

<u>APPENDIX</u>	<u>TITLE</u>	<u>SHEETS</u>
A	BORING LOGS	9-15
B	LABORATORY RESULTS	16-80

INVENTORY

DATE AUGUST 2025

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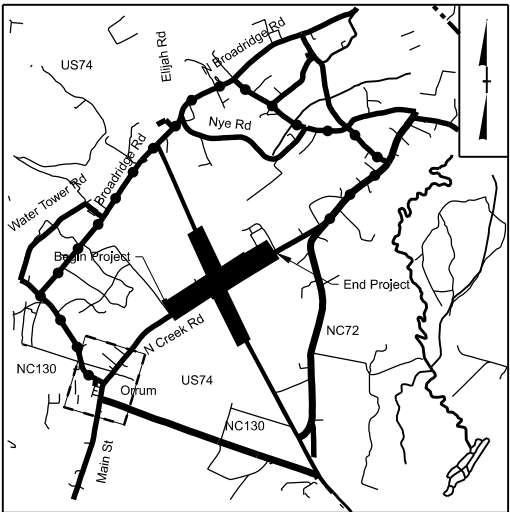
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS									
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>										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.										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:										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 DISLOGGED 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.									
SOIL LEGEND AND AASHTO CLASSIFICATION										MINERALOGICAL COMPOSITION										WEATHERING																			
GENERAL CLASS. SILT-CLAY MATERIALS (< 35% PASSING #200) ORGANIC MATERIALS										MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.										FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.																			
GROUP CLASS. A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8, A-9, A-10, A-11, A-12, A-13, A-14, A-15, A-16, A-17, A-18, A-19, A-20, A-21, A-22, A-23, A-24, A-25, A-26, A-27, A-28, A-29, A-30, A-31, A-32, A-33, A-34, A-35, A-36, A-37, A-38, A-39, A-40, A-41, A-42, A-43, A-44, A-45, A-46, A-47, A-48, A-49, A-50, A-51, A-52, A-53, A-54, A-55, A-56, A-57, A-58, A-59, A-60, A-61, A-62, A-63, A-64, A-65, A-66, A-67, A-68, A-69, A-70, A-71, A-72, A-73, A-74, A-75, A-76, A-77, A-78, A-79, A-80, A-81, A-82, A-83, A-84, A-85, A-86, A-87, A-88, A-89, A-90, A-91, A-92, A-93, A-94, A-95, A-96, A-97, A-98, A-99, A-100, A-101, A-102, A-103, A-104, A-105, A-106, A-107, A-108, A-109, A-110, A-111, A-112, A-113, A-114, A-115, A-116, A-117, A-118, A-119, A-120, A-121, A-122, A-123, A-124, A-125, A-126, A-127, A-128, A-129, A-130, A-131, A-132, A-133, A-134, A-135, A-136, A-137, A-138, A-139, A-140, A-141, A-142, A-143, A-144, A-145, A-146, A-147, A-148, A-149, A-150, A-151, A-152, A-153, A-154, A-155, A-156, A-157, A-158, 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09/08/99

TIP PROJECT: I-6011A

CONTRACT:



VICINITY MAP (NTS)

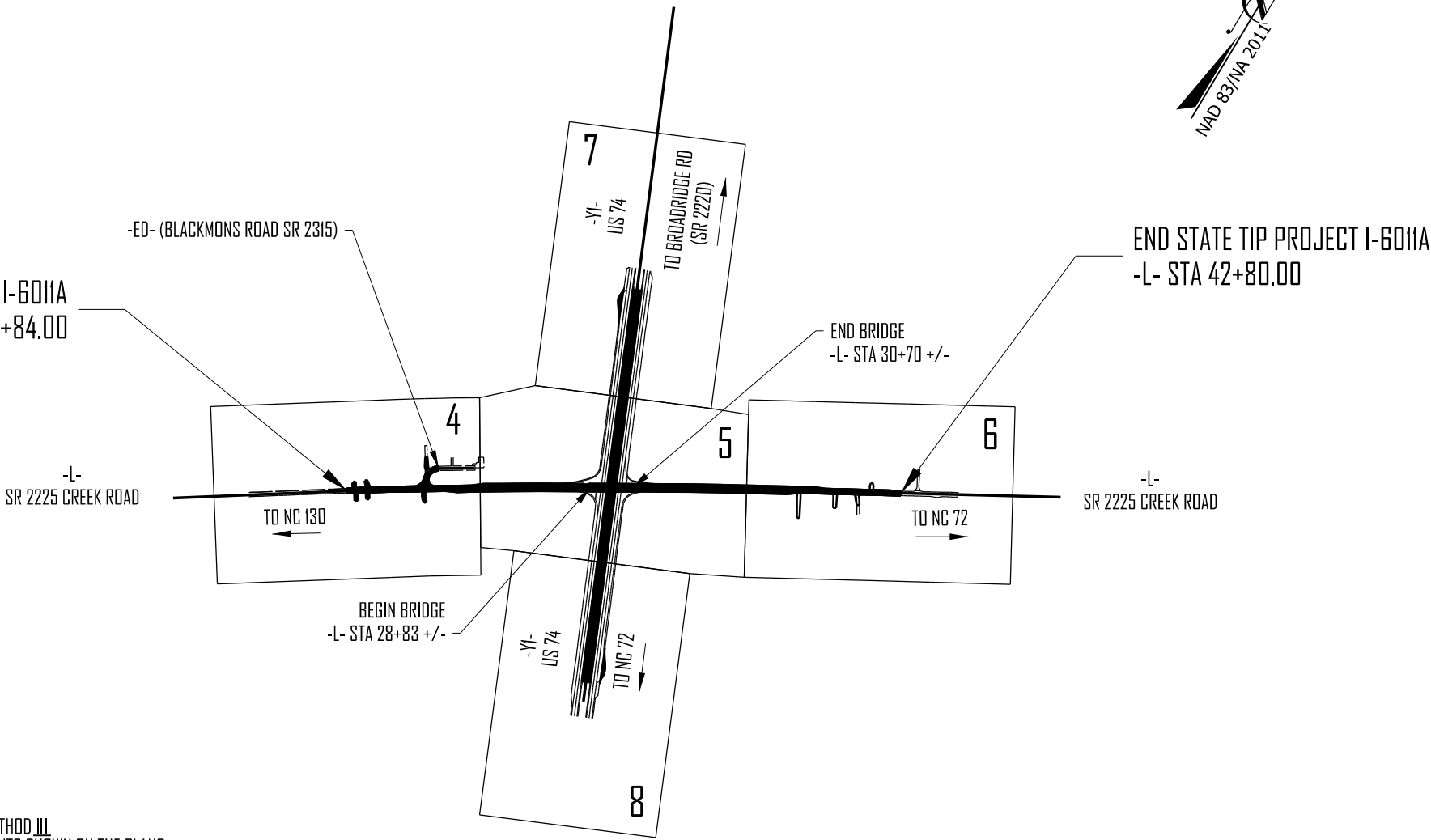
DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROBESON COUNTY

LOCATION: *US 74 CONVERT AT GRADE
INTERSECTION OF US 74 AND
SR 2225 (CREEK ROAD) TO GRADE SEPARATION*
TYPE OF WORK: *PAVING, GRADING,
DRAINAGE, AND STRUCTURE*

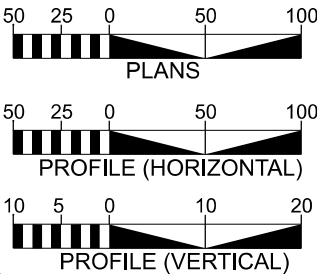
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-6011A	3	83
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
48690.1.2	N/A	PE	
48690.2.2	N/A	RW	
48690.2.3	N/A	UTIL	
48690.3.2	N/A	CONST	



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
THIS IS A PARTIAL CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS SHOWN ON THE PLANS.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2027 = 1250
ADT 2047 = 1440
K = 10 %
D = 60 %
T = 3% % *
V = 60 MPH
* TTST=1% DUAL 2%
FUNC CLASS =
LOCAL-SUB
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-6011A = 0.438 MILES
LENGH STRUCTURE TIP PROJECT I-6011A = 0.035 MILES
TOTAL LENGH TIP PROJECT I-6011A = 0.473 MILES

Prepared in the Office of:



2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
January 31, 2025

LETTING DATE:
January 19, 2027

Trent Huffman, PE
PROJECT ENGINEER

Zitong Liu, EI
PROJECT DESIGN ENGINEER

Alex Henderson
NCDOT CONTACT

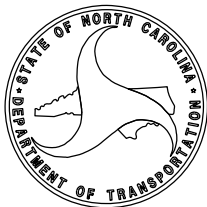
HYDRAULICS ENGINEER



SIGNATURE: P.E.
ROADWAY DESIGN ENGINEER



SIGNATURE: P.E.





Roadway Subsurface Investigation Report - Inventory

Convert At Grade Intersection of US 74 and SR 2225 (Creek Road) to Grade Separation
Robeson County, North Carolina
WBS: 48690.1.2, TIP: I-6011A
Falcon Project No.: G24075.00

Prepared for:
Moffat & Nichol
4700 Falls of the Neuse Road, Suite 300
Raleigh, NC 27609

Submitted by:
Falcon Engineering, Inc.
1210 Trinity Road, Suite 110
Cary, North Carolina 27513
(919) 871-0800
www.falconengineers.com

August 22, 2025

TIP: I-6011A
WBS: 48690.1.2
COUNTY: Robeson
DESCRIPTION: Convert At Grade Intersection of US 74 and SR 2225 (Creek Road) to Grade Separation

SUBJECT: Roadway Subsurface Investigation – Inventory

PROJECT DESCRIPTION

This project consists of the elimination of an at-grade crossing of US 74 and SR 2225 (Creek Road) in Robeson County. The project will grade separate Creek Road over US 74. Tie-ins and minor improvements to additional small drives are also included at various locations. A new bridge will be constructed over US 74 in the middle of the project corridor. Structure Recommendations will be provided under separate cover.

The investigation was conducted between January 14th and 27th, 2025 in general accordance with our Scope and Fee Estimate for Geotechnical Investigation and Engineering Services. The information provided in this report is based solely on our site reconnaissance, soil test borings and laboratory test data, engineering evaluation of these data, and generally accepted soil and foundation engineering practices and principles.

A total of twelve (12) Standard Penetration Test (SPT) borings were performed for the proposed roadway alignments. All mechanical borings were drilled using a Mobile B-57 ATV mounted drill rig equipped with 2 ¼-inch inside diameter hollow-stem augers, and SPT testing was performed with an automatic hammer. Representative soil samples were selected for laboratory testing to verify visual field classifications. In addition, bulk samples were collected for standard Proctor compaction and California Bearing Ratio (CBR) testing.





Portions of the following alignments, totaling approximately 0.842 miles, were investigated. Other minor Y-lines and driveways are included on the project but improvements are not anticipated to be significant enough to warrant investigation.

<u>Alignment</u>	<u>Station (ft)</u>
-L- (SR2225/Creek Road)	17+84 to 42+80
-Y1- (US 74)	22+06.81 to 41+56.57

AREAS OF SPECIAL GEOTECHNICAL INTEREST

- I. The following locations encountered soft/very loose soil (blow count of less than 4) within 4 feet of the ground surface:

<u>Alignment</u>	<u>Station (ft)</u>	<u>Offset</u>
-L-	20+26	17' LT
-L-	27+86	33' RT

- II. The following location encountered groundwater within 4 feet or less of the ground surface:

<u>Alignment</u>	<u>Station (ft)</u>	<u>Offset</u>
-L-	23+00 to 27+00	LT and RT
-L-	30+50 to 37+00	LT and RT

- III. The following locations encountered highly plastic (PI greater than 26) within 4 feet of the ground surface:

<u>Alignment</u>	<u>Station (ft)</u>	<u>Offset</u>
-L-	27+00 to 28+50	RT

- IV. Alluvial soils were not encountered in the areas explored but may be present in other areas of the project corridor adjacent to natural waterways.

PHYSIOGRAPHY AND GEOLOGY

The project site is in the Coastal Plain Physiographic Province of North Carolina. According to the **Geologic Map of North Carolina** (1985), the site is underlain by the Duplin Formation (**Tpy**) of the Tertiary Period.

The Duplin Formation is noted to consist of shelly, medium- to coarse-grained sand, sandy marl, and bluish gray limestone.

Existing site topography is flat in the general project vicinity, typical of this area of the Coastal Plain. The project corridor grades down from either end toward the proposed bridge over US 74 near the middle of the corridor. The corridor is developed with residential buildings and farmland along the entire length.





SOIL PROPERTIES

A variety of soils were encountered along the project, including roadway embankment, Undivided Coastal Plain and Coastal Plain soils.

Roadway Embankment soils were encountered at the ground surface beneath and adjacent to existing roadways. These soils consist of up to 8.0 feet of moist to wet, loose to dense, silty and fine sand (A-2-4, A-3).

Undivided Coastal Plain soils were encountered at ground surface or beneath the roadway embankment. These soils consist of moist to saturated, very loose to medium dense, silty, clayey and fine sand (A-2-4, A-2-5, A-2-6, and A-3) and very soft to medium stiff, non to highly plastic (measured PI = 1 to 66), sandy silt and sandy and silty clay (A-4, A-6, and A-7).

Coastal Plain soils, from the Duplin Formation, were encountered beneath the Undivided Coastal Plain soils. These soils consist of moist to saturated, very loose to very dense, silty clayey and clean sand (A-2-5, A-2-6, and A-3) and stiff to hard, non to highly plastic, sandy and silty clay (A-6 and A-7).

GROUNDWATER PROPERTIES

Groundwater levels were measured at the time of boring completion, and in many cases after a waiting period of at least 24 hours.

Detailed groundwater measurements are included in the attached boring logs, and noted areas of shallow groundwater are included in the Areas of Special Geotechnical Interest earlier in this report. Groundwater was generally not within 4 feet or less from the existing ground surface, except as noted above.

ADDITIONAL LABORATORY TESTING

The following bulk samples were obtained:

<u>Sample</u>	<u>Location</u>	<u>Depth(ft)</u>	<u>Test</u>
BS-1	18+32, 26' RT, -L-	0.5 – 8.5	California Bearing Ratio, Standard Proctor
BS-2	40+05, 21' RT, -L-	0.5 – 6.0	California Bearing Ratio, Standard Proctor

Classification test results for bulk samples and Standard Proctor and California Bearing Ratio (CBR) data is attached in the Appendix.

CLOSING

Falcon appreciates the opportunity to have provided our geotechnical engineering services for the above referenced project. If you have any questions concerning the contents of this report or need additional information, please do not hesitate to contact our office.

FALCON ENGINEERING, INC.

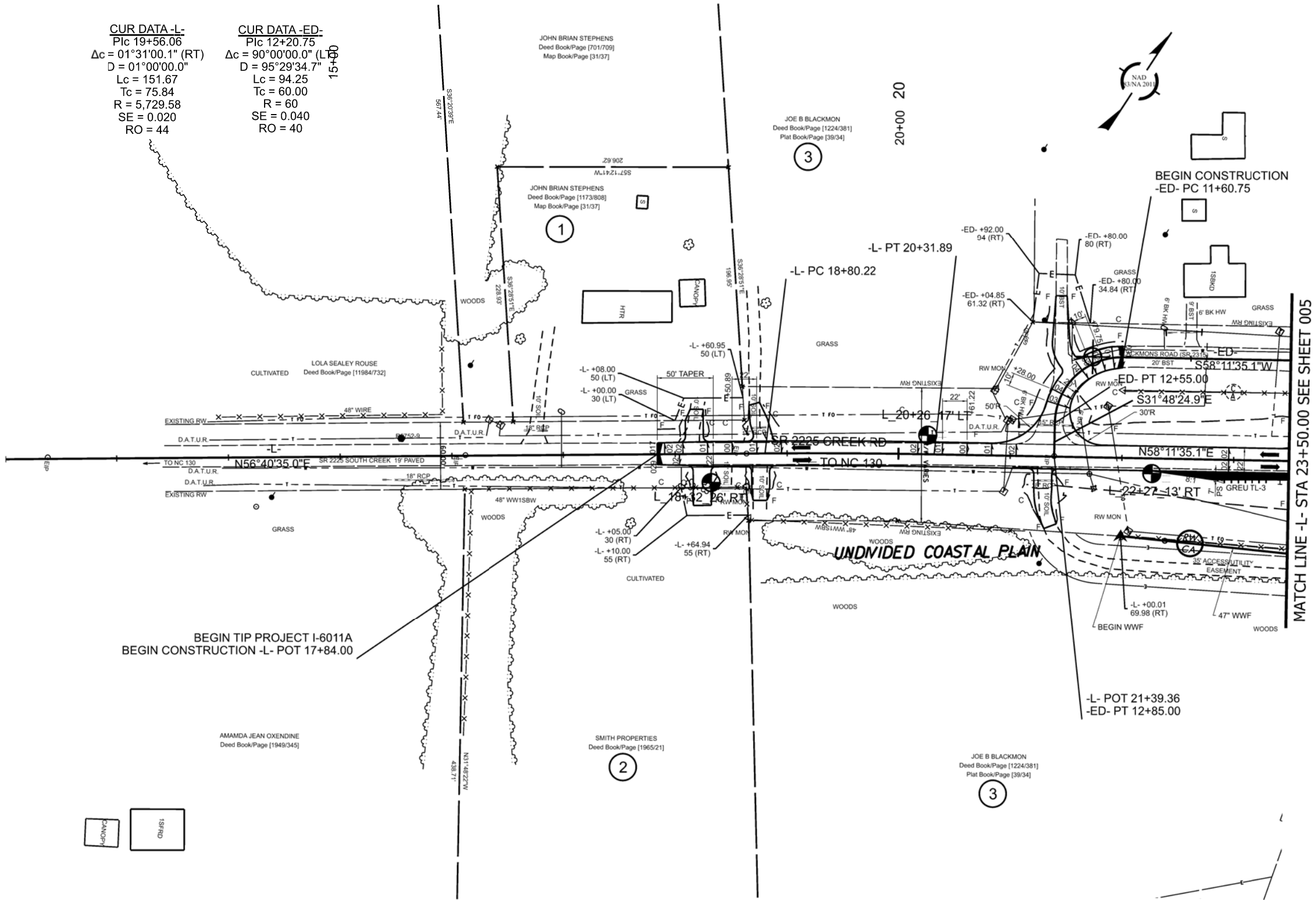
Report Prepared By:

Report Reviewed By:

W. Scott Hunsberger, PE
Geotechnical Engineer

Jeremy R. Hamm, PE
Geotechnical Engineering Manager





CUR DATA -L-
Plc 19+56.06
 $\Delta c = 01^{\circ}31'00.1''$ (RT)
D = 01°00'00.0"
Lc = 151.67
Tc = 75.84
R = 5,729.58
SE = 0.020
RO = 44

CUR DATA -ED-
Plc 12+20.75
 $\Delta c = 90^{\circ}00'00.0''$ (L)
D = 95°29'34.7"
Lc = 94.25
Tc = 60.00
R = 60
SE = 0.040
RO = 40

BEGIN TIP PROJECT I-6011A
BEGIN CONSTRUCTION -L- POT 17+84.00

NOTE:
DRIVEWAYS ARE 16' WIDE UNLESS
NOTED OTHERWISE.

PAVEMENT REMOVAL
FOR DITCH DETAILS, SEE SHEET 2D-1
FOR -L- PROFILE, SEE SHEET NO. 009
FOR -ED- PROFILE, SEE SHEET NO. 011

100100

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NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ROBESON COUNTY

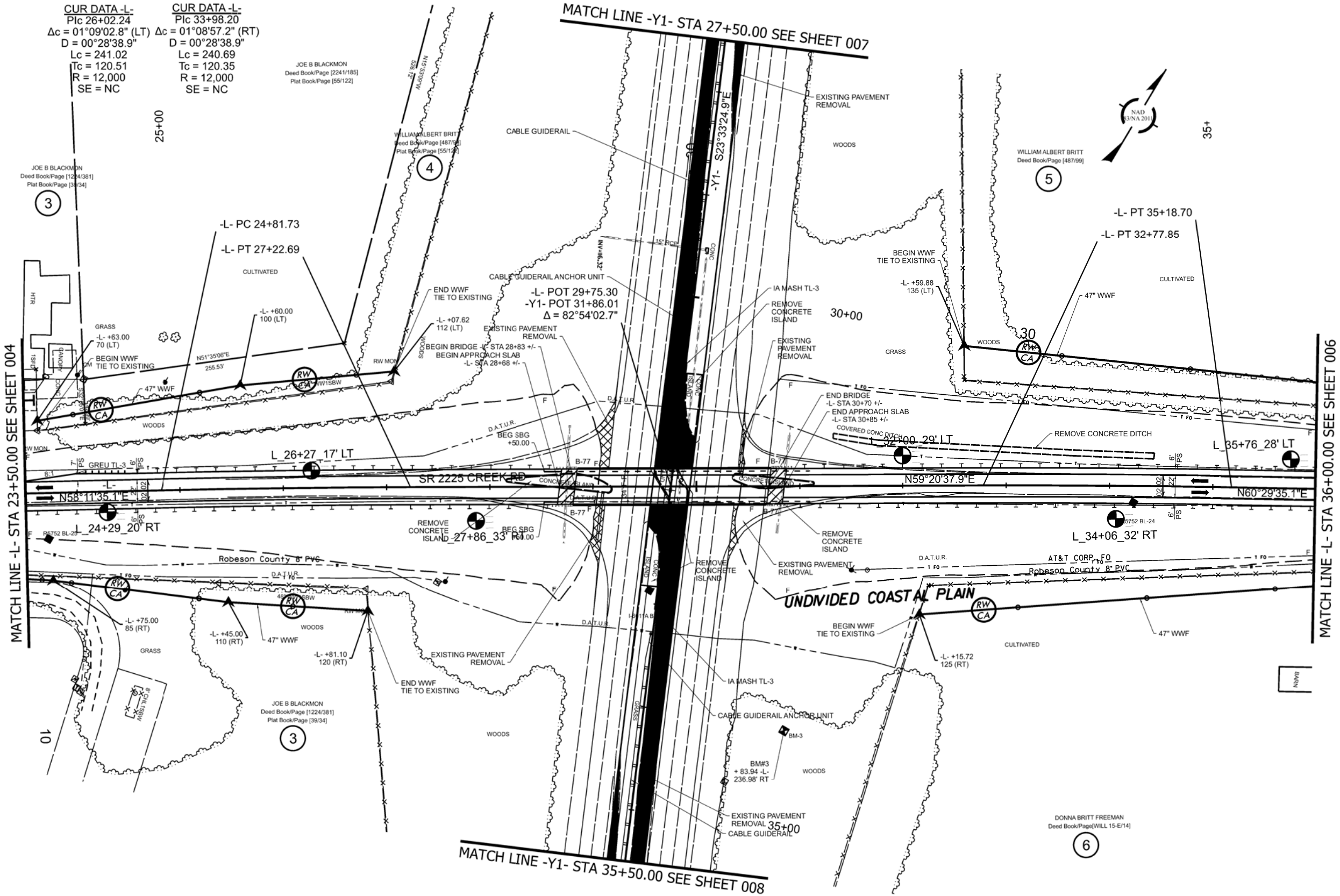
ROADWAY DESIGN UNIT
ROADWAY DESIGN
ENGINEER

HYDRAULIC DESIGN
ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R.W. ACQUISITION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PREPARED BY
 moffatt & nichol

REVISIONS



PAVEMENT REMOVAL
FOR DITCH DETAILS, SEE SHEET 2D-1
FOR -L- PROFILE, SEE SHEET NO. 009
FOR -Y1- PROFILE, SEE SHEET NO. 010

100100

005

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ROBESON COUNTY

ROADWAY DESIGN UNIT
ROADWAY DESIGN
ENGINEER

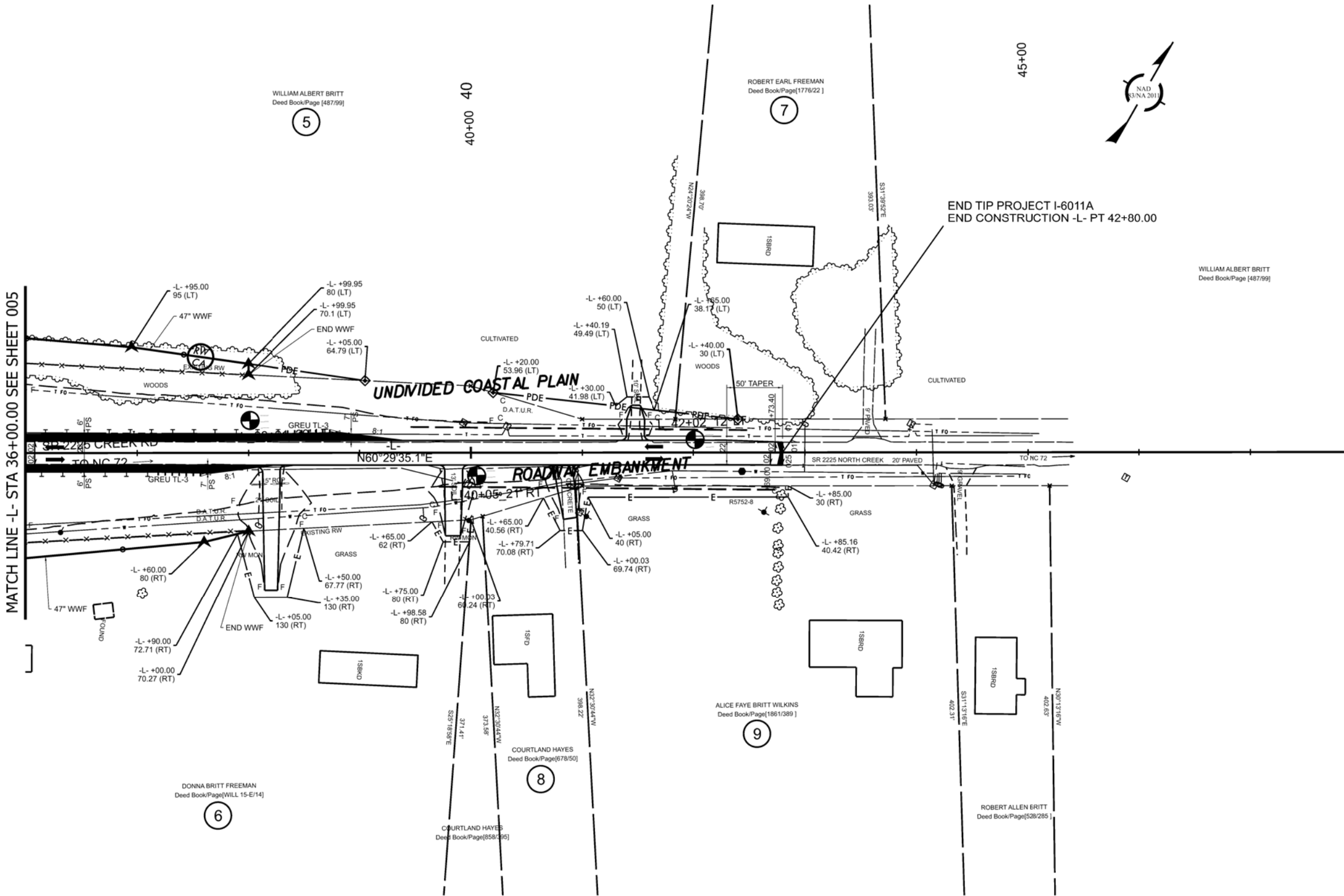
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ENGINEER

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REVISIONS



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FOR -L- PROFILE, SEE SHEET NO. 009

100100

006

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ROBERTSON COUNTY

ROADWAY DESIGN UNIT
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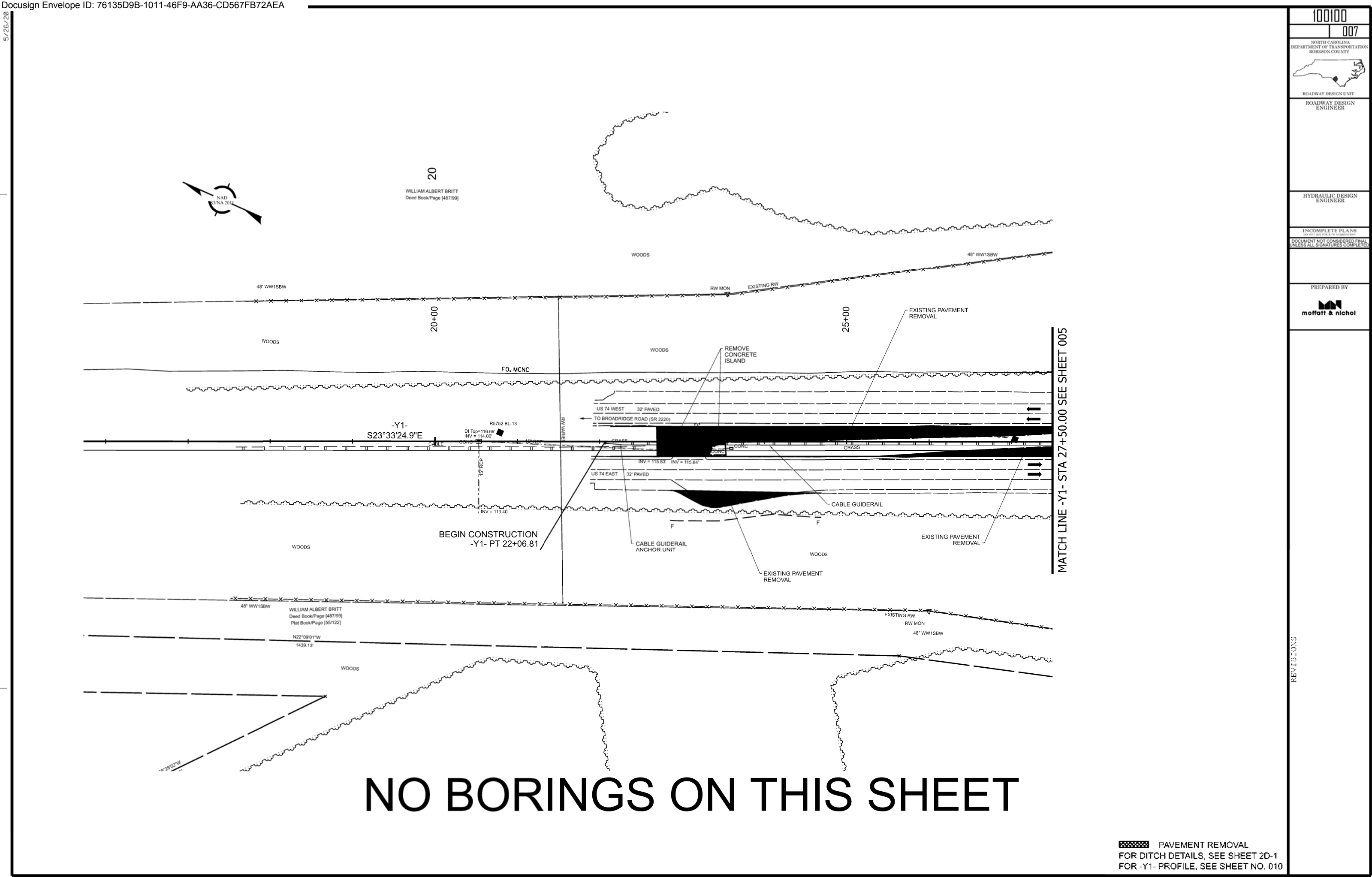
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PREPARED BY

moftatt & nichol

REVISIONS

5/26/20



NO BORINGS ON THIS SHEET

PAVEMENT REMOVAL
FOR DITCH DETAILS, SEE SHEET 2D-1
FOR -Y1- PROFILE, SEE SHEET NO. 010

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NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ROBESON COUNTY

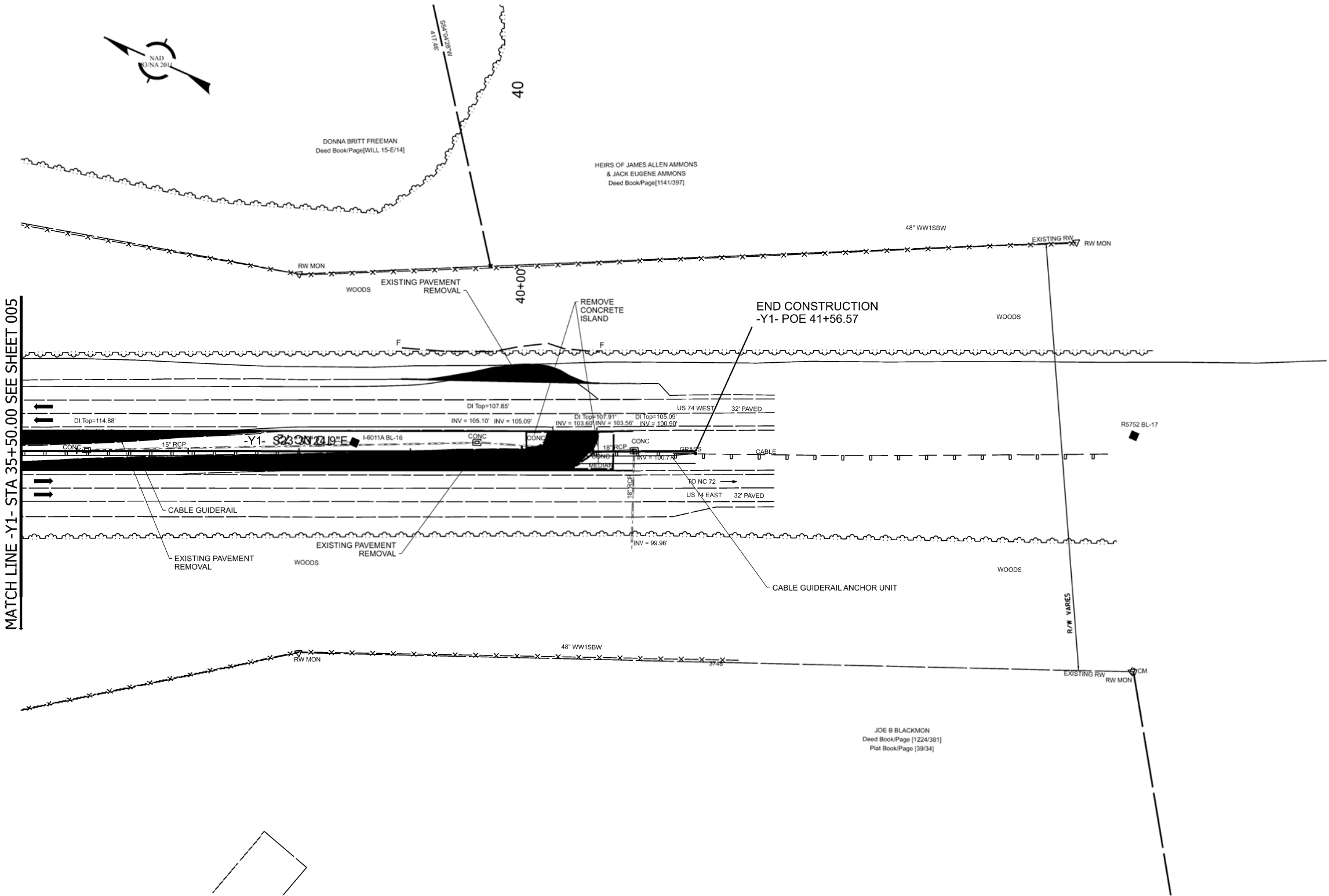
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REVISIONS



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NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ROBESON COUNTY

ROADWAY DESIGN UNIT
ROADWAY DESIGN
ENGINEER

HYDRAULIC DESIGN
ENGINEER

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PREPARED BY

moffatt & nichol

REVISIONS

NO BORINGS ON THIS SHEET

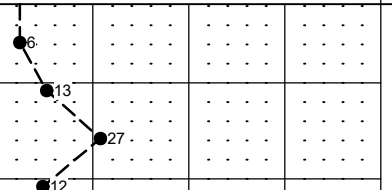
PAVEMENT REMOVAL
FOR DITCH DETAILS, SEE SHEET 2D-1
FOR -Y1- PROFILE, SEE SHEET NO. 010

PROJECT: 48690
REFERENCE: I-6011A

PROJECT REFERENCE NO.	SHEET NO.
I-6011A	9

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
APPENDIX A
BORING LOGS

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 48690.1.2				TIP I-6011A		COUNTY ROBESON		GEOLOGIST GOODNIGHT, D							
SITE DESCRIPTION US 74 GRADE SEPARATION AT US 74 AND SR 2225 (CREEK RD)										GROUND WTR (ft)					
BORING NO. L_18+32_26RT			STATION 18+32			OFFSET 26 ft RT			ALIGNMENT -L-		0 HR. 6.1				
COLLAR ELEV. 129.1 ft			TOTAL DEPTH 10.0 ft			NORTHING 265,353			EASTING 2,002,651		24 HR. 5.8				
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 88% 05/13/2024						DRILL METHOD H.S. Augers				HAMMER TYPE Automatic					
DRILLER Estep, J. E.			START DATE 01/14/25			COMP. DATE 01/14/25			SURFACE WATER DEPTH N/A						
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)
130														129.1	0.2' TOPSOIL 0.0
125	128.1	1.0	5	3	3						SS-01	16%		UNDIVIDED COASTAL PLAIN TAN, LOOSE TO MEDIUM DENSE, SILTY SAND (A-2-4) WITH CLAY LENSES	
	125.6	3.5	3	5	8										
120	123.1	6.0	8	12	15						BS-1	16% W		120.6	8.5
	120.6	8.5	7	7	5										
TAN AND GRAY, MEDIUM DENSE, FINE SAND (A-3)															
Boring Terminated at Elevation 119.1 ft IN UNDIVIDED COASTAL PLAIN: (FINE SAND)															

WBS 48690.1.2			TIP I-6011A			COUNTY ROBESON			GEOLOGIST GOODNIGHT, D					
SITE DESCRIPTION US 74 GRADE SEPARATION AT US 74 AND SR 2225 (CREEK RD)									GROUND WTR (ft)					
BORING NO. L_20+26_17LT			STATION 20+26			OFFSET 17 ft LT			ALIGNMENT -L-			0 HR.	7.1	
COLLAR ELEV. 128.4 ft			TOTAL DEPTH 10.0 ft			NORTHING 265,494			EASTING 2,002,791			24 HR.	5.8	
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 88% 05/13/2024						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic					
DRILLER Estep, J. E.			START DATE 01/14/25			COMP. DATE 01/14/25			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
130														
125	127.4	1.0	2	1	1						SS-02	21%		128.4 0.1' TOPSOIL 0.0
	124.9	3.5	2	3	4									125.4 TAN, VERY LOOSE, SILTY SAND (A-2-4) 3.0
	122.4	6.0	7	10	10									122.9 TAN, LOOSE, SILTY CLAYEY SAND (A-2-5) 5.5
120	119.9	8.5	7	10	10									122.9 TAN, MEDIUM DENSE, FINE SAND (A-3) 5.5
			7	9	7									118.4 Boring Terminated at Elevation 118.4 ft IN UNDIVIDED COASTAL PLAIN: (FINE SAND) 10.0

NCDOT BORE DOUBLE G24075.00-ROADWAY.GPJ NC_DOT.GDT 7/15/25

WBS 48690.1.2			TIP I-6011A			COUNTY ROBESON			GEOLOGIST GOODNIGHT, D								
SITE DESCRIPTION US 74 GRADE SEPARATION AT US 74 AND SR 2225 (CREEK RD)									GROUND WTR (ft)								
BORING NO. L_22+27_13RT			STATION 22+27			OFFSET 13 ft RT			ALIGNMENT -L-			0 HR. Dry					
COLLAR ELEV. 127.6 ft			TOTAL DEPTH 10.0 ft			NORTHING 265,574			EASTING 2,002,978			24 HR. 5.1					
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 88% 05/13/2024						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic								
DRILLER Estep, J. E.			START DATE 01/14/25			COMP. DATE 01/14/25			SURFACE WATER DEPTH N/A								
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
130																	
125	126.6	1.0	6	6	6						SS-03	13%		127.6	0.2' TOPSOIL	0.0	
	124.1	3.5	4	2	6									124.6	TAN, MEDIUM DENSE, SILTY SAND (A-2-4)	3.0	
	121.6	6.0	10	15	14									122.1	TAN, LOOSE, SILTY CLAYEY SAND (A-2-5)	5.5	
120	119.1	8.5	10	13	12								W			TAN-GRAY, MEDIUM DENSE, FINE SAND (A-3)	
													Sat.		117.6	Boring Terminated at Elevation 117.6 ft IN UNDIVIDED COASTAL PLAIN: (FINE SAND)	10.0

WBS 48690.1.2			TIP I-6011A			COUNTY ROBESON			GEOLOGIST GOODNIGHT, D					
SITE DESCRIPTION US 74 GRADE SEPARATION AT US 74 AND SR 2225 (CREEK RD)									GROUND WTR (ft)					
BORING NO. L_24+29_20RT			STATION 24+29			OFFSET 20 ft RT			ALIGNMENT -L-			0 HR. 9.5		
COLLAR ELEV. 125.4 ft			TOTAL DEPTH 20.0 ft			NORTHING 265,675			EASTING 2,003,153			24 HR. 4.0		
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 88% 05/13/2024						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic					
DRILLER Estep, J. E.			START DATE 01/15/25			COMP. DATE 01/15/25			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
130														
125														
120	124.4	1.0	6	4	3									125.4 0.2' TOPSOIL 0.0
	121.9	3.5	6	8	9									
	119.4	6.0	7	8	8									
115	116.9	8.5	8	10	9									119.9 GRAY AND TAN, MEDIUM DENSE, FINE SAND (A-3) 5.5
	111.9	13.5	1	1	2									113.4 GRAY, SOFT, HIGHLY PLASTIC, SANDY SILTY CLAY (A-7-6) 12.0
110	106.9	18.5	WOH	1	1									105.4 Boring Terminated at Elevation 105.4 ft IN UNDIVIDED COASTAL PLAIN: (SILTY CLAY) 20.0

NCDOT BORE DOUBLE G24075.00-ROADWAY.GPJ NC_DOT_GDT 7/15/25

WBS 48690.1.2			TIP I-6011A			COUNTY ROBESON			GEOLOGIST GOODNIGHT, D								
SITE DESCRIPTION US 74 GRADE SEPARATION AT US 74 AND SR 2225 (CREEK RD)									GROUND WTR (ft)								
BORING NO. L_26+27_17LT			STATION 26+27			OFFSET 17 ft LT			ALIGNMENT -L-			0 HR.	4.9				
COLLAR ELEV. 123.9 ft			TOTAL DEPTH 35.0 ft			NORTHING 265,810			EASTING 2,003,303			24 HR.	3.9				
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 88% 05/13/2024						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic								
DRILLER Estep, J. E.			START DATE 01/15/25			COMP. DATE 01/15/25			SURFACE WATER DEPTH N/A								
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	L O G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
125																	
120	122.9	1.0	5	6	9									123.9	0.2' TOPSOIL	0.0	
	120.4	3.5	6	6	7							M		TAN AND GRAY, MEDIUM DENSE, SILTY FINE SAND (A-2-4)	120.9	TAN, MEDIUM DENSE, FINE SAND (A-3)	3.0
115	117.9	6.0	8	9	7							W					
	115.4	8.5	2	2	3							Sat.			115.9	TAN AND GRAY, VERY SOFT TO MEDIUM STIFF, HIGHLY PLASTIC, SILTY CLAY (A-7-5, A-7-6)	8.0
110											SS-06	45%					
	110.4	13.5	1	1	2												
105											SS-07	52%					
	105.4	18.5	WOH	WOH	1												
100											SS-08	56%					
	100.4	23.5	WOH	2	3										100.9	TAN-BROWN AND GRAY, VERY LOOSE TO LOOSE, SILTY SAND (A-2-4)	23.0
95											SS-09	31%					
	95.4	28.5	1	0	1												
90																	
	90.4	33.5	WOR	WOR	WOR							Sat.					
			WOR	WOR	WOR							Sat.					
															Boring Terminated at Elevation 88.9 ft IN UNDIVIDED COASTAL PLAIN: (SILTY SAND) Other Samples: ST-1 (15.3 - 17.3)		35.0

WBS 48690.1.2			TIP I-6011A			COUNTY ROBESON			GEOLOGIST GOODNIGHT, D						
SITE DESCRIPTION US 74 GRADE SEPARATION AT US 74 AND SR 2225 (CREEK RD)												GROUND WTR (ft)			
BORING NO. L_27+86_33RT			STATION 27+86			OFFSET 33 ft RT			ALIGNMENT -L-			0 HR.	3.0		
COLLAR ELEV. 117.1 ft			TOTAL DEPTH 44.5 ft			NORTHING 265,849			EASTING 2,003,465			24 HR.	0.2		
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 88% 05/13/2024						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER Estep, J. E.			START DATE 01/15/25			COMP. DATE 01/16/25			SURFACE WATER DEPTH N/A						
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	L O G	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
120															
115	116.1	1.0	1	2	2						SS-10	44%		117.1	0.0
	114.1	3.0	1	1	2						SS-11	55%		116.1	1.0
110	111.1	6.0	2	2	2							W		ARTIFICIAL FILL 1.0' TOPSOIL/RIP RAP UNDIVIDED COASTAL PLAIN REDDISH-GRAY AND TAN, HIGHLY PLASTIC, SOFT TO MEDIUM STIFF, SILTY CLAY (A-7-6)	
	109.1	8.0	1	1	2						SS-12	47%			
105															
	104.1	13.0	1	1	2						SS-13	60%			
100	99.1	18.0	1	1	2							W			
	94.1	23.0	2	1	1						SS-14	44%			
95														95.6	21.5
90	89.1	28.0	WOH	WOH	2						Sat.			94.1	23.0
	84.1	33.0	15	17	15									GRAY, SOFT, SANDY CLAY (A-6) DARK GRAY, VERY LOOSE, SILTY SAND (A-2-4)	
85															86.1
	79.1	38.0	16	18	26						Sat.		COASTAL PLAIN ORANGE-TAN AND GRAY, MEDIUM DENSE TO DENSE, FINE SAND (A-3) (DUPLIN FORMATION)		
80															
	74.1	43.0	13	16	14						Sat.				
75														72.6	44.5
														Boring Terminated at Elevation 72.6 ft IN COASTAL PLAIN (DUPLIN FORMATION): (FINE SAND) Other Samples: ST-2 (9.6 - 11.6)	

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WBS 48690.1.2			TIP I-6011A			COUNTY ROBESON			GEOLOGIST GOODNIGHT, D						
SITE DESCRIPTION US 74 GRADE SEPARATION AT US 74 AND SR 2225 (CREEK RD)									GROUND WTR (ft)						
BORING NO. L_32+00_29LT			STATION 32+00			OFFSET 29 ft LT			ALIGNMENT -L-			0 HR.	2.8		
COLLAR ELEV. 120.5 ft			TOTAL DEPTH 49.5 ft			NORTHING 266,113			EASTING 2,003,789			24 HR.	2.0		
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 88% 05/13/2024						DRILL METHOD Mud Rotary			HAMMER TYPE Automatic						
DRILLER Estep, J. E.			START DATE 01/21/25			COMP. DATE 01/21/25			SURFACE WATER DEPTH N/A						
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100			ELEV. (ft)	DEPTH (ft)	
125															
120															
115	119.5	1.0	6	5	5								120.5	0.2' TOPSOIL	0.0
	117.5	3.0	4	3	4										
	114.5	6.0	5	2	2								115.0	UNDIVIDED COASTAL PLAIN TAN AND GRAY, LOOSE TO MEDIUM DENSE, SAND (A-3)	5.5
	112.5	8.0	1	1	1									TAN AND GRAY, HIGHLY PLASTIC, VERY SOFT TO SOFT, SILTY CLAY (A-7-5, A-7-6)	
110															
	107.5	13.0	WOH	WOH	1										
105	102.5	18.0	WOH	1	WOH								103.5	TAN AND GRAY, VERY SOFT, SANDY CLAY (A-6)	17.0
	97.5	23.0	WOH	WOH	1								98.5	TAN AND GRAY, VERY SOFT, SANDY SILT (A-4)	22.0
90	92.5	28.0	1	WOH	WOH								90.5	COASTAL PLAIN TAN AND GRAY, VERY LOOSE TO DENSE, CLAYEY SAND (A-2-6) (DUPLIN FORMATION)	30.0
	87.5	33.0	10	13	17										
80	82.5	38.0	5	7	8										
	77.5	43.0	6	5	4								78.5	TAN, LOOSE, SILTY CLAYEY SAND (A-2-5)	42.0
75	72.5	48.0	17	19	18								74.0	TAN, DENSE, SAND (A-3)	46.5
													71.0	Boring Terminated at Elevation 71.0 ft IN COASTAL PLAIN (DUPLIN FORMATION): (FINE SAND)	49.5
														Other Samples: ST-3 (9.8 - 11.8)	

WBS 48690.1.2		TIP I-6011A		COUNTY ROBESON		GEOLOGIST GOODNIGHT, D								
SITE DESCRIPTION US 74 GRADE SEPARATION AT US 74 AND SR 2225 (CREEK RD)							GROUND WTR (ft)							
BORING NO. L_34+06_32RT		STATION 34+06		OFFSET 32 ft RT		ALIGNMENT -L-		0 HR. 3.0						
COLLAR ELEV. 120.8 ft		TOTAL DEPTH 45.0 ft		NORTHING 266,165		EASTING 2,003,998		24 HR. 2.0						
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 88% 05/13/2024				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic								
DRILLER Estep, J. E.		START DATE 01/17/25		COMP. DATE 01/17/25		SURFACE WATER DEPTH N/A								
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
125														
120	119.8	1.0	6	6	8									120.8 0.2' TOPSOIL 0.0
115	117.3	3.5	3	4	5									UNDIVIDED COASTAL PLAIN LIGHT TAN-GRAY, MEDIUM DENSE, SILTY F. SAND (A-2-4)
	114.8	6.0	2	1	2									
110	112.3	8.5	WOH	1	2						SS-24	53%		RED-TAN, HIGHLY PLASTIC, SOFT, SILTY CLAY (A-7-5)
	107.3	13.5	3	4	3									108.8 12.0
105	102.3	18.5	4	1	1									103.8 17.0
100	97.3	23.5	WOH	3	2						SS-25	41%		RED-TAN AND ORANGE-TAN, VERY LOOSE TO LOOSE, SILTY SAND (A-2-4)
95	92.3	28.5	3	3	4									96.3 24.5
90	87.3	33.5	4	5	6									89.8 31.0
85	82.3	38.5	5	13	14									COASTAL PLAIN ORANGE-TAN, MEDIUM DENSE, FINE SAND (A-3) (DUPLIN FORMATION)
80	77.3	43.5	9	10	8									75.8 45.0
														Boring Terminated at Elevation 75.8 ft IN COASTAL PLAIN (DUPLIN FORMATION): (FINE SAND) Other Samples: ST-4 (8.2 - 10.2)

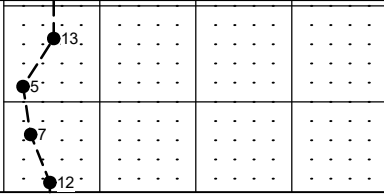
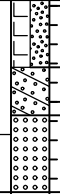
GEOTECHNICAL BORING REPORT
BORE LOG

WBS 48690.1.2				TIP I-6011A		COUNTY ROBESON		GEOLOGIST GOODNIGHT, D								
SITE DESCRIPTION US 74 GRADE SEPARATION AT US 74 AND SR 2225 (CREEK RD)										GROUND WTR (ft)						
BORING NO. L_35+76_28LT			STATION 35+76			OFFSET 28 ft LT		ALIGNMENT -L-		0 HR.	3.3					
COLLAR ELEV. 121.6 ft			TOTAL DEPTH 35.0 ft			NORTHING 266,301		EASTING 2,004,115		24 HR.	3.5					
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 88% 05/13/2024						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic							
DRILLER Estep, J. E.			START DATE 01/22/25			COMP. DATE 01/22/25		SURFACE WATER DEPTH N/A								
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	▼ MOI	L O G	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)	
125																
120	120.6	1.0	6	5	6									121.6	0.2' TOPSOIL	0.0
115	118.1	3.5	6	5	6									UNDIVIDED COASTAL PLAIN TAN, MEDIUM DENSE, FINE SAND (A-3)		
	115.6	6.0	4	2	2											
110														TAN, GRAY AND RED, HIGHLY PLASTIC, SOFT TO MEDIUM STIFF, SILTY CLAY (A-7-5)		
105	108.1	13.5	5	5	5									107.9	TAN, LOOSE TO MEDIUM DENSE, FINE SAND (A-3)	13.7
100	103.1	18.5	4	4	5									TAN, VERY LOOSE, CLAYEY SAND (A-2-6)		
95	98.1	23.5	1	WOH	1									94.6	TAN, LOOSE, SAND (A-3)	27.0
90	93.1	28.5	3	4	2									Boring Terminated at Elevation 86.6 ft IN UNDIVIDED COASTAL PLAIN: (FINE SAND)		
	88.1	33.5	4	3	3									86.6	Other Samples: ST-5 (8.5 - 10.5)	35.0

WBS 48690.1.2				TIP I-6011A		COUNTY ROBESON		GEOLOGIST GOODNIGHT, D						
SITE DESCRIPTION US 74 GRADE SEPARATION AT US 74 AND SR 2225 (CREEK RD)										GROUND WTR (ft)				
BORING NO. L_38+01_29LT			STATION 38+01			OFFSET 29 ft LT			ALIGNMENT -L-		0 HR. 1.5			
COLLAR ELEV. 122.9 ft			TOTAL DEPTH 20.0 ft			NORTHING 266,413			EASTING 2,004,311		24 HR. 5.0			
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 88% 05/13/2024						DRILL METHOD Mud Rotary				HAMMER TYPE Automatic				
DRILLER Estep, J. E.			START DATE 01/21/25			COMP. DATE 01/21/25			SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
125														
120	121.9	1.0	3	3	3									122.9 0.2' TOPSOIL 0.0
	119.4	3.5	4	4	5							M		UNDIVIDED COASTAL PLAIN TAN, LOOSE, CLAYEY SAND (A-2-6)
115	116.9	6.0	9	11	12							M		119.9 TAN, LOOSE TO MEDIUM DENSE, FINE SAND (A-3) 3.0
	114.4	8.5	8	8	11							Sat.		
110	109.4	13.5	2	2	2							Sat.		110.9 GRAY, TAN AND RED, HIGHLY PLASTIC, SOFT TO MEDIUM STIFF, SILTY CLAY (A-7-6) 12.0
	104.4	18.5	3	5	5						SS-27	43%		105.9 ORANGE-TAN, LOOSE TO MEDIUM DENSE, FINE SAND (A-3), WITH CLAY LENSES 17.0
105														102.9 Boring Terminated at Elevation 102.9 ft IN UNDIVIDED COASTAL PLAIN: (FINE SAND) 20.0

NCDOT BORE DOUBLE G24075.00-ROADWAY.GPJ NC_DOT.GDT 7/15/25

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 48690.1.2			TIP I-6011A			COUNTY ROBESON			GEOLOGIST GOODNIGHT, D						
SITE DESCRIPTION US 74 GRADE SEPARATION AT US 74 AND SR 2225 (CREEK RD)									GROUND WTR (ft)						
BORING NO. L_40+05_21RT			STATION 40+05			OFFSET 21 ft RT			ALIGNMENT -L-			0 HR. Dry			
COLLAR ELEV. 125.3 ft			TOTAL DEPTH 10.0 ft			NORTHING 266,470			EASTING 2,004,513			24 HR. 7.0			
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 88% 05/13/2024						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER Estep, J. E.			START DATE 01/22/25			COMP. DATE 01/22/25			SURFACE WATER DEPTH N/A						
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
130															
125															
120	124.3	1.0	6	6	7						BS-02	11% M		125.3 0.1' TOPSOIL 0.0	
	121.8	3.5	2	2	3						SS-28	21% M		121.8 3.5	
	119.3	6.0	2	3	4									119.3 6.0	
	116.8	8.5	4	5	7									115.3 10.0	
														Boring Terminated at Elevation 115.3 ft IN UNDIVIDED COASTAL PLAIN: (FINE SAND)	

WBS 48690.1.2				TIP I-6011A				COUNTY ROBESON				GEOLOGIST GOODNIGHT, D					
SITE DESCRIPTION US 74 GRADE SEPARATION AT US 74 AND SR 2225 (CREEK RD)												GROUND WTR (ft)					
BORING NO. L_42+02_12LT				STATION 42+02				OFFSET 12 ft LT				ALIGNMENT -L-				0 HR. Dry	
COLLAR ELEV. 125.2 ft				TOTAL DEPTH 10.0 ft				NORTHING 266,595				EASTING 2,004,668				24 HR. Dry	
DRILL RIG/HAMMER EFF./DATE TRI8016 MOBILE B-57 88% 05/13/2024								DRILL METHOD H.S. Augers				HAMMER TYPE Automatic					
DRILLER Estep, J. E.				START DATE 01/22/25				COMP. DATE 01/22/25				SURFACE WATER DEPTH N/A					
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
130																	
125																	
120	124.2	1.0	4	4	4												

NCDOT BORE DOUBLE G24075.00-ROADWAY.GPJ NC_DOT.GDT 7/15/25

PROJECT: 48690
REFERENCE: I-6011A

PROJECT REFERENCE NO.	SHEET NO.
I-6011A	16

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



LABORATORY TEST RESULTS
US 74 Grade Separation
Robeson County, NC
NCDOT Project: I-6011A
Falcon Engineering Project No: G24075.00

NO.	SAMPLE LOCATION	DEPTH INTERVAL	AASHTO CLASS.	ATTERBERG LIMITS		PERCENT BY WEIGHT				PERCENT PASSING SIEVE			MOISTURE (%)	BULK DENSITY (pcf)	ORGANICS (%)
				LL	PI	C.SAND	F.SAND	SILT	CLAY	#10	#40	#200			
BS-01	L_18+32_26 'RT	0.5-8.5	A-2-4(0)	16	1	9	75	2	14	100	99	17	16	N/A	N/A
BS-02	L_40+05_21' RT	0.0-3.5	A-2-4(0)	16	0	11	75	1	13	100	97	15	11	N/A	N/A
SS-01	L_18+32_26 'RT	1.0-2.5	A-2-4(0)	21	5	7	64	6	23	100	99	29	16	N/A	N/A
SS-02	L_20+26_17' LT	1.0-2.5	A-2-4(0)	28	10	7	61	5	27	100	99	33	21	N/A	N/A
SS-03	L_22+27_13' RT	1.0-2.5	A-2-4(0)	22	5	9	64	4	23	100	99	28	13	N/A	N/A
SS-04	L_24+29_20' RT	3.5-5.0	A-2-4(0)	18	0	7	82	0	11	100	100	12	19	N/A	N/A
SS-05	L_24+29_20' RT	13.5-15.0	A-7-6(50)	72	44	0	4	22	74	100	100	97	54	N/A	N/A
SS-06	L_26+27_17' LT	8.5-10.0	A-7-5(55)	78	48	0	5	20	75	100	100	96	45	N/A	N/A
SS-07	L_26+27_17' LT	13.5-15.0	A-7-6(61)	90	66	0	17	11	72	100	100	84	52	N/A	2.0%
SS-08	L_26+27_17' LT	18.5-20.0	A-7-6(46)	71	53	0	28	20	52	100	100	83	56	N/A	N/A
SS-09	L_26+27_17' LT	23.5-25.0	A-2-4(0)	23	1	49	34	3	14	100	77	18	31	N/A	N/A
SS-10	L_27+86_33' RT	1.0-2.5	A-7-6(44)	73	44	1	13	19	67	100	100	88	44	N/A	N/A
SS-11	L_27+86_33' RT	3.0-4.5	A-7-6(48)	72	45	1	6	22	71	100	100	93	55	N/A	N/A
SS-12	L_27+86_33' RT	8.0-9.5	A-7-6(41)	71	53	0	33	13	54	100	100	76	47	N/A	N/A
SS-13	L_27+86_33' RT	13.0-14.5	A-7-6(84)	101	74	0	7	21	72	100	100	97	60	N/A	1.9%
SS-14	L_27+86_33' RT	23.0-24.5	A-2-4(0)	23	0	32	56	5	7	97	82	14	44	N/A	N/A
SS-19	L_32+00_29' LT	6.0-7.5	A-7-5(55)	89	46	0	7	15	78	100	100	94	49	N/A	N/A
SS-20	L_32+00_29' LT	8.0-9.5	A-7-6(58)	81	52	1	6	20	73	100	100	95	56	N/A	2.8%
SS-21	L_32+00_29' LT	13.0-14.5	A-7-6(37)	65	48	0	40	19	41	100	100	77	49	N/A	N/A
SS-22	L_32+00_29' LT	18.0-19.5	A-6(9)	38	18	0	57	14	29	100	100	62	48	N/A	N/A
SS-23	L_32+00_29' LT	23.0-24.5	A-4(0)	24	1	0	70	11	19	100	100	40	51	N/A	N/A
SS-24	L_34+06_32' RT	6.0-7.5	A-7-5(52)	79	47	1	7	18	74	100	100	93	53	N/A	N/A
SS-25	L_34+06_32' RT	18.5-20.0	A-2-4(0)	23	0	0	86	1	13	100	100	18	41	N/A	N/A
SS-26	L_35+76_29' LT	6.0-7.5	A-7-5(47)	77	45	1	11	16	72	100	100	89	42	N/A	N/A
SS-27	L_38+01_9' LT	13.5-15.0	A-7-6(38)	67	39	0	16	19	65	100	100	86	43	N/A	N/A
SS-28	L_40+05_21' RT	3.5-5.0	A-2-6(0)	31	11	8	60	2	30	100	99	33	21	N/A	N/A
SS-29	L_42+02_12' LT	8.5-10.0	A-7-6(18)	63	42	2	45	5	48	100	100	54	28	N/A	N/A
ST-01	L_26+27_17' LT	15.3-17.3	A-7-6	74	62	0	0	21	79	100	100	79	41	N/A	N/A
ST-02	L_27+86_33' RT	9.6-11.6	A-6	38	17	0	65	9	25	100	100	46	33	N/A	N/A
ST-30	L_32+00_29' LT	9.8-11.8	A-7-6	88	59	1	6	22	71	100	99	94	55	N/A	N/A
ST-04	L_34+06_32' RT	8.2-10.2	A-7-6	77	57	0	9	32	59	100	100	93	51	N/A	N/A
ST-05	L_35+76_29' LT	8.5-10.5	A-7-6	81	62	0	7	29	64	100	100	94	50	N/A	N/A

Reviewed By

Certification: 105-0803

Falcon Engineering, Inc. 1210 Trinity Road, Suite 110, Cary, NC 27513



FALCON ENGINEERING, INC.
1210 TRINITY ROAD, SUITE 110
CARY, NC 27513

PHONE: 919.871.0800
www.falconengineers.com

CALIFORNIA BEARING RATIO TEST RESULTS
ASTM D1883 / AASHTO T193

Project No.: G24075.00		Tested By: J. Grabner		Test Date: 2025-24-02					
Project Name: US 74 Grade Separation I-6011A									
Boring ID: R-01		Sample ID: BS-01		Sample Depth: 0.5-8.5 ft					
MOLDED SPECIMEN TEST DATA									
Wt. of Mold + Wet Soil:	20847 g	Moisture Content	Before Molding	After Molding	Max. Dry Unit Weight: 116.1 pcf				
Wt. of Mold:	16469 g	Tare Wt.:	6.30 g	6.40 g	Optimum Moisture Content: 12.8%				
Wt. of Wet Soil:	4378 g	Wt. Tare + Wet Soil:	300.00 g	457.90 g	Percent Compaction: 98.1%				
Mold Volume:	0.0752 cf	Wt. Tare + Dry Soil:	267.00 g	407.20 g	Compaction Method: T-99				
Wet Unit Weight:	128.4 pcf	Moisture Content:	12.7%	12.7%	Conversion Factors 1 lb = 453.6 gram 1 cu. foot = 1728 cu. inch				
Dry Unit Weight:	114.0 pcf	Average Moisture Content:	12.7%						
LOAD TEST DATA									
Penetration (in)	Load (lb)	Stress (psi)	Piston Calibration						
0.000	0	0.0	Strain Rate: 0.05 inch/minute						
0.025	155	51.7	Piston Diameter: 1.954 inch						
0.050	397	132.4	Piston Area: 2.999 sq. inch						
0.075	683	227.8	Swell Readings Soak Time: 96 hours Surcharge Weight: 10 lb Surcharge Stress: 51 psf Molded Sample Height: 4.583 inch Initial Dial Reading: 0.050 inch Final Dial Reading: 0.050 inch Percent Swell: 0.00%						
0.100	966	322.1							
0.125	1201	400.5							
0.150	1431	477.2							
0.175	1580	526.9							
0.200	1710	570.2							
0.225	1797	599.3							
0.250	1843	614.6							
0.275	1840	613.6							
0.300	1796	598.9							
0.400	1401	467.2							
0.500	1300	433.5							
Readings After Soak		Additional Specimen Data							
Wt. Mold + Soaked Soil:	20892 g	Liquid Limit:	16	Percent Passing #4:	%	Color: Yellowish Brown Visual Description: USCS Classification: SILTY SAND (SM) AASHTO Classification: A-2-4 (0)			
Wt. Tare:	185 g	Plastic Limit:	15	Percent Passing #10:	%				
Wt. Wet Soil + Tare:	517 g	Plasticity Index:	1	Percent Passing #40:	99%				
Wt. Tare + Dry Soil:	477 g			Percent Passing #200:	17.2%				
Moisture Content:	13.5%								
Wet Unit Weight:	129.7 pcf								
Dry Unit Weight:	114.2 pcf								
BEARING RATIO									
CBR at 0.1 inch:	36.3								
CBR at 0.2 inch:	39.0								

207 REPORT SHEET - CBR G24075.00 LAB.GPJ FALCON FORMAT.GDT 3/3/25



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CARY, NC 27513

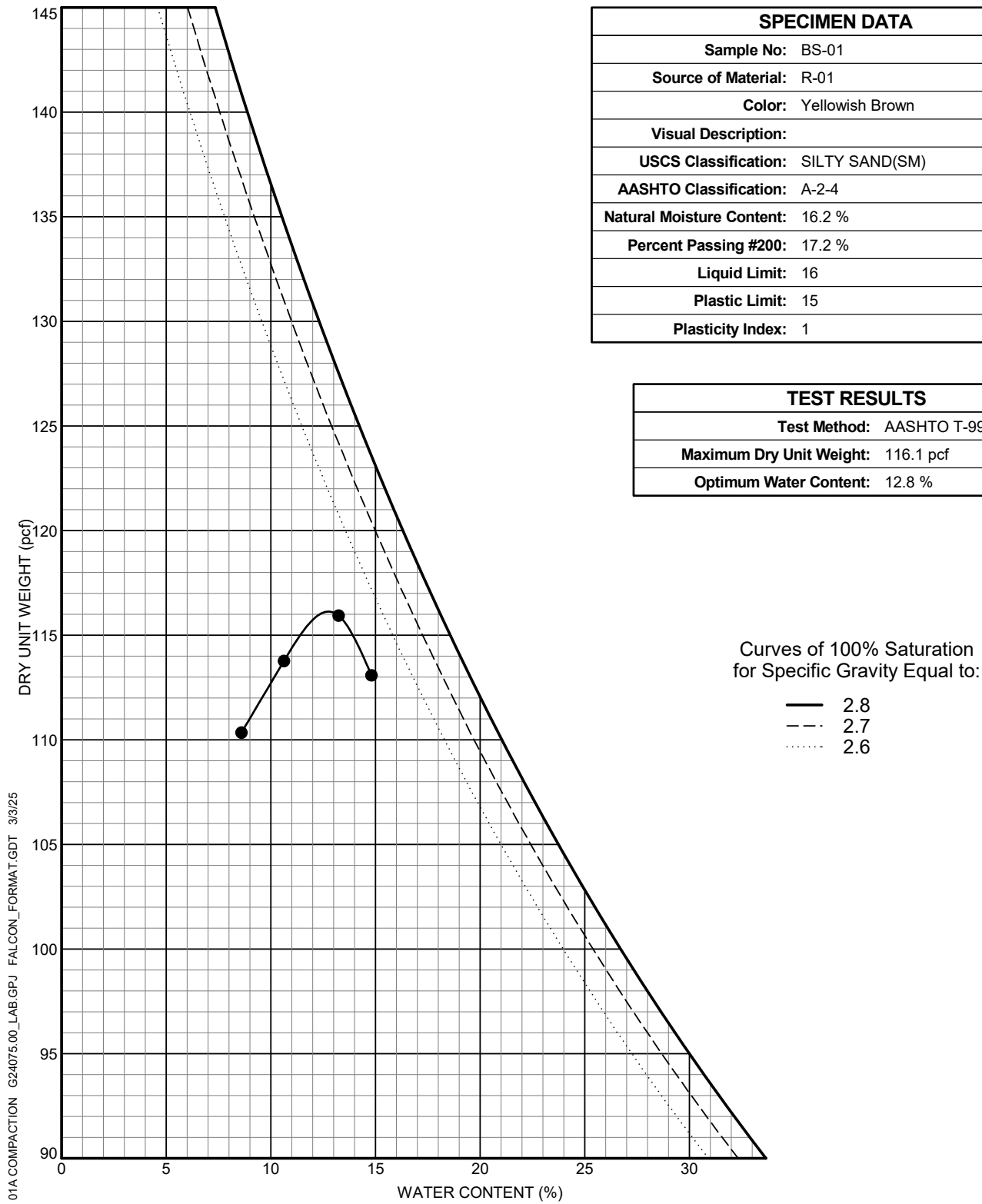
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LABORATORY COMPACTION TEST RESULTS

Project No.:	G24075.00
Project Name:	US 74 Grade Separation I-6011A
Project Location:	Robeson County, NC

SPECIMEN DATA	
Sample No:	BS-01
Source of Material:	R-01
Color:	Yellowish Brown
Visual Description:	
USCS Classification:	SILTY SAND(SM)
AASHTO Classification:	A-2-4
Natural Moisture Content:	16.2 %
Percent Passing #200:	17.2 %
Liquid Limit:	16
Plastic Limit:	15
Plasticity Index:	1

TEST RESULTS	
Test Method:	AASHTO T-99
Maximum Dry Unit Weight:	116.1 pcf
Optimum Water Content:	12.8 %





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CALIFORNIA BEARING RATIO TEST RESULTS
ASTM D1883 / AASHTO T193

Project No.: G24075.00		Tested By: J. Grabner		Test Date: 2025-24-02	
Project Name: US 74 Grade Separation I-6011A					
Boring ID: R-11		Sample ID: BS-02		Sample Depth: 0.5-6.0 ft	
MOLDED SPECIMEN TEST DATA					
Wt. of Mold + Wet Soil:	20698 g	Moisture Content	<u>Before</u> Molding : <u>After</u> Molding	Max. Dry Unit Weight:	112.8 pcf
Wt. of Mold:	16444 g	Tare Wt.:	6.40 g : 6.40 g	Optimum Moisture Content:	12.5%
Wt. of Wet Soil:	4254 g	Wt. Tare + Wet Soil:	520.70 g : 492.80 g	Percent Compaction:	98.1%
Mold Volume:	0.0753 cf	Wt. Tare + Dry Soil:	463.10 g : 439.00 g	Compaction Method:	T-99
Wet Unit Weight:	124.5 pcf	Moisture Content:	12.6% : 12.4%	Conversion Factors 1 lb = 453.6 gram 1 cu. foot = 1728 cu. inch	
Dry Unit Weight:	110.7 pcf	Average Moisture Content:	12.5%		
LOAD TEST DATA					
Penetration (in)	Load (lb)	Stress (psi)	<u>Piston Calibration</u> Strain Rate: 0.05 inch/minute Piston Diameter: 1.954 inch Piston Area: 2.999 sq. inch		
0.000	0	0.0	<u>Swell Readings</u> Soak Time: 96 hours Surcharge Weight: 10 lb Surcharge Stress: 51 psf Molded Sample Height: 4.591 inch Initial Dial Reading: 0.050 inch Final Dial Reading: 0.050 inch Percent Swell: 0.00%		
0.025	57	19.0			
0.050	159	53.0			
0.075	303	101.0			
0.100	490	163.4			
0.125	700	233.4			
0.150	936	312.1			
0.175	1188	396.2			
0.200	1421	473.9			
0.225	1637	545.9			
0.250	1808	602.9			
0.275	1887	629.3			
0.300	1814	604.9			
0.400	1431	477.2			
0.500	1298	432.8			
<u>Readings After Soak</u>			<u>Additional Specimen Data</u> Liquid Limit: 16 Percent Passing #4: 100% Plastic Limit: 16 Percent Passing #10: 100% Plasticity Index: NP Percent Passing #40: 97% Percent Passing #200: 15.2% Color: Brown Visual Description: USCS Classification: SILTY SAND (SM) AASHTO Classification: A-2-4 (0)		
Wt. Mold + Soaked Soil:	20750 g				
Wt. Tare:	207 g				
Wt. Wet Soil + Tare:	546 g				
Wt. Tare + Dry Soil:	506 g				
Moisture Content:	13.2%				
Wet Unit Weight:	126.1 pcf				
Dry Unit Weight:	111.4 pcf				
BEARING RATIO					
CBR at 0.1 inch:	27.4				
CBR at 0.2 inch:	38.4				

207 REPORT SHEET - CBR G24075.00 LAB.GPJ FALCON FORMAT.GDT 3/3/25



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CARY, NC 27513

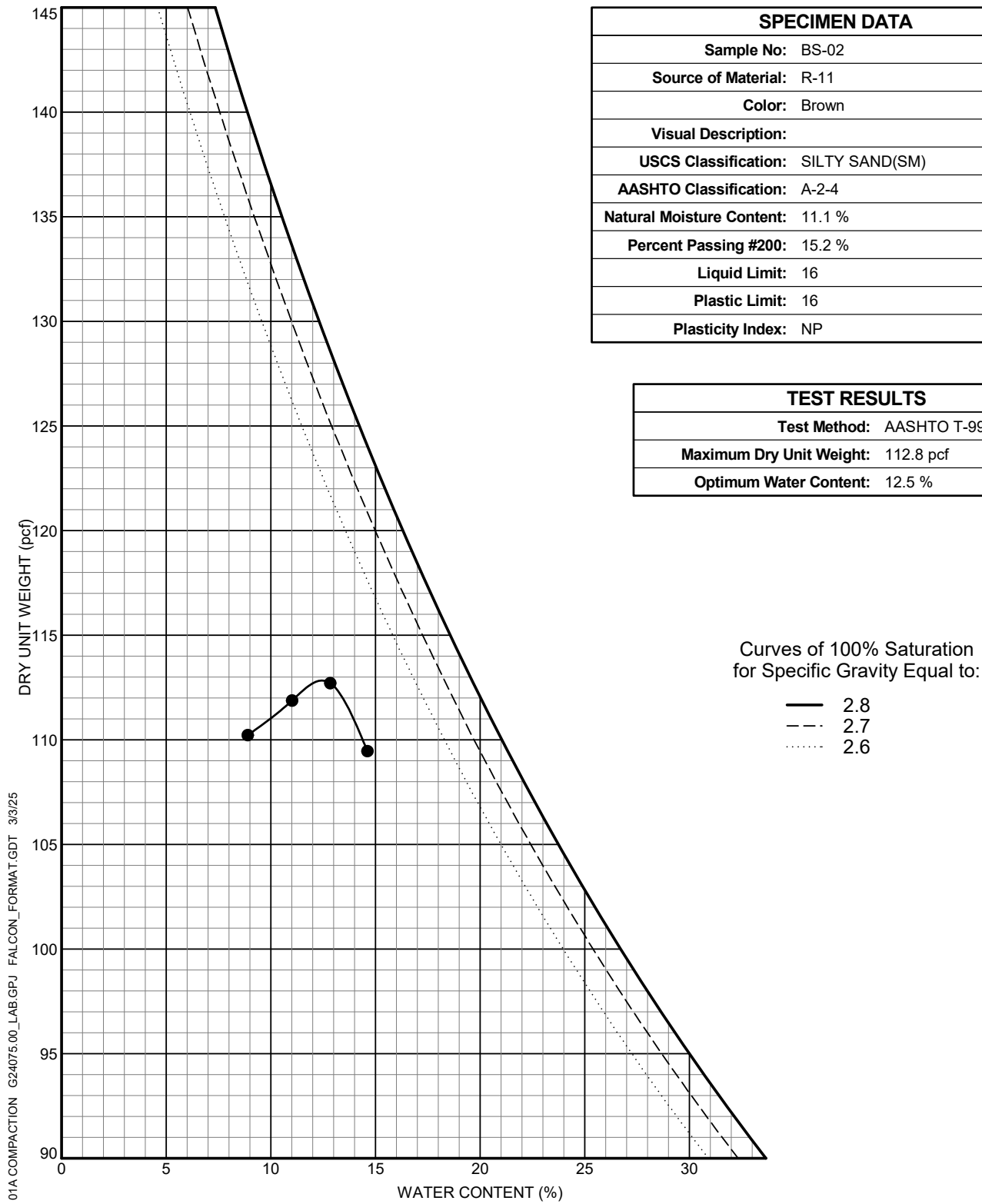
PHONE: 919.871.0800
www.falconengineers.com

LABORATORY COMPACTION TEST RESULTS

Project No.:	G24075.00
Project Name:	US 74 Grade Separation I-6011A
Project Location:	Robeson County, NC

SPECIMEN DATA	
Sample No:	BS-02
Source of Material:	R-11
Color:	Brown
Visual Description:	
USCS Classification:	SILTY SAND(SM)
AASHTO Classification:	A-2-4
Natural Moisture Content:	11.1 %
Percent Passing #200:	15.2 %
Liquid Limit:	16
Plastic Limit:	16
Plasticity Index:	NP

TEST RESULTS	
Test Method:	AASHTO T-99
Maximum Dry Unit Weight:	112.8 pcf
Optimum Water Content:	12.5 %





April 11, 2025

Project No. 2025-045-001

Jeremy Hamm
Falcon Engineering
1210 Trinity Rd. Suite 110
Cary, NC 27513

JHamm@FalconEngineers.com

Transmittal
Laboratory Test Results
G24075.00 (I-6011A)

Please find attached the laboratory test results for the above referenced project. The tests were outlined on the Project Verification Form that was transmitted to your firm prior to the testing. The testing was performed in general accordance with the methods listed on the enclosed data sheets. The test results are believed to be representative of the samples that were submitted for testing and are indicative only of the specimens which were evaluated. We have no direct knowledge of the origin of the samples and imply no position with regard to the nature of the test results, i.e. pass/fail and no claims as to the suitability of the material for its intended use.

The test data and all associated project information provided shall be held in strict confidence and disclosed to other parties only with authorization by our Client. The test data submitted herein is considered integral with this report and is not to be reproduced except in whole and only with the authorization of the Client and Geotechnics. The remaining sample materials for this project will be retained for a minimum of 90 days as directed by the Geotechnics' Quality Program.

We are pleased to provide these testing services. Should you have any questions or if we may be of further assistance, please contact our office.

Respectively submitted,
Geotechnics, Inc.


Michael P. Smith
Regional Manager

***We understand that you have a choice in your laboratory services
and we thank you for choosing Geotechnics.***

DCN: Data Transmittal Letter Date: 1/28/05 Rev.: 1



MOISTURE CONTENT
AASHTO T-265-93

Client Falcon Engineering
Client Reference G24075.00 (I-6011A)
Project No. R-2025-045-001

Lab ID	.001	.002	.003	.004	.005
Boring No.	R-05	R-06	R-07	R-08	R-09
Depth (ft)	15.3-17.3	9.6-11.6	9.8-11.8	8.2-10.2	8.5-10.5
Sample No.	ST-1	ST-2	ST-3	ST-4	ST-5
Tare Number	441	9-A	714	436	700
Wt. of Tare & WS (gm)	469.7	461.93	372.61	417.6	491.68
Wt. of Tare & DS (gm)	361.24	368.9	271.19	310.56	358.29
Wt. of Tare (gm)	98	90.58	87.06	99.21	91.05
Wt. of Water (gm)	108.46	93.03	101.42	107.04	133.39
Wt. of DS (gm)	263.24	278.32	184.13	211.35	267.24
Water Content (%)	41.2	33.4	55.1	50.6	49.9

Notes : NA

Tested By	129-02-0411	Date	3/14/25	Checked By	AES	3/17/25
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page 1 of 1

DCN: CT-S1 DATE 6-30-98 REVISED BY FALEIGH\2025 Projects\Falcon Eng\2025-045 - G24075.00 (I-6011A)\2025-045-001\2025-045-001 DOTWATCONT 2.xls\Sheet1

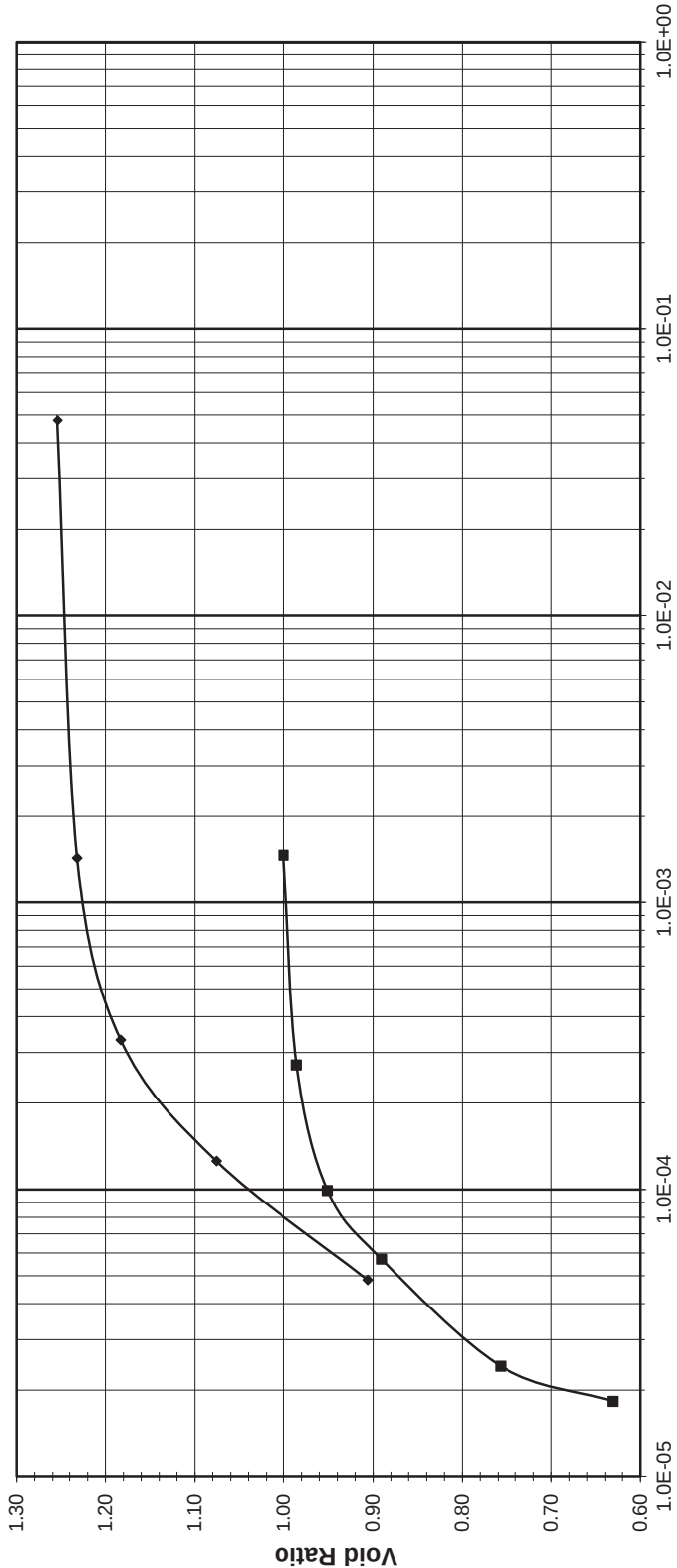


ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Falcon Engineering	Boring No.	R-05
Client Reference	G24075.00 (I-6011A)	Depth (ft)	15.3-17.3
Project No.	R-2025-045-001	Sample No.	ST-1
Lab ID	R-2025-045-001-001	Visual Description	Light Gray Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Coefficient of Consolidation (cm²/sec)

◆ First Cycle Up ■ Second Cycle Up



ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Falcon Engineering	Boring No.	R-05
Client Reference	G24075.00 (I-6011A)	Depth (ft)	15.3-17.3
Project No.	R-2025-045-001	Sample No.	ST-1
Lab ID	R-2025-045-001-001	Visual Description	Light Gray Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Consolidometer No. R-487
1 Division = 0.0001 (in.)

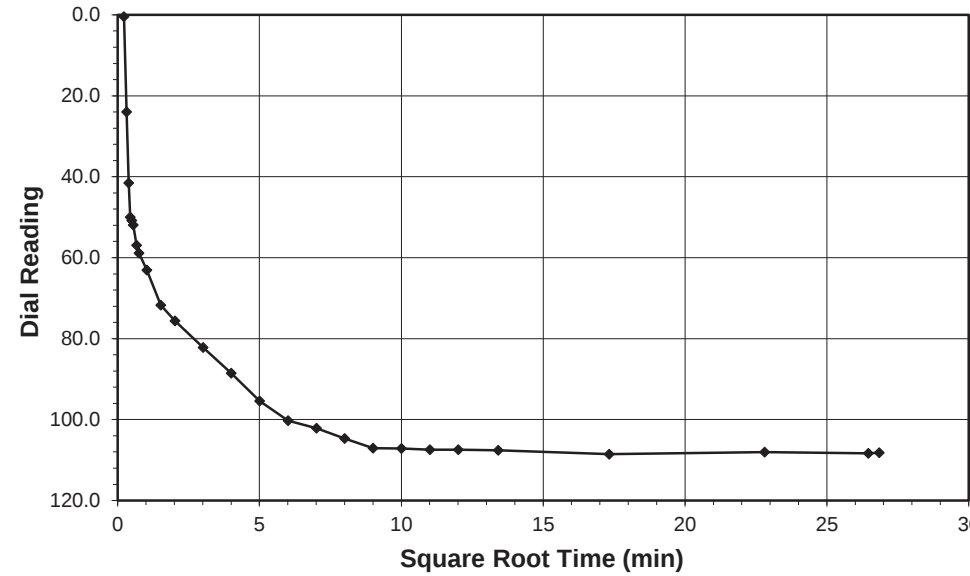
Sample Properties		Initial	Final	C _v Test Data Summary				
				Load Increment (tsf)	Dial Reading @ t ₅₀ (div)	Machine Deflection (div)	Corrected Dial Reading @ t ₅₀ (div)	Sample Height @ t ₅₀ (cm)
Water Content								
Tare Number		474	495					
Wt. Tare & WS (g)		392.57	225.08	0 - 0.25	27.5	10.3	17.2	2.536
Wt. Tare & DS (g)		299.19	195.11	0.25 - 0.5	157.3	21.8	135.5	2.506
Wt. Water (g)		93.38	29.97	0.5 - 1.0	342.3	38.8	303.5	2.463
Wt. Tare (g)		98.53	99.23	1.0 - 2.0	695.8	59.5	636.3	2.378
Wt. DS (g)		200.66	95.88	2.0 - 4.0	1320.9	75.8	1245.0	2.224
Water Content (%)		46.54	31.26	4.0 - 1.0	NA	51.1	NA	NA
Sample Parameters				1.0 - 0.25	NA	22.1	NA	NA
Sample Diameter (in)		2.5	2.5	0.25 - 0.5	1226.7	26.3	1200.4	2.235
Sample Height (in)		1.000	0.816	0.5 - 1.0	1270.7	43.2	1227.5	2.228
Sample Volume (cc)		80.44	65.64	1.0 - 2.0	1407.9	61.0	1346.9	2.198
Wt. Wet Sample + Ring (g)		246.31	231.52	2.0 - 4.0	1634.4	76.1	1558.3	2.144
Wt. of Ring (g)		104.43	104.43	4.0 - 8.0	2095.9	106.9	1989.0	2.035
Wt. of Wet Sample (g)		141.88	127.09	8.0 - 16.0	2713.8	155.3	2558.4	1.890
Wet Density (pcf)		110.06	120.81	16.0 - 4.0	NA	89.3	NA	NA
Wet Density (g/cc)		1.76	1.94	4.0 - 1.0	NA	57.6	NA	NA
Water Content (%)		46.54	31.26	1.0 - 0.25	NA	26.6	NA	NA
Wt. of Dry Sample (g)		96.82	96.82					
Dry Density (pcf)		75.11	92.04					
Dry Density (g/cc)		1.20	1.47					
Void Ratio		1.2764	0.8576					
Saturation (%)		99.90	99.86					
Specific Gravity		2.74	Measured					

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-05
Client Project G24075.00 (I-6011A) Depth (ft) 15.3-17.3
Project No. R-2025-045-001 Sample No. ST-1
Lab ID R-2025-045-001-001 Visual Description Light Gray Clay

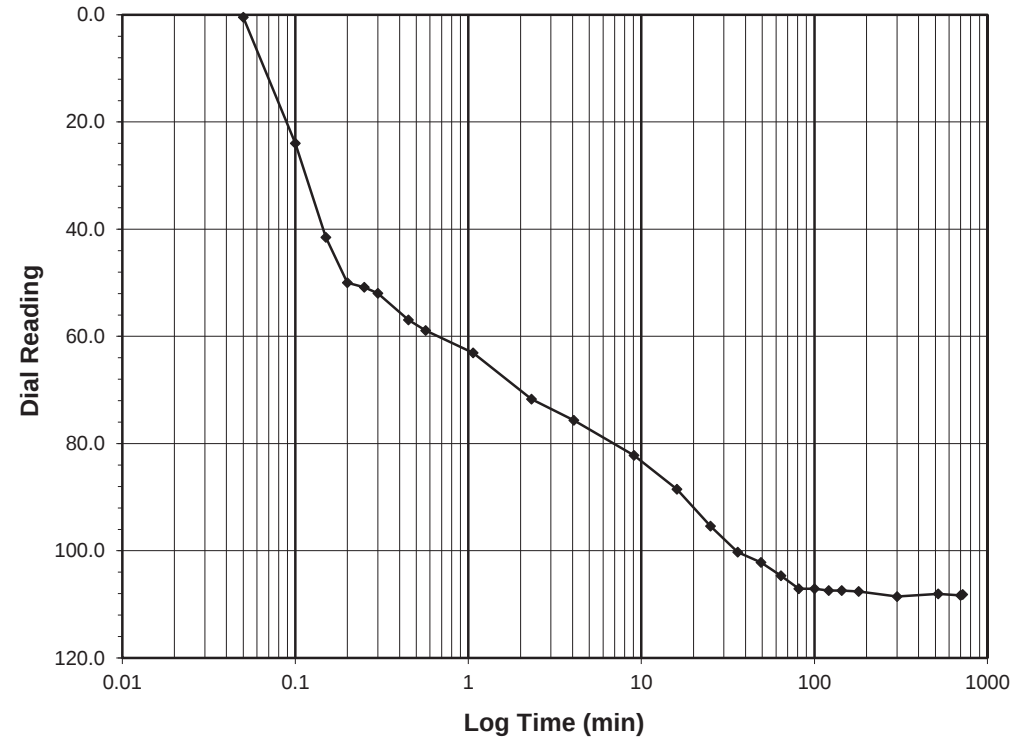
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.0-0.25
Final Reading (div) 108.5
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 3/12/2025
Start Time 10:28:57

Elapsed Time (min)	Dial Reading (div)
Initial	0.0
0.05	0.5
0.10	24.0
0.15	41.5
0.20	50.0
0.25	50.8
0.30	52.0
0.45	56.9
0.57	58.9
1.07	63.1
2.32	71.7
4.07	75.6
9.07	82.2
16.07	88.5
25.07	95.4
36.07	100.3
49.07	102.2
64.07	104.6
81.07	107.1
100.07	107.1
121.08	107.4
144.08	107.4
180.08	107.6
300.08	108.5
520.08	108.0
700.08	108.3
720.50	108.2



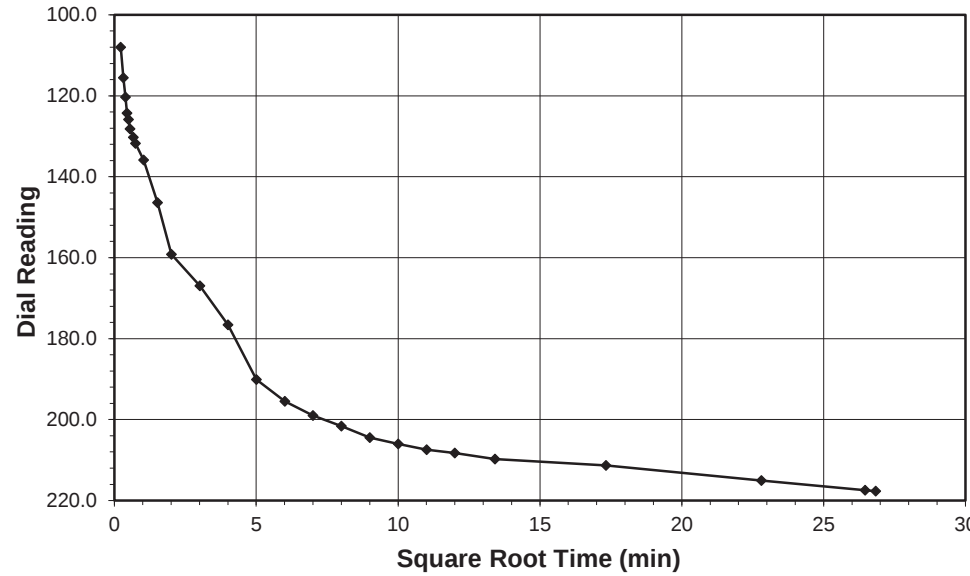
Tested By 129-02-0411 Date 3/12/2025 Checked By MPS Date 3/28/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-05
Client Project G24075.00 (I-6011A) Depth (ft) 15.3-17.3
Project No. R-2025-045-001 Sample No. ST-1
Lab ID R-2025-045-001-001 Visual Description Light Gray Clay

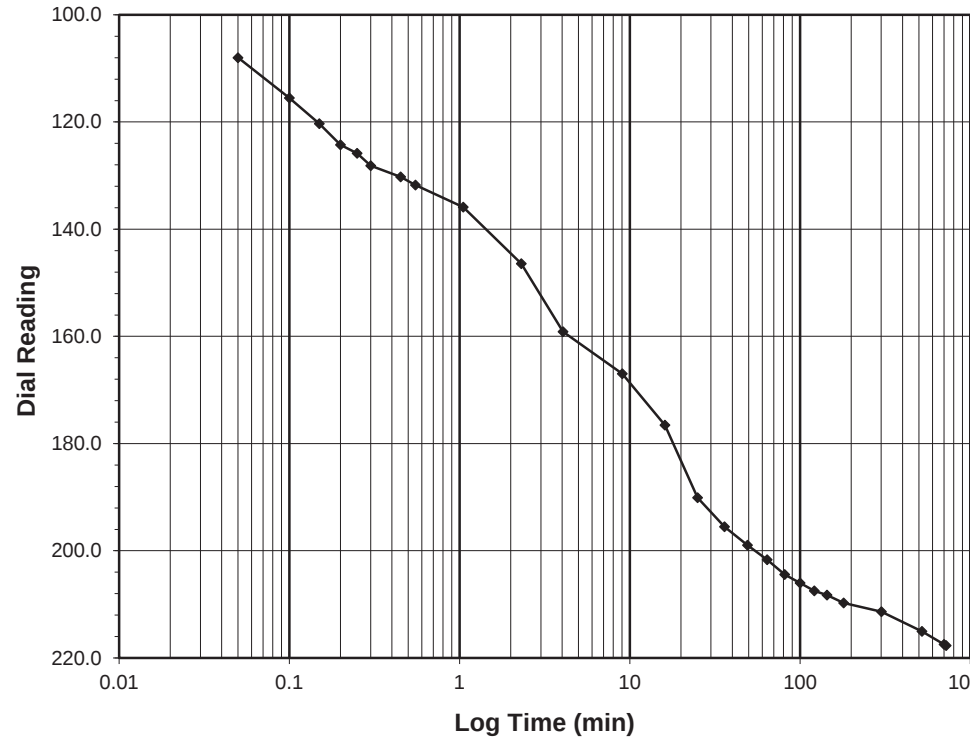
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.25-0.5
Final Reading (div) 217.7
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 3/12/2025
Start Time 22:29:27

Elapsed Time (min)	Dial Reading (div)
Initial	108.5
0.05	108.0
0.10	115.5
0.15	120.3
0.20	124.3
0.25	125.9
0.30	128.2
0.45	130.3
0.55	131.8
1.05	135.9
2.30	146.4
4.05	159.2
9.05	167.0
16.05	176.6
25.05	190.1
36.05	195.5
49.05	199.0
64.07	201.6
81.07	204.4
100.07	206.0
121.07	207.5
144.07	208.2
180.07	209.7
300.07	211.3
520.07	215.0
700.07	217.4
720.20	217.7



Tested By 129-02-0411 Date 3/12/2025 Checked By MPS Date 3/28/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-001

Boring No.

Depth (ft)

Sample No.

Visual Description

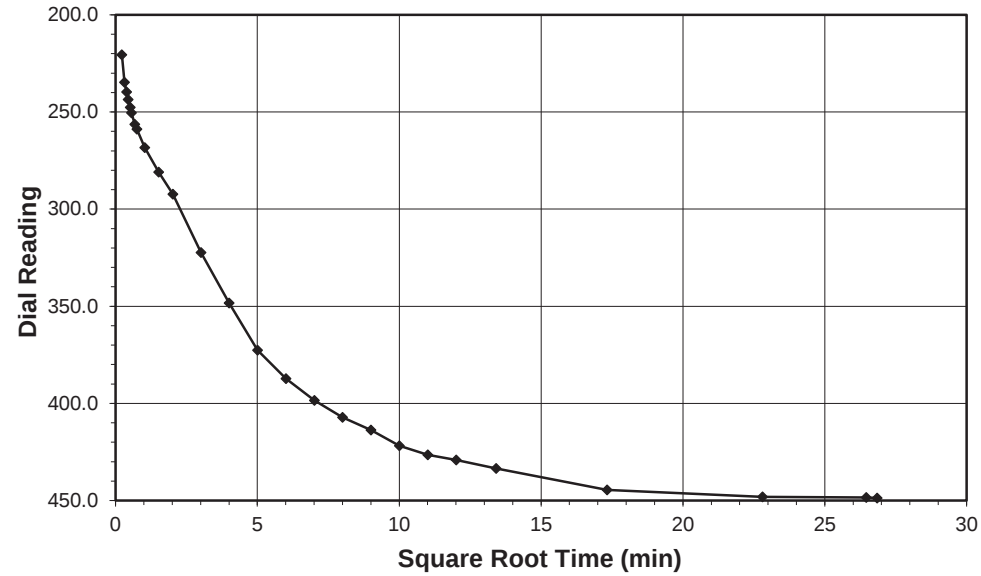
R-05

15.3-17.3

ST-1

Light Gray Clay

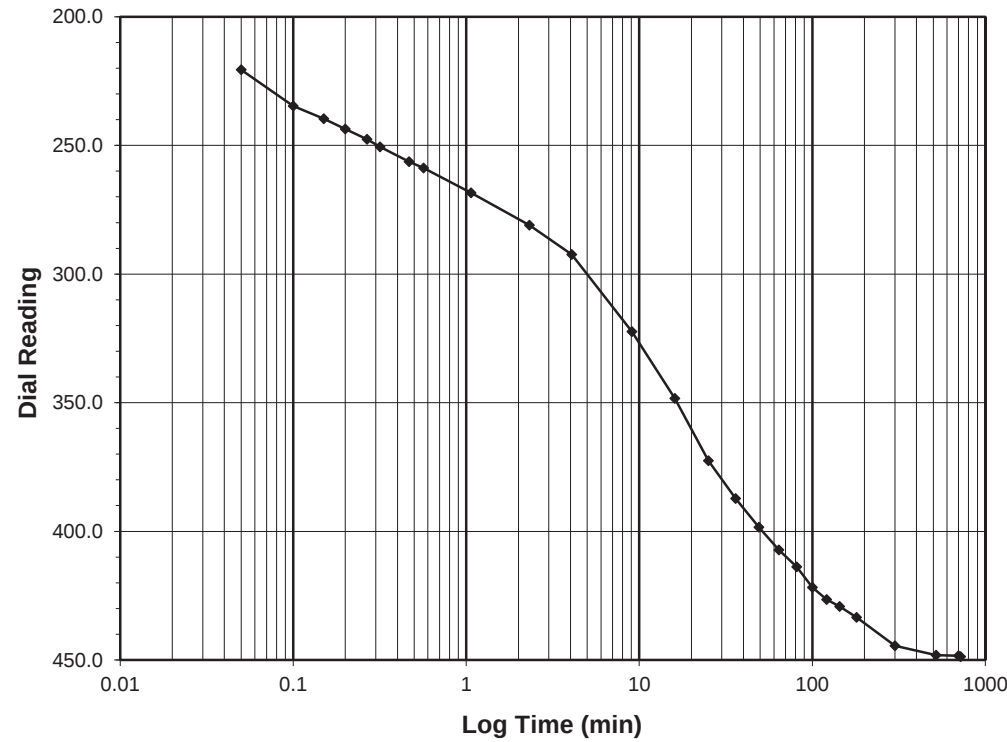
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.5-1.0
Final Reading (div) 448.7
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 3/13/2025
Start Time 10:29:39

Elapsed Time (min)	Dial Reading (div)
Initial	217.7
0.05	220.6
0.10	234.7
0.15	239.6
0.20	243.6
0.27	247.6
0.32	250.5
0.47	256.3
0.57	258.8
1.07	268.4
2.32	281.0
4.07	292.3
9.07	322.3
16.07	348.3
25.08	372.6
36.08	387.3
49.08	398.4
64.08	407.2
81.08	413.8
100.08	421.8
121.08	426.5
144.08	429.2
180.08	433.4
300.10	444.5
520.10	448.2
700.10	448.4
720.45	448.7



Tested By 129-02-0411 Date 3/13/2025 Checked By MPS Date 3/28/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-001

Boring No.

Depth (ft)

Sample No.

Visual Description

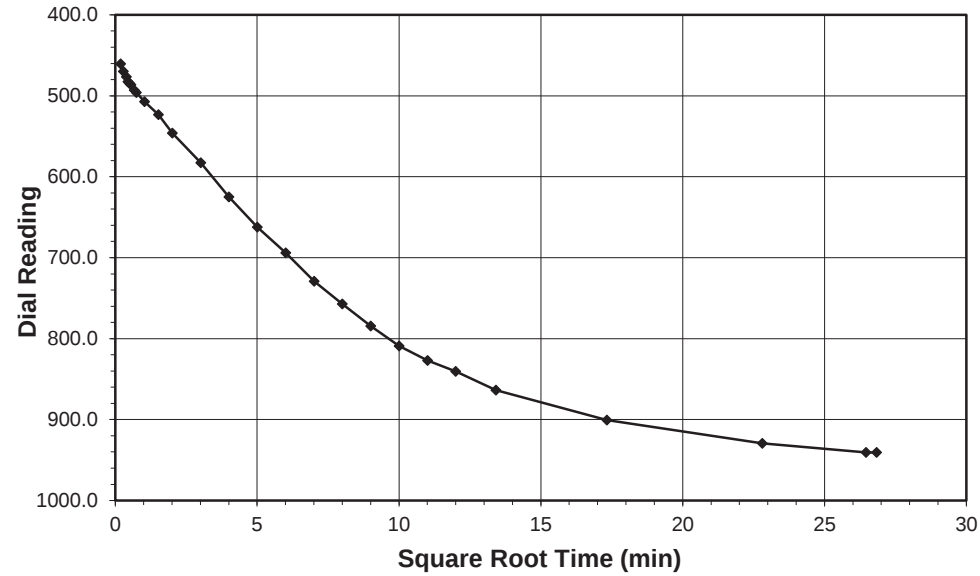
R-05

15.3-17.3

ST-1

Light Gray Clay

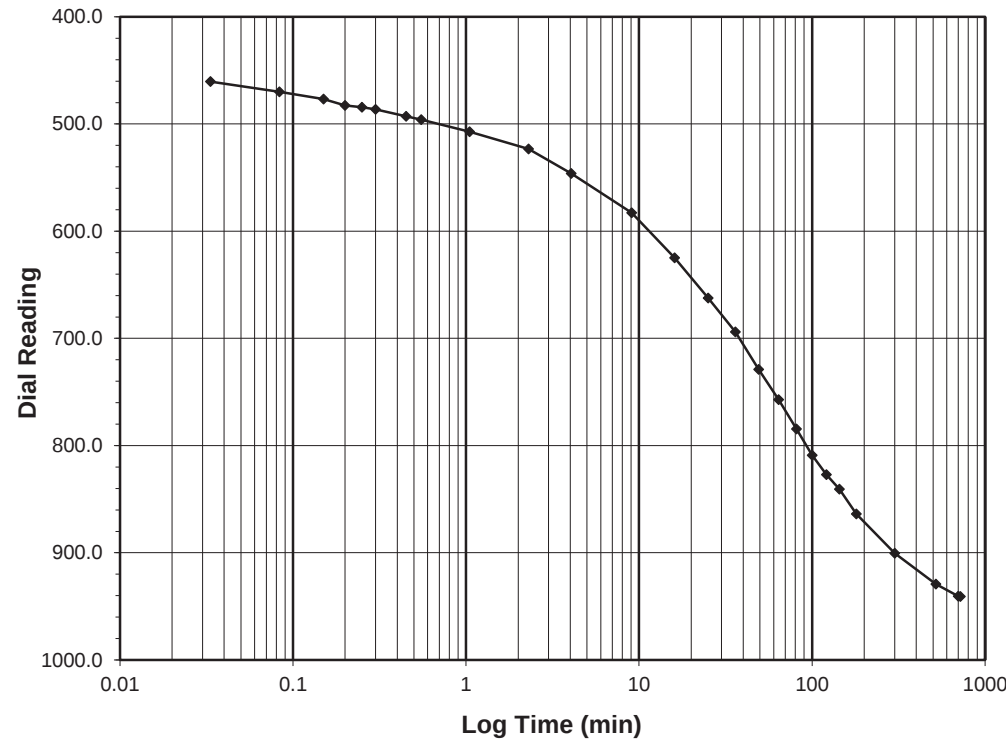
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
Final Reading (div) 940.7
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 3/13/2025
Start Time 22:30:06

Elapsed Time (min)	Dial Reading (div)
Initial	448.7
0.03	460.5
0.08	469.9
0.15	476.8
0.20	482.8
0.25	484.4
0.30	486.3
0.45	492.9
0.55	495.9
1.05	507.1
2.30	523.3
4.05	546.0
9.05	582.8
16.05	624.9
25.05	662.4
36.07	694.0
49.07	729.0
64.07	757.0
81.07	784.4
100.07	809.1
121.07	827.0
144.07	840.5
180.08	863.7
300.08	900.5
520.08	929.3
700.08	940.5
720.37	940.7



Tested By 129-02-0411 Date 3/13/2025 Checked By MPS Date 3/28/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-001

Boring No.

Depth (ft)

Sample No.

Visual Description

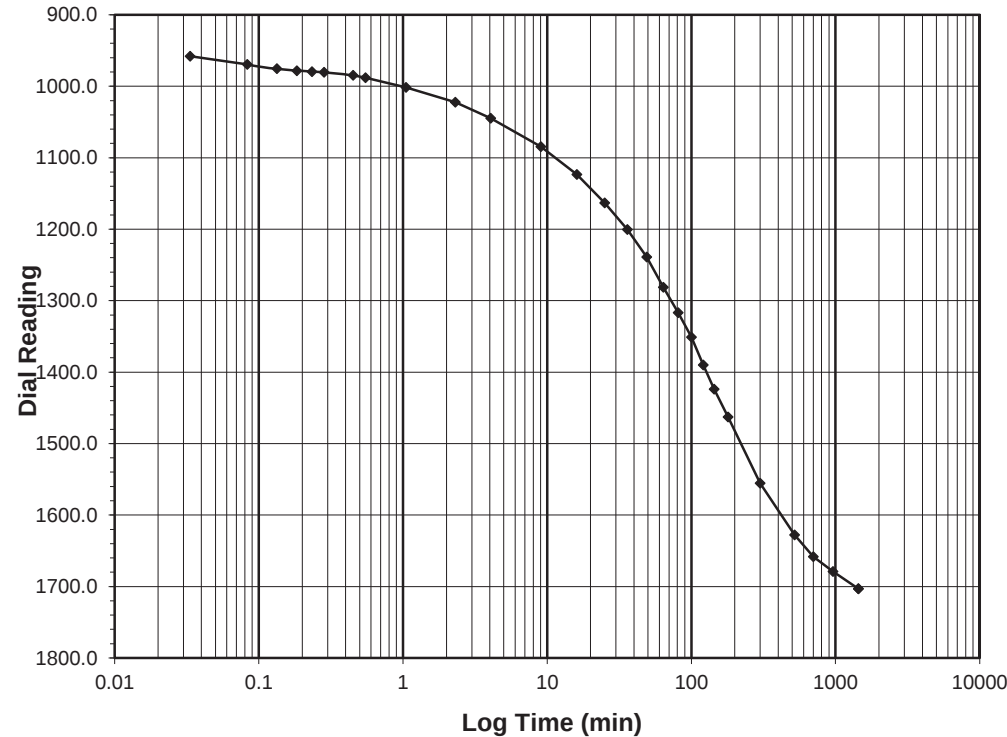
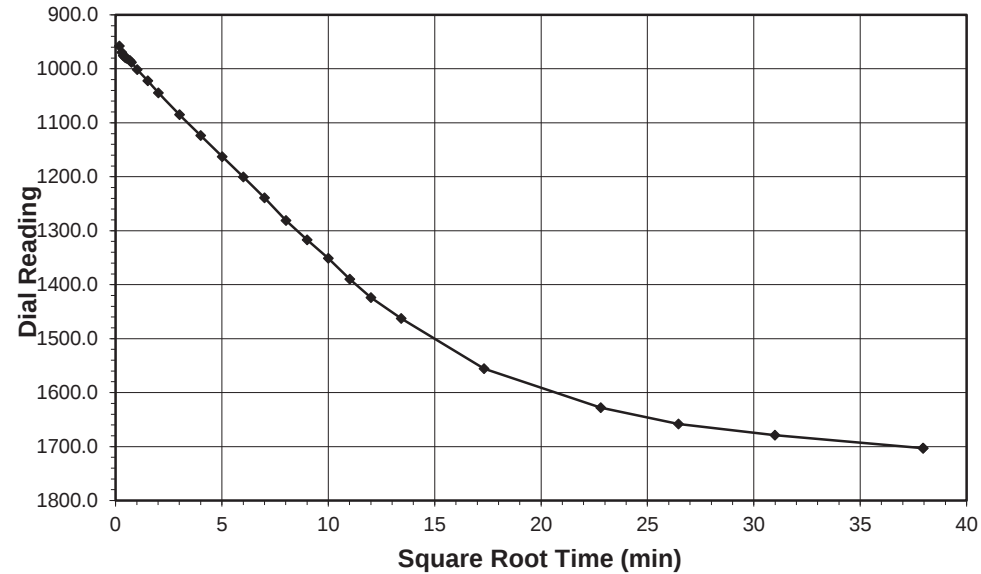
R-05

15.3-17.3

ST-1

Light Gray Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load

Final Reading

Consolidometer No.

1 Division

(tsf)

(div)

R-487

(in)

2.0-4.0

1703.3

0.0001

Start Date

Start Time

3/14/2025

10:30:29

Elapsed Time (min)	Dial Reading (div)
Initial	940.7
0.03	957.9
0.08	969.4
0.13	975.5
0.18	978.4
0.23	979.5
0.28	980.5
0.45	984.8
0.55	988.2
1.05	1001.5
2.30	1022.1
4.05	1044.5
9.05	1084.7
16.05	1123.5
25.05	1163.1
36.05	1200.3
49.05	1239.1
64.05	1281.3
81.07	1316.7
100.07	1351.0
121.07	1389.9
144.07	1423.9
180.07	1462.7
300.07	1555.5
520.07	1628.0
700.07	1658.4
960.08	1679.2
1440.08	1703.2
1440.22	1703.3

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-001

Boring No.

Depth (ft)

Sample No.

Visual Description

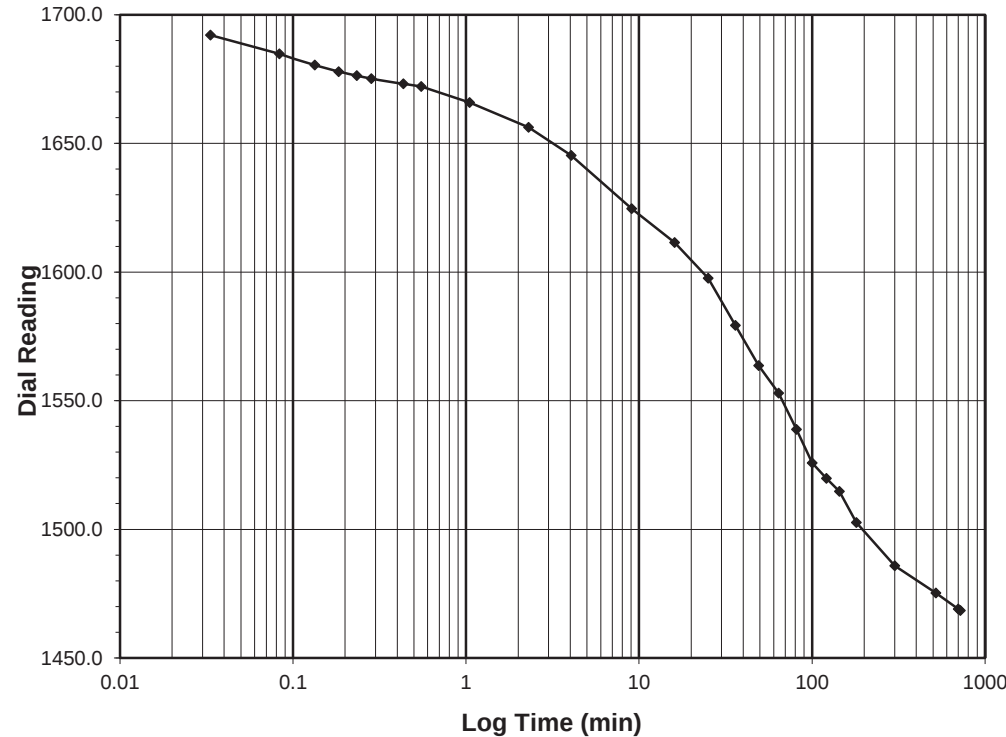
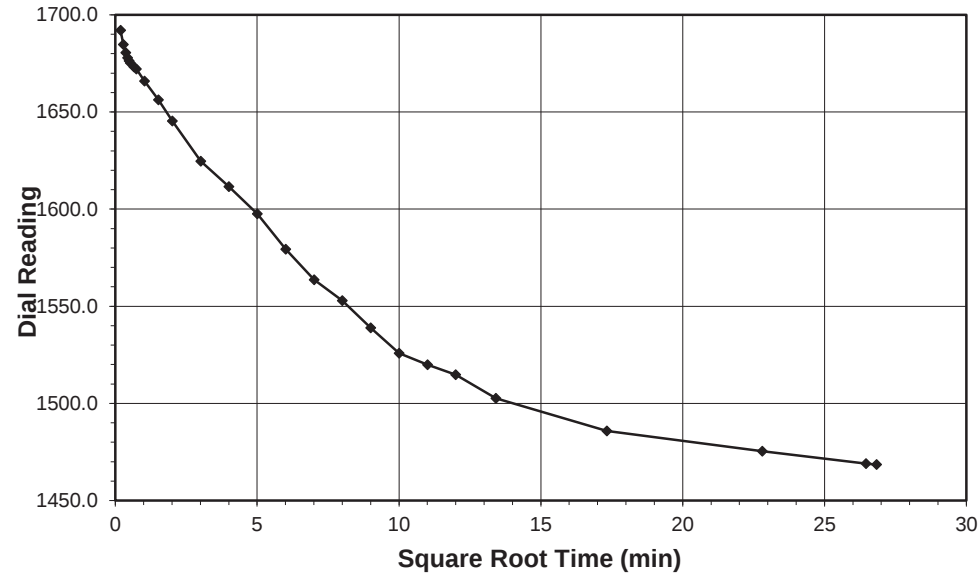
R-05

15.3-17.3

ST-1

Light Gray Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load

Final Reading

Consolidometer No.

1 Division

(tsf)

(div)

R-487

(in)

4.0-1.0

1468.5

0.0001

Start Date

Start Time

3/15/2025

10:30:43

Elapsed Time (min)	Dial Reading (div)
Initial	1703.3
0.03	1692.1
0.08	1684.8
0.13	1680.5
0.18	1677.9
0.23	1676.4
0.28	1675.2
0.43	1673.2
0.55	1672.1
1.05	1665.9
2.30	1656.3
4.05	1645.3
9.05	1624.6
16.05	1611.5
25.05	1597.6
36.05	1579.3
49.07	1563.7
64.07	1553.0
81.07	1538.9
100.07	1525.8
121.07	1519.9
144.07	1514.7
180.07	1502.6
300.07	1485.9
520.07	1475.3
700.07	1469.1
720.35	1468.5

Tested By 129-02-0411 Date 3/14/2025 Checked By MPS Date 3/28/2025

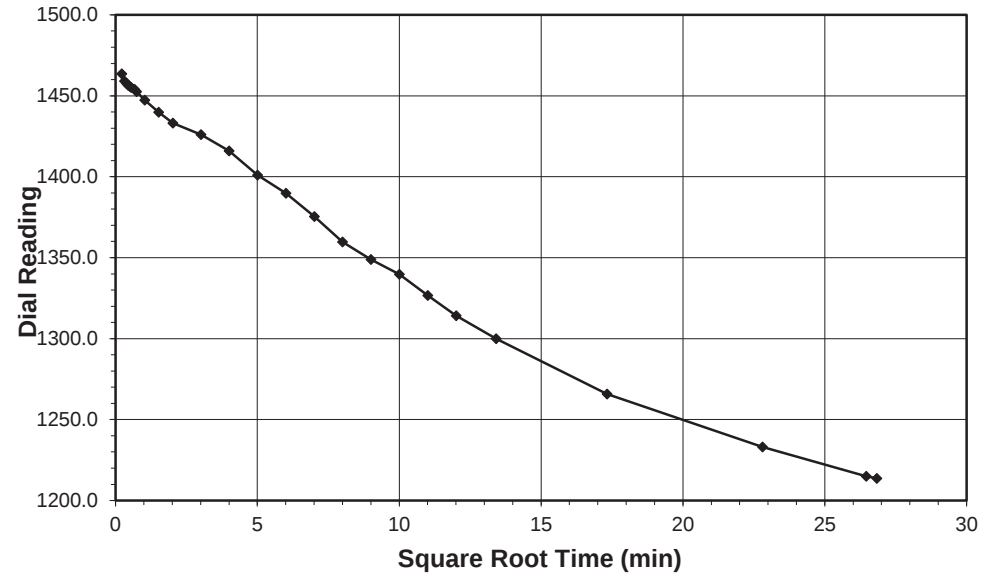
Tested By 129-02-0411 Date 3/15/2025 Checked By MPS Date 3/28/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



ClientFalcon EngineeringBoring No.R-05
Client ProjectG24075.00 (I-6011A)Depth (ft)15.3-17.3
Project No.R-2025-045-001Sample No.ST-1
Lab IDR-2025-045-001-001Visual DescriptionLight Gray Clay

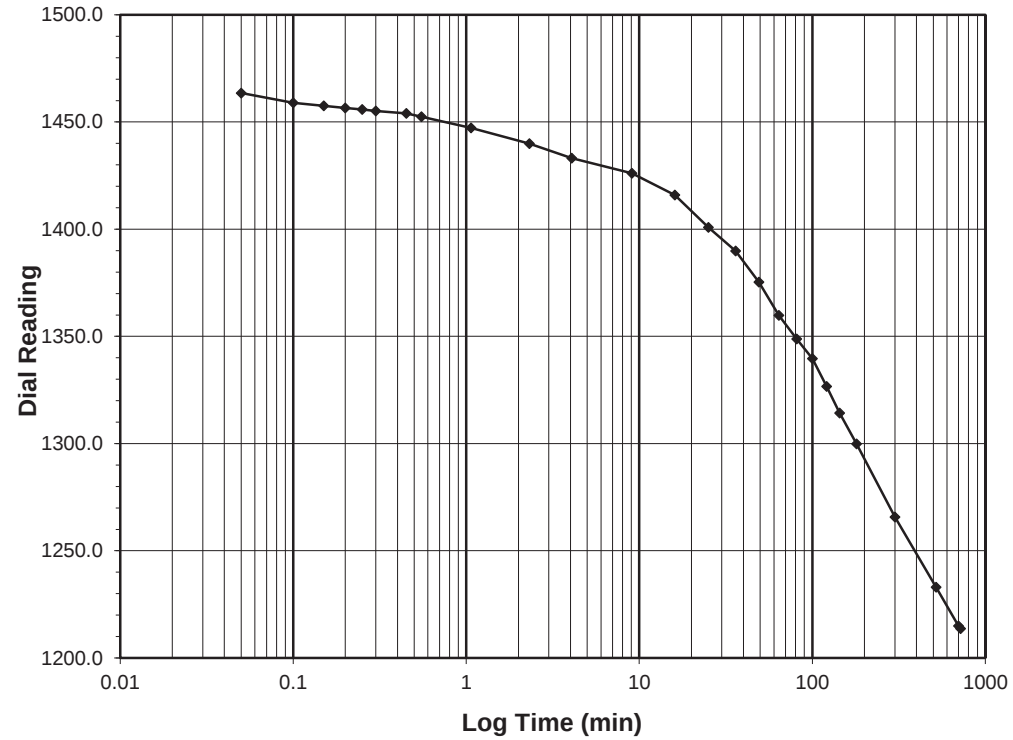
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-0.25
Final Reading (div) 1213.7
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 3/15/2025
Start Time 22:31:05

Elapsed Time (min)	Dial Reading (div)
Initial	1468.5
0.05	1463.5
0.10	1459.0
0.15	1457.5
0.20	1456.5
0.25	1455.8
0.30	1455.1
0.45	1453.9
0.55	1452.5
1.07	1447.2
2.32	1439.9
4.07	1433.1
9.07	1426.0
16.07	1415.9
25.07	1400.9
36.07	1389.8
49.08	1375.4
64.08	1359.7
81.08	1348.8
100.08	1339.7
121.08	1326.7
144.08	1314.2
180.08	1299.9
300.08	1265.7
520.08	1233.0
700.10	1215.0
720.38	1213.7



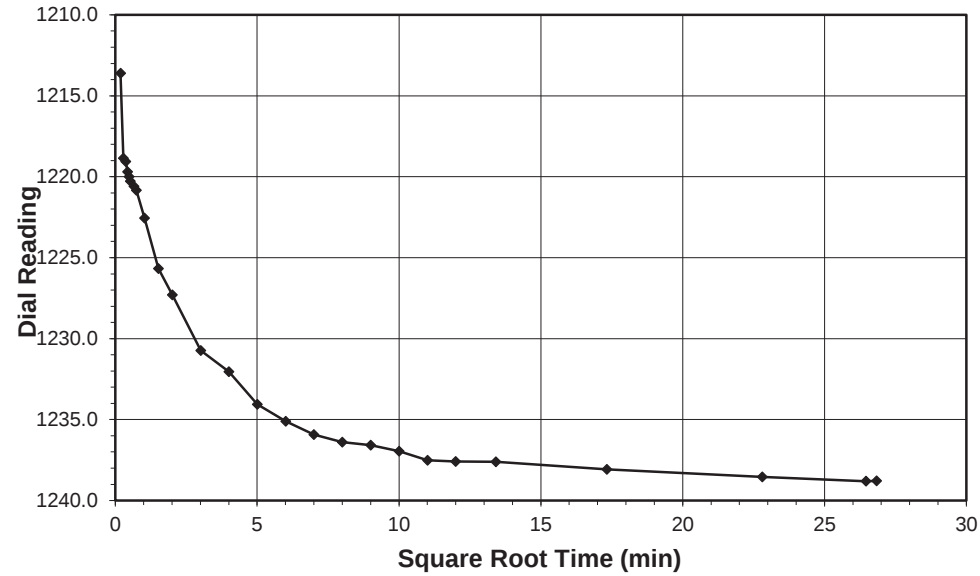
Tested By 129-02-0411 Date 3/15/2025 Checked By MPS Date 3/28/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



ClientFalcon EngineeringBoring No.R-05
Client ProjectG24075.00 (I-6011A)Depth (ft)15.3-17.3
Project No.R-2025-045-001Sample No.ST-1
Lab IDR-2025-045-001-001Visual DescriptionLight Gray Clay

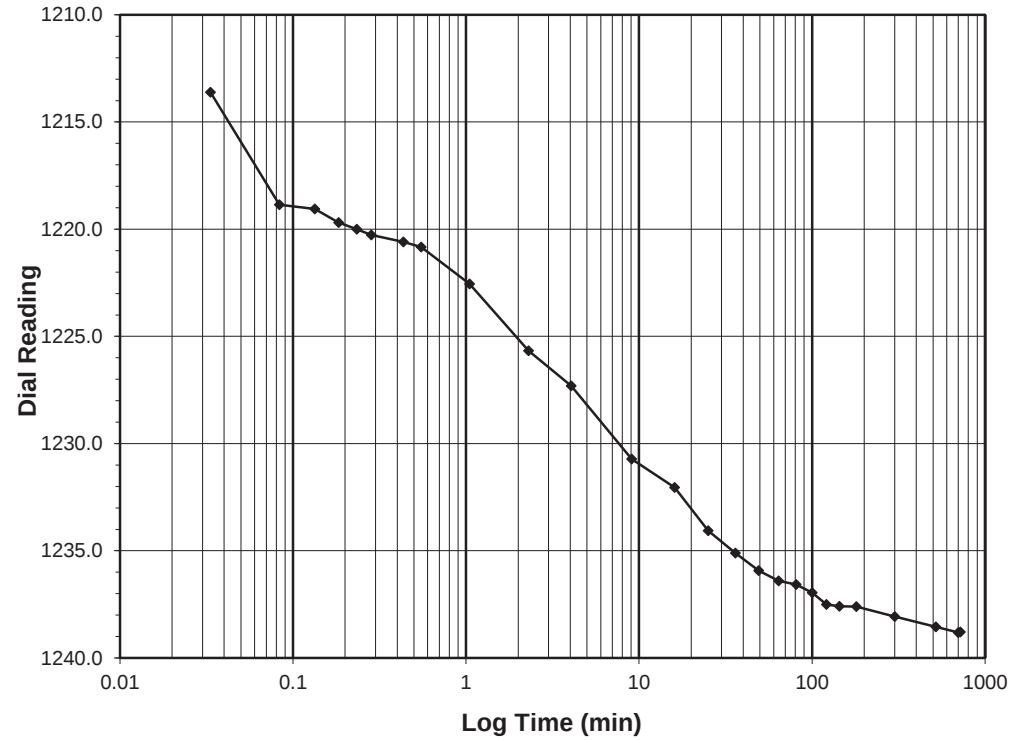
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.25-0.5
Final Reading (div) 1238.8
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 3/16/2025
Start Time 10:31:28

Elapsed Time (min)	Dial Reading (div)
Initial	1213.7
0.03	1213.6
0.08	1218.9
0.13	1219.1
0.18	1219.7
0.23	1220.0
0.28	1220.3
0.43	1220.6
0.55	1220.8
1.05	1222.6
2.30	1225.7
4.05	1227.3
9.05	1230.7
16.05	1232.0
25.05	1234.1
36.05	1235.1
49.05	1235.9
64.05	1236.4
81.05	1236.6
100.07	1237.0
121.07	1237.5
144.07	1237.6
180.07	1237.6
300.07	1238.1
520.07	1238.5
700.07	1238.8
720.30	1238.8



Tested By 129-02-0411 Date 3/16/2025 Checked By MPS Date 3/28/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-001

Boring No.

Depth (ft)

Sample No.

Visual Description

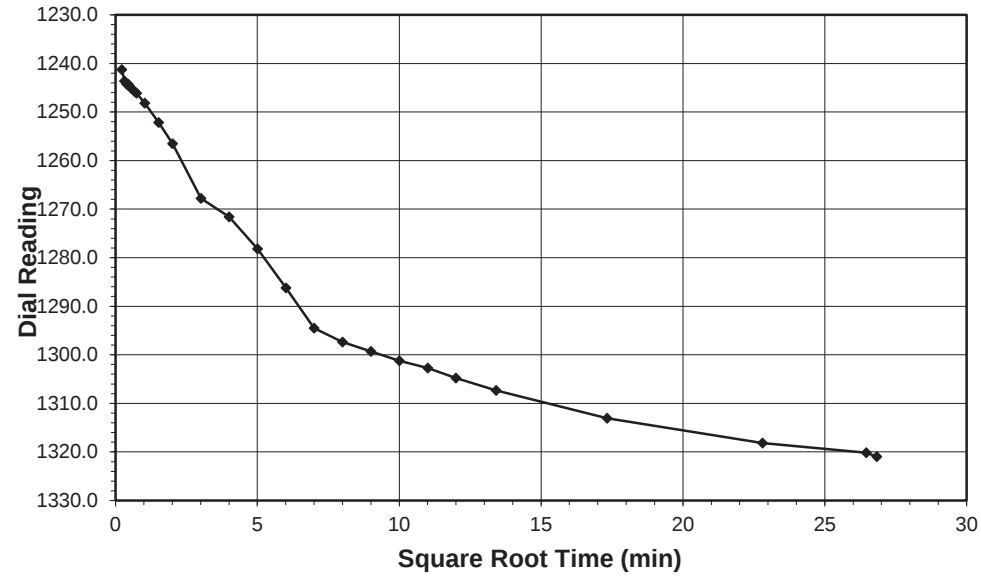
R-05

15.3-17.3

ST-1

Light Gray Clay

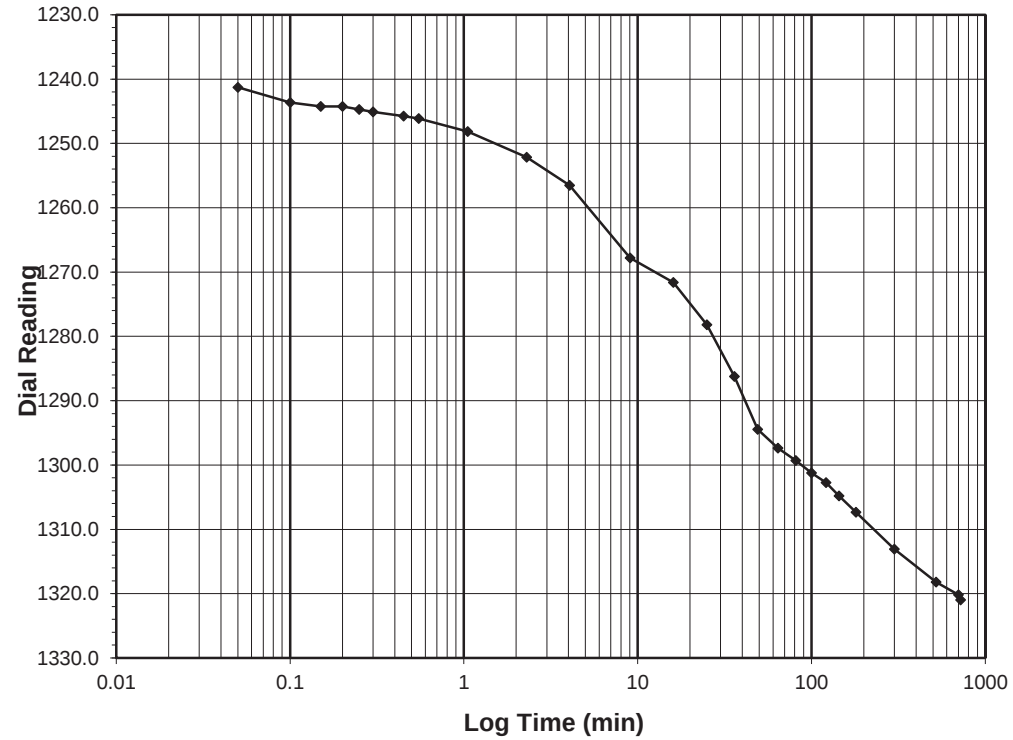
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.5-1.0
Final Reading (div) 1321.0
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 3/16/2025
Start Time 22:31:47

Elapsed Time (min)	Dial Reading (div)
Initial	1238.8
0.05	1241.3
0.10	1243.6
0.15	1244.2
0.20	1244.3
0.25	1244.7
0.30	1245.1
0.45	1245.7
0.55	1246.1
1.05	1248.2
2.30	1252.2
4.05	1256.5
9.05	1267.8
16.05	1271.6
25.05	1278.2
36.05	1286.2
49.05	1294.5
64.07	1297.4
81.07	1299.3
100.07	1301.2
121.07	1302.7
144.07	1304.8
180.07	1307.3
300.07	1313.1
520.07	1318.2
700.07	1320.2
720.32	1321.0



Tested By 129-02-0411 Date 3/16/2025 Checked By MPS Date 3/28/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-001

Boring No.

Depth (ft)

Sample No.

Visual Description

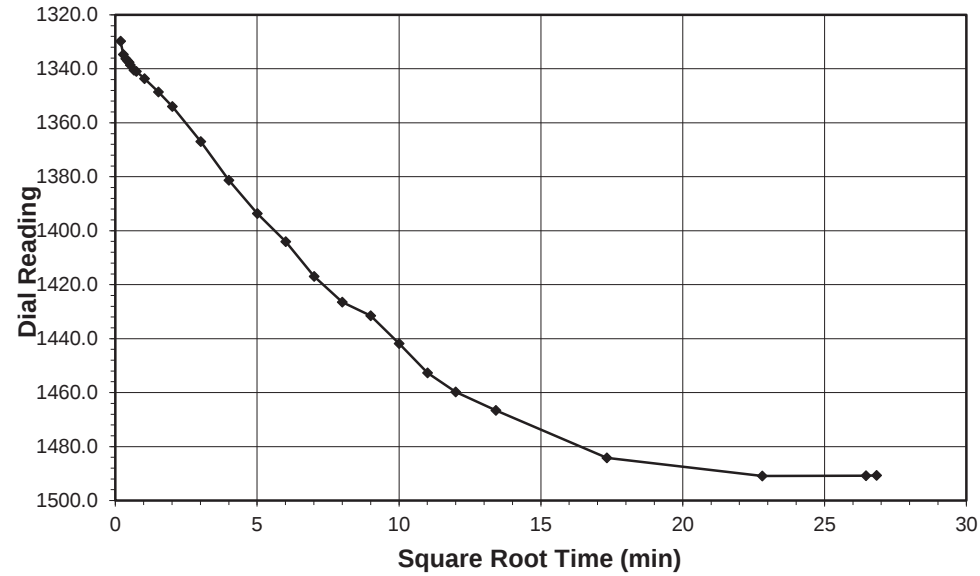
R-05

15.3-17.3

ST-1

Light Gray Clay

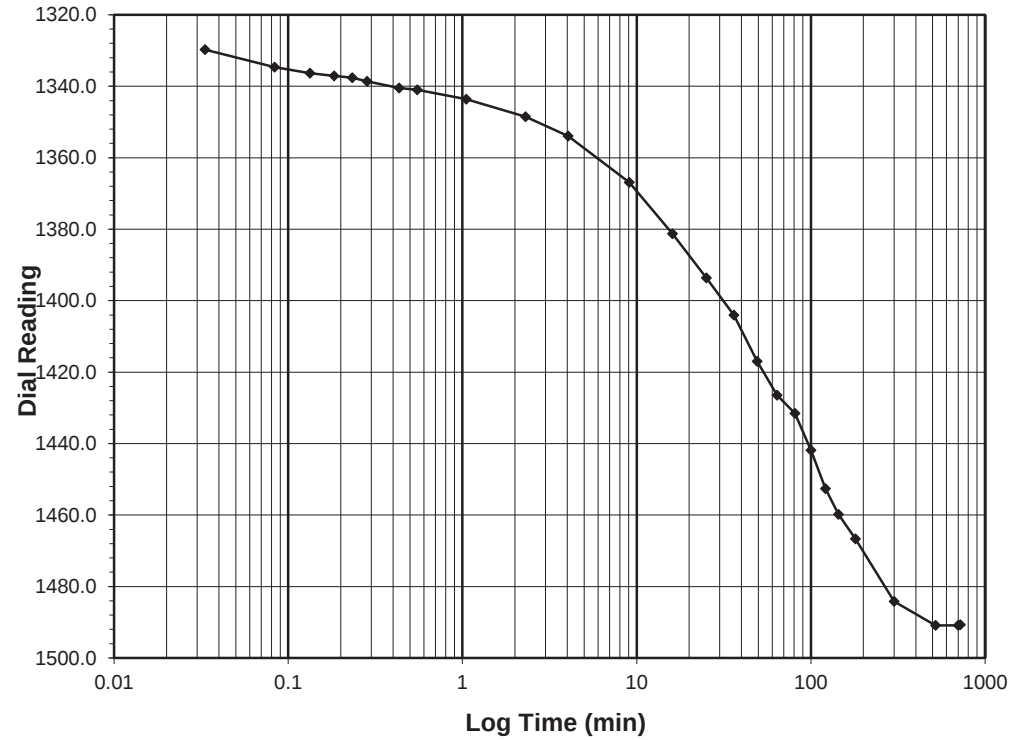
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
Final Reading (div) 1490.9
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 3/17/2025
Start Time 10:32:06

Elapsed Time (min)	Dial Reading (div)
Initial	1321.0
0.03	1329.8
0.08	1334.6
0.13	1336.3
0.18	1337.1
0.23	1337.6
0.28	1338.7
0.43	1340.5
0.55	1341.0
1.05	1343.6
2.30	1348.5
4.05	1353.9
9.05	1366.9
16.07	1381.3
25.07	1393.6
36.07	1404.1
49.07	1417.0
64.07	1426.5
81.07	1431.5
100.07	1441.8
121.07	1452.7
144.07	1459.8
180.07	1466.6
300.07	1484.2
520.07	1490.9
700.07	1490.8
720.40	1490.7



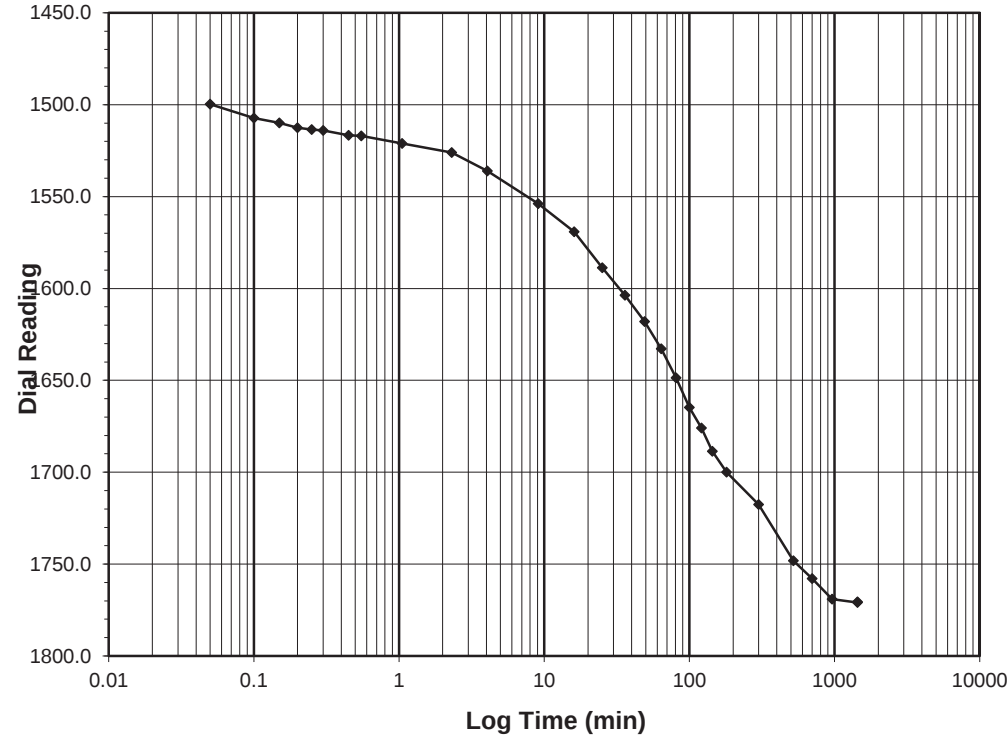
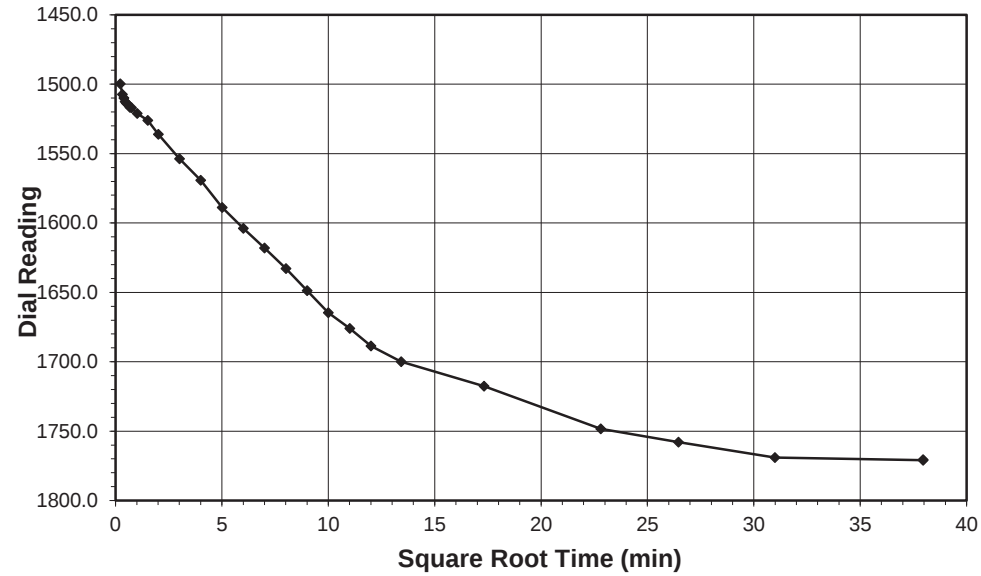
Tested By 129-02-0411 Date 3/17/2025 Checked By MPS Date 3/28/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-05
Client Project G24075.00 (I-6011A) Depth (ft) 15.3-17.3
Project No. R-2025-045-001 Sample No. ST-1
Lab ID R-2025-045-001-001 Visual Description Light Gray Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-4.0
Final Reading (div) 1770.9
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 3/17/2025
Start Time 22:32:31

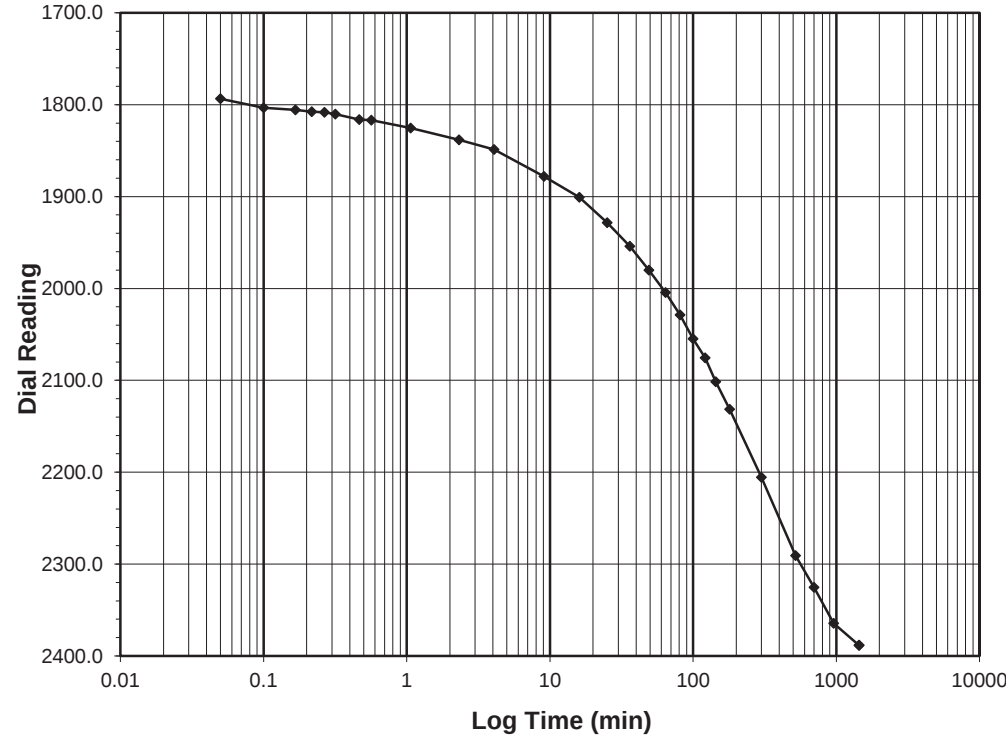
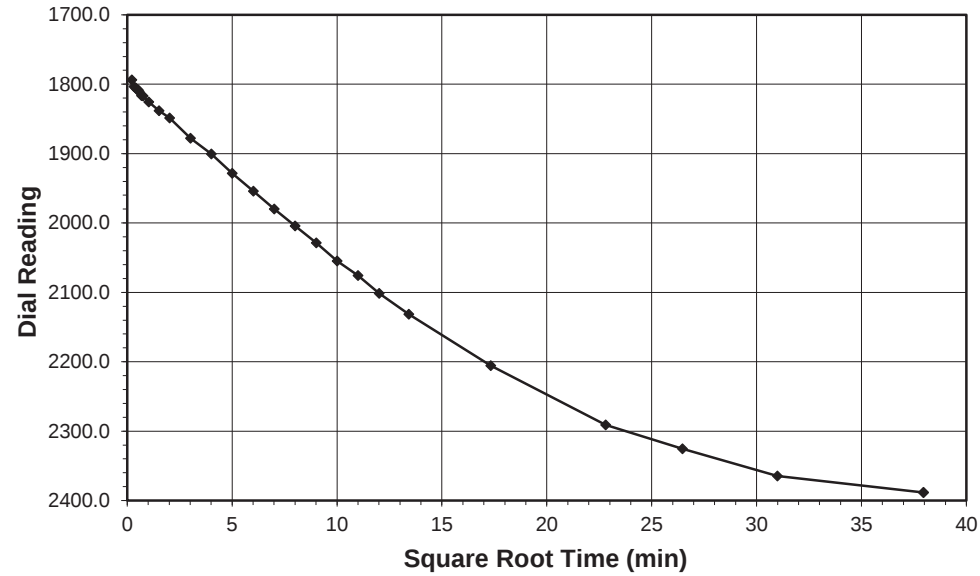
Elapsed Time (min)	Dial Reading (div)
Initial	1490.9
0.05	1499.8
0.10	1507.3
0.15	1509.8
0.20	1512.6
0.25	1513.6
0.30	1514.1
0.45	1516.6
0.55	1517.0
1.05	1521.2
2.30	1526.0
4.07	1536.0
9.07	1553.8
16.07	1569.2
25.07	1588.7
36.07	1603.8
49.07	1618.0
64.07	1632.7
81.07	1648.7
100.07	1664.7
121.07	1675.9
144.07	1688.6
180.08	1699.9
300.08	1717.6
520.08	1748.2
700.08	1757.9
960.08	1769.0
1440.08	1770.9
1440.37	1770.6

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-05
Client Project G24075.00 (I-6011A) Depth (ft) 15.3-17.3
Project No. R-2025-045-001 Sample No. ST-1
Lab ID R-2025-045-001-001 Visual Description Light Gray Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-8.0
Final Reading (div) 2388.4
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 3/18/2025
Start Time 22:32:53

Elapsed Time (min)	Dial Reading (div)
Initial	1770.9
0.05	1793.6
0.10	1803.4
0.17	1805.5
0.22	1807.7
0.27	1808.2
0.32	1810.3
0.47	1816.2
0.57	1816.9
1.07	1825.4
2.32	1838.4
4.07	1848.7
9.08	1878.0
16.08	1900.7
25.08	1928.3
36.08	1954.0
49.08	1980.0
64.08	2004.4
81.08	2028.8
100.08	2054.8
121.08	2075.7
144.08	2101.5
180.10	2131.4
300.10	2205.4
520.10	2290.9
700.10	2325.5
960.10	2364.6
1440.10	2388.4
1440.35	2388.2

Tested By 129-02-0411 Date 3/17/2025 Checked By MPS Date 3/28/2025

Tested By 129-02-0411 Date 3/18/2025 Checked By MPS Date 3/28/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-001

Boring No.

Depth (ft)

Sample No.

Visual Description

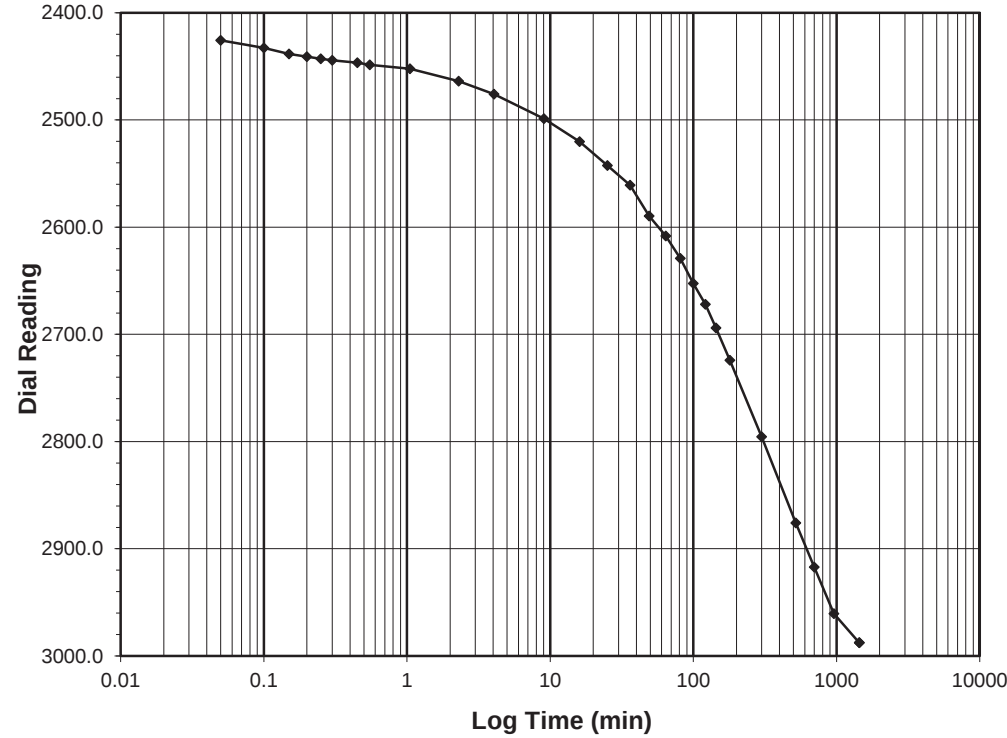
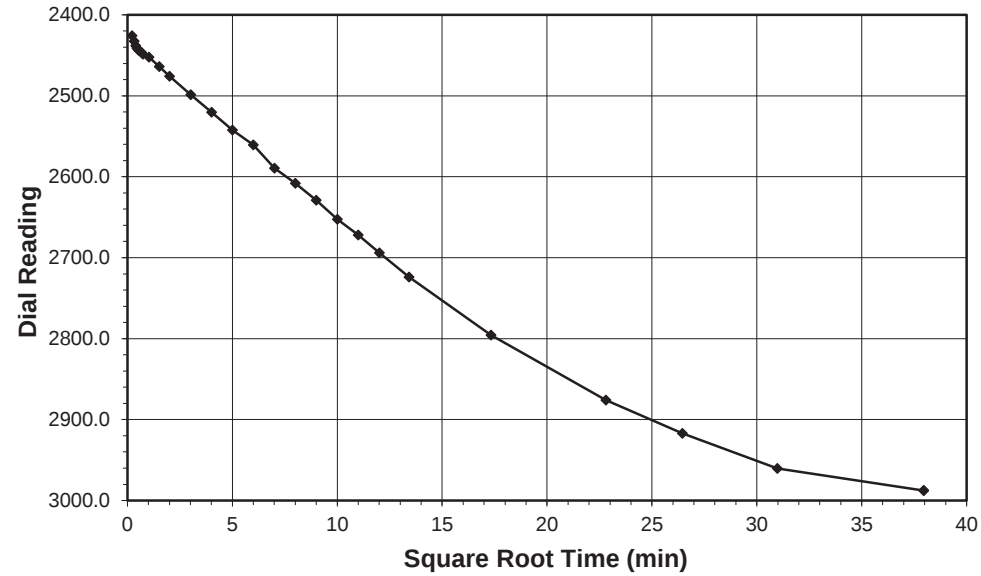
R-05

15.3-17.3

ST-1

Light Gray Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	(tsf)	8.0-16.0
Final Reading	(div)	2987.7
Consolidometer No.		R-487
1 Division	(in)	0.0001
Start Date		3/19/2025
Start Time		22:33:14

Elapsed Time (min)	Dial Reading (div)
Initial	2388.4
0.05	2425.7
0.10	2432.6
0.15	2438.2
0.20	2441.0
0.25	2443.0
0.30	2444.2
0.45	2446.5
0.55	2448.5
1.05	2452.3
2.30	2463.9
4.05	2476.0
9.05	2498.7
16.05	2520.2
25.05	2542.4
36.07	2560.8
49.07	2589.5
64.07	2608.2
81.07	2629.1
100.07	2652.6
121.07	2672.0
144.07	2694.1
180.07	2724.1
300.07	2795.6
520.07	2875.9
700.07	2917.0
960.07	2960.5
1440.07	2987.7
1440.25	2987.7

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-001

Boring No.

Depth (ft)

Sample No.

Visual Description

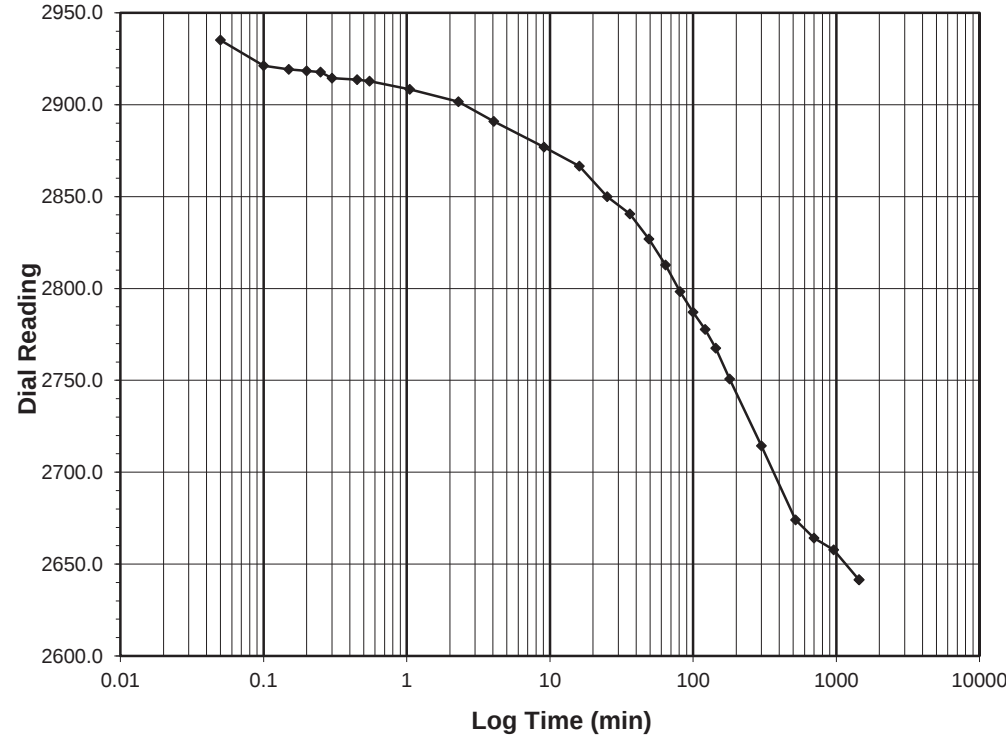
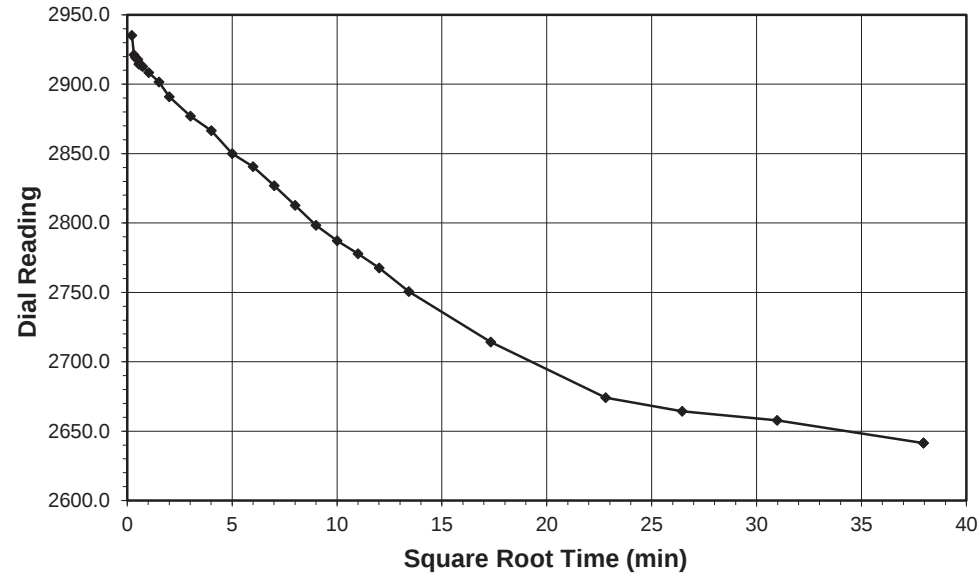
R-05

15.3-17.3

ST-1

Light Gray Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	(tsf)	16.0-4.0
Final Reading	(div)	2641.4
Consolidometer No.		R-487
1 Division	(in)	0.0001
Start Date		3/20/2025
Start Time		22:33:29

Elapsed Time (min)	Dial Reading (div)
Initial	2987.7
0.05	2935.1
0.10	2921.1
0.15	2919.2
0.20	2918.4
0.25	2917.7
0.30	2914.4
0.45	2913.6
0.55	2912.8
1.05	2908.4
2.30	2901.6
4.05	2891.0
9.07	2876.9
16.07	2866.5
25.07	2849.9
36.07	2840.6
49.07	2826.9
64.07	2812.7
81.07	2798.3
100.07	2787.1
121.07	2777.8
144.07	2767.5
180.07	2750.7
300.07	2714.3
520.07	2674.1
700.07	2664.2
960.07	2657.7
1440.07	2641.4
1440.17	2641.4

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-001

Boring No.

Depth (ft)

Sample No.

Visual Description

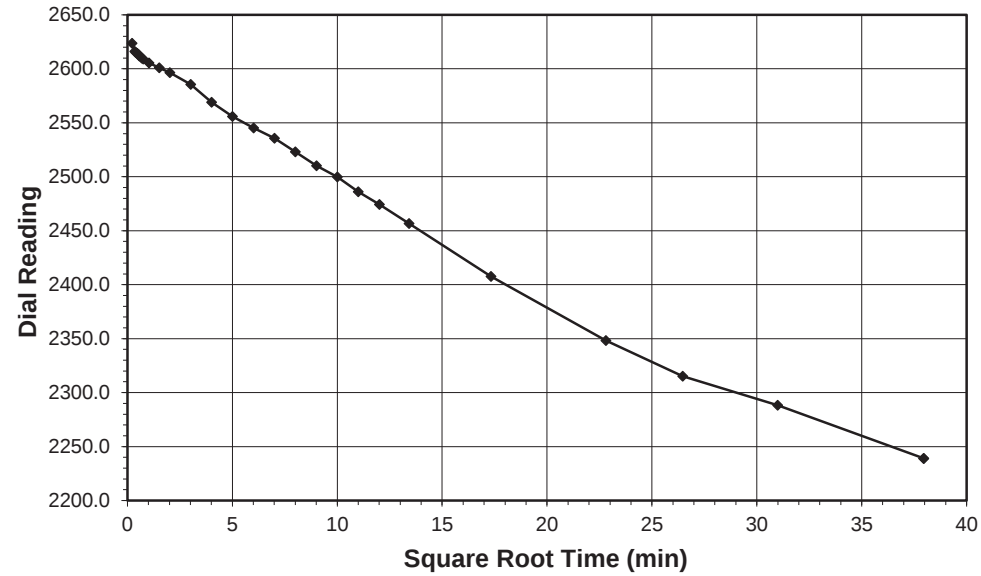
R-05

15.3-17.3

ST-1

Light Gray Clay

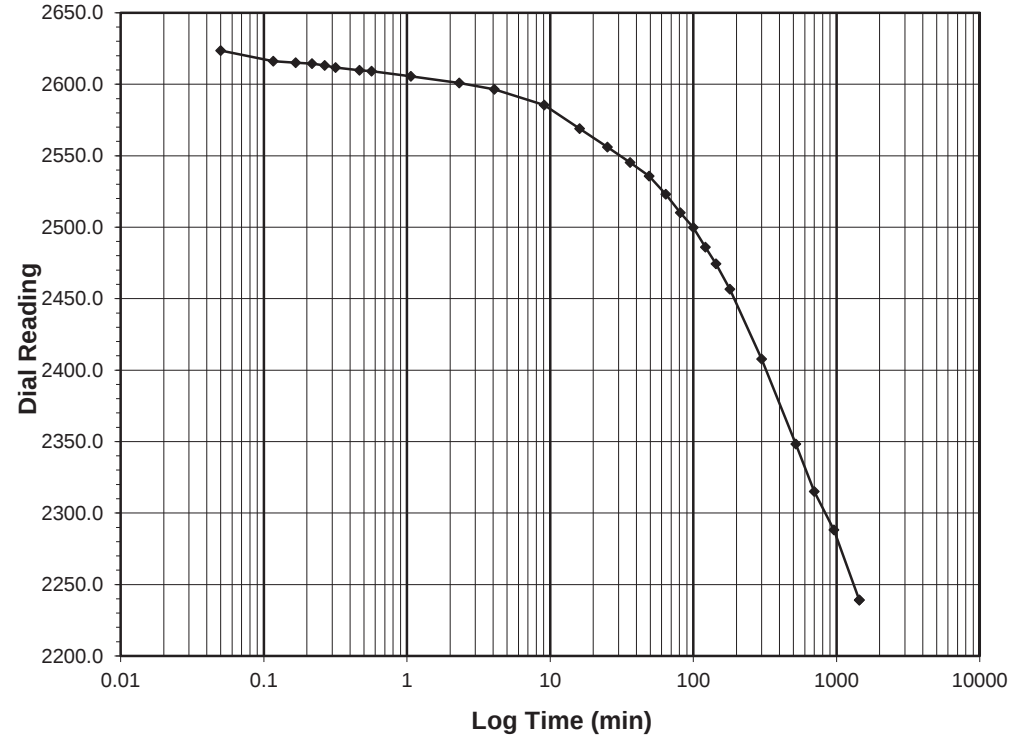
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-1.0
Final Reading (div) 2239.1
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 3/21/2025
Start Time 22:33:39

Elapsed Time (min)	Dial Reading (div)
Initial	2641.4
0.05	2623.6
0.12	2616.1
0.17	2615.1
0.22	2614.5
0.27	2613.1
0.32	2611.8
0.47	2609.8
0.57	2609.1
1.07	2605.5
2.32	2600.9
4.07	2596.5
9.07	2585.5
16.07	2569.0
25.08	2556.0
36.08	2545.2
49.08	2535.7
64.08	2523.1
81.08	2510.2
100.08	2499.8
121.08	2486.1
144.08	2474.4
180.08	2456.6
300.08	2407.8
520.10	2348.2
700.10	2315.1
960.10	2288.3
1440.10	2239.1
1440.25	2239.1



Tested By 129-02-0411 Date 3/21/2025 Checked By MPS Date 3/28/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-001

Boring No.

Depth (ft)

Sample No.

Visual Description

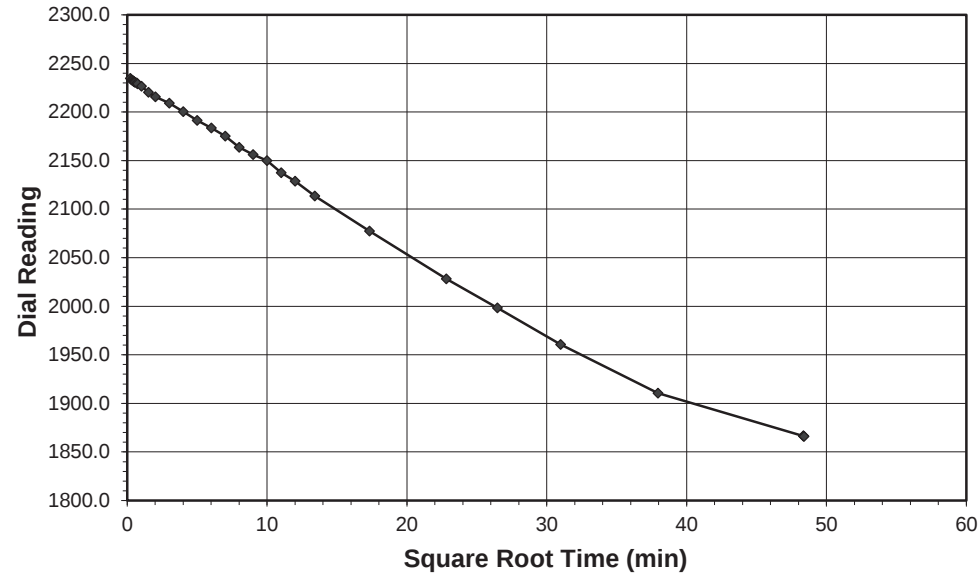
R-05

15.3-17.3

ST-1

Light Gray Clay

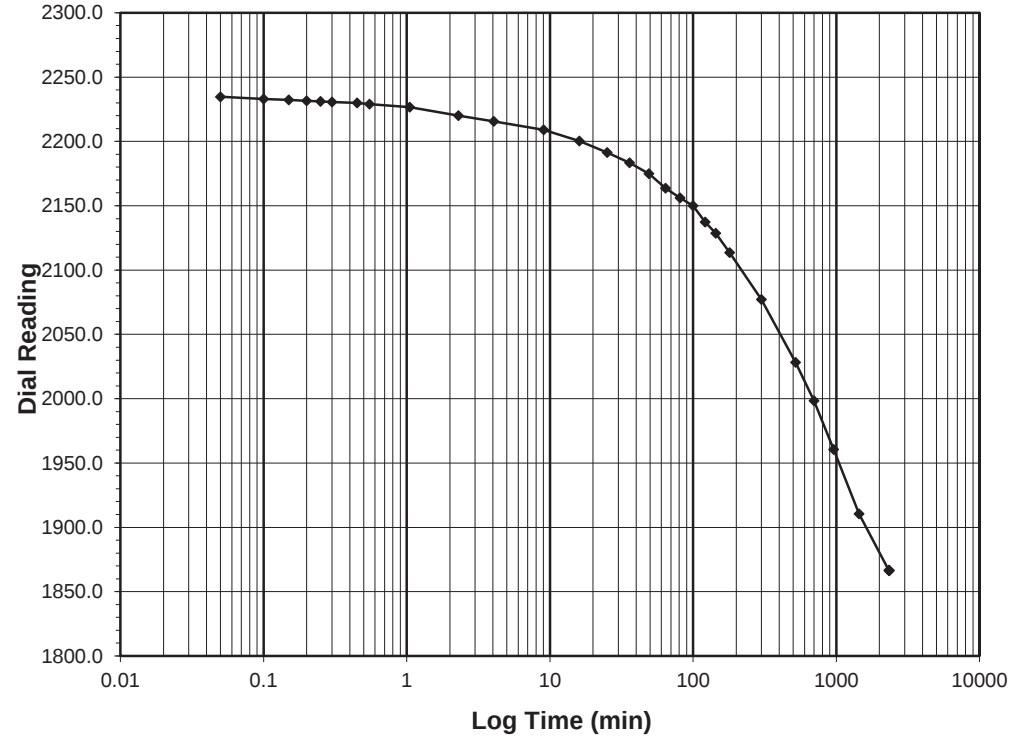
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-0.25
Final Reading (div) 1866.2
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 3/22/2025
Start Time 22:33:54

Elapsed Time (min)	Dial Reading (div)
Initial	2239.1
0.05	2234.7
0.10	2233.1
0.15	2232.3
0.20	2231.5
0.25	2231.1
0.30	2230.7
0.45	2229.8
0.55	2229.0
1.05	2226.6
2.30	2220.1
4.05	2215.7
9.05	2209.0
16.05	2200.3
25.05	2191.5
36.05	2183.4
49.05	2175.0
64.05	2163.7
81.05	2156.2
100.05	2149.9
121.07	2137.4
144.07	2128.7
180.07	2113.7
300.07	2077.2
520.07	2028.3
700.07	1998.4
960.07	1960.6
1440.07	1910.4
2336.83	1866.2
2337.33	1866.7
2342.67	1866.2



Tested By 129-02-0411 Date 3/22/2025 Checked By MPS Date 3/28/2025



SIEVE AND HYDROMETER ANALYSIS
NCDOT MOD. AASHTO T-88,

Client

Falcon Engineering

Boring No.

R-05

Client Reference

G24075.00 (I-6011A)

Depth (ft)

15.3-17.3

Project No.

R-2025-045-001

Sample No.

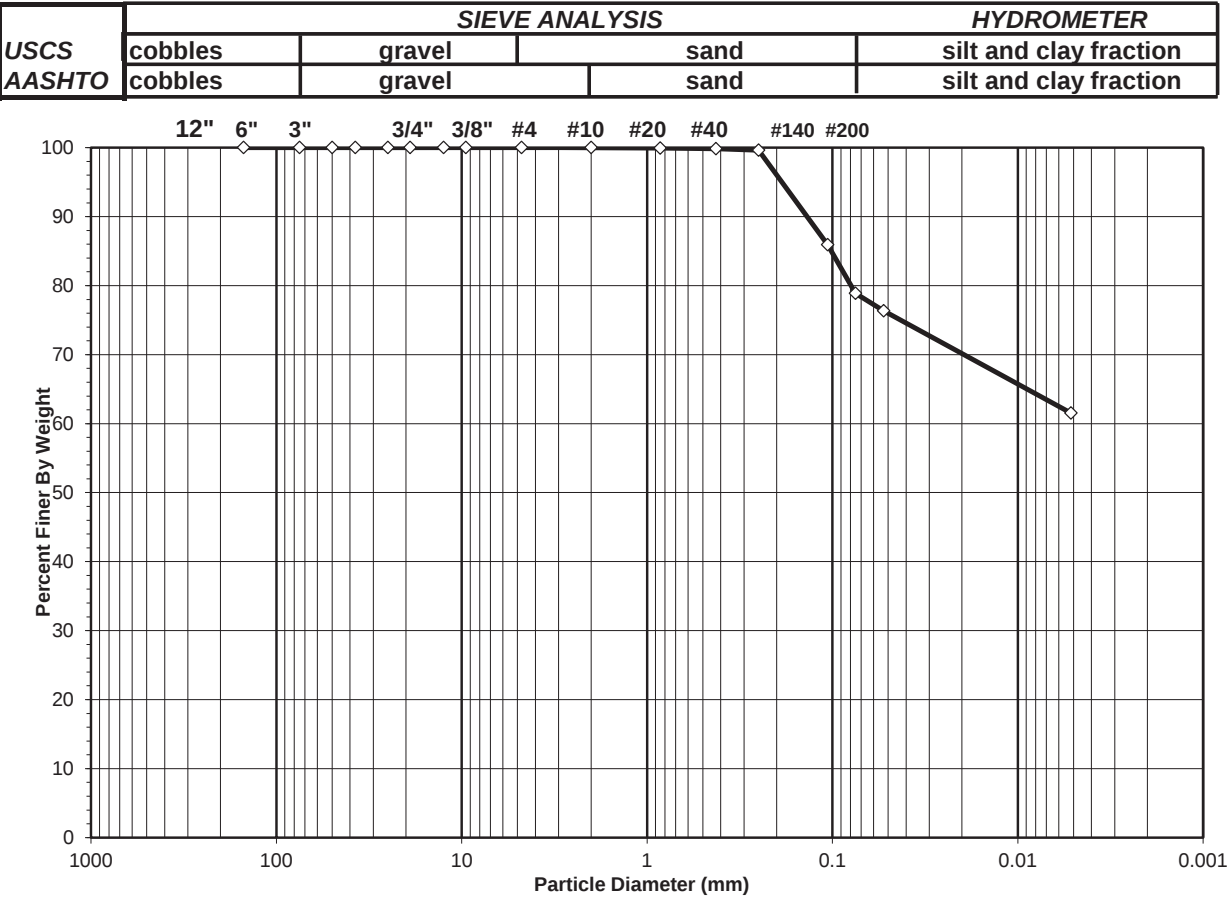
ST-1

Lab ID

R-2025-045-001-001

Soil Color

Light Gray



Sieve Size (mm)	Percent Finer	USCS %	AASHTO %	NCDOT SOIL MORTAR %
100	100.00	Gravel 0.00	Gravel 0.00	Coarse Sand Ret. #60 0.37
2	100.00	Sand 21.13	Coarse Sand 0.15	Fine Sand Ret. #270 23.27
0.075	78.87	Silt&Clay 78.87	Fine Sand 20.99	Silt 0.05-0.005mm 14.83
			Silt & Clay 78.87	Clay <0.005mm 61.53
AASHTO (GI) A-7-6 (49)				



WASH SIEVE ANALYSIS
NCDOT MOD. AASHTO T-88,

Client

Falcon Engineering

Boring No.

R-05

Client Reference

G24075.00 (I-6011A)

Depth (ft)

15.3-17.3

Project No.

R-2025-045-001

Sample No.

ST-1

Lab ID

R-2025-045-001-001

Soil Color

Light Gray

Minus #10 for Hygroscopic (10-15gm)		Hydrometer Specimen 50 or 100gms	
Tare No.	B	Air Dried Hydrometer Material (gm)	64.75
Wgt.Tare + Wet Specimen (gm)	29.82	Corrected Dry Wt. of Hydro Mtrl. (gm)	61.89
Wgt.Tare + Dry Specimen (gm)	29.17		
Weight of Tare (gm)	15.08	Weight of -#270 Material	47.26
Weight of Water (gm)	0.65	Weight of -#10; +#270 Material	14.63
Weight of Dry Soil (gm)	14.09		
Moisture Content (%)	4.6		

Tare No.	471		
Wgt. Tare + Air Dry Soil (gm)	515.51	Dry Weight of Material Ret. #10 (gm)	0.00
Weight of Tare (gm)	133.82	Corrected Dry Sample Wt - #10 (gm)	364.86
Air Dried Wgt.Total Sample (gm)	381.69		
Total Dry Weight Sample (gm)	364.9	J - Factor (Percent Finer than #10)	1.0000

Sieve Size	Sieve Opening (mm)	Wgt.of Soil Retained (gm)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.5	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.00	0.00	0.00	100.00	100.00
#20	0.85	0.04	0.06	0.06	99.94	99.94
#40	0.425	0.05	0.08	0.15	99.85	99.85
#60	0.25	0.14	0.23	0.37	99.63	99.63
#140	0.106	8.48	13.70	14.07	85.93	85.93
#200	0.075	4.37	7.06	21.13	78.87	78.87
#270	0.053	1.55	2.50	23.64	76.36	76.36
Pan	-	47.26	76.36	100.00	-	-

Tested By 129-02-0411 Date 3/28/25 Checked By AES Date 3/31/25



HYDROMETER ANALYSIS
NCDOT MOD. AASHTO T-88,

Client

Client Reference

Project No.

Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-001

Boring No.

Depth (ft)

Sample No.

Soil Color

R-05
15.3-17.3
ST-1
Light Gray

Elapsed Time (min)		R Measured	Temp. (° C)	Composite Correction	R Corrected	N (%)	K Factor	Diameter (mm)	N' (%)
7:23:32	0	NA	NA	NA	NA	NA	NA	NA	NA
7:24:00	0.47	53.0	20.7	-1.74	48.7	77.3	0.01318	0.0532	77.3
8:23:32	60.00	43.0	20.9	-1.78	38.8	61.5	0.01315	0.0052	61.5

Corrections	
a - Factor	0.982
Percent Finer than # 10	100.00
Specific Gravity	2.74 Measured

Note: Hydrometer test is performed on - #10 sieve material.

LL

=

74

PL

=

12

PI

=

62

Tested By 129-02-0411

Date 3/27/25

Checked By AES

Date 3/31/25

page 3 of 3DCN: CT-S3Y DATE: 3/27/25 REVISION: 22025-045 - G24075.00 (I-6011A)\2025-045-001\2025-045-001-001 Grain SIEVEHYD10 NCDOT.xlsmData1



ATTERBERG LIMITS
AASHTO T-89, T-90 (DOT Modified)

Client

Client Reference

Project No.

Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-001

Boring No.

Depth (ft)

Sample No.

Soil Description

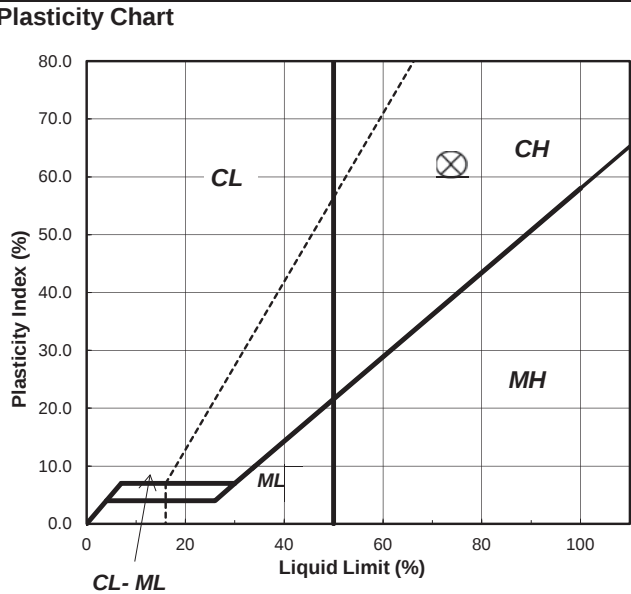
R-05
15.3-17.3
ST-1
LIGHT GRAY FAT CLAY
(Minus No. 40 sieve material, Airdried)

Note: The USCS symbol used with this test refers only to the minus No. 40 sieve material. See the "Sieve and Hydrometer Analysis" graph page for the complete material description .

Liquid Limit Test		1
Tare Number		D-1
Wt. of Tare & WS (gm)		27.17
Wt. of Tare & DS (gm)		22.06
Wt. of Tare (gm)		15.14
Wt. of Water (gm)		5.1
Wt. of DS (gm)		6.9
Moisture Content (%)		73.8
Number of Blows		25

Plastic Limit Test	1	2	Range	Test Results	
Tare Number	24	V		Liquid Limit (%)	74
Wt. of Tare & WS (gm)	14.50	22.63		Plastic Limit (%)	12
Wt. of Tare & DS (gm)	13.71	21.83		Plasticity Index (%)	62
Wt. of Tare (gm)	7.06	15.14		USCS Symbol	CH
Wt. of Water (gm)	0.8	0.8			
Wt. of DS (gm)	6.7	6.7			
Moisture Content (%)	11.9	12.0	-0.1		

Note: The acceptable range of the two Moisture contents is ± 2.6



Tested By 129-02-0411

Date 3/21/25

Checked By AES

Date 3/24/25

page 1 of 1DCN: CT-S4B DATE: 10/8/01 REVISION: 2



SHELBY TUBE UNIT WEIGHT
ASTM D7263-09

Client	Falcon Engineering	Boring No.:	R-05
Client Reference	G24075.00 (I-6011A)	Depth Pushed (ft):	15.3-17.3
Project No.	R-2025-045-001	Shelby Tube No.:	ST-1
Lab ID	R-2025-045-001-001	Recovery (ft):	2.0'

MOISTURE CONTENT

Tare Number	441
Wt. Tare & WS (g)	469.70
Wt. Tare & DS (g)	361.24
Wt. Tare (g)	98.00
Moisture Content (%)	41.20

UNIT WEIGHT

Wt. Tube & WS. (g)	1294.73
Wt. Of Tube (g)	0.00
Wt. Of WS. (g)	1294.73
Length 1 (in.)	6.974
Length 2 (in.)	6.992
Length 3 (in.)	6.907
Top Diameter (in.)	2.838
Middle Diameter (in.)	2.809
Bottom Diameter (in.)	2.820
Sample Volume (cc)	713.30
Moisture Content(%)	41.20
Unit Wet Wt. (g/cc)	1.82
Unit Wet Wt. (pcf)	113.26
Unit Dry Wt. (g/cc)	1.29
Unit Dry Wt. (pcf)	80.2

Tested By DL Date 3/19/25 Checked By AES Date 3/21/25

page 1 of 1 DCN: CT-S37A DATE: 1/7/15 REVISION: 1e



SPECIFIC GRAVITY
ASTM D 854-14

Client:	Falcon Engineering	Boring No.:	R-05
Client Reference:	G24075.00 (I-6011A)	Depth (ft):	15.3-17.3
Project No.:	R-2025-045-001	Sample No.:	ST-1
Lab ID:	R-2025-045-001-001	Visual Description:	Light Gray Clay

(Minus No.4 sieve material,oven dried)

Replicate Number

	1	2
Pycnometer ID:	R 745	R 746
Weight of Pycnometer & Soil & Water (g):	683.84	680.75
Temperature (°C):	23.4	22.4
Weight of Pycnometer & Water (g):	651.76	648.91
Tare Number:	745	746
Weight of Tare & Dry Soil (g):	204.54	201.15
Weight of Tare (g):	154.2	150.81
Weight of Dry Soil (g):	50.34	50.34
Specific Gravity of Soil @ Measured Temperature:	2.757	2.721
Specific Gravity of Water @ Measured Temperature:	0.99745	0.99768
Conversion Factor for Measured Temperature:	0.99924	0.99948
Specific Gravity @ 20° Celsius:	2.759	2.722

Average Specific Gravity @ 20° Celsius 2.74

Tested By 129-02-0411 Date 3/18/25 Checked By AES Date 3/18/25

page 1 of 1 DCN: CT-S5 DATE: 3/26/18 REVISION: 21

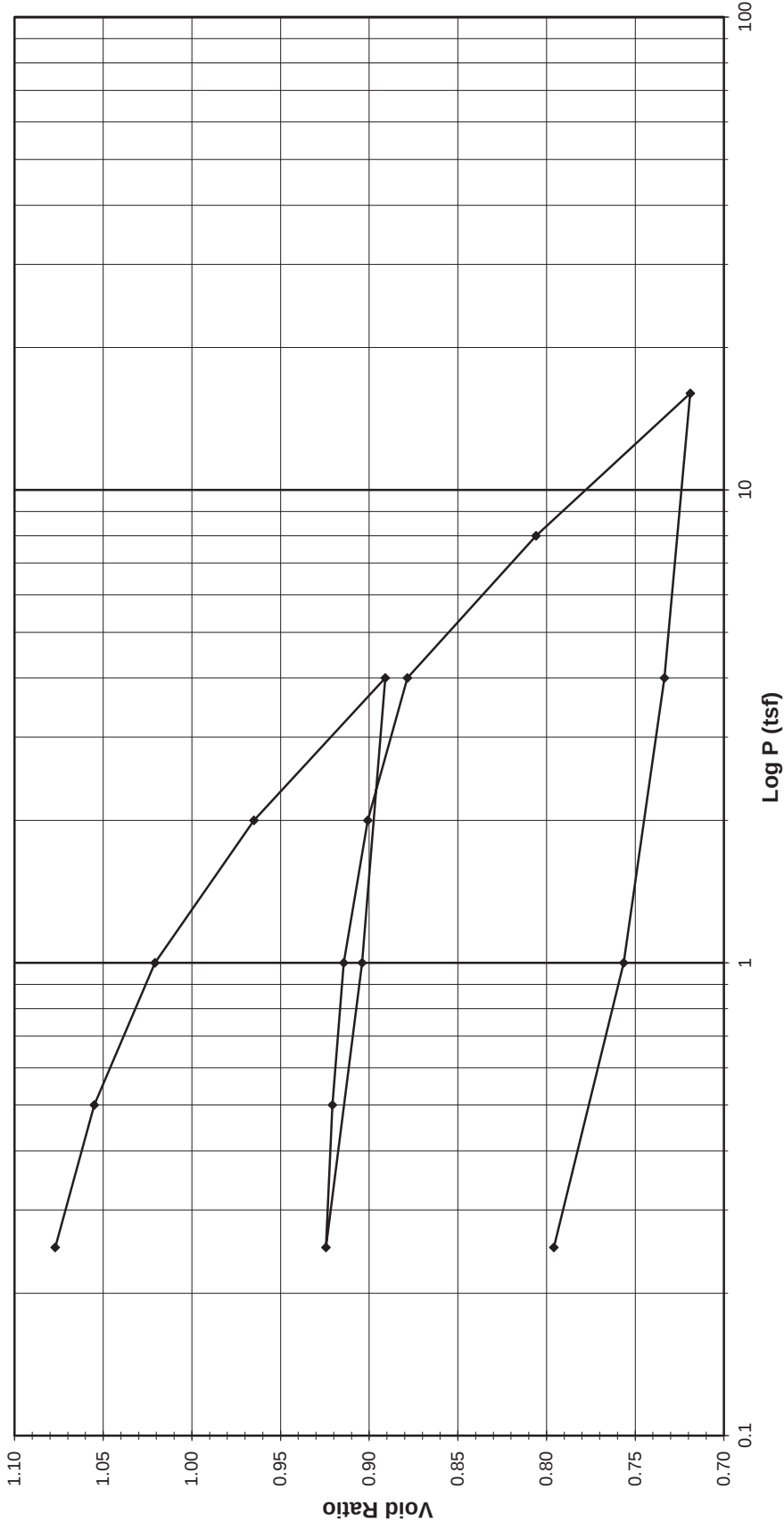


ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Falcon Engineering	Boring No.	R-06
Client Reference	G24075.00 (I-6011A)	Depth (ft)	9.6-11.6
Project No.	R-2025-045-001	Sample No.	ST-2
Lab ID	R-2025-045-001-002	Visual Description	Light Brown Sandy Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Falcon Engineering	Boring No.	R-06
Client Reference	G24075.00 (I-6011A)	Depth (ft)	9.6-11.6
Project No.	R-2025-045-001	Sample No.	ST-2
Lab ID	R-2025-045-001-002	Visual Description	Light Brown Sandy Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Consolidometer No. R-470
1 Division = 0.0001 (in.)

Sample Properties			Initial	Final	Test Data Summary							
Water Content					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
Tare Number					Seating	0	0	0	25.400	80.440	1.26040	1.11837
Wt. Tare & WS (g)					0.25	207.5	12.4	195.1	24.904	78.871	1.28548	1.07704
Wt. Tare & DS (g)					0.5	326.8	27.4	299.3	24.640	78.032	1.29930	1.05496
Wt. Tare (g)					1	503.2	42.8	460.4	24.231	76.736	1.32123	1.02084
Wt. DS (g)					2	788.5	64.4	724.1	23.561	74.615	1.35879	0.96499
Water Content (%)					4	1168.0	94.1	1073.9	22.672	71.802	1.41204	0.89088
Sample Parameters					1	1068.6	56.9	1011.7	22.830	72.302	1.40227	0.90405
Sample Diameter (in)					0.25	946.3	30.8	915.5	23.075	73.076	1.38742	0.92443
Sample Height (in)					0.5	968.8	36.1	932.8	23.031	72.937	1.39006	0.92078
Sample Volume (cc)					1	1013.5	50.6	962.9	22.954	72.695	1.39469	0.91440
Wt. Wet Sample + Ring (g)					2	1094.8	67.6	1027.3	22.791	72.177	1.40470	0.90076
Wt. of Ring (g)					4	1227.0	94.5	1132.5	22.523	71.330	1.42138	0.87846
Wt. of Wet Sample (g)					8	1606.6	131.6	1475.0	21.653	68.575	1.47848	0.80591
Wet Density (pcf)					16	2056.7	171.4	1885.3	20.611	65.275	1.55323	0.71900
Wet Density (g/cc)					4	1925.1	108.6	1816.4	20.786	65.829	1.54016	0.73358
Water Content (%)					1	1773.0	65.1	1707.9	21.062	66.701	1.52001	0.75656
Wt. of Dry Sample (g)					0.25	1560.6	38.5	1522.1	21.534	68.196	1.48669	0.79594
Dry Density (pcf)												
Dry Density (g/cc)												
Void Ratio												
Saturation (%)												
Specific Gravity												



ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

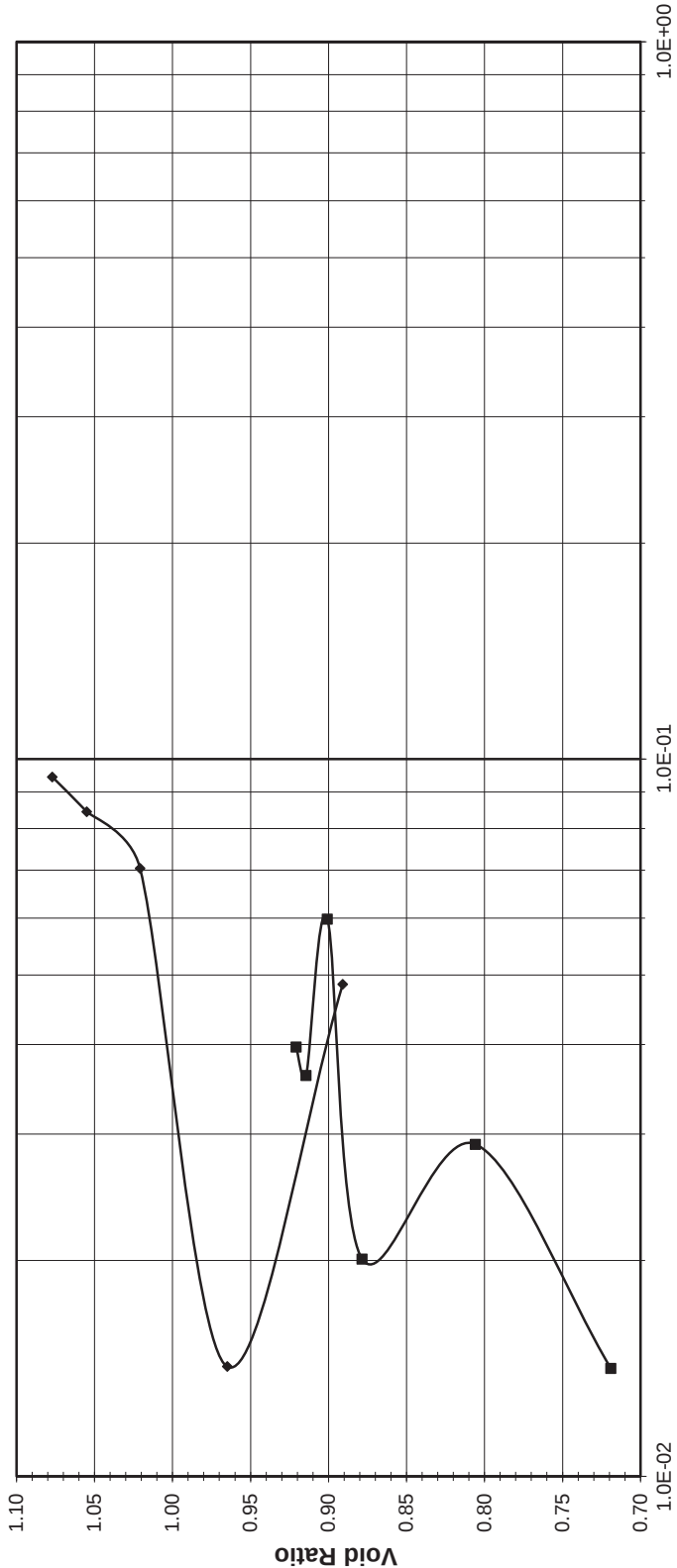
Client
Client Reference
Project No.
Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-002

Boring No.
Depth (ft)
Sample No.
Visual Description

R-06
9.6-11.6
ST-2
Light Brown Sandy Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Coefficient of Consolidation (cm²/sec)

◆ First Cycle Up ■ Second Cycle Up



ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client
Client Reference
Project No.
Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-002

Boring No.
Depth (ft)
Sample No.
Visual Description

R-06
9.6-11.6
ST-2
Light Brown Sandy Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Consolidometer No. R-470
1 Division = 0.0001 (in.)

Sample Properties		Initial	Final	C _v Test Data Summary						
				Load Increment (tsf)	Dial Reading @ t ₅₀ (div)	Machine Deflection (div)	Corrected Dial Reading @ t ₅₀ (div)	Sample Height @ t ₅₀ (cm)	Time t ₅₀ (min.)	C _v (cm ² /sec)
Water Content										
Tare Number		427	13-A							
Wt. Tare & WS (g)		433.31	213.61							
Wt. Tare & DS (g)		342.40	184.84							
Wt. Water (g)		90.91	28.77	0 - 0.25	20.7	12.4	8.3	2.538	0.06	0.09441
Wt. Tare (g)		99.42	87.72	0.25 - 0.5	246.0	27.4	218.5	2.484	0.06	0.08445
Wt. DS (g)		242.98	97.12	0.5 - 1.0	394.7	42.8	351.8	2.451	0.07	0.07042
Water Content (%)		37.41	29.62	1.0 - 2.0	649.8	64.4	585.4	2.391	0.33	0.01422
				2.0 - 4.0	911.5	94.1	817.4	2.332	0.09	0.04854
Sample Parameters				4.0 - 1.0	NA	56.9	NA	NA	NA	NA
Sample Diameter (in)		2.5	2.5	1.0 - 0.25	NA	30.8	NA	NA	NA	NA
Sample Height (in)		1.000	0.848	0.25 - 0.5	956.2	36.1	920.1	2.306	0.11	0.03969
Sample Volume (cc)		80.44	68.20	0.5 - 1.0	992.0	50.6	941.4	2.301	0.12	0.03621
Wt. Wet Sample + Ring (g)		353.96	346.06	1.0 - 2.0	1046.1	67.6	978.5	2.291	0.07	0.05986
Wt. of Ring (g)		214.64	214.64	2.0 - 4.0	1168.9	94.5	1074.4	2.267	0.21	0.02009
Wt. of Wet Sample (g)		139.32	131.42	4.0 - 8.0	1368.7	131.6	1237.0	2.226	0.14	0.02905
Wet Density (pcf)		108.08	120.25	8.0 - 16.0	1839.3	171.4	1667.9	2.116	0.26	0.01414
Wet Density (g/cc)		1.73	1.93	16.0 - 4.0	NA	108.6	NA	NA	NA	NA
Water Content (%)		37.41	29.62	4.0 - 1.0	NA	65.1	NA	NA	NA	NA
Wt. of Dry Sample (g)		101.39	101.39	1.0 - 0.25	NA	38.5	NA	NA	NA	NA
Dry Density (pcf)		78.65	92.77							
Dry Density (g/cc)		1.26	1.49							
Void Ratio		1.1184	0.7959							
Saturation (%)		89.32	99.37							
Specific Gravity		2.67	Measured							

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-002

Boring No.

Depth (ft)

Sample No.

Visual Description

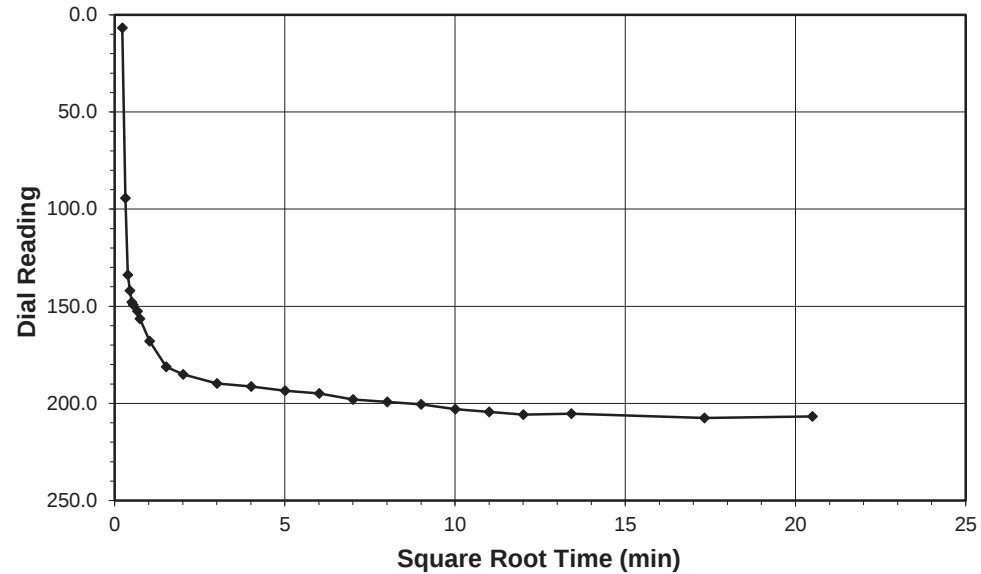
R-06

9.6-11.6

ST-2

Light Brown Sandy Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf)

Final Reading (div)

Consolidometer No.

1 Division (in)

0.0-0.25

207.5

R-470

0.0001

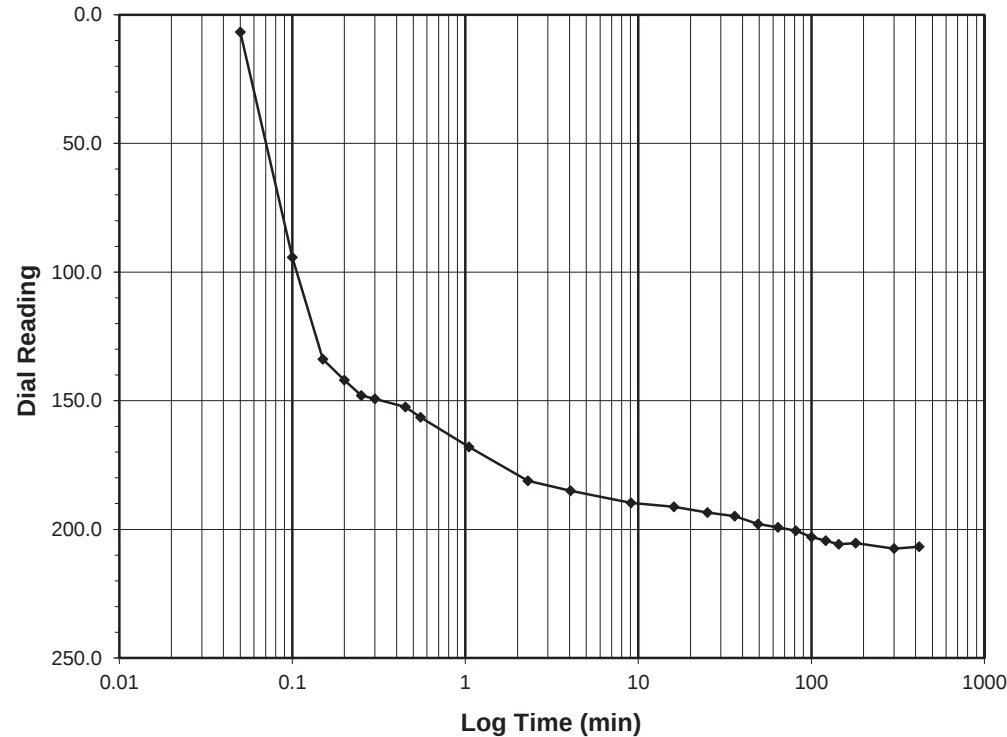
Start Date

Start Time

3/12/2025

11:53:30

Elapsed Time (min)	Dial Reading (div)
Initial	0.0
0.05	6.7
0.10	94.3
0.15	133.9
0.20	142.0
0.25	148.0
0.30	149.3
0.45	152.5
0.55	156.5
1.05	168.0
2.30	181.1
4.05	185.1
9.07	189.7
16.07	191.2
25.07	193.5
36.07	194.9
49.07	198.0
64.07	199.2
81.07	200.5
100.07	203.0
121.07	204.4
144.07	205.8
180.07	205.3
300.07	207.5
420.17	206.7



Tested By 129-02-0411 Date 3/12/2025 Checked By MPS Date 3/19/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-002

Boring No.

Depth (ft)

Sample No.

Visual Description

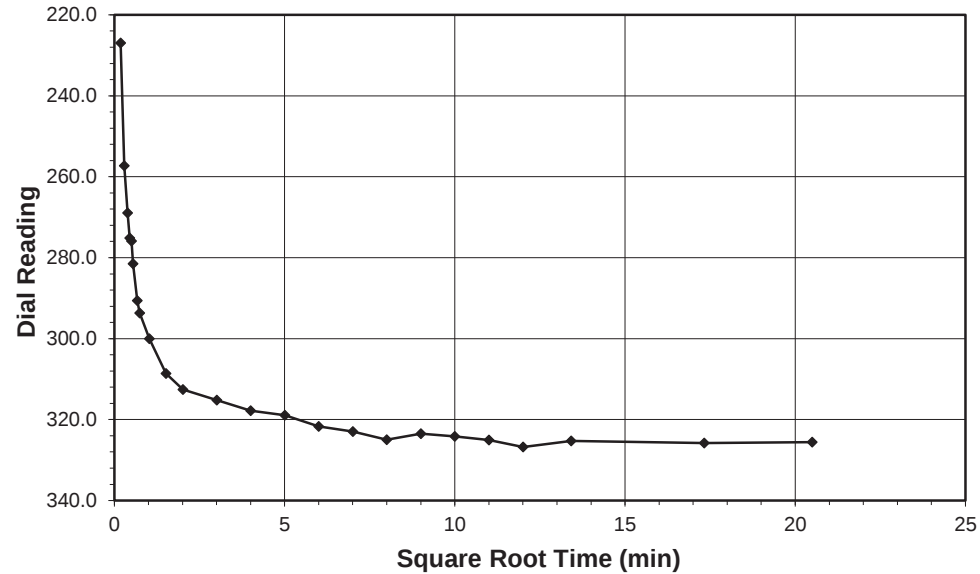
R-06

9.6-11.6

ST-2

Light Brown Sandy Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf)

Final Reading (div)

Consolidometer No.

1 Division (in)

0.25-0.5

326.8

R-470

0.0001

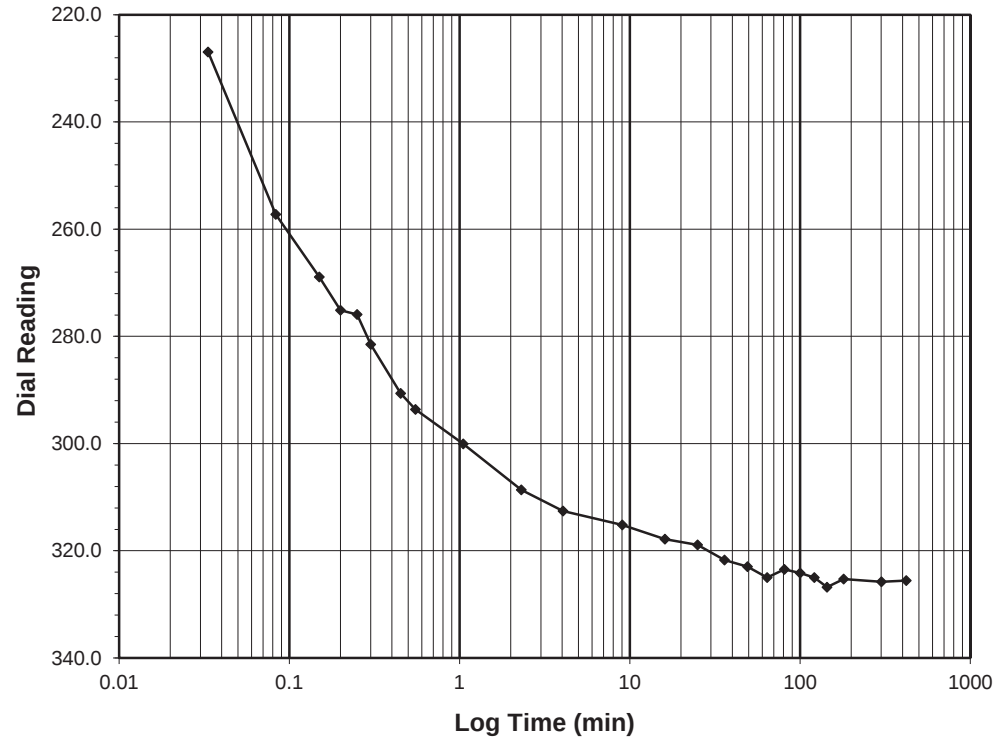
Start Date

Start Time

3/12/2025

18:53:40

Elapsed Time (min)	Dial Reading (div)
Initial	207.5
0.03	226.9
0.08	257.3
0.15	268.9
0.20	275.1
0.25	275.9
0.30	281.5
0.45	290.6
0.55	293.6
1.05	300.1
2.30	308.6
4.05	312.6
9.05	315.2
16.05	317.8
25.05	318.9
36.05	321.7
49.05	323.0
64.05	325.0
81.05	323.5
100.05	324.1
121.05	325.0
144.05	326.8
180.05	325.3
300.05	325.8
420.10	325.6



Tested By 129-02-0411 Date 3/12/2025 Checked By MPS Date 3/19/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-002

Boring No.

Depth (ft)

Sample No.

Visual Description

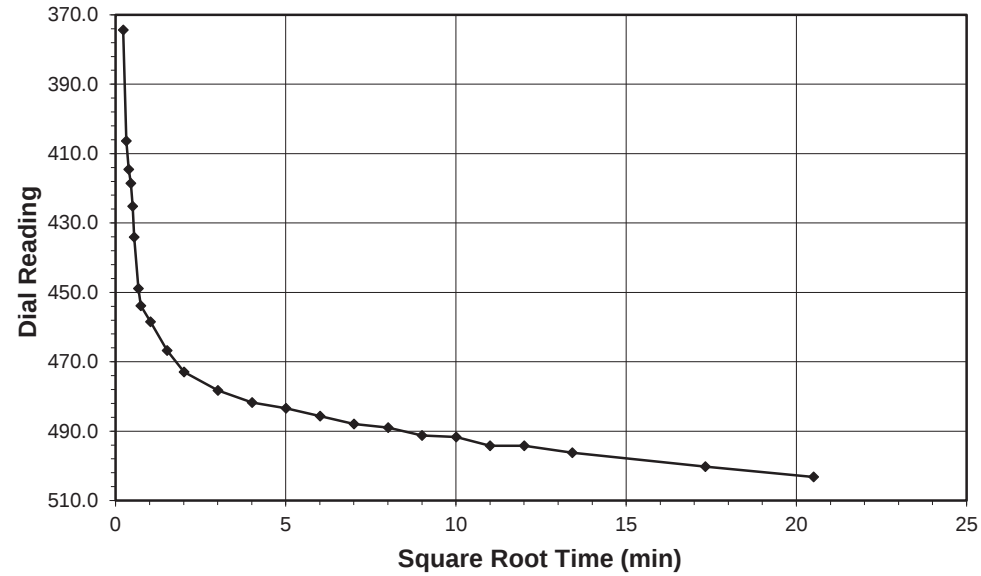
R-06

9.6-11.6

ST-2

Light Brown Sandy Clay

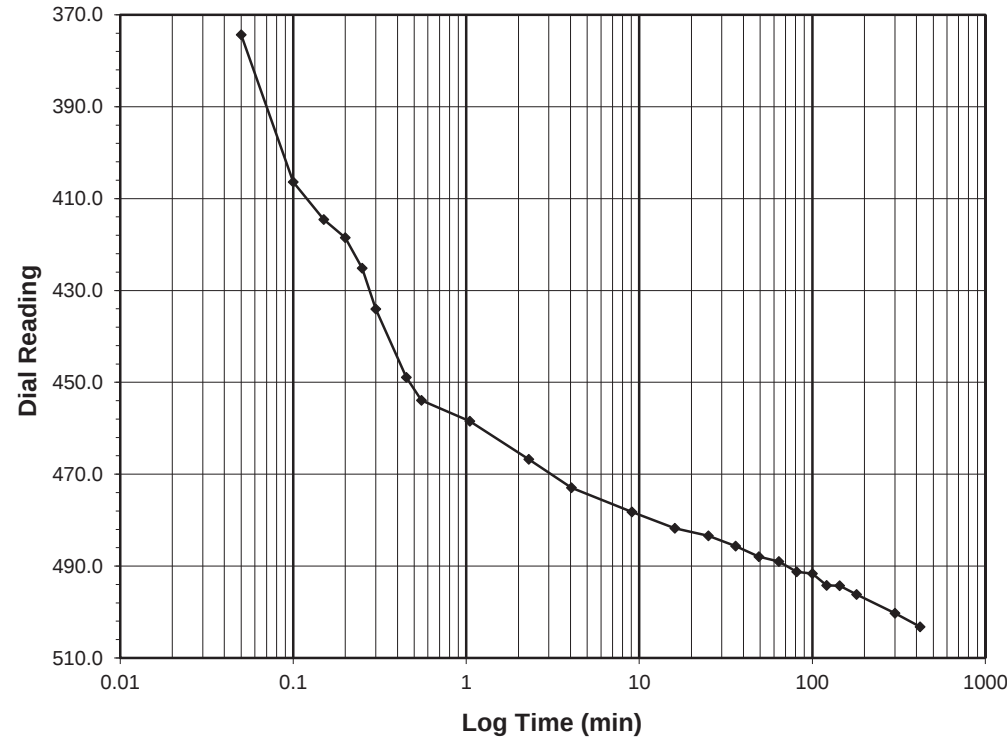
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.5-1.0
Final Reading (div) 503.2
Consolidometer No. R-470
1 Division (in) 0.0001

Start Date 3/13/2025
Start Time 1:53:48

Elapsed Time (min)	Dial Reading (div)
Initial	326.8
0.05	374.4
0.10	406.4
0.15	414.6
0.20	418.5
0.25	425.2
0.30	434.1
0.45	448.9
0.55	453.9
1.05	458.5
2.30	466.8
4.05	473.0
9.07	478.2
16.07	481.8
25.07	483.4
36.07	485.6
49.07	487.9
64.07	489.0
81.07	491.3
100.07	491.7
121.07	494.2
144.07	494.3
180.07	496.2
300.07	500.3
420.35	503.2



Tested By 129-02-0411 Date 3/13/2025 Checked By MPS Date 3/19/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-002

Boring No.

Depth (ft)

Sample No.

Visual Description

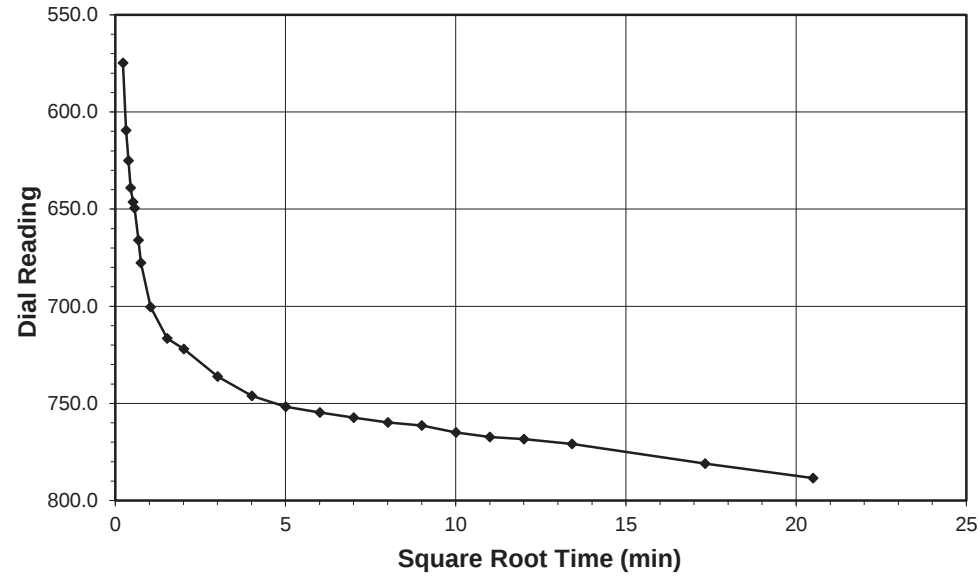
R-06

9.6-11.6

ST-2

Light Brown Sandy Clay

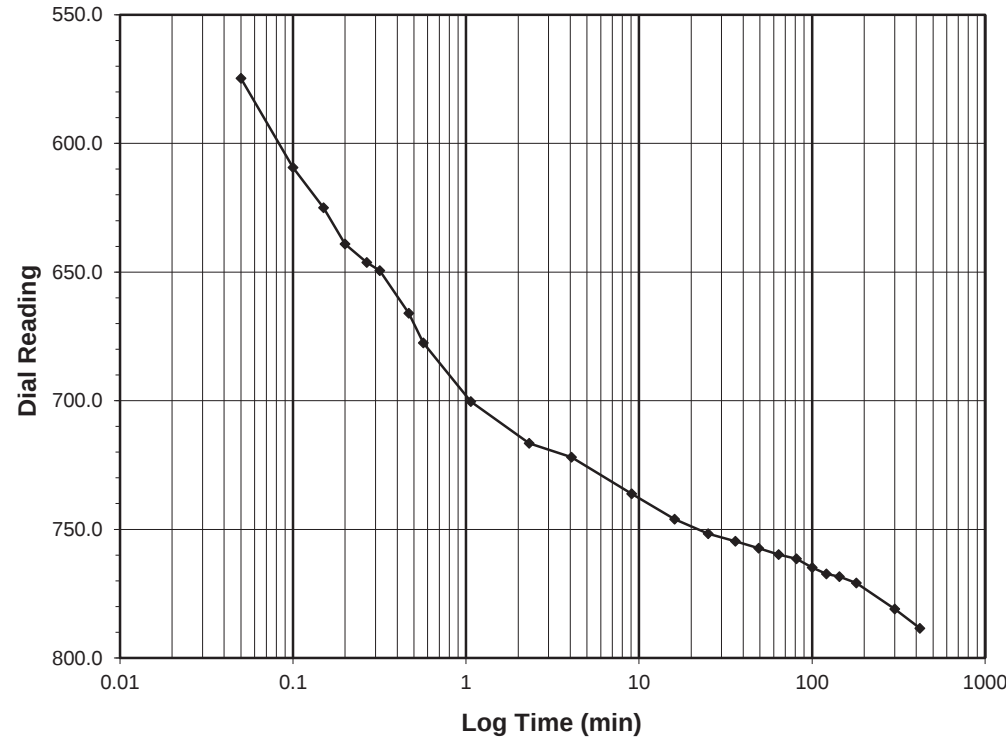
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
Final Reading (div) 788.5
Consolidometer No. R-470
1 Division (in) 0.0001

Start Date 3/13/2025
Start Time 8:54:09

Elapsed Time (min)	Dial Reading (div)
Initial	503.2
0.05	574.7
0.10	609.4
0.15	625.0
0.20	639.1
0.27	646.3
0.32	649.4
0.47	666.0
0.57	677.6
1.07	700.3
2.32	716.5
4.07	721.9
9.07	736.2
16.07	746.1
25.07	751.8
36.07	754.7
49.07	757.3
64.07	759.8
81.07	761.4
100.07	764.9
121.07	767.4
144.07	768.4
180.07	770.9
300.08	781.0
420.25	788.5



Tested By 129-02-0411 Date 3/13/2025 Checked By MPS Date 3/19/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-002

Boring No.

Depth (ft)

Sample No.

Visual Description

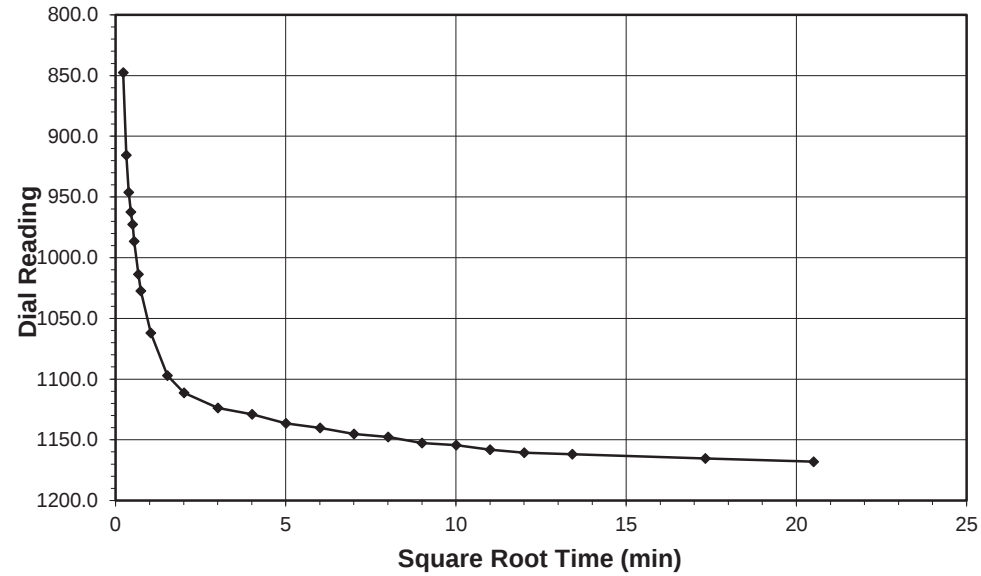
R-06

9.6-11.6

ST-2

Light Brown Sandy Clay

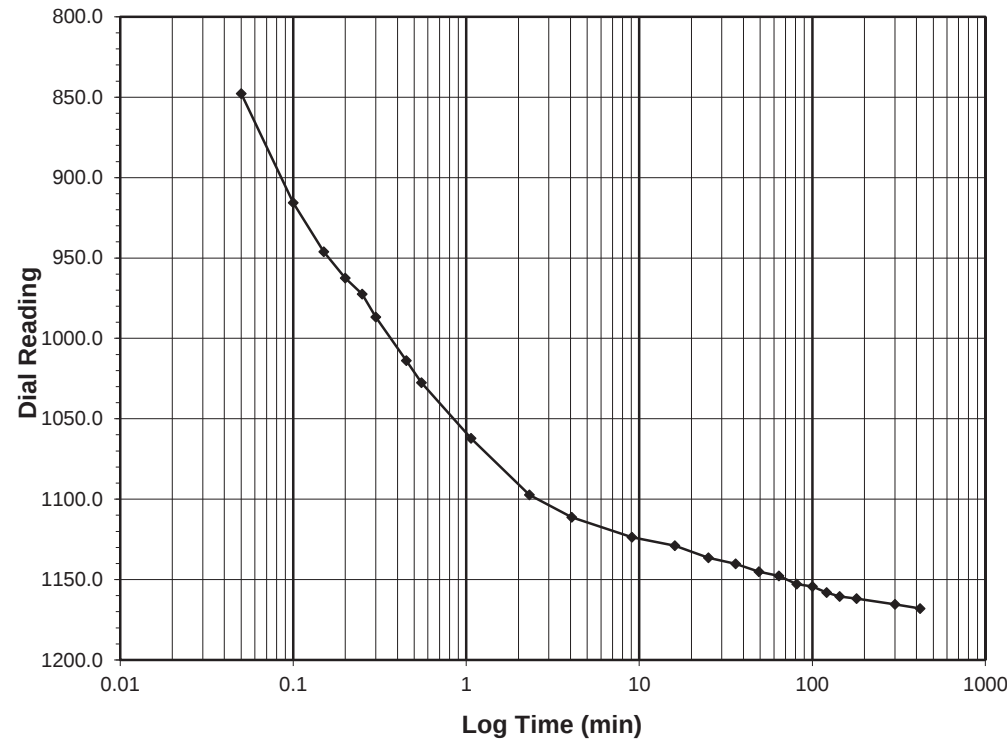
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-4.0
Final Reading (div) 1168.0
Consolidometer No. R-470
1 Division (in) 0.0001

Start Date 3/13/2025
Start Time 15:54:24

Elapsed Time (min)	Dial Reading (div)
Initial	788.5
0.05	847.7
0.10	915.7
0.15	946.2
0.20	962.4
0.25	972.5
0.30	986.7
0.45	1013.7
0.55	1027.5
1.07	1062.1
2.32	1097.2
4.07	1111.3
9.07	1123.7
16.07	1129.0
25.07	1136.5
36.07	1140.2
49.07	1145.1
64.07	1147.8
81.07	1152.8
100.07	1154.4
121.07	1158.2
144.07	1160.6
180.07	1161.9
300.07	1165.5
420.37	1168.0



Tested By 129-02-0411 Date 3/13/2025 Checked By MPS Date 3/19/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-002

Boring No.

Depth (ft)

Sample No.

Visual Description

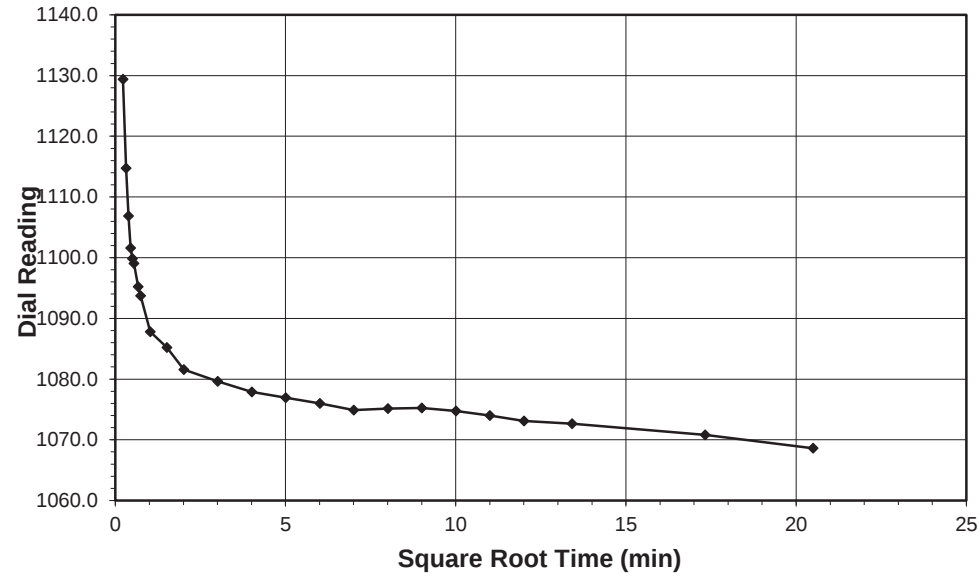
R-06

9.6-11.6

ST-2

Light Brown Sandy Clay

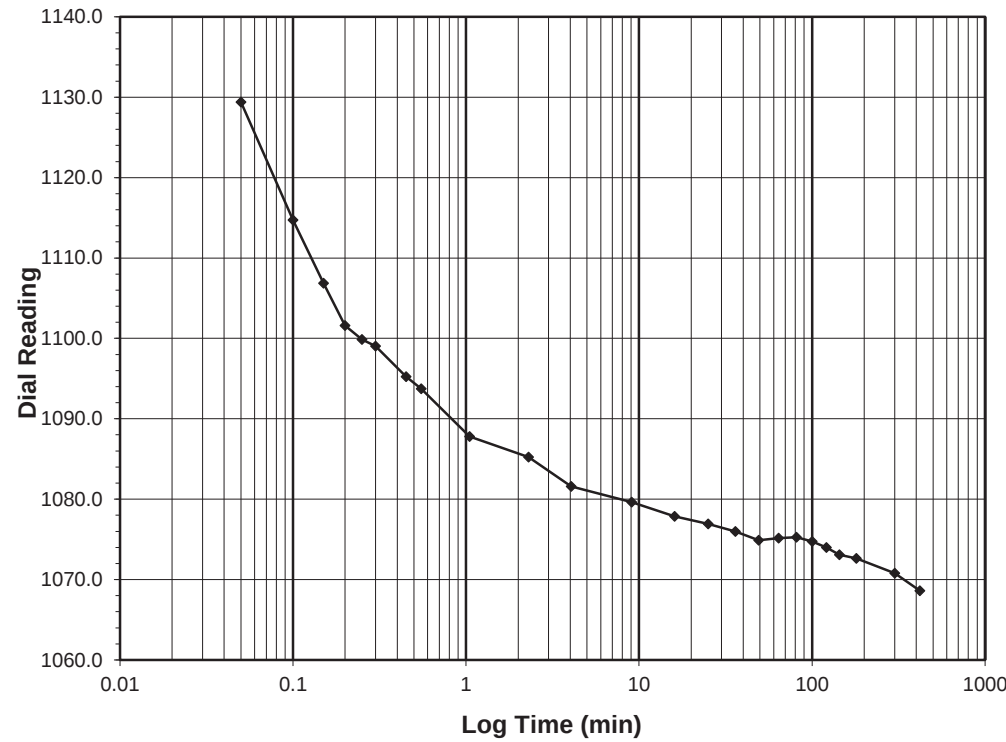
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-1.0
Final Reading (div) 1068.6
Consolidometer No. R-470
1 Division (in) 0.0001

Start Date 3/13/2025
Start Time 22:54:46

Elapsed Time (min)	Dial Reading (div)
Initial	1168.0
0.05	1129.4
0.10	1114.7
0.15	1106.9
0.20	1101.6
0.25	1099.9
0.30	1099.0
0.45	1095.2
0.55	1093.7
1.05	1087.8
2.30	1085.2
4.05	1081.6
9.05	1079.6
16.07	1077.9
25.07	1076.9
36.07	1076.0
49.07	1074.9
64.07	1075.2
81.07	1075.3
100.07	1074.7
121.07	1074.0
144.07	1073.1
180.07	1072.6
300.07	1070.8
420.30	1068.6



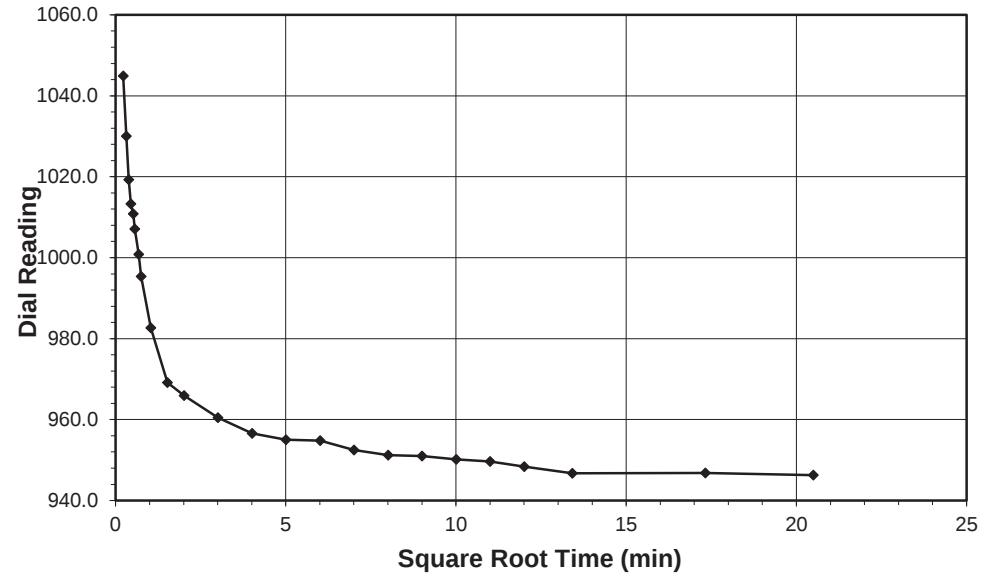
Tested By 129-02-0411 Date 3/13/2025 Checked By MPS Date 3/19/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



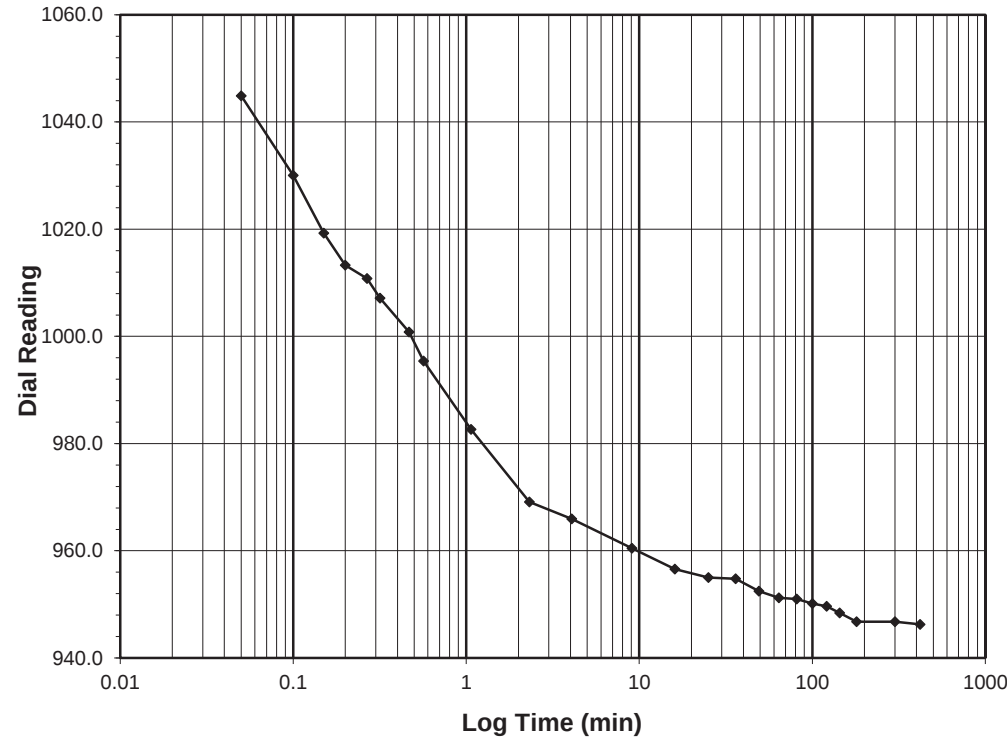
Client Falcon Engineering Boring No. R-06
Client Project G24075.00 (I-6011A) Depth (ft) 9.6-11.6
Project No. R-2025-045-001 Sample No. ST-2
Lab ID R-2025-045-001-002 Visual Description Light Brown Sandy Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf)	1.0-0.25
Final Reading (div)	946.3
Consolidometer No.	R-470
1 Division (in)	0.0001
Start Date	3/14/2025
Start Time	5:55:04

Elapsed Time (min)	Dial Reading (div)
Initial	1068.6
0.05	1044.9
0.10	1030.0
0.15	1019.3
0.20	1013.3
0.27	1010.8
0.32	1007.1
0.47	1000.8
0.57	995.4
1.07	982.6
2.32	969.1
4.07	966.0
9.07	960.5
16.07	956.6
25.07	955.0
36.07	954.8
49.07	952.5
64.07	951.2
81.07	951.0
100.07	950.1
121.07	949.6
144.07	948.4
180.07	946.7
300.07	946.8
420.13	946.3



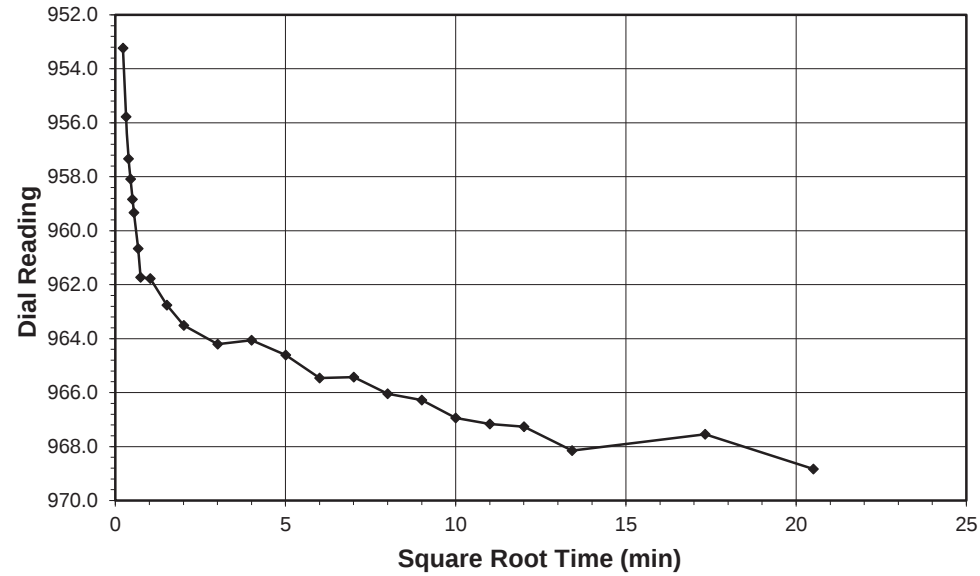
Tested By 129-02-0411 Date 3/14/2025 Checked By MPS Date 3/19/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



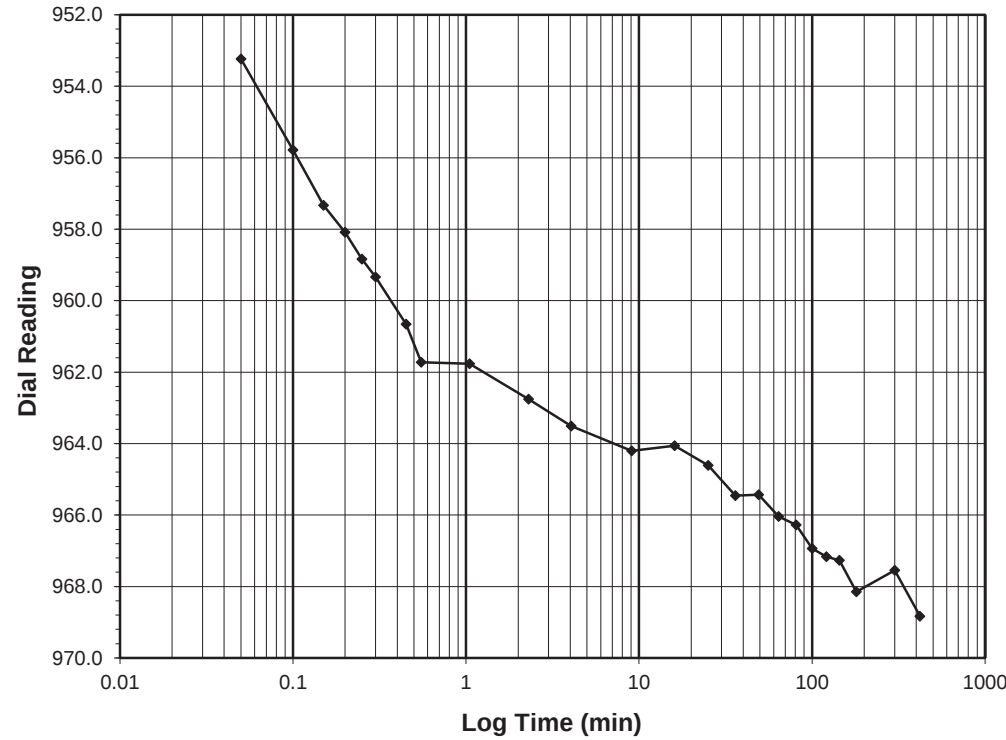
Client Falcon Engineering Boring No. R-06
Client Project G24075.00 (I-6011A) Depth (ft) 9.6-11.6
Project No. R-2025-045-001 Sample No. ST-2
Lab ID R-2025-045-001-002 Visual Description Light Brown Sandy Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf)	0.25-0.5
Final Reading (div)	968.8
Consolidometer No.	R-470
1 Division (in)	0.0001
Start Date	3/14/2025
Start Time	12:55:12

Elapsed Time (min)	Dial Reading (div)
Initial	946.3
0.05	953.2
0.10	955.8
0.15	957.3
0.20	958.1
0.25	958.8
0.30	959.3
0.45	960.7
0.55	961.7
1.05	961.8
2.30	962.8
4.05	963.5
9.05	964.2
16.05	964.1
25.05	964.6
36.05	965.5
49.05	965.4
64.05	966.0
81.05	966.3
100.05	966.9
121.07	967.2
144.07	967.3
180.07	968.1
300.07	967.5
420.35	968.8



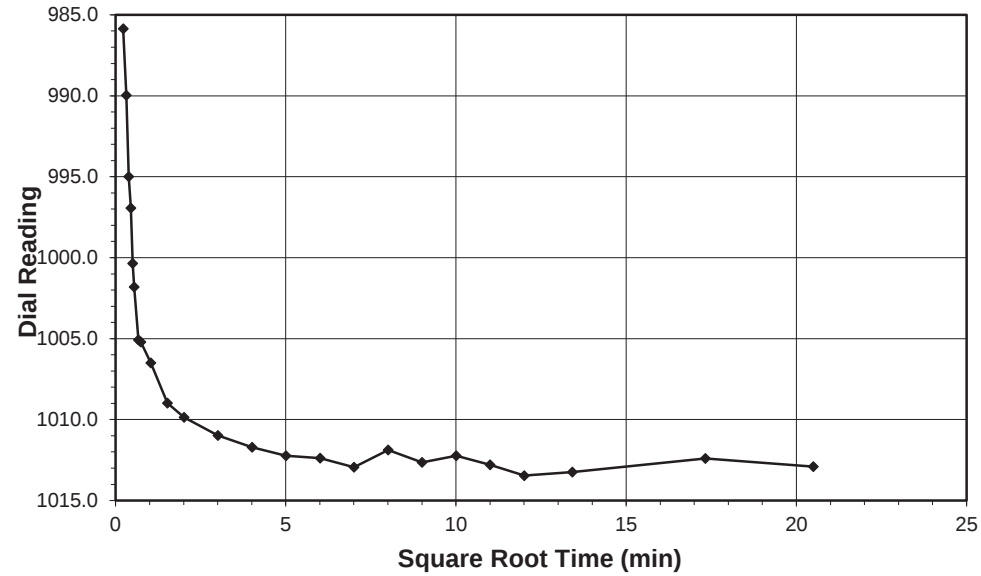
Tested By 129-02-0411 Date 3/14/2025 Checked By MPS Date 3/19/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



ClientFalcon EngineeringBoring No.R-06
Client ProjectG24075.00 (I-6011A)Depth (ft)9.6-11.6
Project No.R-2025-045-001Sample No.ST-2
Lab IDR-2025-045-001-002Visual DescriptionLight Brown Sandy Clay

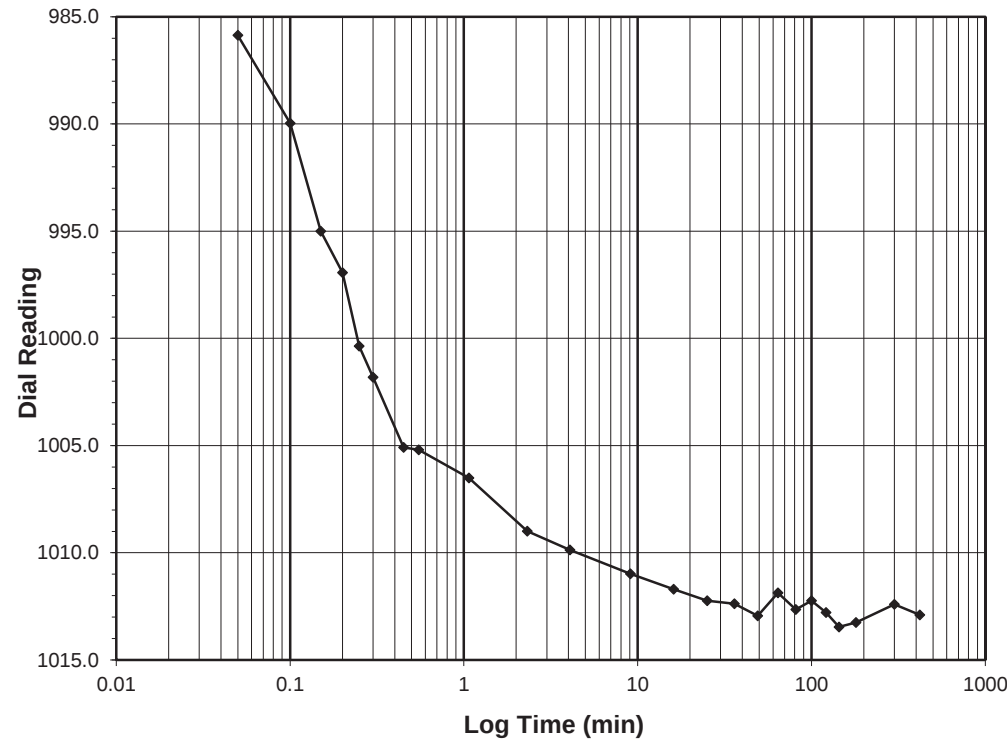
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.5-1.0
Final Reading (div) 1013.5
Consolidometer No. R-470
1 Division (in) 0.0001

Start Date 3/14/2025
Start Time 19:55:33

Elapsed Time (min)	Dial Reading (div)
Initial	968.8
0.05	985.9
0.10	990.0
0.15	995.0
0.20	996.9
0.25	1000.4
0.30	1001.8
0.35	1005.1
0.40	1005.2
0.45	1006.5
0.50	1009.0
0.55	1009.9
0.60	1011.0
0.65	1011.7
0.70	1012.2
0.75	1012.4
0.80	1012.9
0.85	1011.9
0.90	1012.6
0.95	1012.2
1.00	1012.8
1.05	1013.5
1.10	1013.2
1.15	1012.4
1.20	1012.9



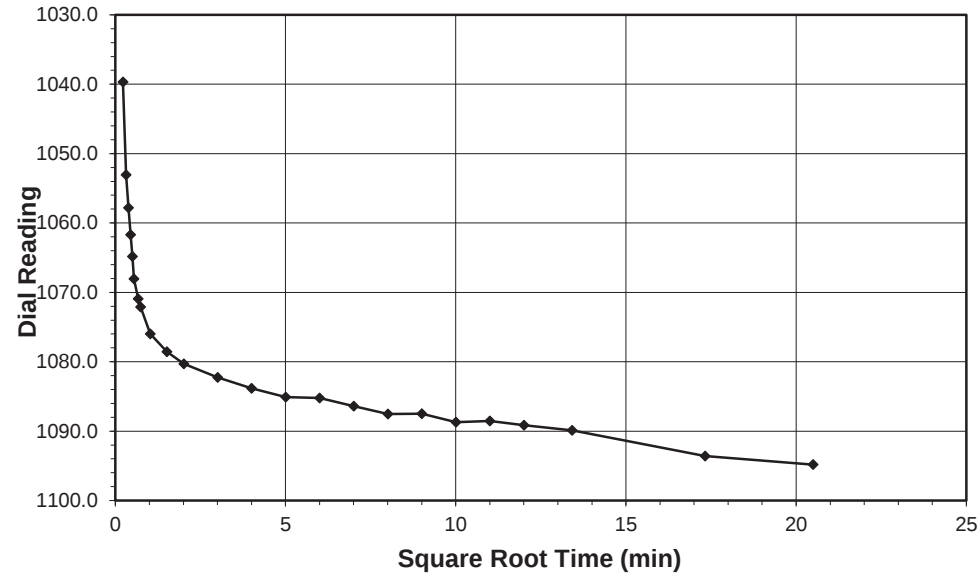
Tested By 129-02-0411 Date 3/14/2025 Checked By MPS Date 3/19/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



ClientFalcon EngineeringBoring No.R-06
Client ProjectG24075.00 (I-6011A)Depth (ft)9.6-11.6
Project No.R-2025-045-001Sample No.ST-2
Lab IDR-2025-045-001-002Visual DescriptionLight Brown Sandy Clay

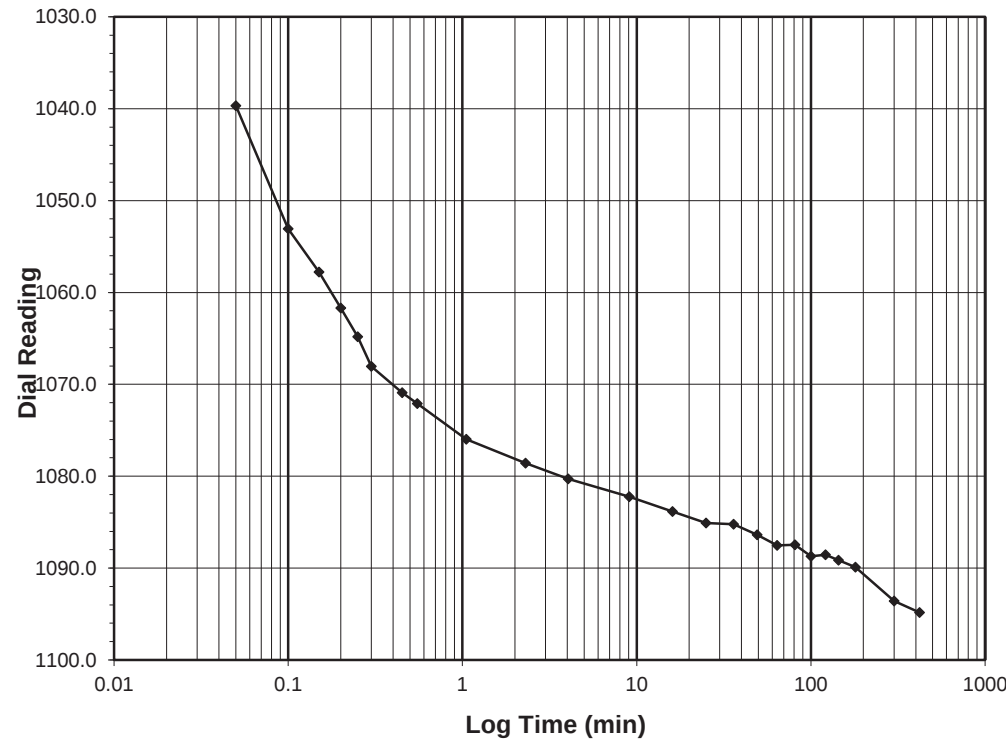
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
Final Reading (div) 1094.8
Consolidometer No. R-470
1 Division (in) 0.0001

Start Date 3/15/2025
Start Time 2:55:52

Elapsed Time (min)	Dial Reading (div)
Initial	1013.5
0.05	1039.7
0.10	1053.1
0.15	1057.8
0.20	1061.7
0.25	1064.8
0.30	1068.1
0.35	1070.9
0.40	1072.1
0.45	1076.0
0.50	1078.6
0.55	1080.3
0.60	1082.2
0.65	1083.8
0.70	1085.1
0.75	1085.2
0.80	1086.4
0.85	1087.5
0.90	1087.5
0.95	1088.7
1.00	1088.5
1.05	1089.2
1.10	1089.9
1.15	1093.6
1.20	1094.8



Tested By 129-02-0411 Date 3/15/2025 Checked By MPS Date 3/19/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-002

Boring No.

Depth (ft)

Sample No.

Visual Description

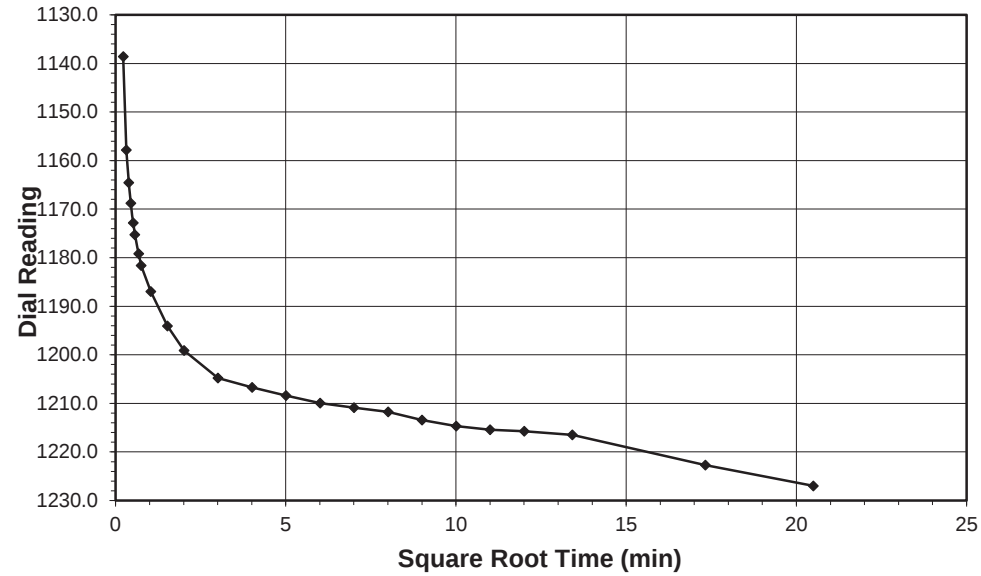
R-06

9.6-11.6

ST-2

Light Brown Sandy Clay

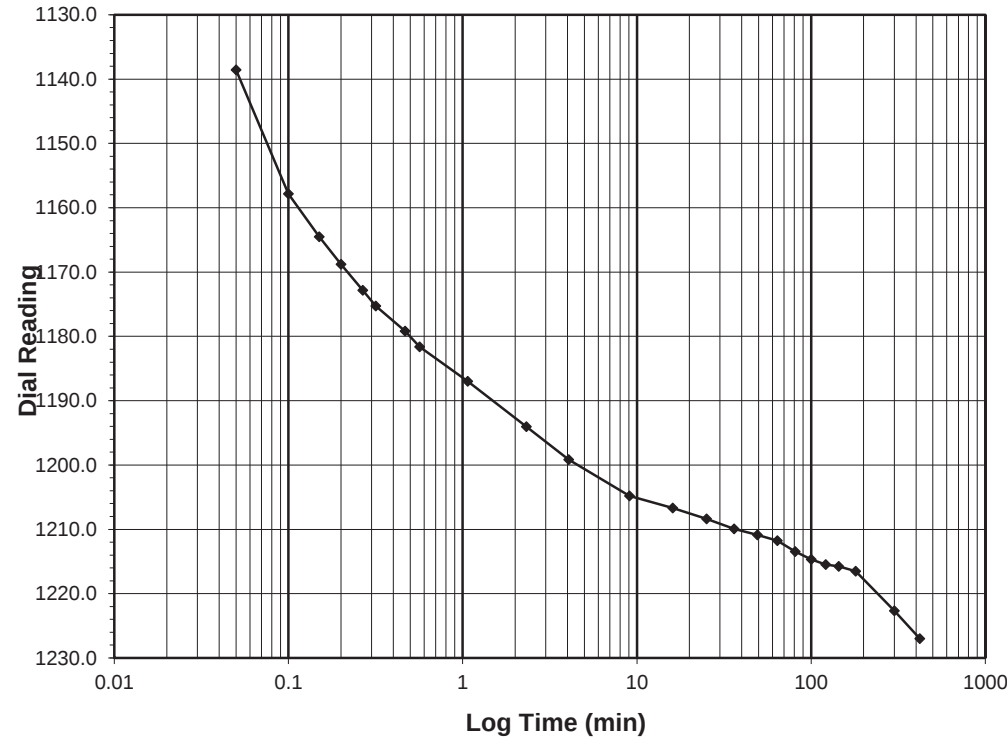
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-4.0
Final Reading (div) 1227.0
Consolidometer No. R-470
1 Division (in) 0.0001

Start Date 3/15/2025
Start Time 9:56:08

Elapsed Time (min)	Dial Reading (div)
Initial	1094.8
0.05	1138.6
0.10	1157.8
0.15	1164.5
0.20	1168.8
0.27	1172.9
0.32	1175.3
0.47	1179.2
0.57	1181.6
1.07	1187.0
2.32	1194.0
4.07	1199.1
9.07	1204.8
16.07	1206.7
25.07	1208.4
36.07	1209.9
49.07	1210.9
64.07	1211.8
81.07	1213.5
100.07	1214.7
121.07	1215.5
144.07	1215.7
180.07	1216.5
300.07	1222.7
420.08	1227.0



Tested By 129-02-0411 Date 3/15/2025 Checked By MPS Date 3/19/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-002

Boring No.

Depth (ft)

Sample No.

Visual Description

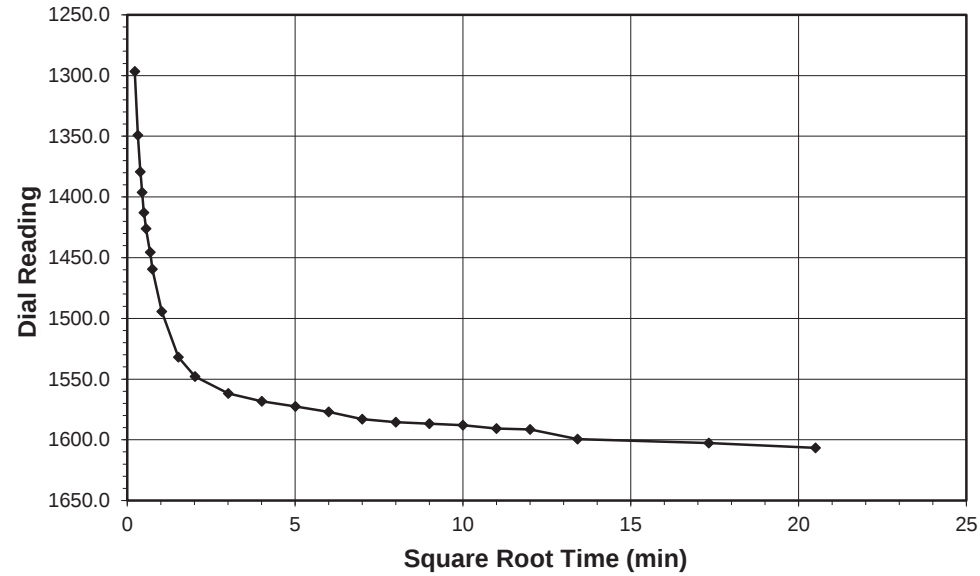
R-06

9.6-11.6

ST-2

Light Brown Sandy Clay

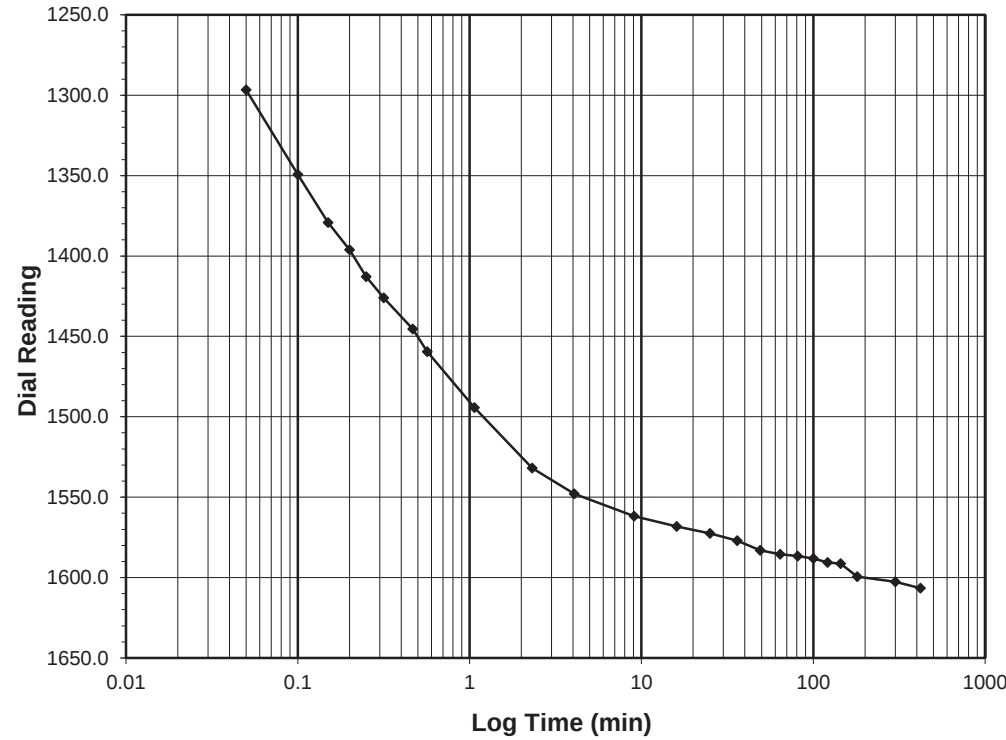
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-8.0
Final Reading (div) 1606.6
Consolidometer No. R-470
1 Division (in) 0.0001

Start Date 3/15/2025
Start Time 16:56:13

Elapsed Time (min)	Dial Reading (div)
Initial	1227.0
0.05	1296.7
0.10	1349.3
0.15	1379.2
0.20	1396.1
0.25	1412.8
0.32	1426.0
0.47	1445.5
0.57	1459.5
1.07	1494.3
2.32	1531.9
4.07	1548.0
9.07	1561.9
16.07	1568.2
25.07	1572.5
36.07	1577.0
49.07	1583.1
64.07	1585.5
81.07	1586.6
100.08	1588.1
121.08	1590.6
144.08	1591.3
180.08	1599.5
300.08	1602.6
420.33	1606.6



Tested By 129-02-0411 Date 3/15/2025 Checked By MPS Date 3/19/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-002

Boring No.

Depth (ft)

Sample No.

Visual Description

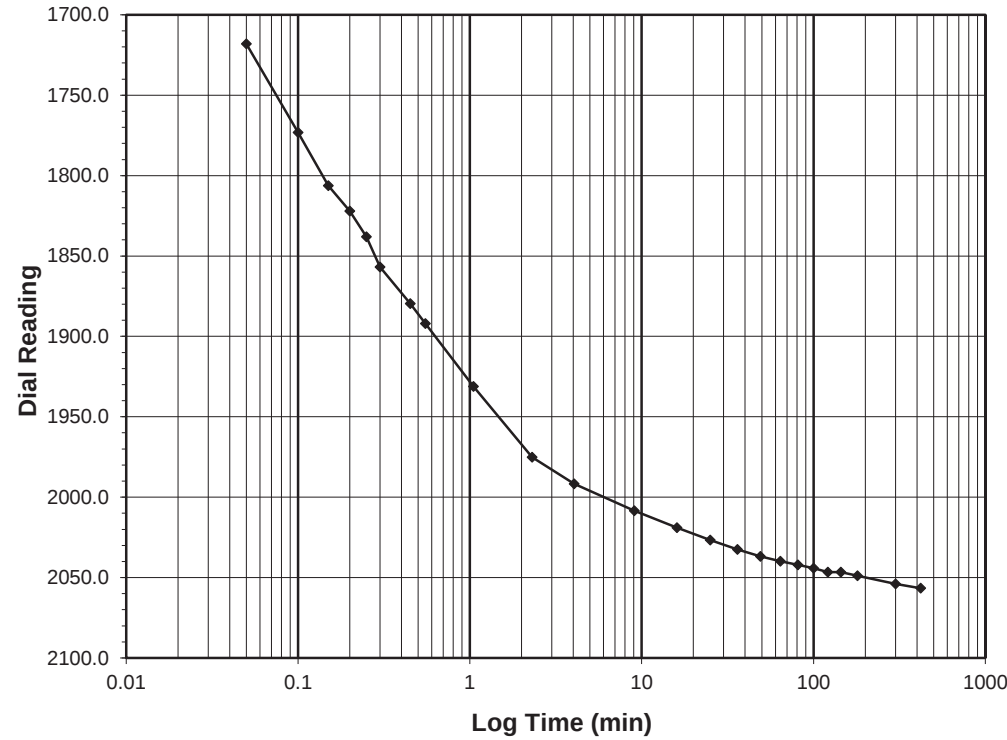
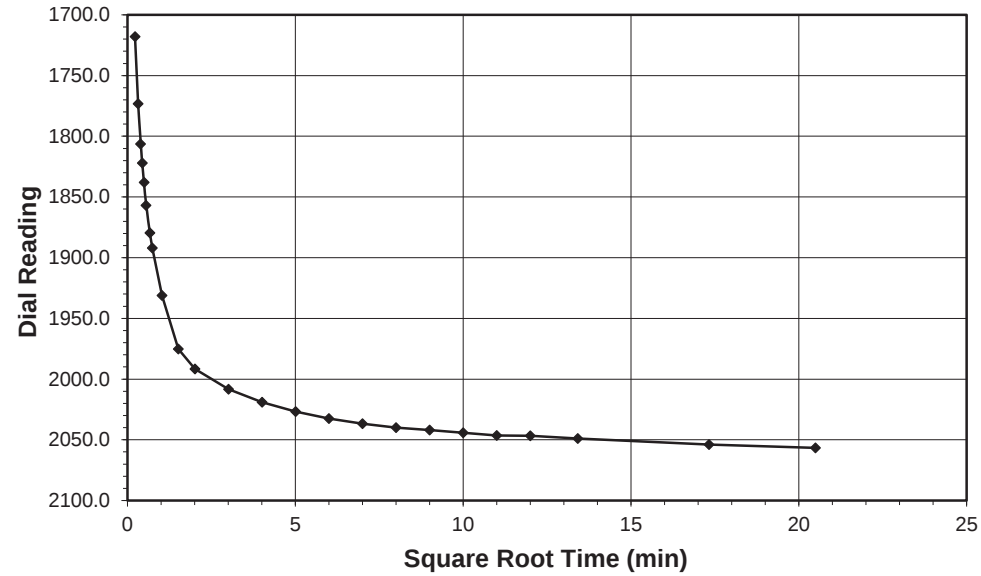
R-06

9.6-11.6

ST-2

Light Brown Sandy Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	(tsf)	8.0-16.0
Final Reading	(div)	2056.7
Consolidometer No.		R-470
1 Division	(in)	0.0001
Start Date		3/15/2025
Start Time		23:56:33

Elapsed Time (min)	Dial Reading (div)
Initial	1606.6
0.05	1718.0
0.10	1773.1
0.15	1806.3
0.20	1822.1
0.25	1838.1
0.30	1856.9
0.45	1879.6
0.55	1892.0
1.05	1931.1
2.30	1975.2
4.05	1991.7
9.05	2008.4
16.05	2019.0
25.07	2026.7
36.07	2032.6
49.07	2036.7
64.07	2039.9
81.07	2042.0
100.07	2044.2
121.07	2046.5
144.07	2046.7
180.07	2048.9
300.07	2053.9
420.27	2056.7

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-002

Boring No.

Depth (ft)

Sample No.

Visual Description

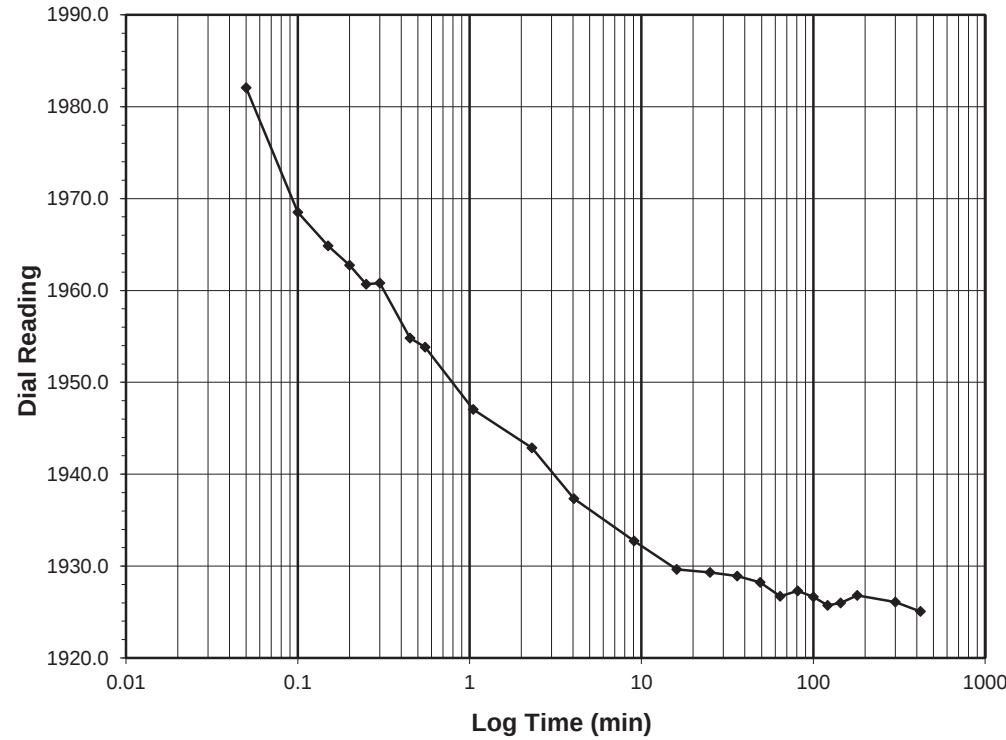
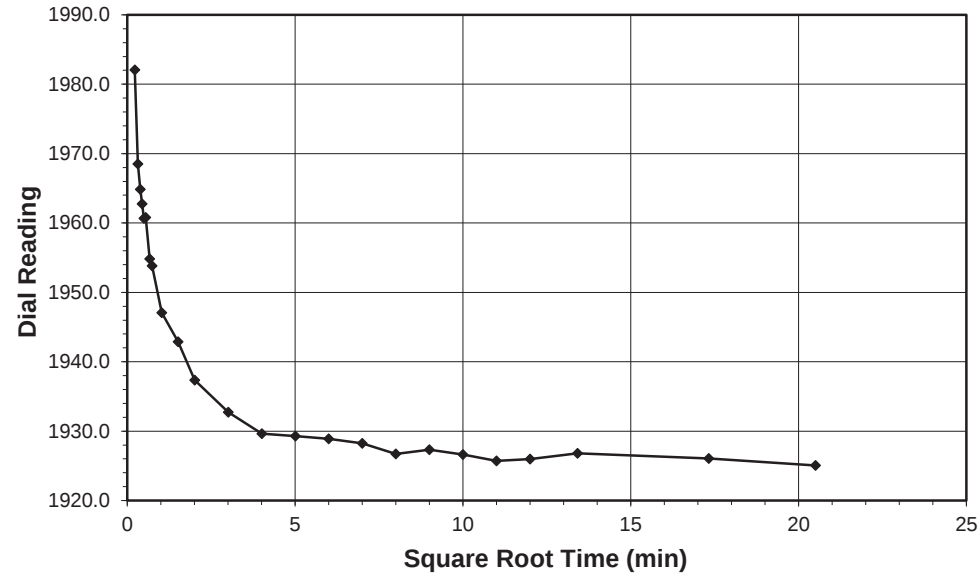
R-06

9.6-11.6

ST-2

Light Brown Sandy Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load	(tsf)	16.0-4.0
Final Reading	(div)	1925.1
Consolidometer No.		R-470
1 Division	(in)	0.0001
Start Date		3/16/2025
Start Time		6:56:49

Elapsed Time (min)	Dial Reading (div)
Initial	2056.7
0.05	1982.1
0.10	1968.5
0.15	1964.8
0.20	1962.8
0.25	1960.7
0.30	1960.8
0.45	1954.8
0.55	1953.8
1.05	1947.1
2.30	1942.9
4.05	1937.3
9.07	1932.7
16.07	1929.7
25.07	1929.3
36.07	1928.9
49.07	1928.2
64.07	1926.7
81.07	1927.3
100.07	1926.6
121.07	1925.7
144.07	1926.0
180.07	1926.8
300.07	1926.1
420.32	1925.1

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-002

Boring No.

Depth (ft)

Sample No.

Visual Description

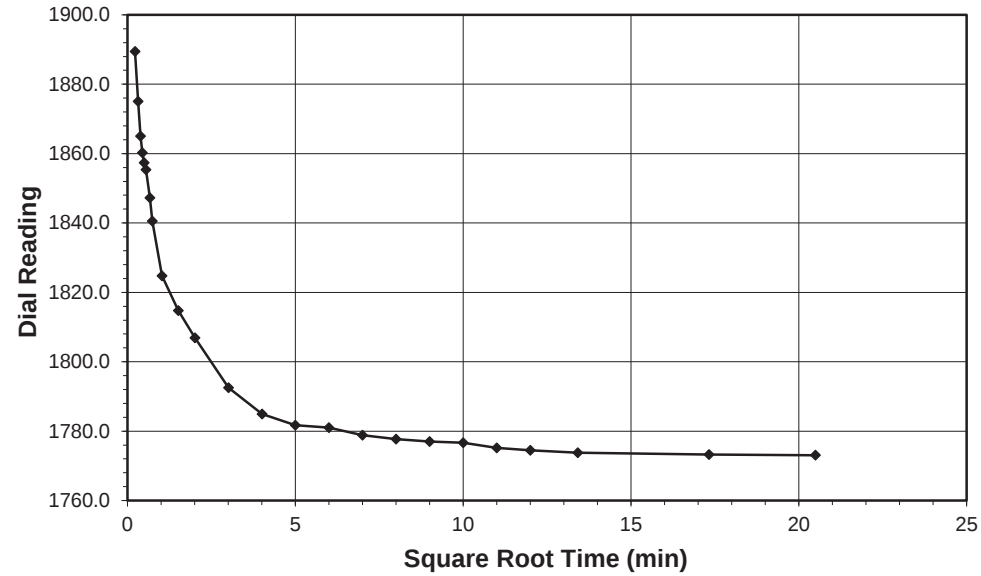
R-06

9.6-11.6

ST-2

Light Brown Sandy Clay

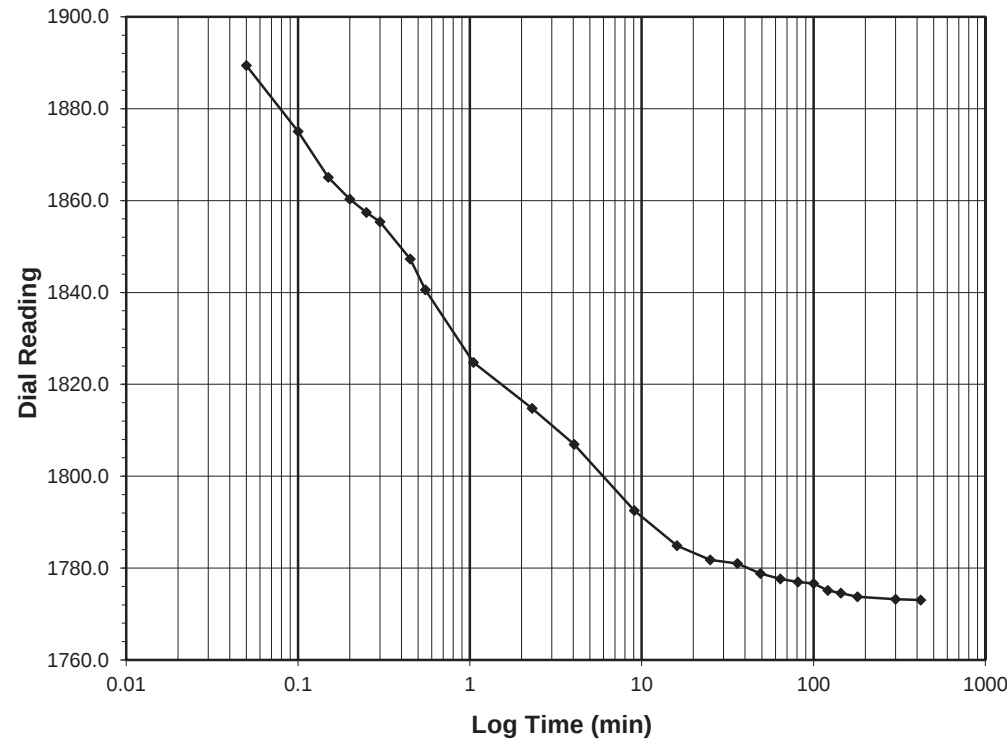
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-1.0
Final Reading (div) 1773.0
Consolidometer No. R-470
1 Division (in) 0.0001

Start Date 3/16/2025
Start Time 13:57:08

Elapsed Time (min)	Dial Reading (div)
Initial	1925.1
0.05	1889.4
0.10	1875.0
0.15	1865.0
0.20	1860.3
0.25	1857.4
0.30	1855.4
0.45	1847.3
0.55	1840.6
1.05	1824.8
2.30	1814.7
4.05	1806.9
9.05	1792.5
16.05	1784.9
25.05	1781.8
36.05	1781.0
49.05	1778.8
64.05	1777.7
81.05	1777.0
100.05	1776.6
121.05	1775.2
144.05	1774.5
180.05	1773.7
300.07	1773.2
420.13	1773.0



Tested By 129-02-0411 Date 3/16/2025 Checked By MPS Date 3/19/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-002

Boring No.

Depth (ft)

Sample No.

Visual Description

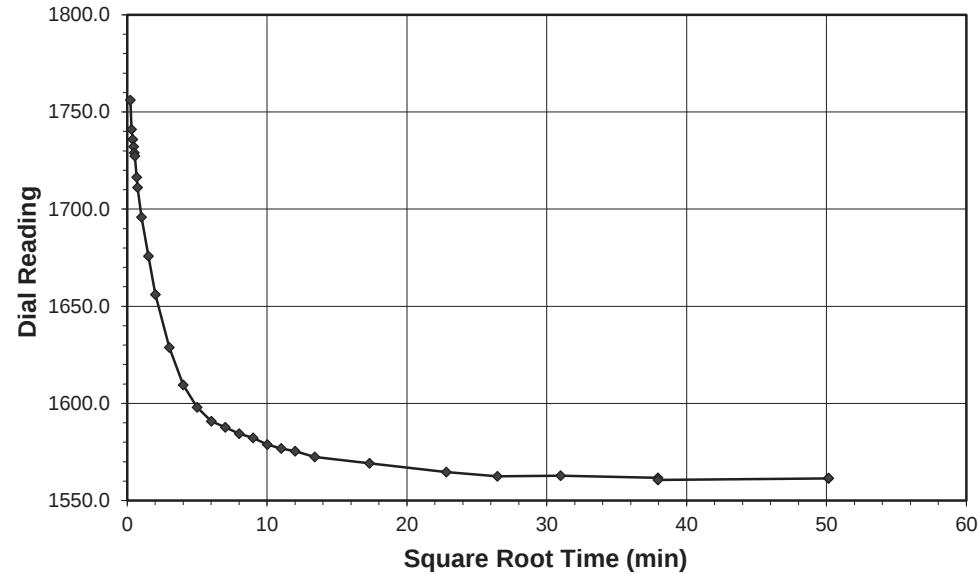
R-06

9.6-11.6

ST-2

Light Brown Sandy Clay

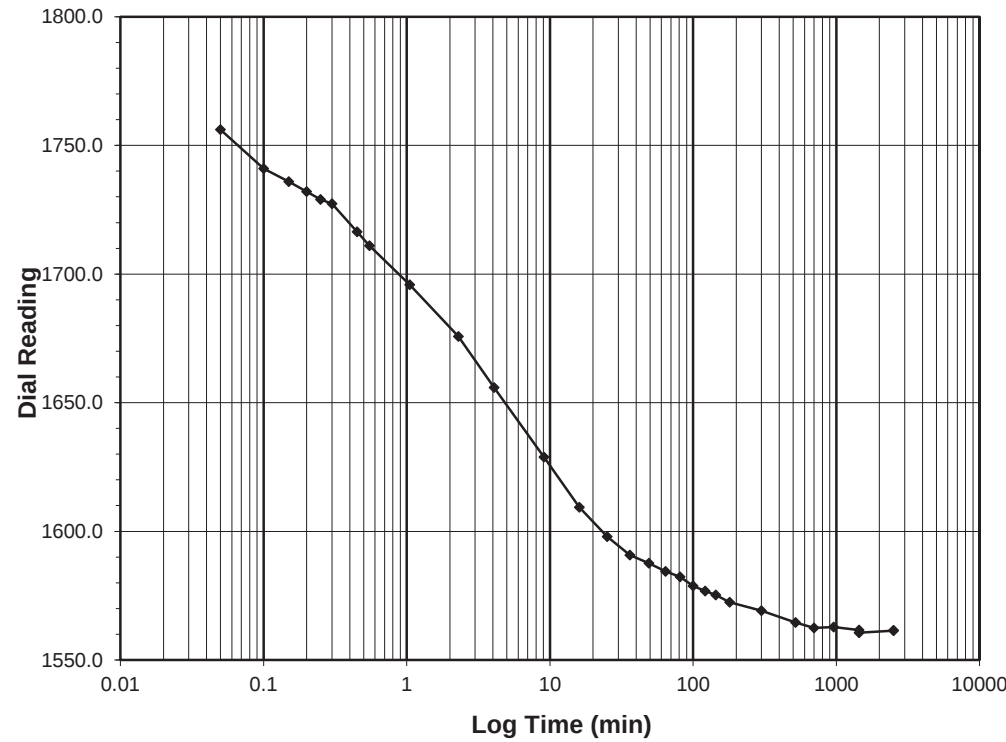
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-0.25
Final Reading (div) 1560.6
Consolidometer No. R-470
1 Division (in) 0.0001

Start Date 3/16/2025
Start Time 20:57:16

Elapsed Time (min)	Dial Reading (div)
Initial	1773.0
0.05	1756.1
0.10	1741.0
0.15	1735.9
0.20	1732.1
0.25	1729.0
0.30	1727.4
0.45	1716.5
0.55	1711.0
1.05	1695.8
2.30	1675.8
4.07	1655.9
9.07	1628.8
16.07	1609.4
25.07	1597.9
36.07	1590.8
49.07	1587.7
64.07	1584.4
81.07	1582.3
100.07	1578.8
121.07	1576.8
144.07	1575.3
180.07	1572.4
300.07	1569.1
520.07	1564.6
700.07	1562.5
960.08	1562.8
1440.08	1561.6
1440.13	1560.6
2514.75	1561.4
2514.78	1561.5



Tested By 129-02-0411 Date 3/16/2025 Checked By MPS Date 3/19/2025



SIEVE AND HYDROMETER ANALYSIS
NCDOT MOD. AASHTO T-88,

Client

Falcon Engineering

Client Reference

G24075.00 (I-6011A)

Project No.

R-2025-045-001

Lab ID

R-2025-045-001-002

Boring No.

R-06

Depth (ft)

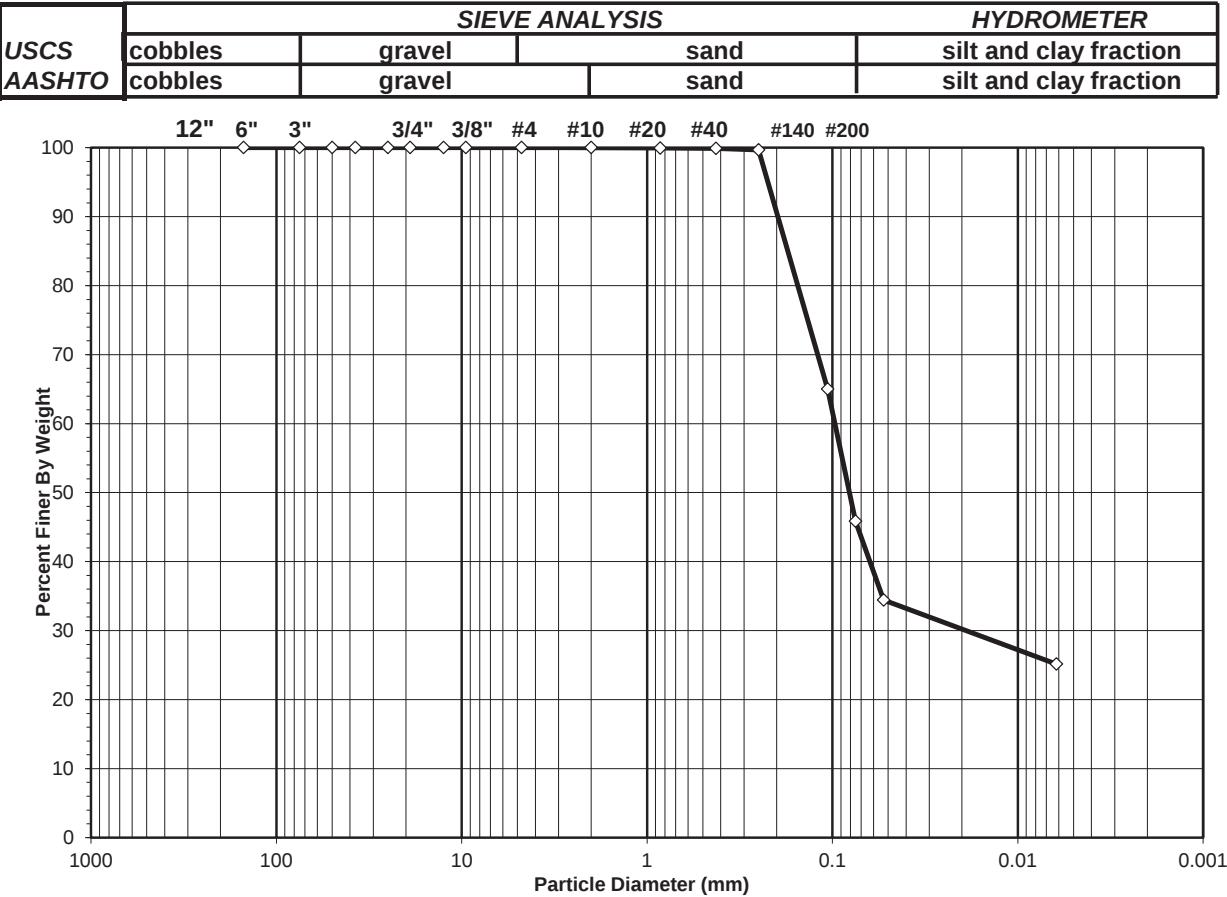
9.6-11.6

Sample No.

ST-2

Soil Color

Light Brown



Sieve Size (mm)	Percent Finer	USCS %		AASHTO %		NCDOT SOIL MORTAR %	
100	100.00	Gravel	0.00	Gravel	0.00	Coarse Sand Ret. #60	0.33
2	100.00	Sand	54.15	Coarse Sand	0.12	Fine Sand Ret. #270	65.24
0.075	45.85	Silt&Clay	45.85	Fine Sand	54.03	Silt 0.05-0.005mm	9.29
				Silt & Clay	45.85	Clay <0.005mm	25.15
AASHTO (GI)		A-6 (4)					



WASH SIEVE ANALYSIS
NCDOT MOD. AASHTO T-88,

Client

Falcon Engineering

Client Reference

G24075.00 (I-6011A)

Project No.

R-2025-045-001

Lab ID

R-2025-045-001-002

Boring No.

R-06

Depth (ft)

9.6-11.6

Sample No.

ST-2

Soil Color

Light Brown

Minus #10 for Hygroscopic (10-15gm)		Hydrometer Specimen 50 or 100gms	
Tare No.	A-1	Air Dried Hydrometer Material (gm)	74.82
Wgt.Tare + Wet Specimen (gm)	30.06	Corrected Dry Wt. of Hydro Mtrl. (gm)	73.70
Wgt.Tare + Dry Specimen (gm)	29.84		
Weight of Tare (gm)	15.34	Weight of -#270 Material	25.38
Weight of Water (gm)	0.22	Weight of -#10; +#270 Material	48.32
Weight of Dry Soil (gm)	14.50		
Moisture Content (%)	1.5		

Tare No.	405		
Wgt. Tare + Air Dry Soil (gm)	470.88	Dry Weight of Material Ret. #10 (gm)	0.00
Weight of Tare (gm)	147.38	Corrected Dry Sample Wt - #10 (gm)	318.67
Air Dried Wgt.Total Sample (gm)	323.50		
Total Dry Weight Sample (gm)	318.7	J - Factor (Percent Finer than #10)	1.0000

Sieve Size	Sieve Opening (mm)	Wgt.of Soil Retained (gm)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.5	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.00	0.00	0.00	100.00	100.00
#20	0.85	0.06	0.08	0.08	99.92	99.92
#40	0.425	0.03	0.04	0.12	99.88	99.88
#60	0.25	0.15	0.20	0.33	99.67	99.67
#140	0.106	25.54	34.65	34.98	65.02	65.02
#200	0.075	14.13	19.17	54.15	45.85	45.85
#270	0.053	8.41	11.41	65.56	34.44	34.44
Pan	-	25.38	34.44	100.00	-	-

Tested By 129-02-0411 Date 3/28/25 Checked By AES Date 3/31/25



HYDROMETER ANALYSIS
NCDOT MOD. AASHTO T-88,

Client

Client Reference

Project No.

Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-002

Boring No.

Depth (ft)

Sample No.

Soil Color

R-06
9.6-11.6
ST-2
Light Brown

Elapsed Time (min)		R Measured	Temp. (° C)	Composite Correction	R Corrected	N (%)	K Factor	Diameter (mm)	N' (%)
7:57:00	0	NA	NA	NA	NA	NA	NA	NA	NA
7:57:33	0.55	36.0	20.5	-1.70	31.7	42.8	0.01348	0.0586	42.8
8:57:00	60.00	23.0	20.1	-1.61	18.6	25.1	0.01355	0.0062	25.1

Corrections
a - Factor0.996
Percent Finer than # 10100.00
Specific Gravity2.67 Measured

Note: Hydrometer test is performed on - #10 sieve material.

LL

PL

PI

=

38

21

17

Tested By129-02-0411

Date3/27/25

Checked ByAES

Date3/31/25

page 3 of 3DCN: CT-S3Y DATE: 3/27/25 REVISION: 22025-045 - G24075.00 (I-6011A)\2025-045-001\2025-045-001-002 Grain SIEVEHYD10 NCDOT.xlsmData1



ATTERBERG LIMITS
AASHTO T-89, T-90 (DOT Modified)

Client

Client Reference

Project No.

Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-002

Boring No.

Depth (ft)

Sample No.

Soil Description

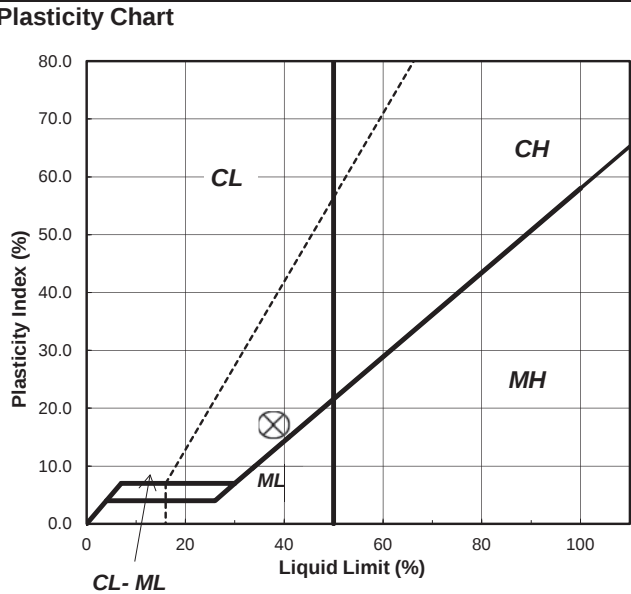
R-06
9.6-11.6
ST-2
LIGHT BROWN LEAN CLAY
(Minus No. 40 sieve material, Airdried)

Note: The USCS symbol used with this test refers only to the minus No. 40 sieve material. See the "Sieve and Hydrometer Analysis" graph page for the complete material description .

Liquid Limit Test	1
Tare Number	U
Wt. of Tare & WS (gm)	32.01
Wt. of Tare & DS (gm)	27.35
Wt. of Tare (gm)	15.07
Wt. of Water (gm)	4.7
Wt. of DS (gm)	12.3
Moisture Content (%)	37.9
Number of Blows	25

Plastic Limit Test	1	2	Range	Test Results
Tare Number	23	14		Liquid Limit (%)38
Wt. of Tare & WS (gm)	15.94	15.88		Plastic Limit (%)21
Wt. of Tare & DS (gm)	14.39	14.36		Plasticity Index (%)17
Wt. of Tare (gm)	7.04	6.98		USCS SymbolCL
Wt. of Water (gm)	1.6	1.5		
Wt. of DS (gm)	7.4	7.4		
Moisture Content (%)	21.1	20.6	0.5	

Note: The acceptable range of the two Moisture contents is ± 2.6



Tested By129-02-0411

Date3/21/25

Checked ByAES

Date3/24/25

page 1 of 1DCN: CT-S4B DATE: 10/8/01 REVISION: 2



SPECIFIC GRAVITY
ASTM D 854-14

Client:
Client Reference:
Project No.:
Lab ID:

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-002

Boring No.: R-06
Depth (ft): 9.6-11.6
Sample No.: ST-2
Visual Description: Light Brown Sandy Clay

(Minus No.4 sieve material,oven dried)

Replicate Number	1	2
Pycnometer ID:	R 543	R 544
Weight of Pycnometer & Soil & Water (g):	692.82	695.33
Temperature (°C):	22.4	22.9
Weight of Pycnometer & Water (g):	661.36	663.78
Tare Number:	543	544
Weight of Tare & Dry Soil (g):	213.52	216.21
Weight of Tare (g):	163.17	165.86
Weight of Dry Soil (g):	50.35	50.35
Specific Gravity of Soil @ Measured Temperature:	2.665	2.679
Specific Gravity of Water @ Measured Temperature:	0.99768	0.99757
Conversion Factor for Measured Temperature:	0.99948	0.99936
Specific Gravity @ 20° Celsius:	2.666	2.681

Average Specific Gravity @ 20° Celsius2.67

Tested By 129-02-0411Date 3/18/25Checked By AESDate 3/18/25

page 1 of 1DCN: CT-S5DATE: 3/26/18REVISION: 21



SHELBY TUBE UNIT WEIGHT
ASTM D7263-09

Client
Client Reference
Project No.
Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-002

Boring No.: R-06
Depth Pushed (ft): 9.6-11.6
Shelby Tube No.: ST-2
Recovery (ft): 2.0'

MOISTURE CONTENT

Tare Number	9-A
Wt. Tare & WS (g)	461.93
Wt. Tare & DS (g)	368.90
Wt. Tare (g)	90.58
Moisture Content (%)	33.43

UNIT WEIGHT	
Wt. Tube & WS. (g)	1303.10
Wt. Of Tube (g)	0.00
Wt. Of WS. (g)	1303.10
Length 1 (in.)	6.928
Length 2 (in.)	7.022
Length 3 (in.)	6.923
Top Diameter (in.)	2.751
Middle Diameter (in.)	2.818
Bottom Diameter (in.)	2.831
Sample Volume (cc)	702.05
Moisture Content(%)	33.43
Unit Wet Wt .(g/cc)	1.86
Unit Wet Wt. (pcf)	115.82
Unit Dry Wt. (g/cc)	1.39
Unit Dry Wt. (pcf)	86.8

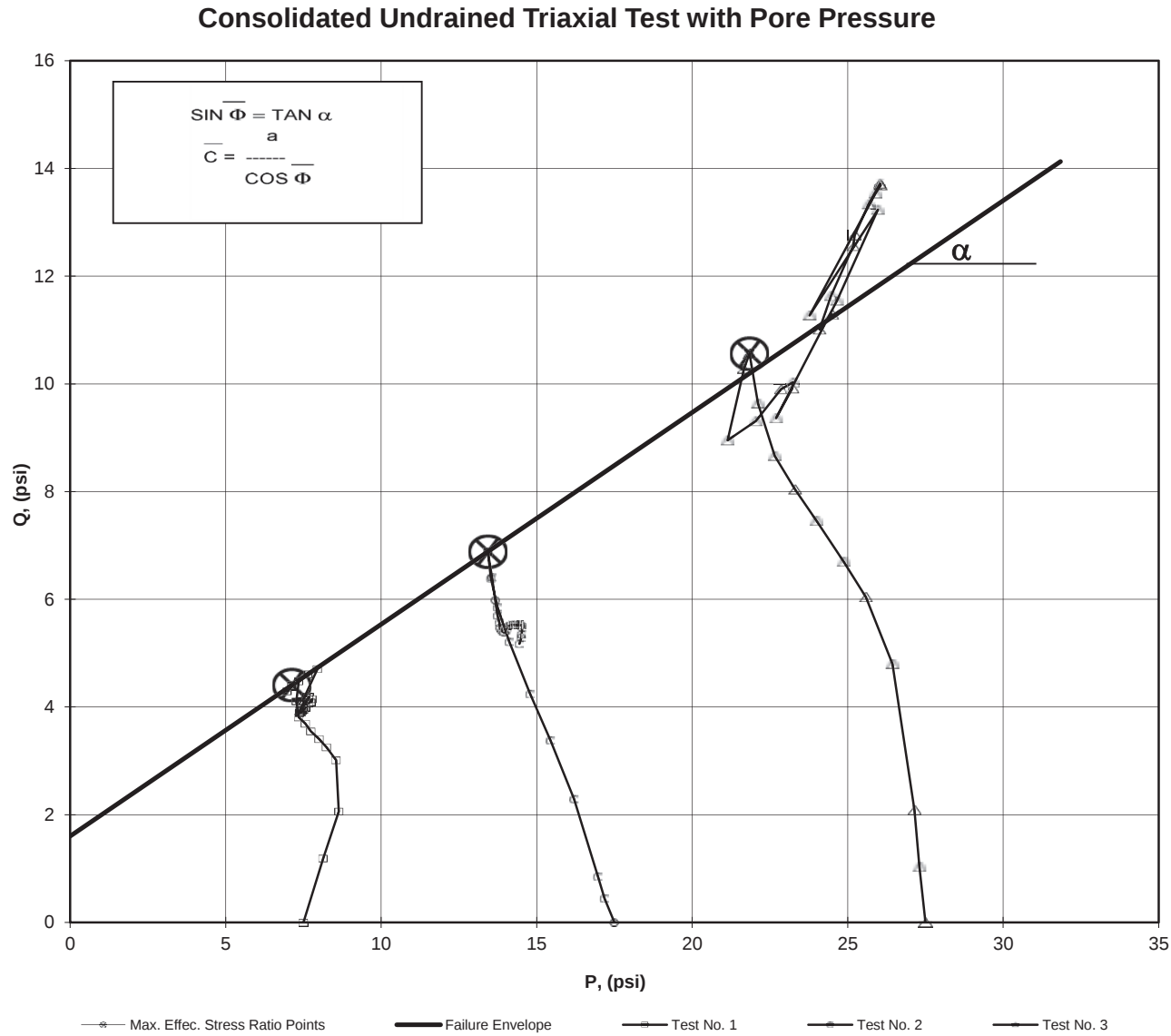
Tested By DLDate 3/19/25Checked By AESDate 3/21/25

page 1 of 1DCN: CT-S37A DATE: 1/7/15 REVISION: 1e



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

Client:	Falcon Engineering	Boring No.:	R-07
Client Reference:	G24075.00 (I-6011A)	Depth (ft):	9.8-11.8
Project No.:	R-2025-045-001	Sample No.:	ST-3
Lab ID:	R-2025-045-001-003		



a	=	1.60	$\overline{C}$	=	1.74
α	=	21.5	$\overline{\Phi}$	=	23.17

Tested By: 129-02-0411 Date: 3/14/25 Approved By: MPS Date: 3/21/25

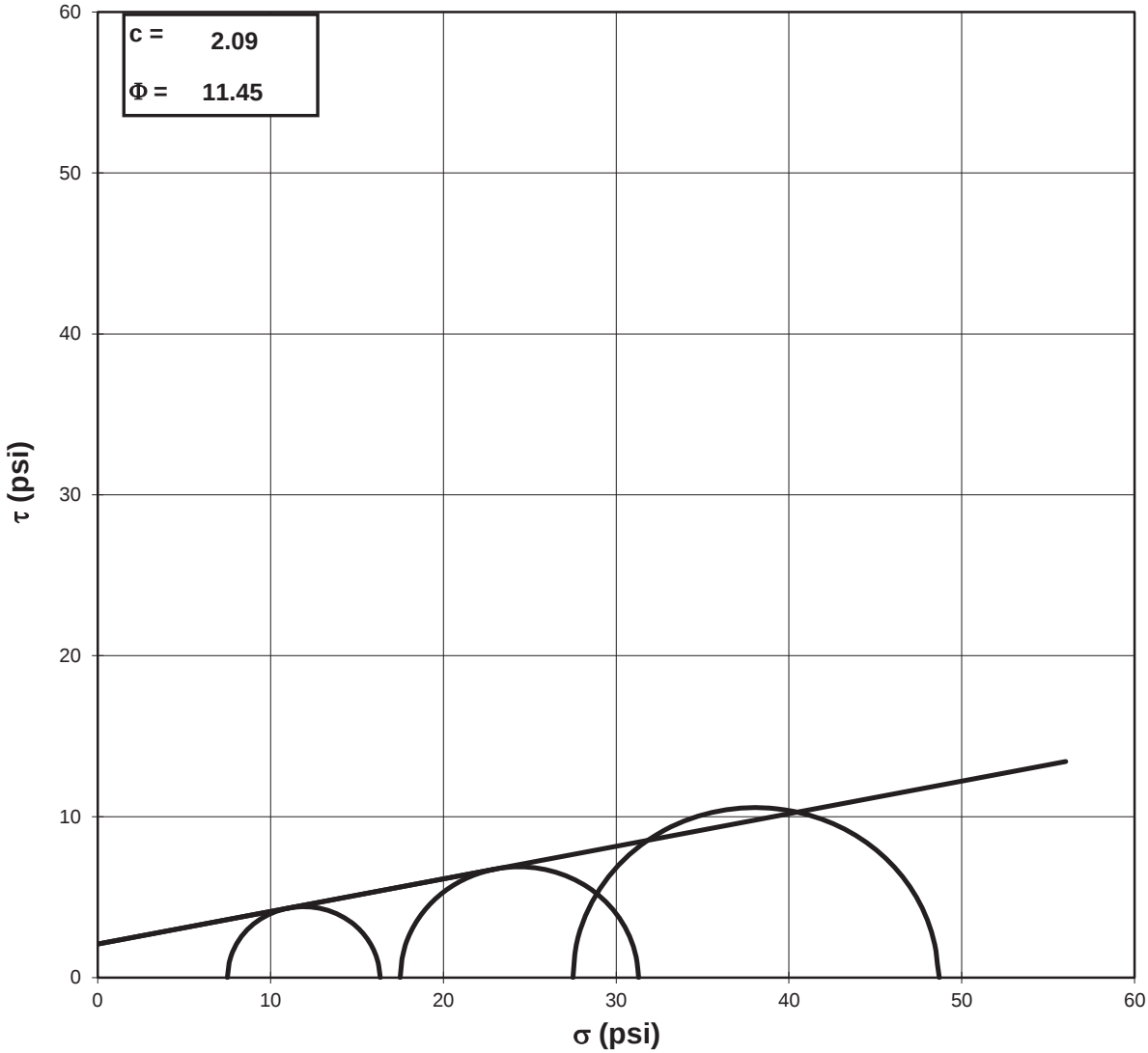
page 1 of 10 DCN: CT-S28 DATE: 4/12/13 REVISION: 3 Sigmatrax.xls

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MOHR TOTAL STRENGTH ENVELOPE
AASHTO T-297

Client:	Falcon Engineering	Boring No.:	R-07
Client Reference:	G24075.00 (I-6011A)	Depth (ft):	9.8-11.8
Project No.:	R-2025-045-001	Sample No.:	ST-3
Lab ID:	R-2025-045-001-003		
Visual Description:	Brown Clay (UNDISTURBED)		



Failure Based on Maximum Effective Principal Stress Ratio NOTE: GRAPH NOT TO SCALE

Tested By: 129-02-0411 Date: 3/14/25 Approved By: MPS Date: 3/21/25

page 2 of 10 DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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



Client: Falcon Engineering

Client Reference: G24075.00 (I-6011A)

Project No.: R-2025-045-001

Lab ID: R-2025-045-001-003

Boring No.: R-07

Depth (ft): 9.8-11.8

Sample No.: ST-3

Visual Description: Brown Clay (UNDISTURBED)

Stage No.	1
Test No.	1

PRESSURES (psi)

Cell Pressure (psi)

Back Pressure (psi)

Eff. Conf. Pressure (psi)

Pore Pressure

Response (%)

67.5

60.0

7.5

98

MAXIMUM OBLIQUITY POINTS

$\overline{P}$

=

7.13

Q

=

4.41

INITIAL SAMPLE DIMENSIONS (in)

Length 1:

Length 2:

Length 3:

Length 4:

Avg. Length:

6.228

6.279

6.193

6.264

6.241

Diameter 1:

Diameter 2:

Diameter 3:

Diameter 4:

Avg. Diam.:

2.835

2.796

2.840

2.795

2.817

VOLUME CHANGE

Initial Burette Reading (ml)

Final Burette Reading (ml)

Final Change (ml)

24.0

5.5

18.5

Initial Dial Reading (mil)

Dial Reading After Saturation (mil)

Dial Reading After Consolidation (mil)

193

201

299

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
16.2	0.000	60.0
30.8	0.001	60.5
41.5	0.002	60.9
53.2	0.008	62.0
56.2	0.014	62.5
58.1	0.020	62.9
59.9	0.029	63.3
61.7	0.038	63.6
63.3	0.051	64.0
67.1	0.072	64.3
71.9	0.103	64.6
71.5	0.140	64.8
70.4	0.177	64.8
71.9	0.220	64.8
73.5	0.251	64.6
75.5	0.294	64.5
77.4	0.353	64.3
70.3	0.414	64.1
71.8	0.461	64.1
69.0	0.522	64.0
68.7	0.568	64.0
73.2	0.614	64.0
70.5	0.660	64.0
70.1	0.691	64.0
70.4	0.722	64.0
71.3	0.752	63.9
72.2	0.784	63.9
73.8	0.830	63.9
75.5	0.876	63.9
75.0	0.907	63.8
75.5	0.937	63.8

Tested By: 129-02-0411

Date: 3/14/25

Input Checked By: MPS

Date: 3/21/25

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



Client: Falcon Engineering

Client Reference: G24075.00 (I-6011A)

Project No.: R-2025-045-001

Lab ID: R-2025-045-001-003

Boring No.: R-07

Depth (ft): 9.8-11.8

Sample No.: ST-3

Visual Description: Brown Clay (UNDISTURBED)

Effective Confining Pressure (psi)	7.5	Stage No.	1
		Test No	1

INITIAL DIMENSIONS

Initial Sample Length (in)

Initial Sample Diameter (in)

Initial Sample Area (in²)

Initial Sample Volume (in³)

6.24

2.82

6.23

38.88

VOLUME CHANGE

Volume After Consolidation (in³)

Length After Consolidation (in)

Area After Consolidation (in²)

37.60

6.14

6.130

Strain (%)	Deviator Stress PSI	ΔU	$\overline{\sigma}_1$	$\overline{\sigma}_3$	Effective Principal Stress Ratio	$\overline{A}$	$\overline{P}$	Q
---------------	---------------------------	------------	-----------------------	-----------------------	-------------------------------------	----------------	----------------	---

0.02	2.37	0.55	9.32	7.0	1.342	0.24	8.14	1.19
0.04	4.12	0.92	10.70	6.6	1.627	0.23	8.64	2.06
0.14	6.03	1.96	11.57	5.5	2.090	0.33	8.55	3.02
0.22	6.51	2.51	11.49	5.0	2.305	0.39	8.24	3.25
0.33	6.81	2.90	11.41	4.6	2.479	0.43	8.01	3.40
0.48	7.10	3.31	11.29	4.2	2.694	0.48	7.74	3.55
0.62	7.38	3.63	11.25	3.9	2.906	0.50	7.56	3.69
0.83	7.61	3.95	11.16	3.5	3.146	0.53	7.35	3.81
1.18	8.21	4.33	11.38	3.2	3.594	0.54	7.27	4.11
1.69	8.94	4.62	11.82	2.9	4.109	0.53	7.35	4.47
2.28	8.82	4.77	11.54	2.7	4.233	0.55	7.13	4.41
2.88	8.59	4.81	11.28	2.7	4.193	0.57	6.98	4.29
3.59	8.76	4.75	11.51	2.7	4.191	0.55	7.13	4.38
4.09	8.97	4.63	11.84	2.9	4.125	0.53	7.35	4.48
4.79	9.22	4.46	12.26	3.0	4.032	0.49	7.65	4.61
5.75	9.41	4.25	12.65	3.2	3.898	0.46	7.95	4.70
6.75	8.23	4.14	11.59	3.4	3.448	0.51	7.47	4.11
7.51	8.39	4.10	11.79	3.4	3.471	0.50	7.59	4.20
8.51	7.88	4.05	11.33	3.5	3.284	0.52	7.39	3.94
9.26	7.77	4.01	11.26	3.5	3.226	0.53	7.38	3.88
10.01	8.37	4.01	11.86	3.5	3.396	0.49	7.68	4.18
10.76	7.90	3.99	11.41	3.5	3.253	0.52	7.46	3.95
11.27	7.80	3.98	11.32	3.5	3.216	0.52	7.42	3.90
11.77	7.80	3.96	11.34	3.5	3.203	0.52	7.44	3.90
12.26	7.89	3.93	11.45	3.6	3.213	0.51	7.51	3.94
12.77	7.98	3.92	11.55	3.6	3.230	0.50	7.56	3.99
13.53	8.12	3.89	11.73	3.6	3.253	0.49	7.67	4.06
14.28	8.29	3.86	11.93	3.6	3.276	0.47	7.79	4.14
14.78	8.17	3.83	11.84	3.7	3.228	0.48	7.76	4.09
15.28	8.19	3.81	11.88	3.7	3.219	0.47	7.79	4.10

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



Client: Falcon Engineering Boring No.: R-07
Client Reference: G24075.00 (I-6011A) Depth (ft): 9.8-11.8
Project No.: R-2025-045-001 Sample No.: ST-3
Lab ID: R-2025-045-001-003

Visual Description: Brown Clay (UNDISTURBED)

Stage No.	1
Test No.	2

INITIAL SAMPLE DIMENSIONS (in)			
Length 1:	6.094	Diameter 1:	2.857
Length 2:	6.095	Diameter 2:	2.860
Length 3:	6.154	Diameter 3:	2.863
Length 4:	6.129	Diameter 4:	2.849
Avg. Length	6.118	Avg. Diam.:	2.857

PRESSURES (psi)

Cell Pressure (psi)	77.5
Back Pressure (psi)	60.0
Eff. Conf. Pressure (psi)	17.5
Pore Pressure	
Response (%)	98

VOLUME CHANGE	
Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	0.6
Final Change (ml)	23.4

MAXIMUM OBLIQUITY POINTS

$\bar{P}$	=	13.43	Initial Dial Reading (mil)	329
$\bar{Q}$	=	6.88	Dial Reading After Saturation (mil)	300
			Dial Reading After Consolidation (mil)	420

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
19.0	0.000	60.1
24.7	0.001	60.8
29.8	0.003	61.4
48.2	0.009	63.6
62.2	0.015	65.4
73.2	0.021	67.0
85.6	0.031	68.6
94.0	0.039	69.6
101.0	0.051	70.4
107.7	0.073	71.0
102.0	0.104	70.3
96.9	0.140	69.8
93.7	0.176	69.5
92.5	0.220	69.3
91.6	0.250	69.1
91.4	0.293	69.0
91.8	0.351	68.9
93.2	0.412	68.9
93.8	0.458	68.9
95.7	0.519	68.9
96.6	0.564	68.9
97.3	0.610	68.8
97.8	0.655	68.7
98.3	0.686	68.6
98.7	0.717	68.5
99.3	0.747	68.5
99.0	0.777	68.4
97.8	0.824	68.3
97.6	0.870	68.3
96.4	0.900	68.2
95.8	0.931	68.2

Tested By: 129-02-0411 Date: 3/14/25 Input Checked By: MPS Date: 3/21/25

page 5 of 10 DCN: CT-S28 DATE: 4/12/13 REVISION: 3

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



Client: Falcon Engineering Boring No.: R-07
Client Reference: G24075.00 (I-6011A) Depth (ft): 9.8-11.8
Project No.: R-2025-045-001 Sample No.: ST-3
Lab ID: R-2025-045-001-003

Visual Description: Brown Clay (UNDISTURBED)

Effective Confining Pressure (psi)	17.5	Stage No.	1
		Test No	2

INITIAL DIMENSIONS

Initial Sample Length (in)	6.12
Initial Sample Diameter (in)	2.86
Initial Sample Area (in ²)	6.41
Initial Sample Volume (in ³)	39.23

VOLUME CHANGE

Volume After Consolidation (in ³)	38.36
Length After Consolidation (in)	6.03
Area After Consolidation (in ²)	6.364

Strain (%)	Deviator Stress PSI	ΔU	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principal Stress Ratio	$\bar{A}$	$\bar{P}$	$\bar{Q}$
---------------	---------------------------	------------	------------------	------------------	-------------------------------------	-----------	-----------	-----------

0.02	0.89	0.76	17.62	16.7	1.053	0.88	17.18	0.44
0.05	1.70	1.38	17.82	16.1	1.105	0.83	16.97	0.85
0.15	4.58	3.58	18.49	13.9	1.329	0.80	16.20	2.29
0.25	6.76	5.44	18.83	12.1	1.561	0.82	15.44	3.38
0.35	8.48	6.95	19.03	10.5	1.804	0.84	14.79	4.24
0.51	10.42	8.59	19.33	8.9	2.169	0.84	14.12	5.21
0.65	11.70	9.61	19.59	7.9	2.483	0.84	13.74	5.85
0.85	12.78	10.36	19.92	7.1	2.791	0.83	13.53	6.39
1.21	13.77	10.96	20.31	6.5	3.104	0.81	13.43	6.88
1.72	12.82	10.35	19.97	7.2	2.792	0.82	13.56	6.41
2.32	11.96	9.81	19.64	7.7	2.555	0.84	13.67	5.98
2.93	11.40	9.46	19.44	8.0	2.417	0.85	13.74	5.70
3.64	11.12	9.26	19.37	8.2	2.349	0.85	13.81	5.56
4.15	10.94	9.15	19.29	8.4	2.310	0.85	13.82	5.47
4.86	10.82	9.04	19.28	8.5	2.278	0.85	13.87	5.41
5.82	10.78	8.94	19.34	8.6	2.259	0.85	13.95	5.39
6.83	10.87	8.92	19.45	8.6	2.267	0.84	14.01	5.43
7.59	10.86	8.89	19.47	8.6	2.261	0.84	14.04	5.43
8.61	11.01	8.90	19.61	8.6	2.281	0.82	14.10	5.51
9.36	11.05	8.85	19.70	8.6	2.277	0.82	14.17	5.52
10.12	11.05	8.77	19.79	8.7	2.265	0.81	14.26	5.53
10.87	11.04	8.69	19.85	8.8	2.253	0.80	14.33	5.52
11.39	11.05	8.59	19.95	8.9	2.241	0.79	14.43	5.52
11.89	11.03	8.54	20.00	9.0	2.231	0.79	14.48	5.52
12.40	11.05	8.50	20.05	9.0	2.228	0.78	14.53	5.53
12.90	10.94	8.44	20.01	9.1	2.208	0.79	14.53	5.47
13.67	10.69	8.33	19.86	9.2	2.167	0.80	14.51	5.35
14.43	10.57	8.27	19.80	9.2	2.146	0.80	14.51	5.29
14.93	10.35	8.23	19.62	9.3	2.116	0.81	14.45	5.17
15.44	10.20	8.18	19.52	9.3	2.095	0.82	14.42	5.10

page 6 of 10

Client:	Falcon Engineering	Boring No.:	R-07
Client Reference:	G24075.00 (I-6011A)	Depth (ft):	9.8-11.8
Project No.:	R-2025-045-001	Sample No.:	ST-3
Lab ID:	R-2025-045-001-003		

Stage No.	1
Test No.	3

Cell Pressure (psi)	87.5
Back Pressure (psi)	60
Eff. Conf. Pressure (psi)	27.5
Pore Pressure	
Response (%)	98

$\overline{P}$	=	21.84
Q	=	10.57

Tested By: 129-02-0411 Date: 3/14/2025 Input Checked By: MPS Date: 3/21/2025

Effective Confining Pressure (psi)	27.5	Stage No.	1
		Test No	3

Initial Sample Length (in)	6.39	Volume After Consolidation (in ³)	38.80
Initial Sample Diameter (in)	2.85	Length After Consolidation (in)	6.18
Initial Sample Area (in ²)	6.36	Area After Consolidation (in ²)	6.279
Initial Sample Volume (in ³)	40.63		

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

Client: Falcon Engineering

Client Reference: G24075.00 (I-6011A)

Project No.: R-2025-045-001

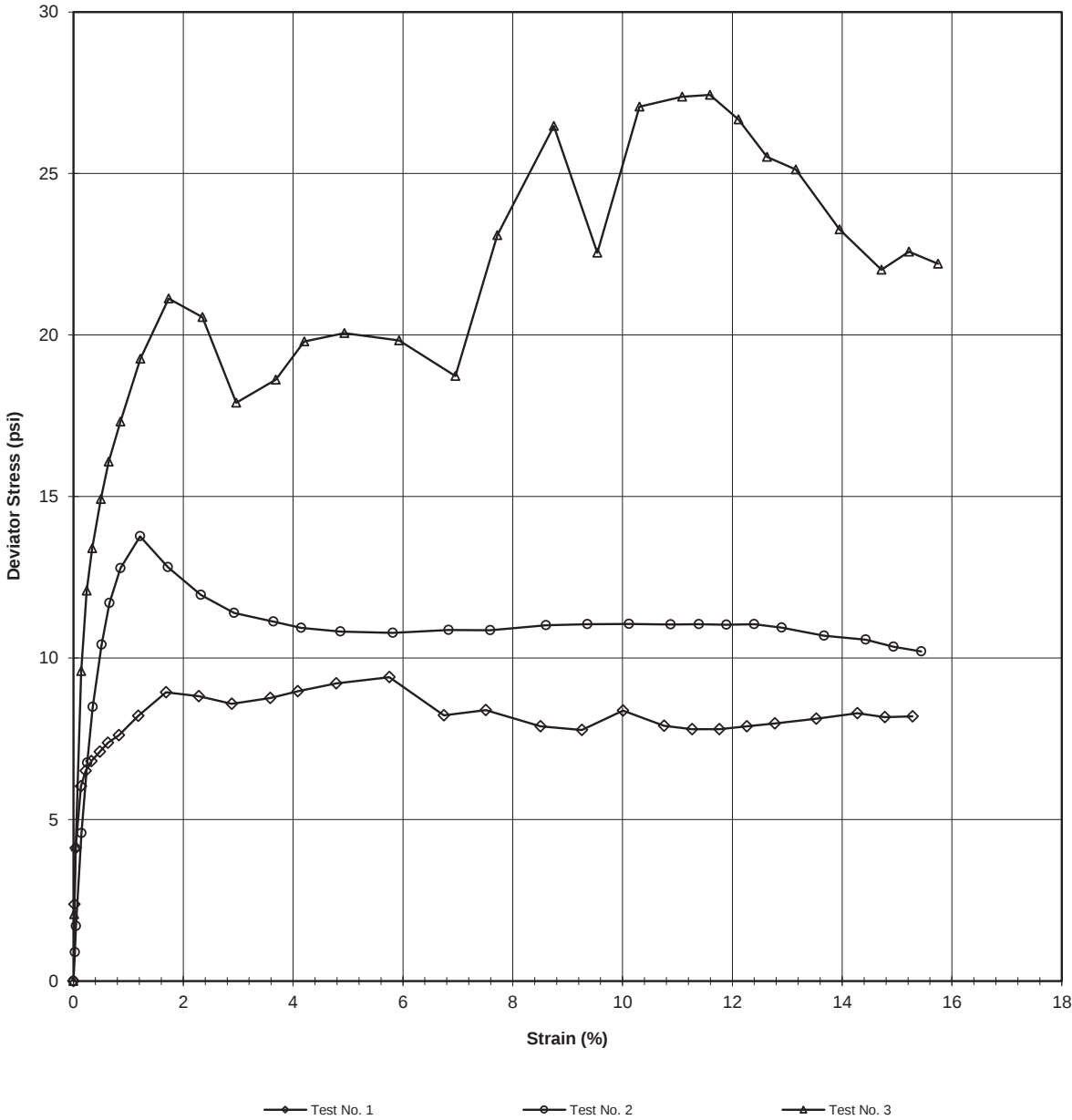
Lab ID: R-2025-045-001-003

Visual Description: Brown Clay (UNDISTURBED)

Boring No.: R-07

Depth (ft): 9.8-11.8

Sample No.: ST-3



Tested By: 129-02-0411

Date: 3/14/2025

Approved By: MPS

Date: #####

page 9 of 10



CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
ASTM D4767-11

Client: Falcon Engineering

Client Reference: G24075.00 (I-6011A)

Project No.: R-2025-045-001

Lab ID: R-2025-045-001-003

Visual Description: Brown Clay (UNDISTURBED)

Specific Gravity (Measured): 2.74

SAMPLE CONDITION SUMMARY

Boring No.:	R-07	R-07	R-07
Depth (ft):	9.8-11.8	9.8-11.8	9.8-11.8
Sample No.:	ST-3	ST-3	ST-3
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.001	0.001	0.001
Back Pressure (psi)	60.0	60.0	60
Consolidation Time (days)	3	3	3
Moisture Content (%) (INITIAL)	55.1	55.1	55.1
Total Unit Weight (pcf)	102.8	104.5	102.6
Dry Unit Weight (pcf)	66.3	67.4	66.2
Moisture Content (%) (FINAL)	55.6	51.2	47.6
Initial State Void Ratio,e	1.581	1.538	1.584
Void Ratio at Shear, e	1.497	1.482	1.468



Tested By: 129-02-0411

Date: 3/14/25

Input Checked By: MPS

Date: 3/21/25

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DCN: CT-S28 DATE: 4/12/13 REVISION: 3



SIEVE AND HYDROMETER ANALYSIS
NCDOT MOD. AASHTO T-88,

Client

Falcon Engineering

Client Reference

G24075.00 (I-6011A)

Project No.

R-2025-045-001

Lab ID

R-2025-045-001-003

Boring No.

R-07

Depth (ft)

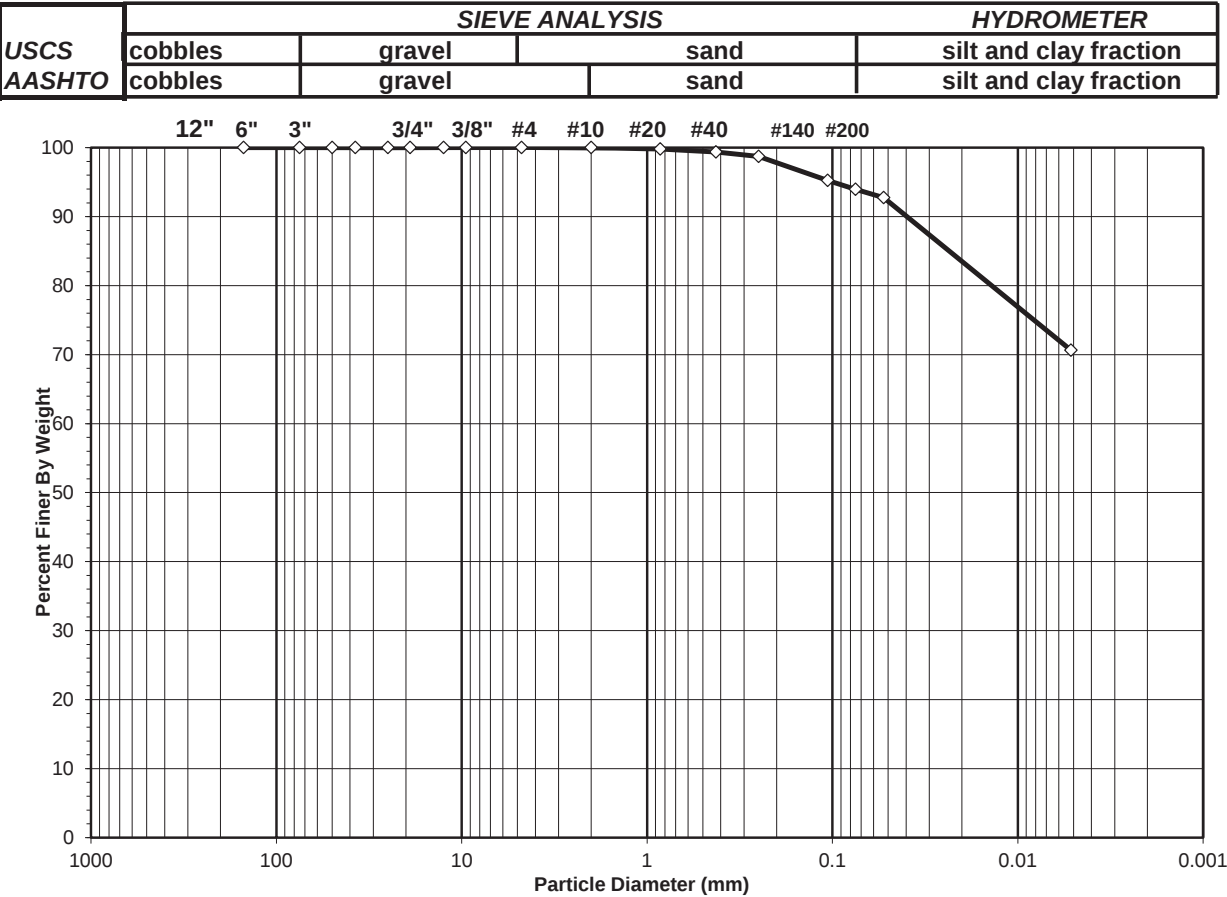
9.8-11.8

Sample No.

ST-3

Soil Color

Brown



Sieve Size (mm)	Percent Finer	USCS %		AASHTO %		NCDOT SOIL MORTAR %	
100	100.00	Gravel	0.00	Gravel	0.00	Coarse Sand Ret. #60	1.26
2	100.00	Sand	6.05	Coarse Sand	0.63	Fine Sand Ret. #270	5.99
0.075	93.95	Silt&Clay	93.95	Fine Sand	5.42	Silt 0.05-0.005mm	22.11
				Silt & Clay	93.95	Clay <0.005mm	70.64
AASHTO (GI)		A-7-6 (65)					



WASH SIEVE ANALYSIS
NCDOT MOD. AASHTO T-88,

Client

Falcon Engineering

Client Reference

G24075.00 (I-6011A)

Project No.

R-2025-045-001

Lab ID

R-2025-045-001-003

Boring No.

R-07

Depth (ft)

9.8-11.8

Sample No.

ST-3

Soil Color

Brown

Minus #10 for Hygroscopic (10-15gm)		Hydrometer Specimen 50 or 100gms	
Tare No.	A	Air Dried Hydrometer Material (gm)	60.16
Wgt.Tare + Wet Specimen (gm)	29.25	Corrected Dry Wt. of Hydro Mtrl. (gm)	53.91
Wgt.Tare + Dry Specimen (gm)	27.78		
Weight of Tare (gm)	15.09	Weight of -#270 Material	50.00
Weight of Water (gm)	1.47	Weight of -#10; +#270 Material	3.91
Weight of Dry Soil (gm)	12.69		
Moisture Content (%)	11.6		

Tare No.	43-A		
Wgt. Tare + Air Dry Soil (gm)	473.58	Dry Weight of Material Ret. #10 (gm)	0.00
Weight of Tare (gm)	129.28	Corrected Dry Sample Wt - #10 (gm)	308.56
Air Dried Wgt.Total Sample (gm)	344.30		
Total Dry Weight Sample (gm)	308.6	J - Factor (Percent Finer than #10)	1.0000

Sieve Size	Sieve Opening (mm)	Wgt.of Soil Retained (gm)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.5	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.00	0.00	0.00	100.00	100.00
#20	0.85	0.12	0.22	0.22	99.78	99.78
#40	0.425	0.22	0.41	0.63	99.37	99.37
#60	0.25	0.34	0.63	1.26	98.74	98.74
#140	0.106	1.89	3.51	4.77	95.23	95.23
#200	0.075	0.69	1.28	6.05	93.95	93.95
#270	0.053	0.65	1.21	7.25	92.75	92.75
Pan	-	50.00	92.75	100.00	-	-

Tested By 129-02-0411 Date 3/19/25 Checked By AES Date 3/21/25



HYDROMETER ANALYSIS
NCDOT MOD. AASHTO T-88,

Client

Client Reference

Project No.

Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-003

Boring No.

Depth (ft)

Sample No.

Soil Color

R-07
9.8-11.8
ST-3
Brown

Elapsed Time (min)		R Measured	Temp. (° C)	Composite Correction	R Corrected	N (%)	K Factor	Diameter (mm)	N' (%)
10:05:00	0	NA	NA	NA	NA	NA	NA	NA	NA
10:05:28	0.47	54.9	20.7	-1.74	50.6	92.2	0.01318	0.0521	92.2
11:05:00	60.00	43.0	20.9	-1.78	38.8	70.6	0.01315	0.0052	70.6

Corrections
a - Factor0.982
Percent Finer than # 10100.00
Specific Gravity2.74 Measured

Note: Hydrometer test is performed on - #10 sieve material.

LL = 88

PL = 29

PI = 59

Tested By129-02-0411

Date3/17/25

Checked ByAES

Date3/21/25

page 3 of 3DCN: CT-S3Y DATE: 12/18/25 REVISION: 225-045 - G24075.00 (I-6011A)\2025-045-001\2025-045-001-003 Grain SIEVEHYD10 NCDOT.xlsmData1



ATTERBERG LIMITS
AASHTO T-89, T-90 (DOT Modified)

Client

Client Reference

Project No.

Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-003

Boring No.

Depth (ft)

Sample No.

Soil Description

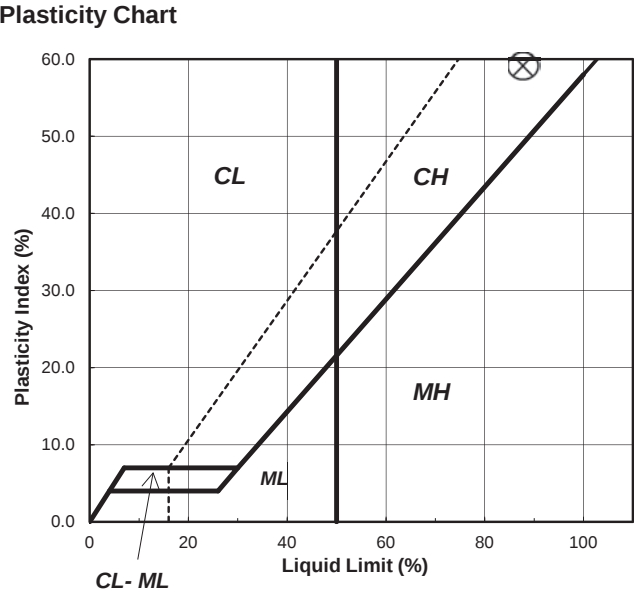
R-07
NA
ST-3
BROWN FAT CLAY
(Minus No. 40 sieve material, Airdried)

Note: The USCS symbol used with this test refers only to the minus No. 40 sieve material. See the "Sieve and Hydrometer Analysis" graph page for the complete material description .

Liquid Limit Test	1
Tare Number	U
Wt. of Tare & WS (gm)	26.16
Wt. of Tare & DS (gm)	21.25
Wt. of Tare (gm)	15.67
Wt. of Water (gm)	4.9
Wt. of DS (gm)	5.6
Moisture Content (%)	88.0
Number of Blows	25

Plastic Limit Test	1	2	Range	Test Results
Tare Number	14	23		Liquid Limit (%)88
Wt. of Tare & WS (gm)	16.36	17.48		Plastic Limit (%)29
Wt. of Tare & DS (gm)	14.26	15.14		Plasticity Index (%)59
Wt. of Tare (gm)	6.98	7.04		USCS SymbolCH
Wt. of Water (gm)	2.1	2.3		
Wt. of DS (gm)	7.3	8.1		
Moisture Content (%)	28.8	28.9	0.0	

Note: The acceptable range of the two Moisture contents is ± 2.6



Tested By129-02-0411

Date3/19/25

Checked ByAES

Date3/20/25

page 1 of 1DCN: CT-S4B DATE: 10/8/01 REVISION: 2



SPECIFIC GRAVITY
ASTM D 854-14

Client:
Client Reference:
Project No.:
Lab ID:

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-003

Boring No.:
Depth (ft):
Sample No.:
Visual Description:

R-07
9.8-11.8
ST-3
Brown Clay

(Minus No.4 sieve material,oven dried)

Replicate Number

	1	2
Pycnometer ID:	R 747	R 748
Weight of Pycnometer & Soil & Water (g):	681.25	678.46
Temperature (°C):	23.4	23.2
Weight of Pycnometer & Water (g):	649.41	646.55
Tare Number:	747	748
Weight of Tare & Dry Soil (g):	201.88	199
Weight of Tare (g):	151.7	148.69
Weight of Dry Soil (g):	50.18	50.31
Specific Gravity of Soil @ Measured Temperature:	2.736	2.735
Specific Gravity of Water @ Measured Temperature:	0.99745	0.99750
Conversion Factor for Measured Temperature:	0.99924	0.99929
Specific Gravity @ 20° Celsius:	2.738	2.737

Average Specific Gravity @ 20° Celsius2.74

Tested By129-02-0411Date3/18/25Checked ByAESDate3/18/25

page 1 of 1DCN: CT-S5DATE: 3/26/18REVISION: 21



SHELBY TUBE UNIT WEIGHT
ASTM D7263-09

Client
Client Reference
Project No.
Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-003

Boring No.:
Depth Pushed (ft):
Shelby Tube No.:
Recovery (ft):

R-07
9.8-11.8
ST-3
2.0'

MOISTURE CONTENT

Tare Number	714
Wt. Tare & WS (g)	372.61
Wt. Tare & DS (g)	271.19
Wt. Tare (g)	87.06
Moisture Content (%)	55.08

UNIT WEIGHT	
Wt. Tube & WS. (g)	1076.31
Wt. Of Tube (g)	0.00
Wt. Of WS. (g)	1076.31
Length 1 (in.)	6.094
Length 2 (in.)	6.129
Length 3 (in.)	6.154
Top Diameter (in.)	2.857
Middle Diameter (in.)	2.860
Bottom Diameter (in.)	2.849
Sample Volume (cc)	642.77
Moisture Content(%)	55.08
Unit Wet Wt .(g/cc)	1.67
Unit Wet Wt. (pcf)	104.49
Unit Dry Wt. (g/cc)	1.08
Unit Dry Wt. (pcf)	67.4

Tested ByDLDate3/14/25Checked ByAESDate3/17/25

page 1 of 1DCN: CT-S37A DATE: 1/7/15 REVISION: 1e

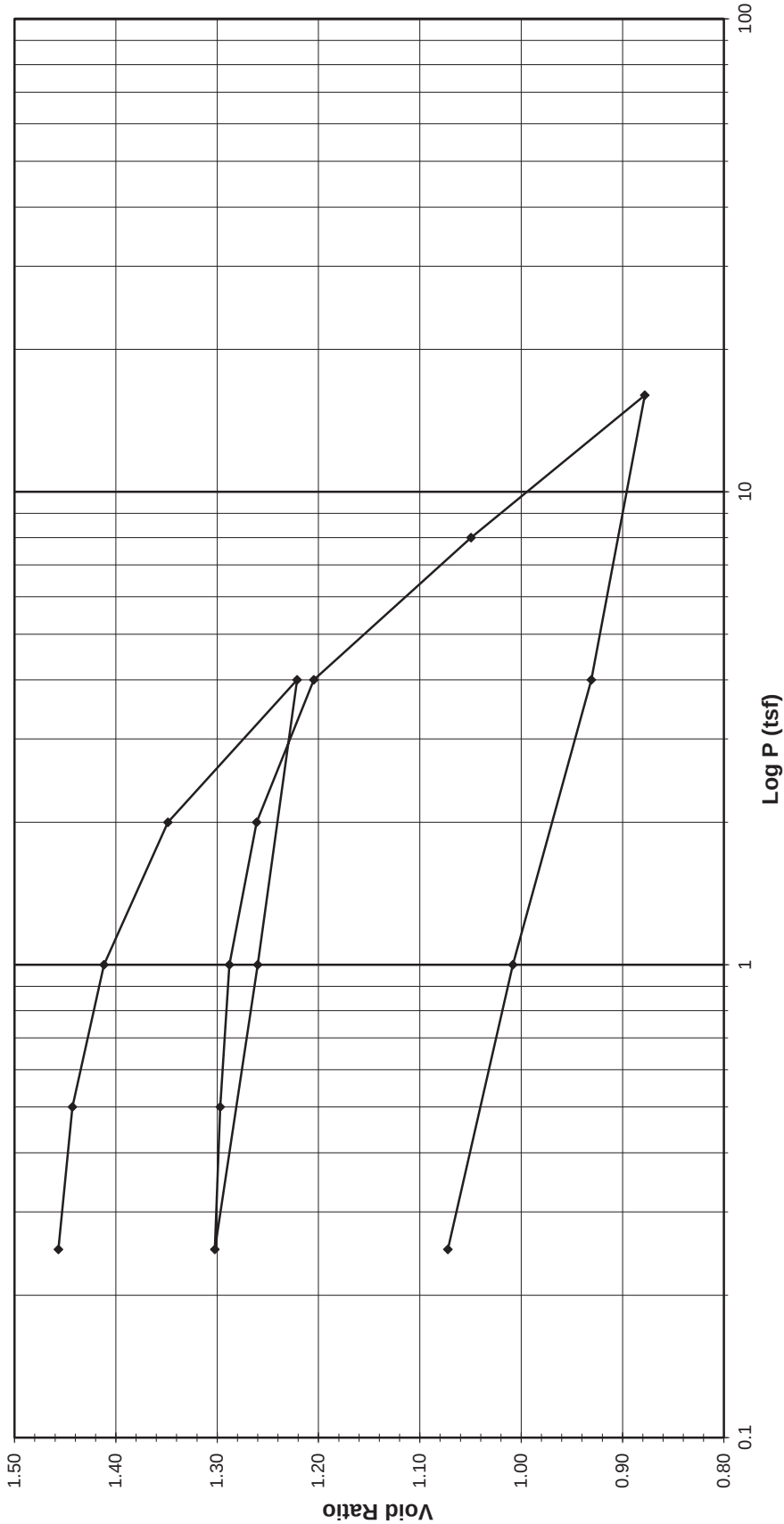


ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Falcon Engineering	Boring No.	R-08
Client Reference	G24075.00 (I-6011A)	Depth (ft)	8.2-10.2
Project No.	R-2025-045-001	Sample No.	ST-4
Lab ID	R-2025-045-001-004	Visual Description	Pink Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Falcon Engineering	Boring No.	R-08
Client Reference	G24075.00 (I-6011A)	Depth (ft)	8.2-10.2
Project No.	R-2025-045-001	Sample No.	ST-4
Lab ID	R-2025-045-001-004	Visual Description	Pink Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Consolidometer No. R-409
1 Division = 0.0001 (in.)

Sample Properties			Test Data Summary							
Initial	Final		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
Water Content										
Tare Number		433	477							
Wt. Tare & WS (g)		472.91	221.11							
Wt. Tare & DS (g)		346.98	186.51							
Wt. Water (g)		125.93	34.60							
Wt. Tare (g)		100.20	99.65							
Wt. DS (g)		246.78	86.86							
Water Content (%)		51.03	39.83							
Sample Parameters										
Sample Diameter (in)		2.5	2.5							
Sample Height (in)		1.0000	0.8405							
Sample Volume (cc)		80.44	67.61							
Wt. Wet Sample + Ring (g)		346.70	336.88							
Wt. of Ring (g)		214.16	214.16							
Wt. of Wet Sample (g)		132.54	122.72							
Wet Density (pcf)		102.82	113.26							
Wet Density (g/cc)		1.65	1.82							
Water Content (%)		51.03	39.83							
Wt. of Dry Sample (g)		87.76	87.76							
Dry Density (pcf)		68.08	80.99							
Dry Density (g/cc)		1.09	1.30							
Void Ratio		1.4657	1.0724							
Saturation (%)		93.66	99.92							
Specific Gravity		2.69	Measured							



ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

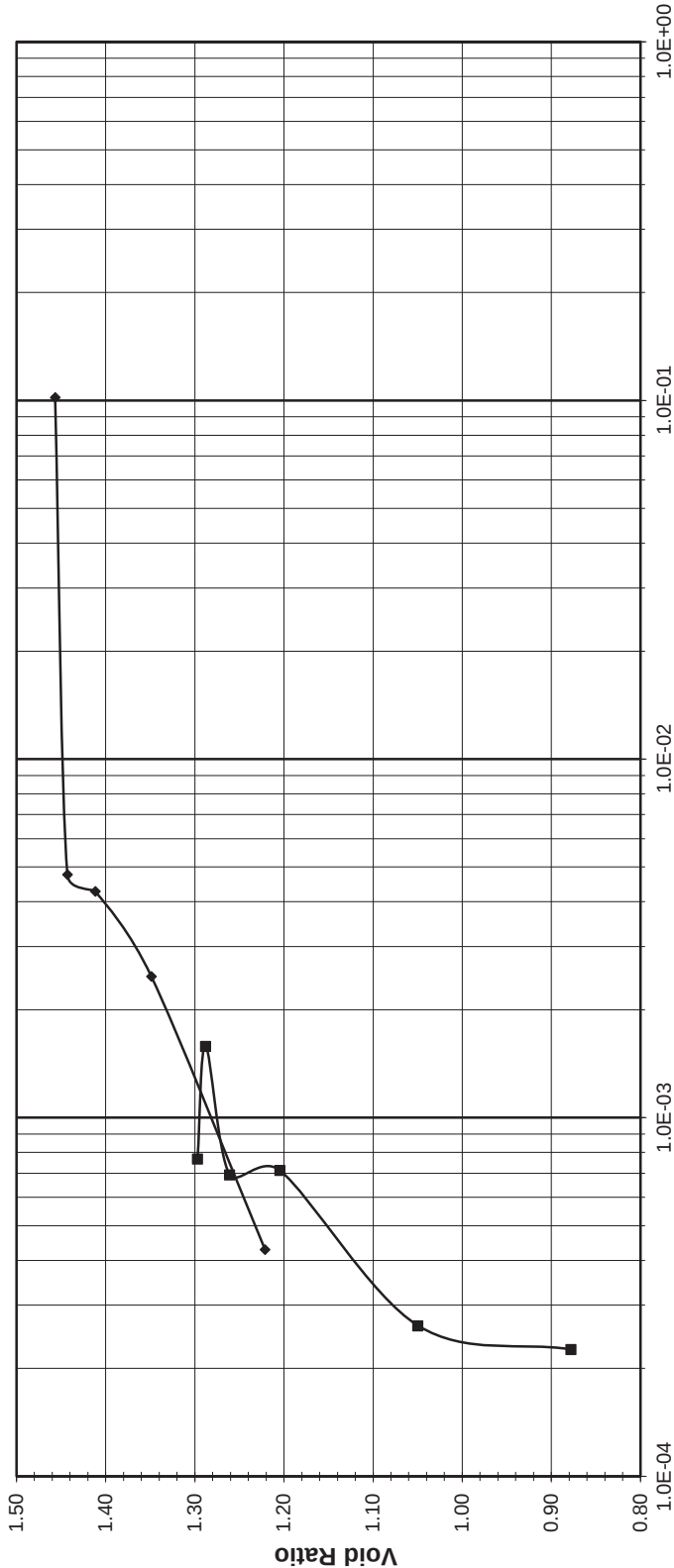
Client
Client Reference
Project No.
Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-004

Boring No.
Depth (ft)
Sample No.
Visual Description

R-08
8.2-10.2
ST-4
Pink Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Coefficient of Consolidation (cm²/sec)

◆ First Cycle Up ■ Second Cycle Up



ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client
Client Reference
Project No.
Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-004

Boring No.
Depth (ft)
Sample No.
Visual Description

R-08
8.2-10.2
ST-4
Pink Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Consolidometer No. R-409
1 Division = 0.0001 (in.)

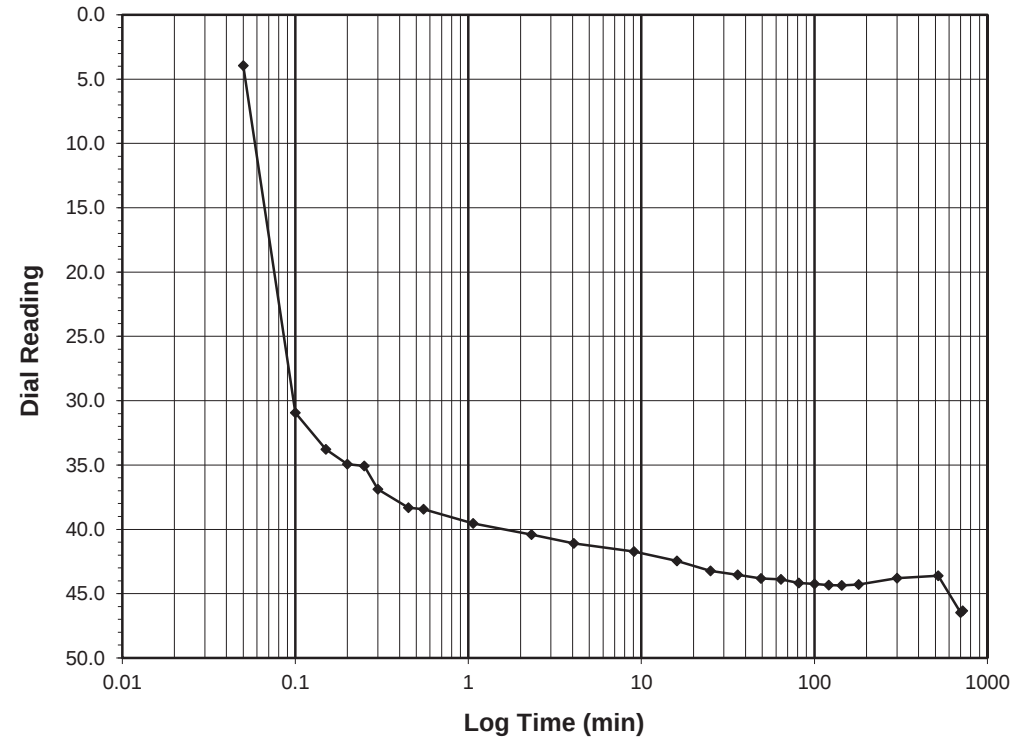
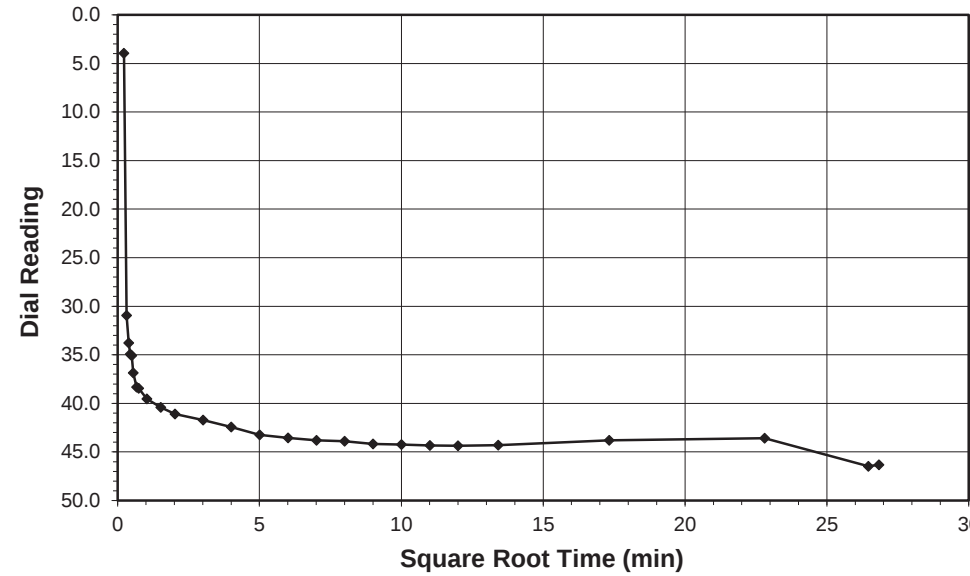
Sample Properties		Initial	Final	C _v Test Data Summary						
				Load Increment (tsf)	Dial Reading @ t ₅₀ (div)	Machine Deflection (div)	Corrected Dial Reading @ t ₅₀ (div)	Sample Height @ t ₅₀ (cm)	Time t ₅₀ (min.)	C _v (cm ² /sec)
Water Content										
Tare Number				433	477					
Wt. Tare & WS (g)				472.91	221.11					
Wt. Tare & DS (g)				346.98	186.51					
Wt. Water (g)				125.93	34.60					
Wt. Tare (g)				100.20	99.65					
Wt. DS (g)				246.78	86.86					
Water Content (%)				51.03	39.83					
Sample Parameters										
Sample Diameter (in)				2.5	2.5					
Sample Height (in)				1.000	0.841					
Sample Volume (cc)				80.44	67.61					
Wt. Wet Sample + Ring (g)				346.70	336.88					
Wt. of Ring (g)				214.16	214.16					
Wt. of Wet Sample (g)				132.54	122.72					
Wet Density (pcf)				102.82	113.26					
Wet Density (g/cc)				1.65	1.82					
Water Content (%)				51.03	39.83					
Wt. of Dry Sample (g)				87.76	87.76					

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-08
Client Project G24075.00 (I-6011A) Depth (ft) 8.2-10.2
Project No. R-2025-045-001 Sample No. ST-4
Lab ID R-2025-045-001-004 Visual Description Pink Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf)	0.0-0.25
Final Reading (div)	46.5
Consolidometer No.	R-409
1 Division (in)	0.0001
Start Date	3/14/2025
Start Time	19:13:17

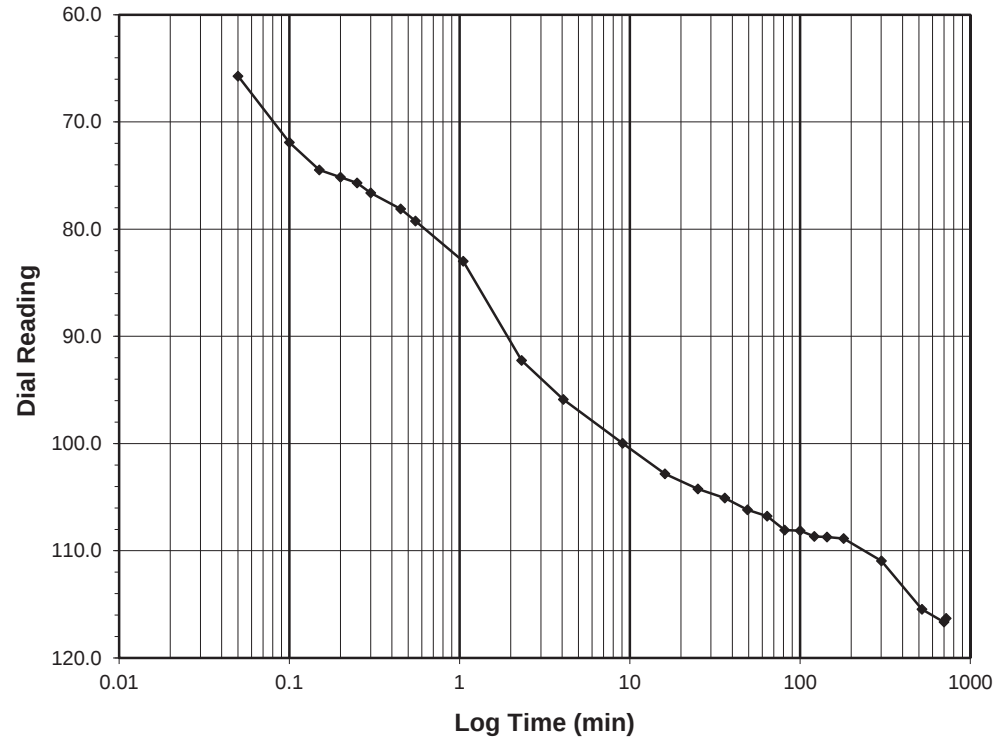
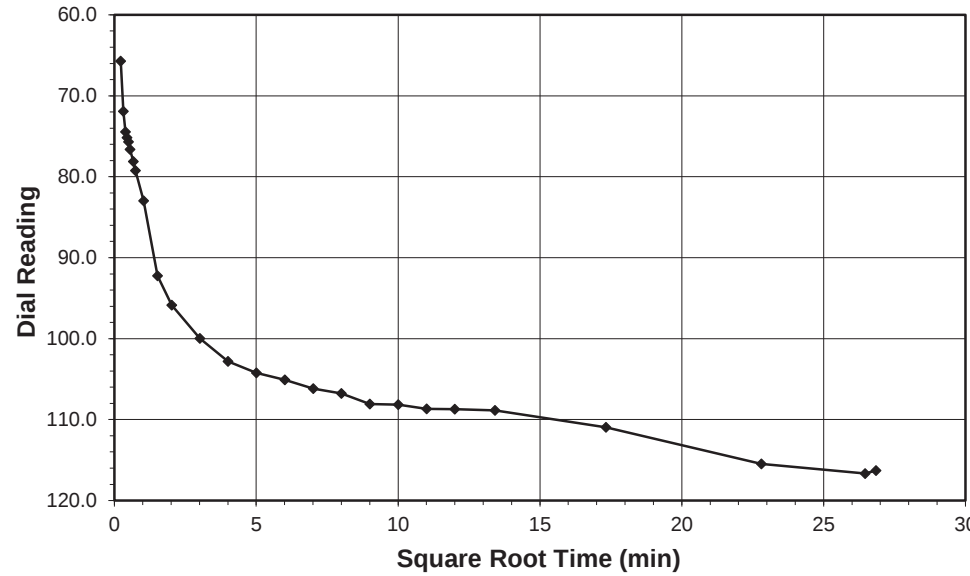
Elapsed Time (min)	Dial Reading (div)
Initial	0.0
0.05	4.0
0.10	30.9
0.15	33.8
0.20	34.9
0.25	35.1
0.30	36.9
0.45	38.3
0.55	38.4
1.07	39.5
2.32	40.4
4.07	41.1
9.07	41.7
16.07	42.4
25.07	43.2
36.07	43.5
49.07	43.8
64.07	43.9
81.07	44.2
100.07	44.3
121.07	44.3
144.07	44.4
180.07	44.3
300.07	43.8
520.07	43.6
700.07	46.5
720.10	46.3

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-08
Client Project G24075.00 (I-6011A) Depth (ft) 8.2-10.2
Project No. R-2025-045-001 Sample No. ST-4
Lab ID R-2025-045-001-004 Visual Description Pink Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf)	0.25-0.5
Final Reading (div)	116.7
Consolidometer No.	R-409
1 Division (in)	0.0001
Start Date	3/15/2025
Start Time	7:13:23

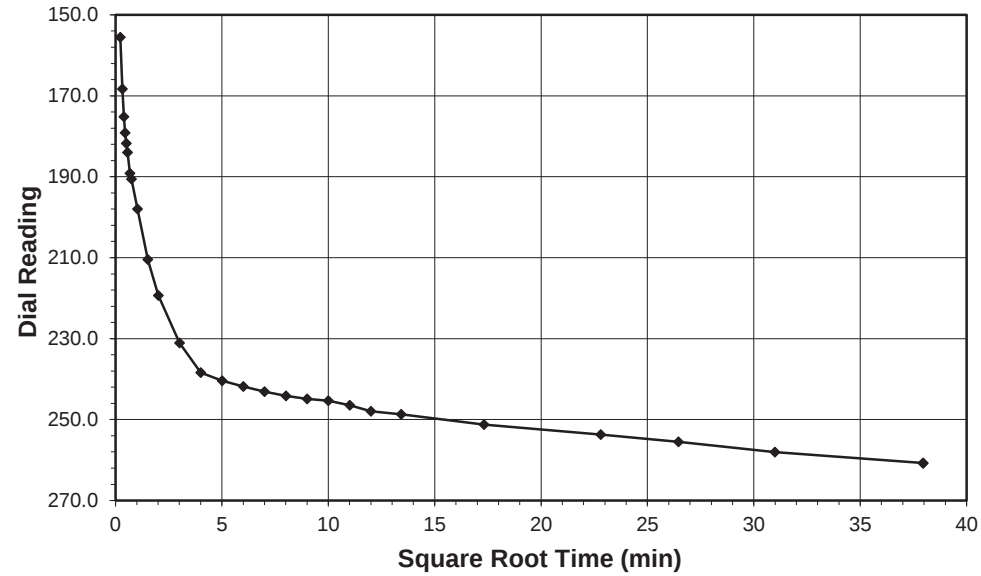
Elapsed Time (min)	Dial Reading (div)
Initial	46.5
0.05	65.7
0.10	71.9
0.15	74.5
0.20	75.2
0.25	75.7
0.30	76.6
0.45	78.1
0.55	79.2
1.05	83.0
2.32	92.3
4.07	95.9
9.07	100.0
16.07	102.8
25.07	104.2
36.07	105.1
49.07	106.2
64.07	106.8
81.07	108.1
100.07	108.1
121.07	108.7
144.07	108.7
180.07	108.9
300.07	110.9
520.07	115.5
700.07	116.7
720.43	116.3

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-08
Client Project G24075.00 (I-6011A) Depth (ft) 8.2-10.2
Project No. R-2025-045-001 Sample No. ST-4
Lab ID R-2025-045-001-004 Visual Description Pink Clay

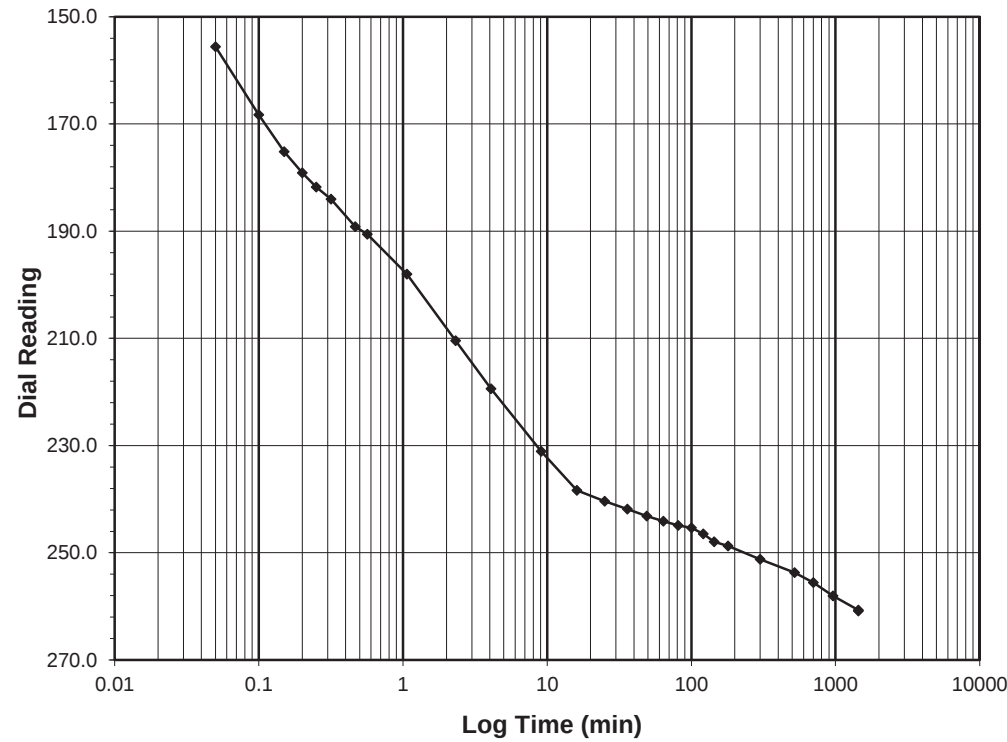
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.5-1.0
Final Reading (div) 260.8
Consolidometer No. R-409
1 Division (in) 0.0001

Start Date 3/15/2025
Start Time 19:13:49

Elapsed Time (min)	Dial Reading (div)
Initial	116.7
0.05	155.6
0.10	168.3
0.15	175.2
0.20	179.1
0.25	181.8
0.32	184.0
0.47	189.2
0.57	190.6
1.07	198.0
2.32	210.4
4.07	219.4
9.07	231.1
16.07	238.4
25.07	240.4
36.07	241.8
49.07	243.1
64.07	244.1
81.07	244.9
100.07	245.3
121.07	246.5
144.07	247.9
180.07	248.7
300.07	251.2
520.07	253.7
700.07	255.5
960.07	258.0
1440.07	260.7
1440.42	260.8



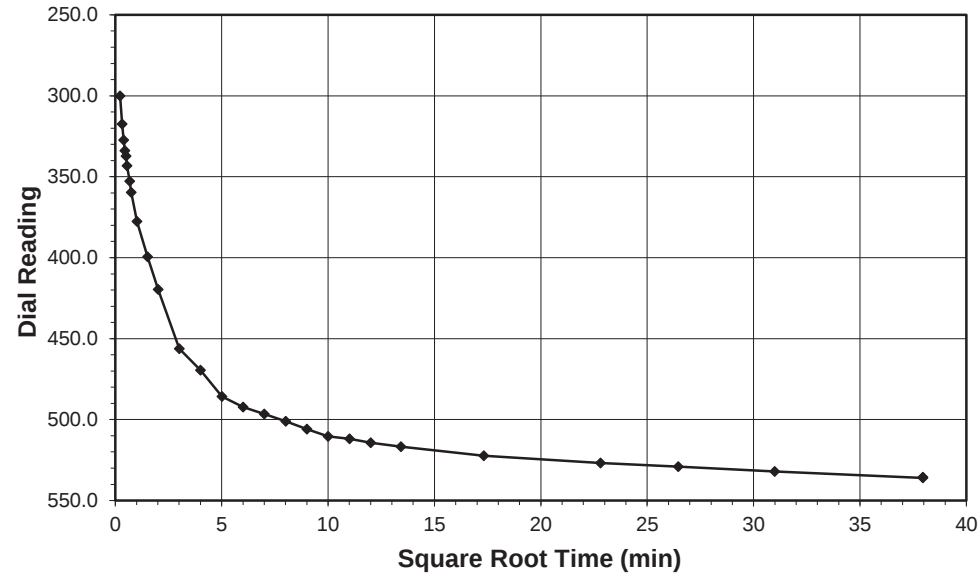
Tested By 129-02-0411 Date 3/15/2025 Checked By MPS Date 4/2/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-08
Client Project G24075.00 (I-6011A) Depth (ft) 8.2-10.2
Project No. R-2025-045-001 Sample No. ST-4
Lab ID R-2025-045-001-004 Visual Description Pink Clay

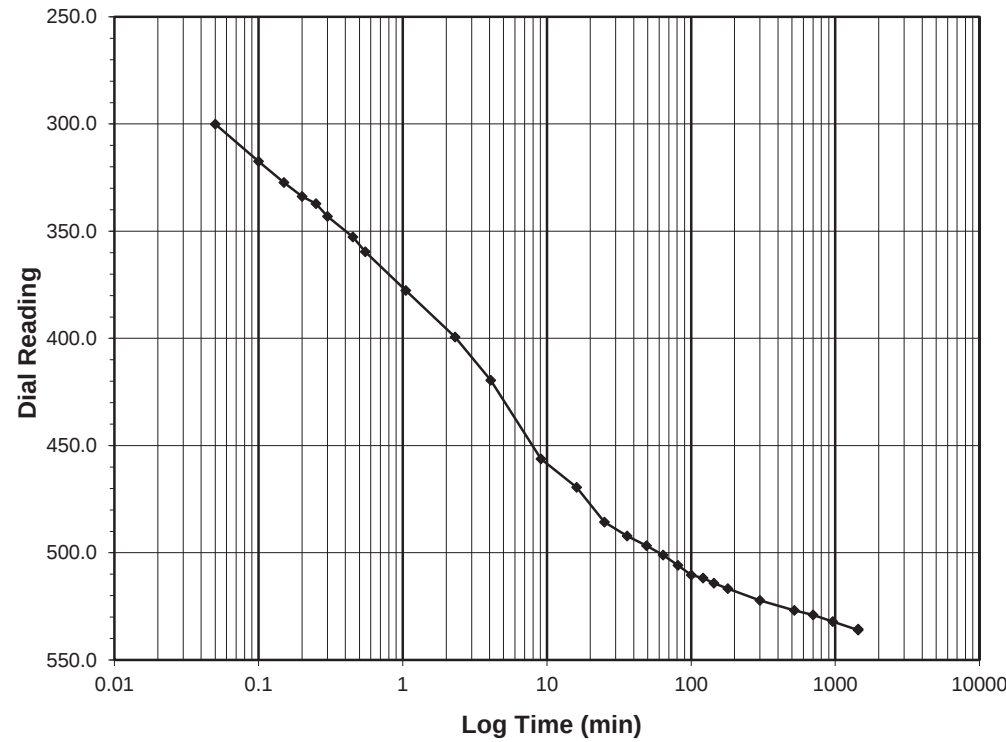
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
Final Reading (div) 536.1
Consolidometer No. R-409
1 Division (in) 0.0001

Start Date 3/16/2025
Start Time 19:14:14

Elapsed Time (min)	Dial Reading (div)
Initial	260.8
0.05	300.0
0.10	317.4
0.15	327.3
0.20	333.8
0.25	337.2
0.30	343.1
0.45	352.7
0.55	359.6
1.05	377.6
2.30	399.4
4.07	419.6
9.07	456.3
16.07	469.5
25.07	485.6
36.07	492.2
49.07	496.6
64.07	501.1
81.07	505.9
100.07	510.4
121.07	511.9
144.07	514.2
180.07	516.8
300.07	522.3
520.07	526.9
700.07	529.0
960.07	532.1
1440.07	536.1
1440.27	535.6



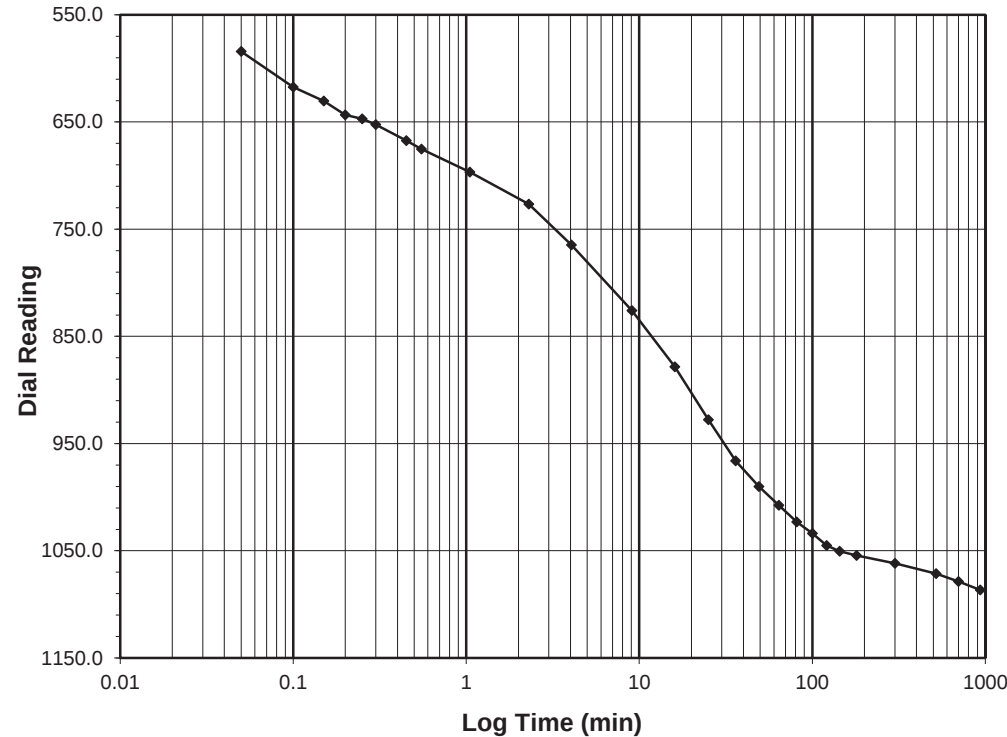
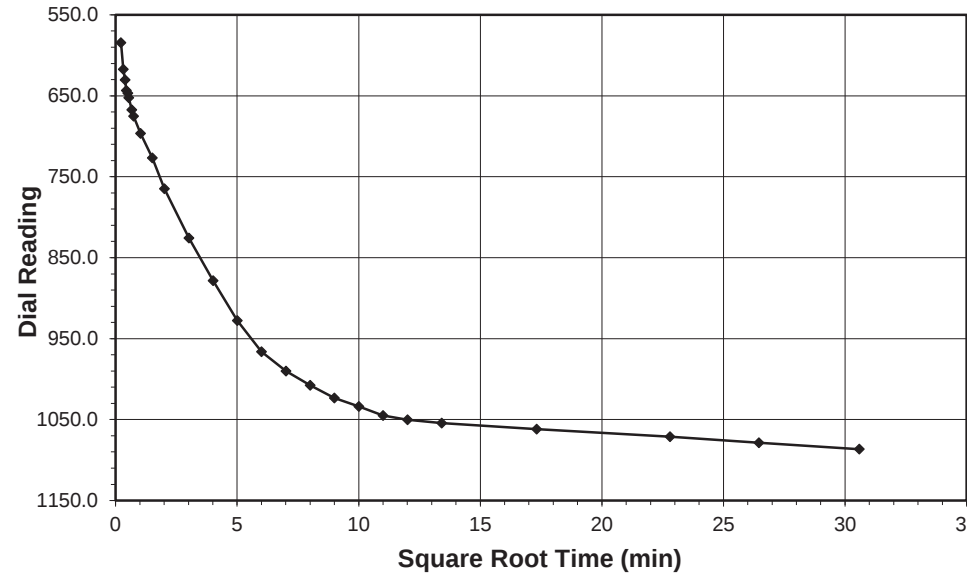
Tested By 129-02-0411 Date 3/16/2025 Checked By MPS Date 4/2/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-08
Client Project G24075.00 (I-6011A) Depth (ft) 8.2-10.2
Project No. R-2025-045-001 Sample No. ST-4
Lab ID R-2025-045-001-004 Visual Description Pink Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-4.0
Final Reading (div) 1086.6
Consolidometer No. R-409
1 Division (in) 0.0001
Start Date 3/17/2025
Start Time 19:14:30

Elapsed Time (min)	Dial Reading (div)
Initial	536.1
0.05	584.3
0.10	617.4
0.15	630.3
0.20	643.5
0.25	646.9
0.30	652.5
0.45	667.4
0.55	675.2
1.05	696.6
2.30	726.7
4.05	764.8
9.07	825.9
16.07	878.3
25.07	927.7
36.07	966.1
49.07	990.2
64.07	1007.5
81.07	1023.2
100.07	1033.8
121.07	1045.1
144.07	1050.4
180.07	1054.5
300.07	1061.9
520.07	1071.2
700.07	1078.7
935.33	1086.6

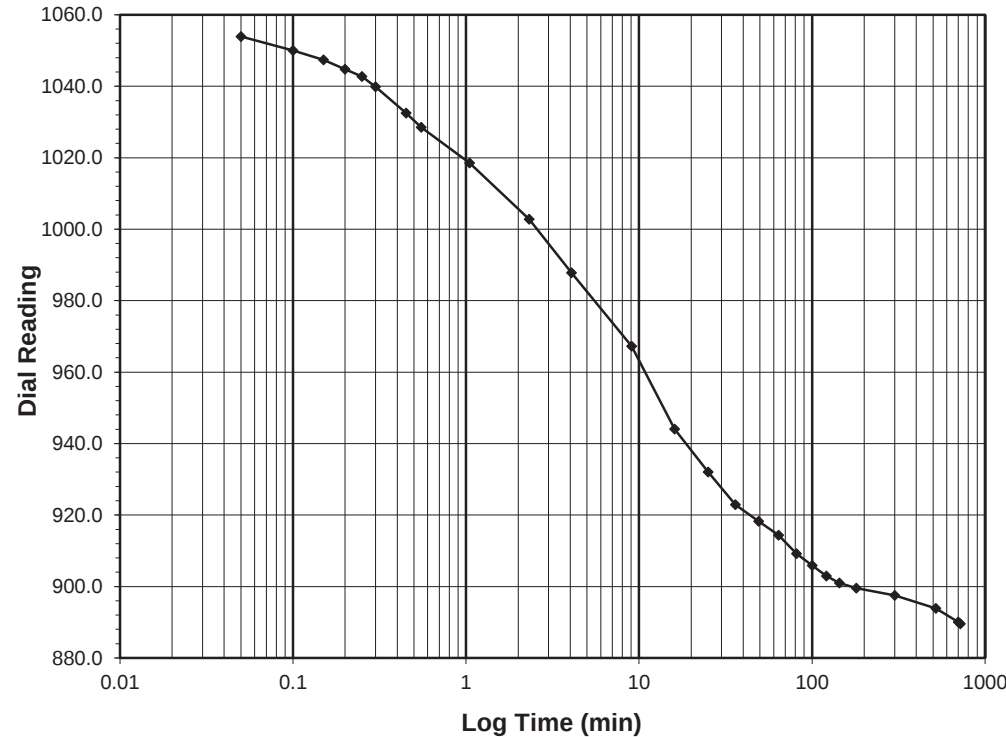
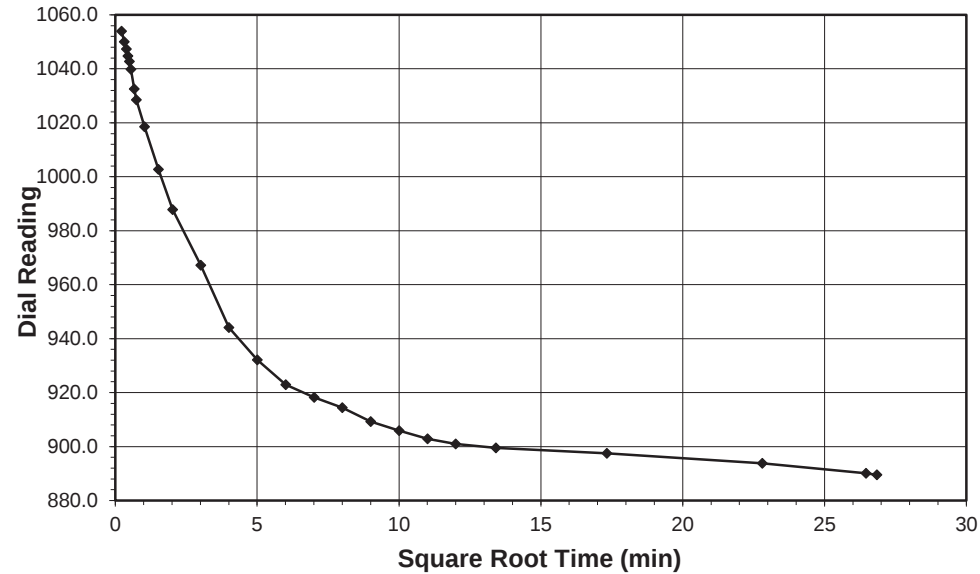
Tested By 129-02-0411 Date 3/17/2025 Checked By MPS Date 4/2/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-08
Client Project G24075.00 (I-6011A) Depth (ft) 8.2-10.2
Project No. R-2025-045-001 Sample No. ST-4
Lab ID R-2025-045-001-004 Visual Description Pink Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-1.0
Final Reading (div) 889.5
Consolidometer No. R-409
1 Division (in) 0.0001
Start Date 3/18/2025
Start Time 10:49:50

Elapsed Time (min)	Dial Reading (div)
Initial	1086.6
0.05	1053.9
0.10	1050.0
0.15	1047.4
0.20	1044.7
0.25	1042.7
0.30	1039.8
0.45	1032.5
0.55	1028.5
1.05	1018.5
2.32	1002.8
4.07	987.8
9.07	967.2
16.07	944.1
25.07	932.1
36.07	922.9
49.07	918.2
64.07	914.4
81.07	909.2
100.07	905.9
121.07	902.9
144.07	901.0
180.07	899.5
300.07	897.5
520.07	893.8
700.08	890.1
720.42	889.5

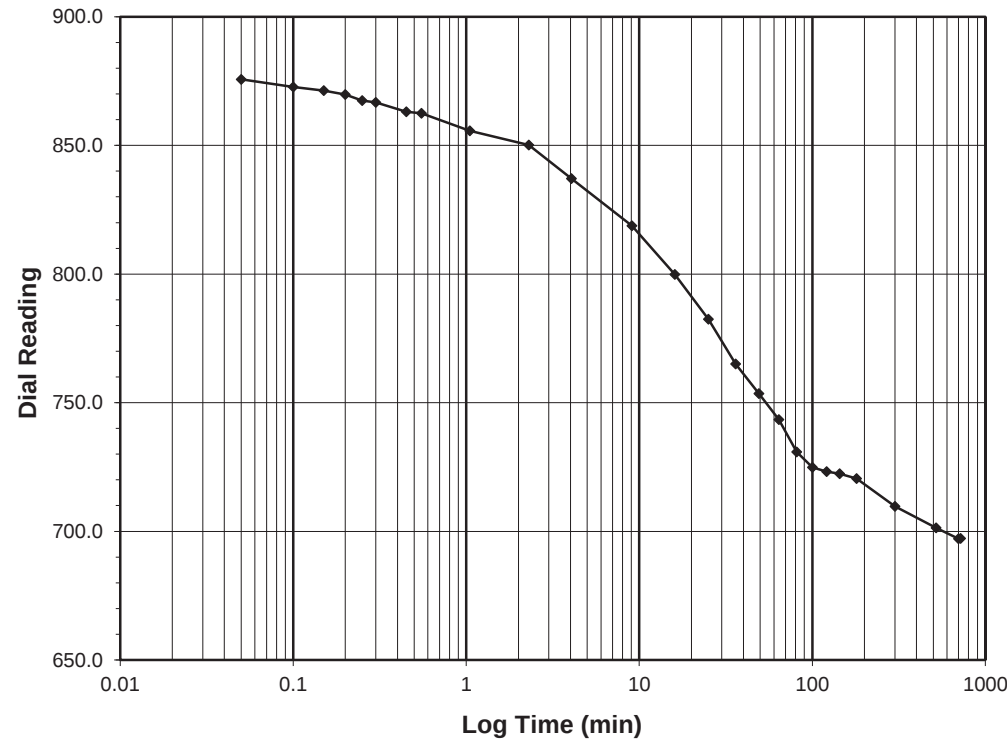
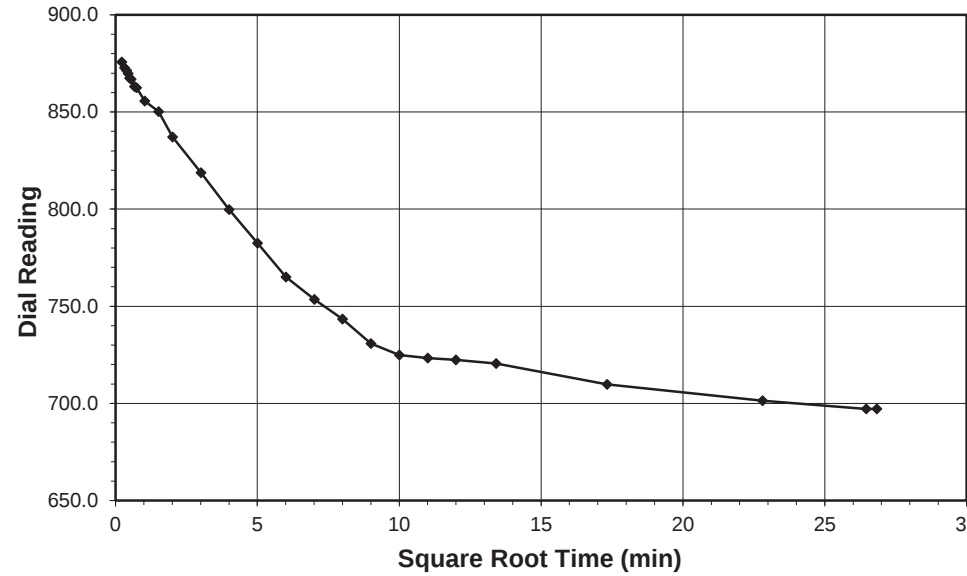
Tested By 129-02-0411 Date 3/18/2025 Checked By MPS Date 4/2/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-08
Client Project G24075.00 (I-6011A) Depth (ft) 8.2-10.2
Project No. R-2025-045-001 Sample No. ST-4
Lab ID R-2025-045-001-004 Visual Description Pink Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

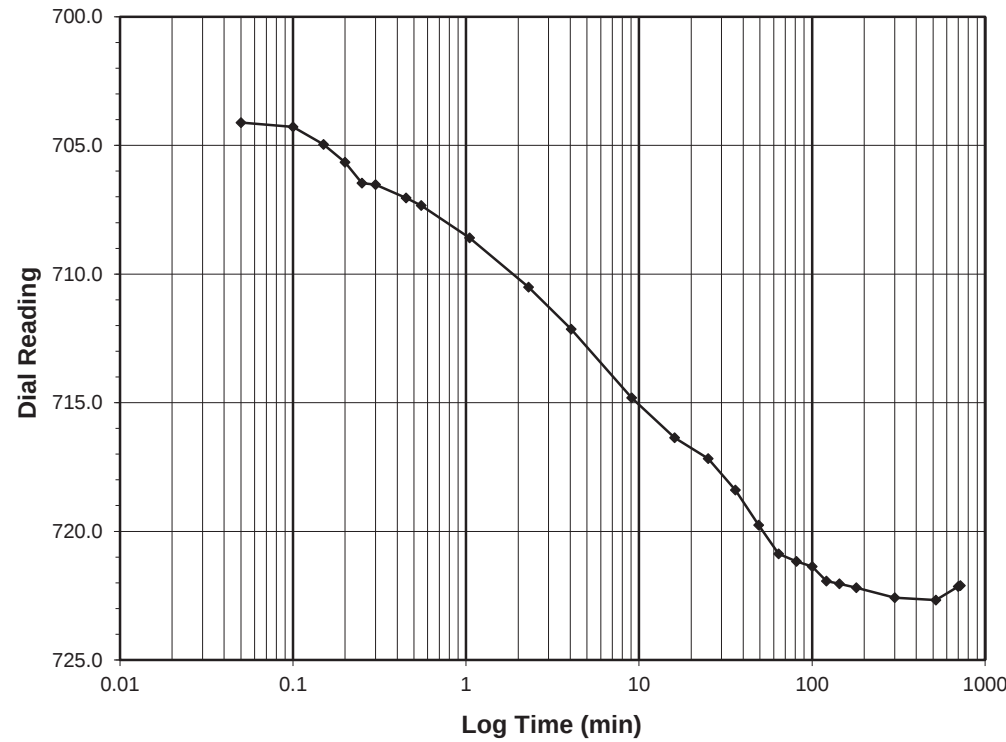
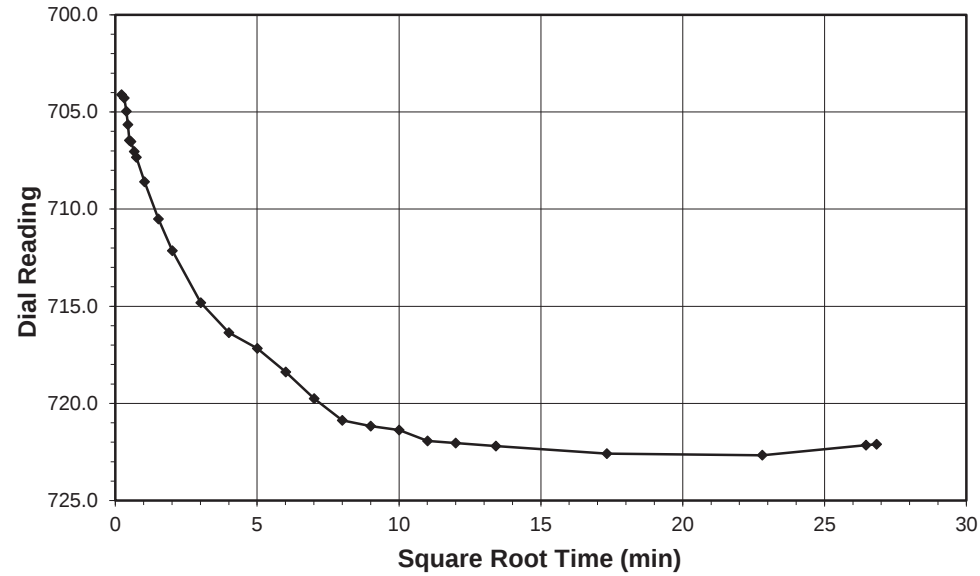


ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-08
Client Project G24075.00 (I-6011A) Depth (ft) 8.2-10.2
Project No. R-2025-045-001 Sample No. ST-4
Lab ID R-2025-045-001-004 Visual Description Pink Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

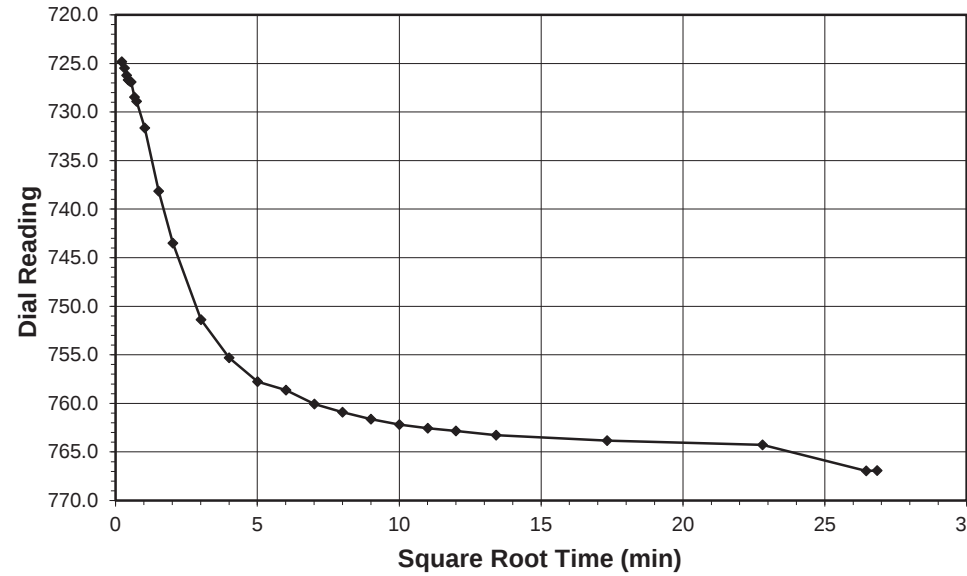


ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-08
Client Project G24075.00 (I-6011A) Depth (ft) 8.2-10.2
Project No. R-2025-045-001 Sample No. ST-4
Lab ID R-2025-045-001-004 Visual Description Pink Clay

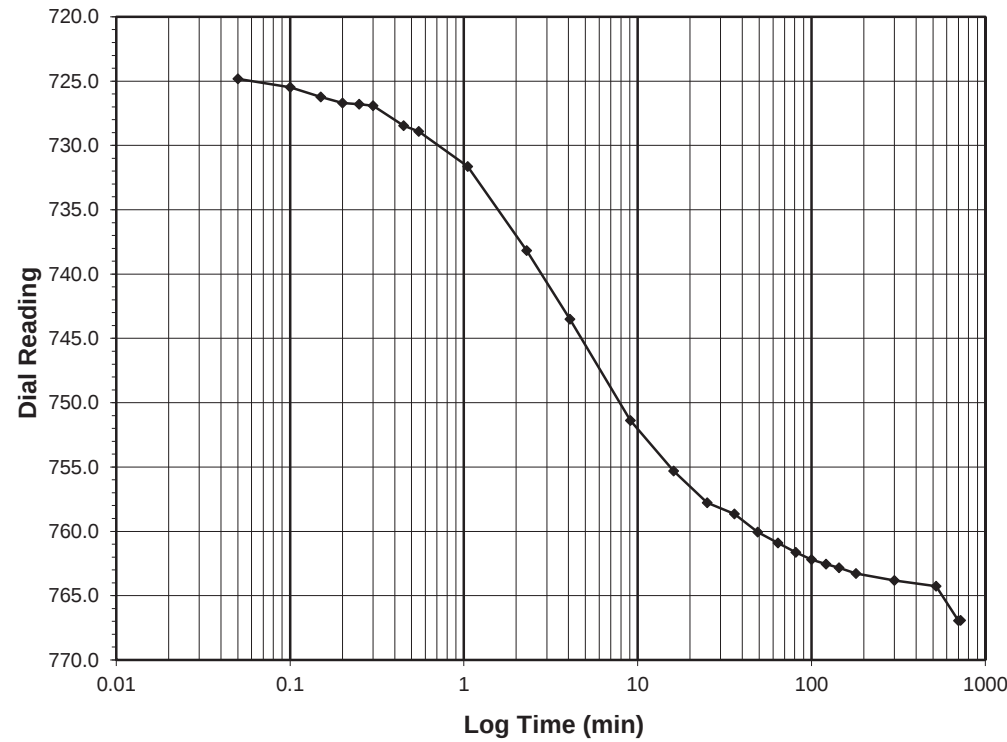
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.5-1.0
Final Reading (div) 767.0
Consolidometer No. R-409
1 Division (in) 0.0001

Start Date 3/19/2025
Start Time 22:50:48

Elapsed Time (min)	Dial Reading (div)
Initial	722.7
0.05	724.8
0.10	725.5
0.15	726.2
0.20	726.7
0.25	726.8
0.30	726.9
0.45	728.5
0.55	728.9
1.05	731.6
2.30	738.2
4.07	743.5
9.07	751.4
16.07	755.3
25.07	757.8
36.07	758.7
49.07	760.1
64.07	760.9
81.07	761.6
100.07	762.2
121.07	762.6
144.07	762.8
180.07	763.3
300.07	763.8
520.07	764.3
700.07	767.0
720.42	766.9



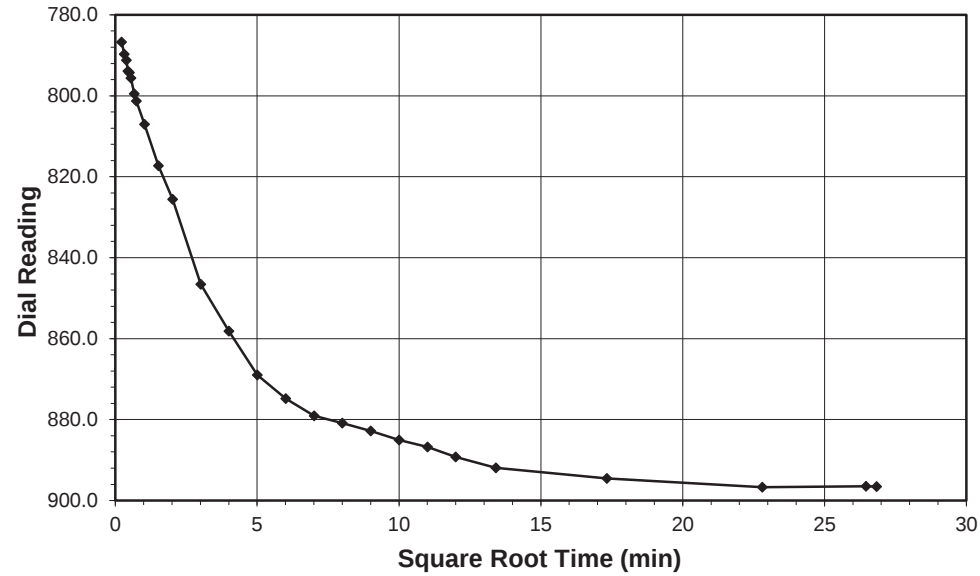
Tested By 129-02-0411 Date 3/19/2025 Checked By MPS Date 4/2/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-08
Client Project G24075.00 (I-6011A) Depth (ft) 8.2-10.2
Project No. R-2025-045-001 Sample No. ST-4
Lab ID R-2025-045-001-004 Visual Description Pink Clay

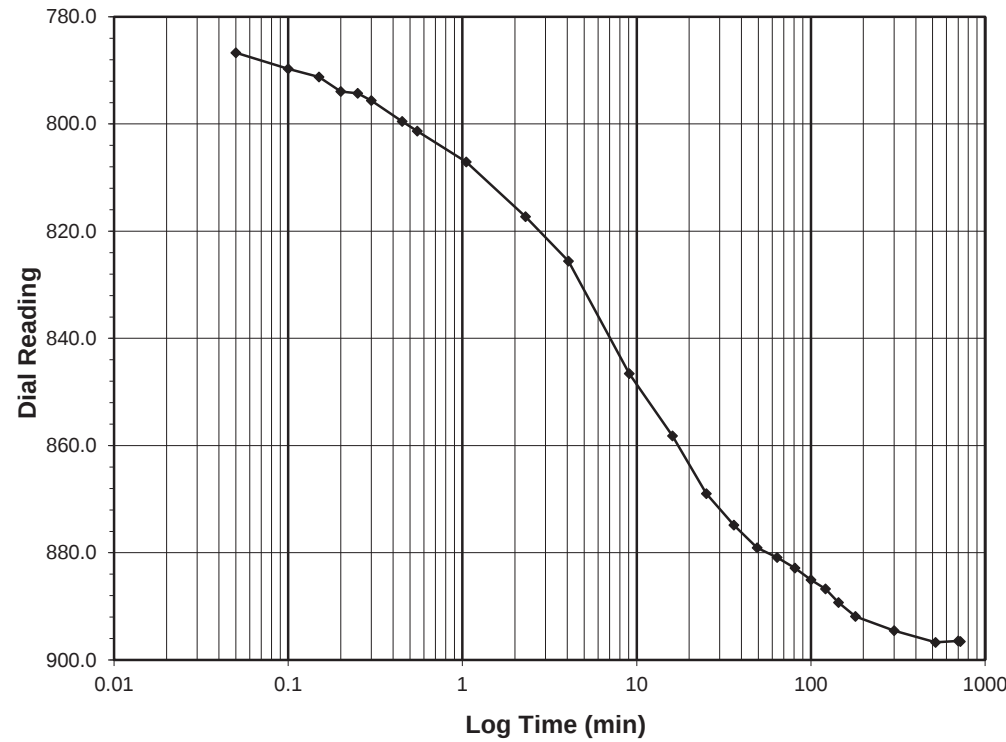
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
Final Reading (div) 896.7
Consolidometer No. R-409
1 Division (in) 0.0001

Start Date 3/20/2025
Start Time 10:51:13

Elapsed Time (min)	Dial Reading (div)
Initial	767.0
0.05	786.7
0.10	789.7
0.15	791.2
0.20	793.9
0.25	794.3
0.30	795.7
0.45	799.5
0.55	801.3
1.05	807.1
2.30	817.3
4.07	825.6
9.07	846.6
16.07	858.2
25.07	869.0
36.07	874.8
49.07	879.1
64.07	880.9
81.07	882.8
100.07	885.1
121.07	886.7
144.07	889.3
180.07	891.9
300.08	894.5
520.08	896.7
700.08	896.5
720.35	896.6



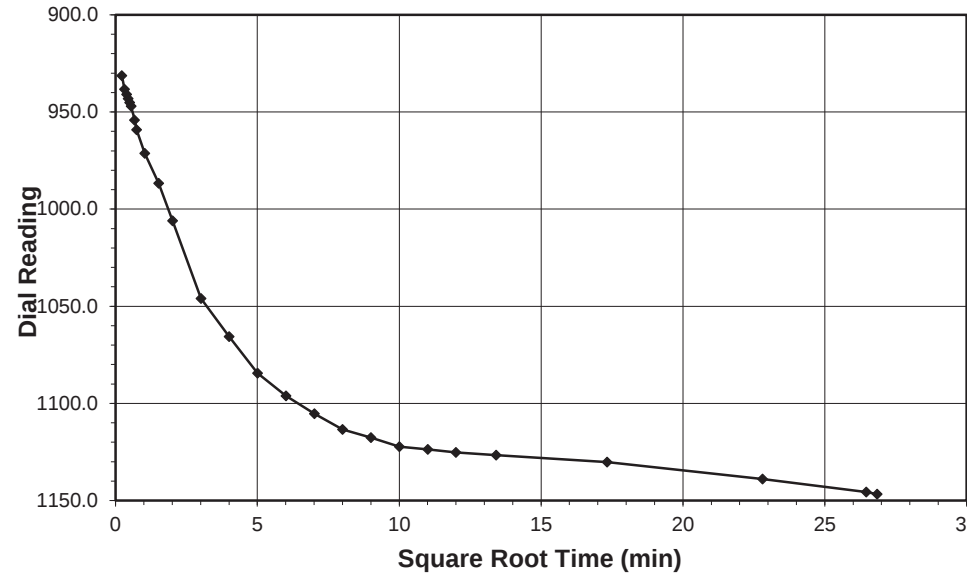
Tested By 129-02-0411 Date 3/20/2025 Checked By MPS Date 4/2/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-08
Client Project G24075.00 (I-6011A) Depth (ft) 8.2-10.2
Project No. R-2025-045-001 Sample No. ST-4
Lab ID R-2025-045-001-004 Visual Description Pink Clay

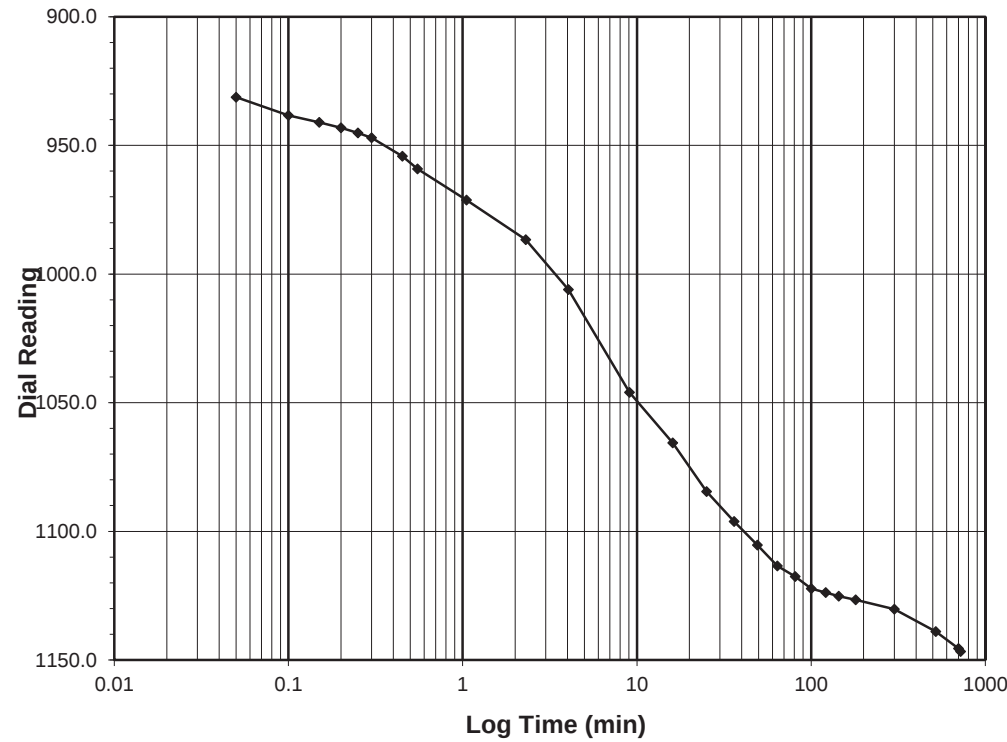
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-4.0
Final Reading (div) 1146.7
Consolidometer No. R-409
1 Division (in) 0.0001

Start Date 3/20/2025
Start Time 22:51:34

Elapsed Time (min)	Dial Reading (div)
Initial	896.7
0.05	931.2
0.10	938.3
0.15	941.0
0.20	943.1
0.25	945.1
0.30	947.0
0.45	954.2
0.55	959.1
1.05	971.3
2.30	986.6
4.05	1006.0
9.05	1046.0
16.07	1065.7
25.07	1084.5
36.07	1096.2
49.07	1105.4
64.07	1113.5
81.07	1117.6
100.07	1122.2
121.07	1123.7
144.07	1125.2
180.07	1126.6
300.07	1130.2
520.07	1139.0
700.07	1145.6
720.43	1146.7



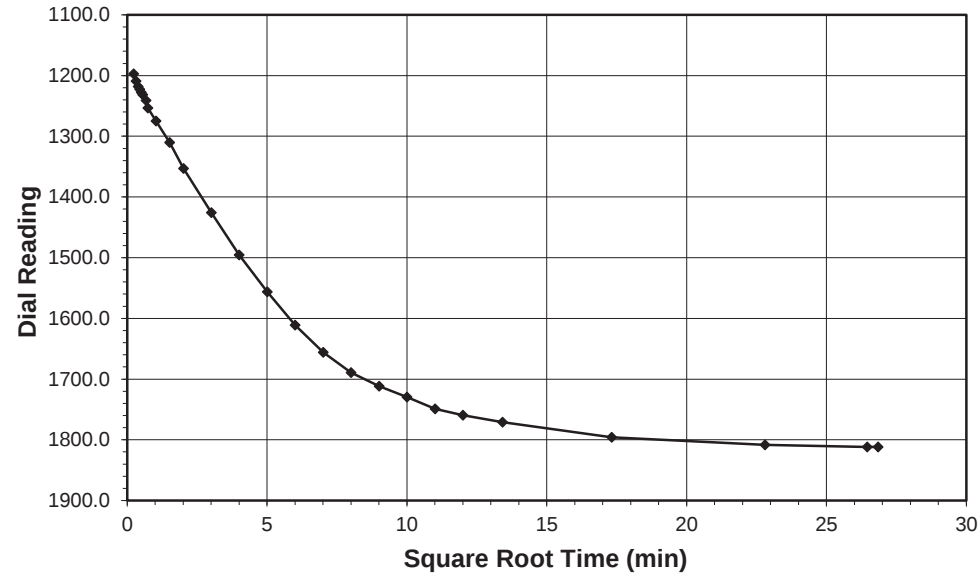
Tested By 129-02-0411 Date 3/20/2025 Checked By MPS Date 4/2/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-08
Client Project G24075.00 (I-6011A) Depth (ft) 8.2-10.2
Project No. R-2025-045-001 Sample No. ST-4
Lab ID R-2025-045-001-004 Visual Description Pink Clay

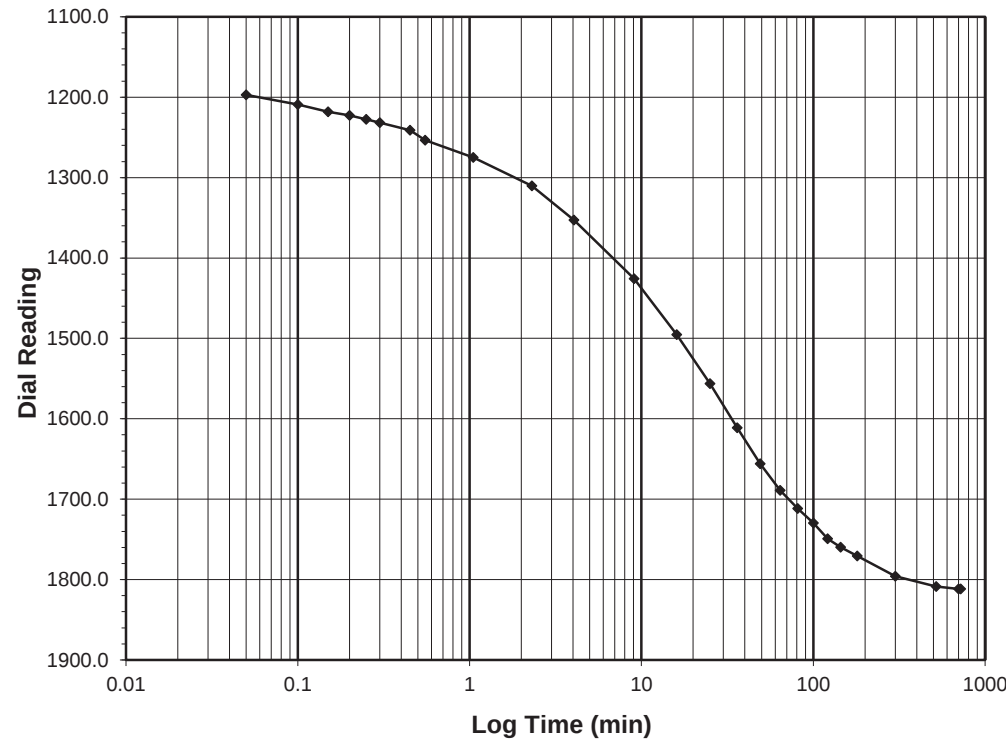
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-8.0
Final Reading (div) 1811.6
Consolidometer No. R-409
1 Division (in) 0.0001

Start Date 3/21/2025
Start Time 10:52:00

Elapsed Time (min)	Dial Reading (div)
Initial	1146.7
0.05	1197.1
0.10	1209.2
0.15	1217.9
0.20	1222.7
0.25	1227.3
0.30	1231.8
0.45	1241.2
0.55	1253.6
1.05	1274.8
2.30	1310.4
4.05	1353.0
9.05	1425.7
16.05	1495.5
25.05	1556.3
36.07	1611.0
49.07	1656.0
64.07	1689.1
81.07	1711.5
100.07	1729.5
121.07	1749.3
144.07	1759.7
180.07	1770.7
300.07	1795.7
520.07	1808.5
700.07	1811.6
720.37	1811.6



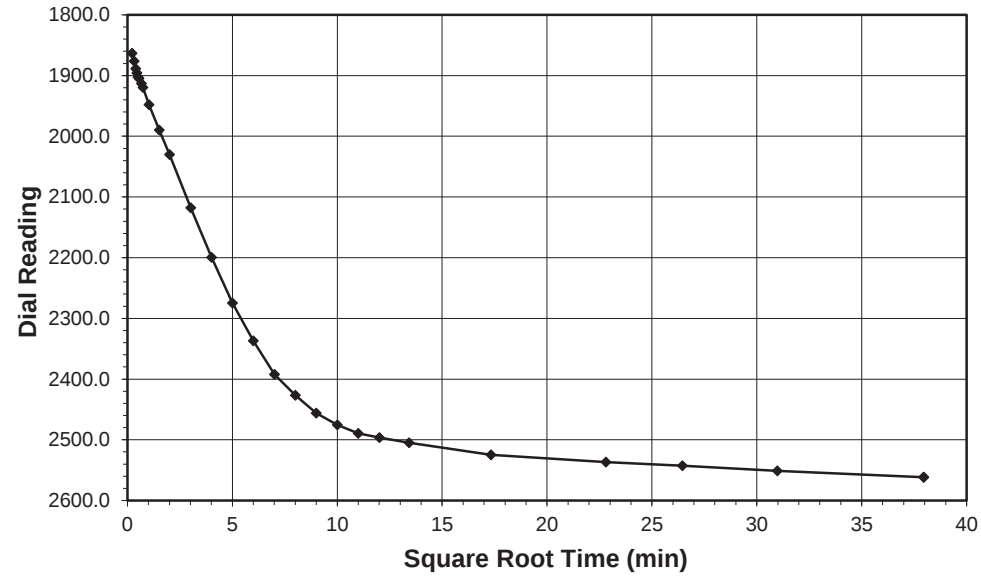
Tested By 129-02-0411 Date 3/21/2025 Checked By MPS Date 4/2/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-08
Client Project G24075.00 (I-6011A) Depth (ft) 8.2-10.2
Project No. R-2025-045-001 Sample No. ST-4
Lab ID R-2025-045-001-004 Visual Description Pink Clay

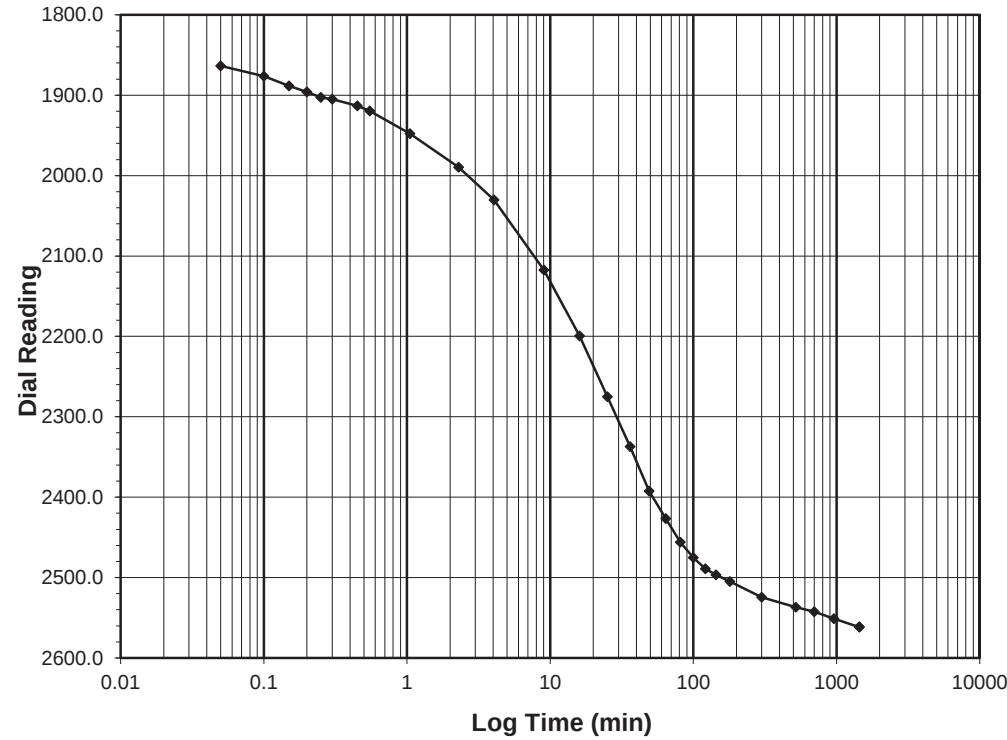
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 8.0-16.0
Final Reading (div) 2561.7
Consolidometer No. R-409
1 Division (in) 0.0001

Start Date 3/21/2025
Start Time 22:52:22

Elapsed Time (min)	Dial Reading (div)
Initial	1811.6
0.05	1863.5
0.10	1876.3
0.15	1888.6
0.20	1895.8
0.25	1902.5
0.30	1904.9
0.45	1913.1
0.55	1919.8
1.05	1948.0
2.30	1989.7
4.05	2030.2
9.05	2117.6
16.05	2199.4
25.05	2274.9
36.07	2337.2
49.07	2392.4
64.07	2426.6
81.07	2456.1
100.07	2475.3
121.07	2489.2
144.07	2496.5
180.07	2504.8
300.07	2524.6
520.07	2536.8
700.07	2542.6
960.07	2551.2
1440.07	2561.7
1440.18	2561.4



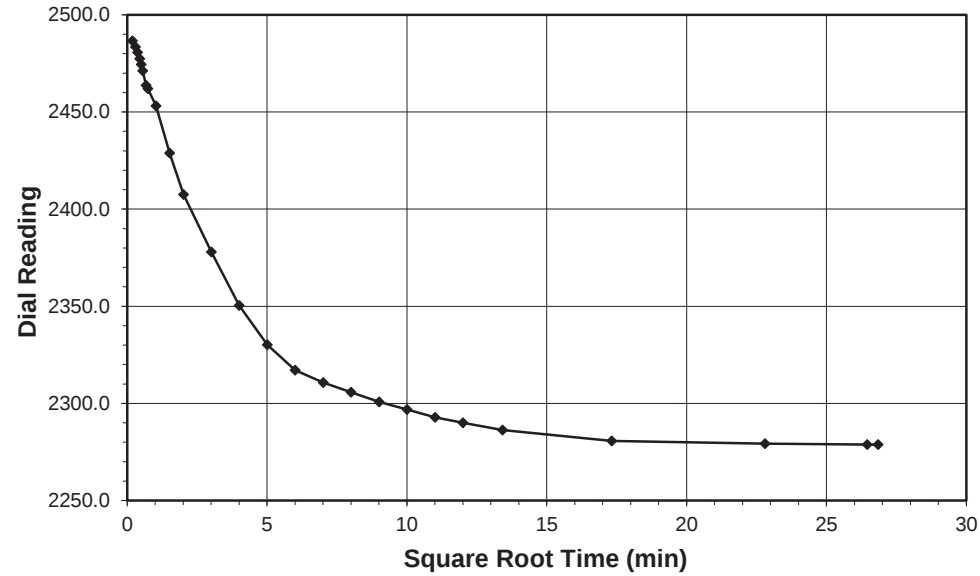
Tested By 129-02-0411 Date 3/21/2025 Checked By MPS Date 4/2/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-08
Client Project G24075.00 (I-6011A) Depth (ft) 8.2-10.2
Project No. R-2025-045-001 Sample No. ST-4
Lab ID R-2025-045-001-004 Visual Description Pink Clay

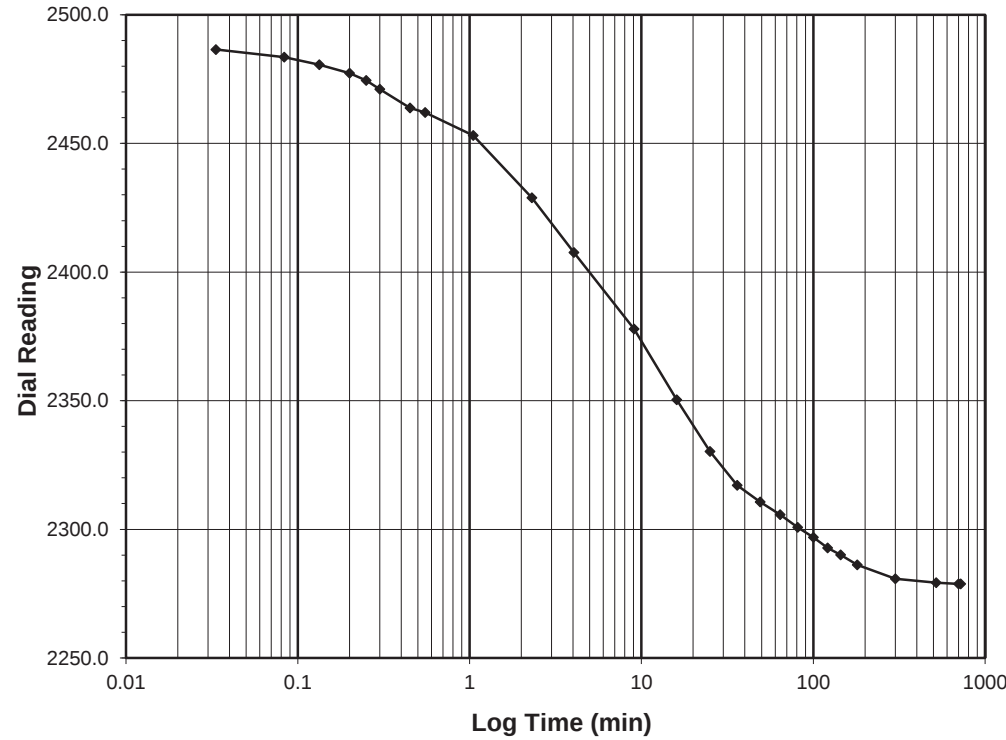
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 16.0-4.0
Final Reading (div) 2278.8
Consolidometer No. R-409
1 Division (in) 0.0001

Start Date 3/22/2025
Start Time 22:52:33

Elapsed Time (min)	Dial Reading (div)
Initial	2561.7
0.03	2486.5
0.08	2483.5
0.13	2480.6
0.20	2477.4
0.25	2474.5
0.30	2471.1
0.45	2463.8
0.55	2462.1
1.05	2453.1
2.30	2428.9
4.05	2407.6
9.05	2377.9
16.05	2350.4
25.05	2330.2
36.05	2317.1
49.05	2310.7
64.05	2305.7
81.05	2300.7
100.05	2296.9
121.05	2292.8
144.05	2290.1
180.07	2286.2
300.07	2280.7
520.07	2279.3
700.07	2278.8
720.33	2278.8



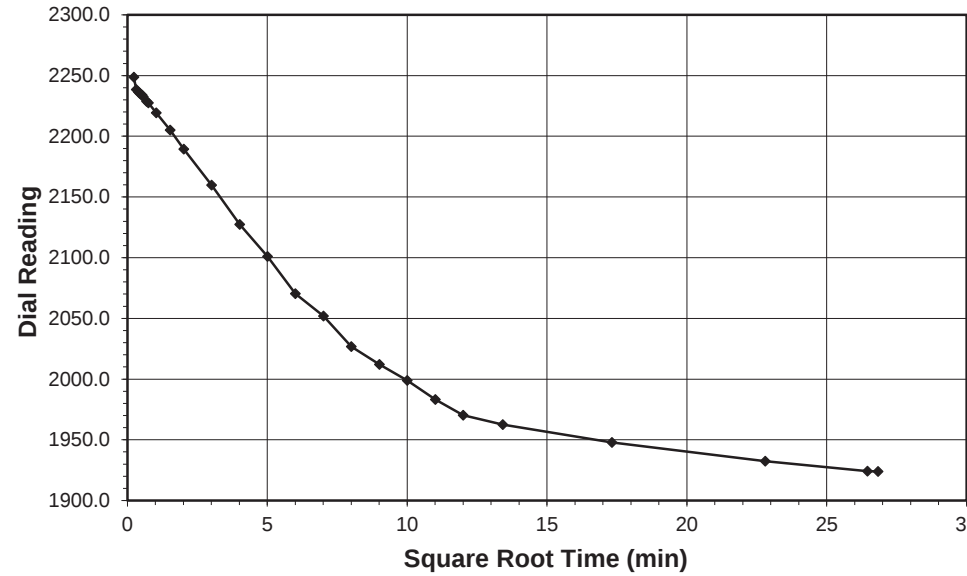
Tested By 129-02-0411 Date 3/22/2025 Checked By MPS Date 4/2/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-08
Client Project G24075.00 (I-6011A) Depth (ft) 8.2-10.2
Project No. R-2025-045-001 Sample No. ST-4
Lab ID R-2025-045-001-004 Visual Description Pink Clay

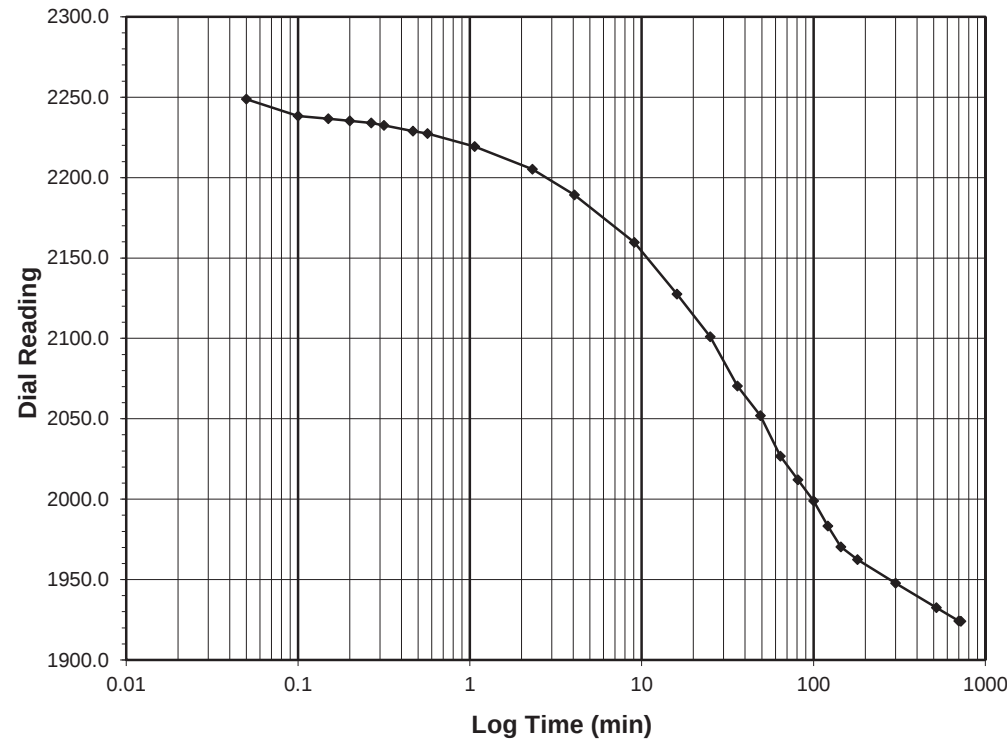
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-1.0
Final Reading (div) 1924.0
Consolidometer No. R-409
1 Division (in) 0.0001

Start Date 3/23/2025
Start Time 10:52:54

Elapsed Time (min)	Dial Reading (div)
Initial	2278.8
0.05	2248.8
0.10	2238.4
0.15	2236.5
0.20	2235.3
0.27	2234.1
0.32	2232.6
0.47	2228.9
0.57	2227.4
1.07	2219.3
2.32	2205.2
4.07	2189.3
9.07	2159.7
16.07	2127.4
25.07	2101.0
36.07	2070.3
49.07	2051.9
64.07	2026.8
81.07	2012.0
100.07	1998.9
121.07	1983.2
144.07	1970.3
180.07	1962.4
300.08	1947.8
520.07	1932.5
700.07	1924.3
720.05	1924.0



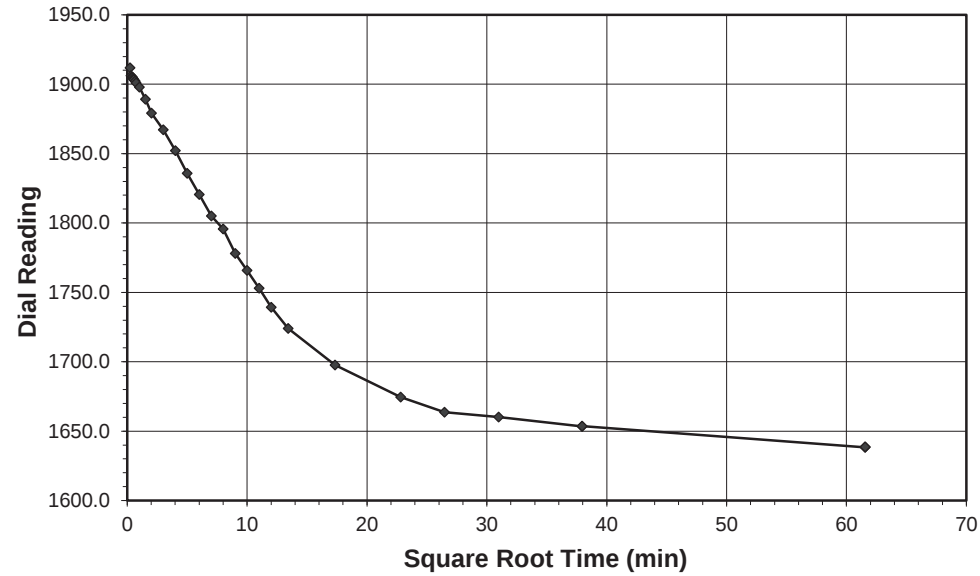
Tested By 129-02-0411 Date 3/23/2025 Checked By MPS Date 4/2/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-08
Client Project G24075.00 (I-6011A) Depth (ft) 8.2-10.2
Project No. R-2025-045-001 Sample No. ST-4
Lab ID R-2025-045-001-004 Visual Description Pink Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-0.25
Final Reading (div) 1638.3
Consolidometer No. R-409
1 Division (in) 0.0001

Start Date 3/23/2025
Start Time 22:52:57

Elapsed Time (min)	Dial Reading (div)
Initial	1924.0
0.05	1911.8
0.10	1906.2
0.15	1905.3
0.20	1904.9
0.25	1903.8
0.30	1903.3
0.45	1902.3
0.55	1901.0
1.05	1897.9
2.30	1889.2
4.05	1879.1
9.05	1867.2
16.07	1852.1
25.07	1835.9
36.07	1820.6
49.07	1805.0
64.07	1795.7
81.07	1777.9
100.07	1765.9
121.07	1753.1
144.07	1739.3
180.07	1724.1
300.07	1697.6
520.07	1674.5
700.07	1663.6
960.07	1660.2
1440.07	1653.4
1440.18	1653.5
3789.60	1638.3
3789.62	1638.6
3789.63	1638.5

Tested By 129-02-0411 Date 3/23/2025 Checked By MPS Date 4/2/2025



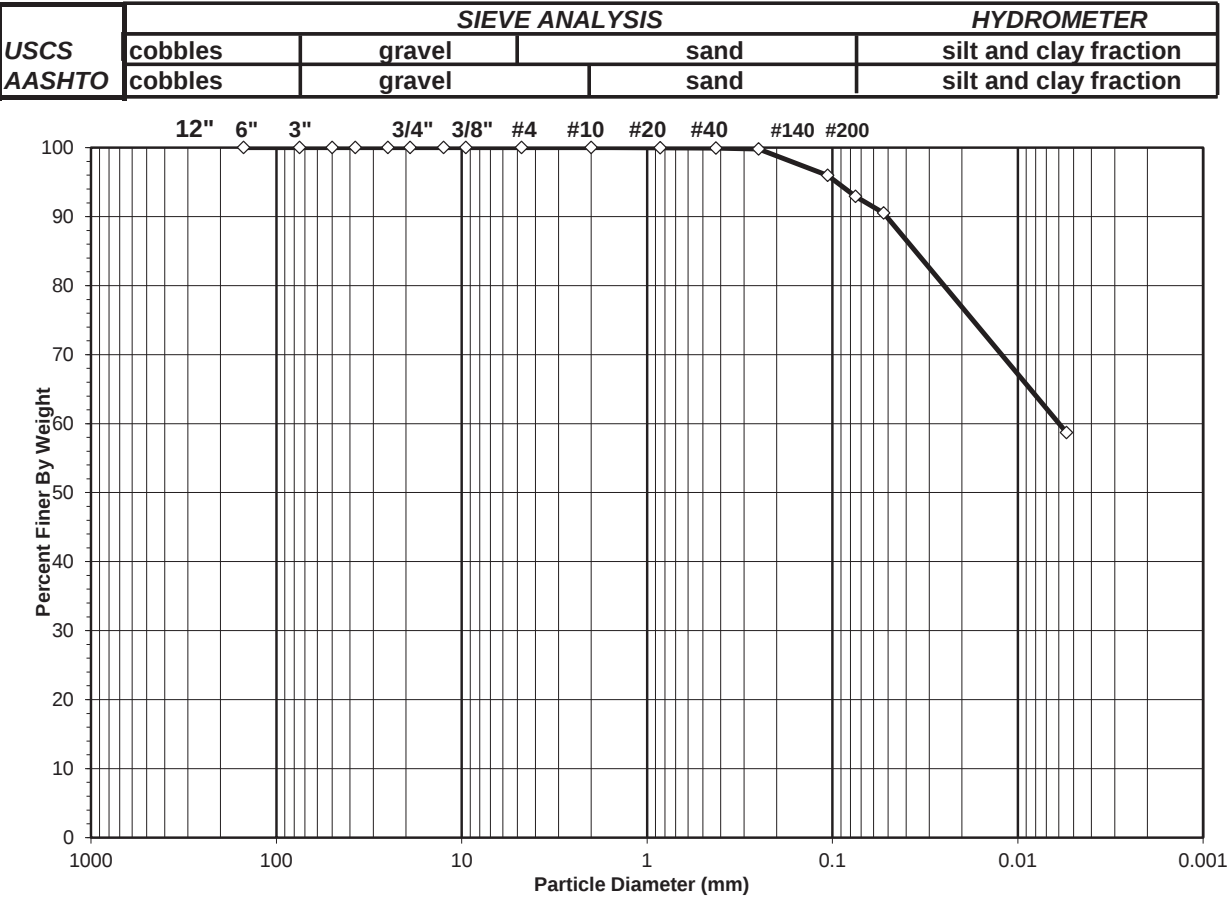
SIEVE AND HYDROMETER ANALYSIS
NCDOT MOD. AASHTO T-88,

Client
Client Reference
Project No.
Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-004

Boring No.
Depth (ft)
Sample No.
Soil Color

R-08
8.2-10.2
ST-4
Pink



Sieve Size (mm)	Percent Finer	USCS %		AASHTO %		NCDOT SOIL MORTAR %	
100	100.00	Gravel	0.00	Gravel	0.00	Coarse Sand Ret. #60	0.21
2	100.00	Sand	7.09	Coarse Sand	0.09	Fine Sand Ret. #270	9.26
0.075	92.91	Silt&Clay	92.91	Fine Sand	7.00	Silt 0.05-0.005mm	31.82
				Silt & Clay	92.91	Clay <0.005mm	58.71
AASHTO (GI)		A-7-6 (59)					



WASH SIEVE ANALYSIS
NCDOT MOD. AASHTO T-88,

Client
Client Reference
Project No.
Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-004

Boring No.
Depth (ft)
Sample No.
Soil Color

R-08
8.2-10.2
ST-4
Pink

Minus #10 for Hygroscopic (10-15gm)		Hydrometer Specimen 50 or 100gms	
Tare No.	H	Air Dried Hydrometer Material (gm)	58.56
Wgt.Tare + Wet Specimen (gm)	29.65	Corrected Dry Wt. of Hydro Mtrl. (gm)	57.12
Wgt.Tare + Dry Specimen (gm)	29.29		
Weight of Tare (gm)	15.01	Weight of -#270 Material	51.71
Weight of Water (gm)	0.36	Weight of -#10; +#270 Material	5.41
Weight of Dry Soil (gm)	14.28		
Moisture Content (%)	2.5		

Tare No.	469		
Wgt. Tare + Air Dry Soil (gm)	450.45	Dry Weight of Material Ret. #10 (gm)	0.00
Weight of Tare (gm)	146.10	Corrected Dry Sample Wt - #10 (gm)	296.87
Air Dried Wgt.Total Sample (gm)	304.35		
Total Dry Weight Sample (gm)	296.9	J - Factor (Percent Finer than #10)	1.0000

Sieve Size	Sieve Opening (mm)	Wgt.of Soil Retained (gm)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.5	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.00	0.00	0.00	100.00	100.00
#20	0.85	0.02	0.04	0.04	99.96	99.96
#40	0.425	0.03	0.05	0.09	99.91	99.91
#60	0.25	0.07	0.12	0.21	99.79	99.79
#140	0.106	2.19	3.83	4.04	95.96	95.96
#200	0.075	1.74	3.05	7.09	92.91	92.91
#270	0.053	1.36	2.38	9.47	90.53	90.53
Pan	-	51.71	90.53	100.00	-	-

Tested By 129-02-0411 Date 4/1/25 Checked By AES Date 4/1/25



HYDROMETER ANALYSIS
NCDOT MOD. AASHTO T-88,

Client	Falcon Engineering	Boring No.	R-08
Client Reference	G24075.00 (I-6011A)	Depth (ft)	8.2-10.2
Project No.	R-2025-045-001	Sample No.	ST-4
Lab ID	R-2025-045-001-004	Soil Color	Pink

Elapsed Time (min)		R Measured	Temp. (° C)	Composite Correction	R Corrected	N (%)	K Factor	Diameter (mm)	N' (%)
7:43:00	0	NA	NA	NA	NA	NA	NA	NA	NA
7:43:28	0.47	55.0	20.9	-1.78	50.8	88.2	0.01334	0.0527	88.2
8:43:00	60.00	38.0	21	-1.80	33.8	58.7	0.01332	0.0055	58.7

Corrections	
a - Factor	0.992
Percent Finer than # 10	100.00
Specific Gravity	2.69 Measured

Note: Hydrometer test is performed on - #10 sieve material.

LL = 77
PL = 20
PI = 57

Tested By 129-02-0411 Date 3/28/25 Checked By AES Date 4/1/25

page 3 of 3 DCN: CT-S3Y DATE: 10/8/01 REVISION: 2 25-045 - G24075.00 (I-6011A)\2025-045-001\2025-045-001-004 Grain SIEVEHYD10 NCDOT.xlsm]Data1



ATTERBERG LIMITS
AASHTO T-89, T-90 (DOT Modified)

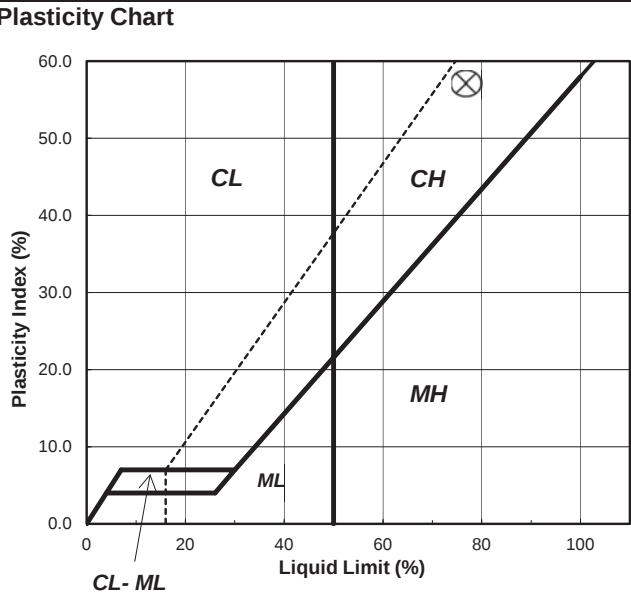
Client	Falcon Engineering	Boring No.	R-08
Client Reference	G24075.00 (I-6011A)	Depth (ft)	8.2-10.2
Project No.	R-2025-045-001	Sample No.	ST-4
Lab ID	R-2025-045-001-004	Soil Description	PINK FAT CLAY

Note: The USCS symbol used with this test refers only to the minus No. 40 sieve material. See the "Sieve and Hydrometer Analysis" graph page for the complete material description .

Liquid Limit Test	1
Tare Number	V-2
Wt. of Tare & WS (gm)	26.97
Wt. of Tare & DS (gm)	22.00
Wt. of Tare (gm)	15.54
Wt. of Water (gm)	5.0
Wt. of DS (gm)	6.5
Moisture Content (%)	76.9
Number of Blows	25

Plastic Limit Test	1	2	Range	Test Results
Tare Number	20	33		Liquid Limit (%) 77
Wt. of Tare & WS (gm)	15.26	15.20		Plastic Limit (%) 20
Wt. of Tare & DS (gm)	13.87	13.79		Plasticity Index (%) 57
Wt. of Tare (gm)	7.02	6.96		USCS Symbol CH
Wt. of Water (gm)	1.4	1.4		
Wt. of DS (gm)	6.9	6.8		
Moisture Content (%)	20.3	20.6	-0.4	

Note: The acceptable range of the two Moisture contents is ± 2.6



Tested By 129-02-0411 Date 3/21/25 Checked By AES Date 3/24/25

page 1 of 1 DCN: CT-S4B DATE: 10/8/01 REVISION: 2



SPECIFIC GRAVITY
ASTM D 854-14

Client:
Client Reference:
Project No.:
Lab ID:

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-004

Boring No.: R-08
Depth (ft): 8.2-10.2
Sample No.: ST-4
Visual Description: Pink Fat Clay

(Minus No.4 sieve material,oven dried)

Replicate Number	1	2
Pycnometer ID:	R 714	R 749
Weight of Pycnometer & Soil & Water (g):	676.04	672.5
Temperature (°C):	22.9	22.9
Weight of Pycnometer & Water (g):	644.42	640.99
Tare Number:	714	749
Weight of Tare & Dry Soil (g):	196.58	193.46
Weight of Tare (g):	146.31	143.22
Weight of Dry Soil (g):	50.27	50.24
Specific Gravity of Soil @ Measured Temperature:	2.696	2.683
Specific Gravity of Water @ Measured Temperature:	0.99757	0.99757
Conversion Factor for Measured Temperature:	0.99936	0.99936
Specific Gravity @ 20° Celsius:	2.698	2.685

Average Specific Gravity @ 20° Celsius2.69

Tested By 129-02-0411Date 3/18/25Checked By AESDate 3/18/25

page 1 of 1DCN: CT-S5DATE: 3/26/18REVISION: 21



SHELBY TUBE UNIT WEIGHT
ASTM D7263-09

Client
Client Reference
Project No.
Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-004

Boring No.: R-08
Depth Pushed (ft): 8.2-10.2
Shelby Tube No.: ST-4
Recovery (ft): 2.0'

MOISTURE CONTENT

Tare Number	436
Wt. Tare & WS (g)	417.60
Wt. Tare & DS (g)	310.56
Wt. Tare (g)	99.21
Moisture Content (%)	50.65

UNIT WEIGHT	
Wt. Tube & WS. (g)	1087.36
Wt. Of Tube (g)	0.00
Wt. Of WS. (g)	1087.36
Length 1 (in.)	6.186
Length 2 (in.)	6.157
Length 3 (in.)	6.166
Top Diameter (in.)	2.822
Middle Diameter (in.)	2.834
Bottom Diameter (in.)	2.823
Sample Volume (cc)	634.31
Moisture Content(%)	50.65
Unit Wet Wt .(g/cc)	1.71
Unit Wet Wt. (pcf)	106.97
Unit Dry Wt. (g/cc)	1.14
Unit Dry Wt. (pcf)	71.0

Tested By DLDate 3/19/25Checked By AESDate 3/21/25

page 1 of 1DCN: CT-S37A DATE: 1/7/15 REVISION: 1e

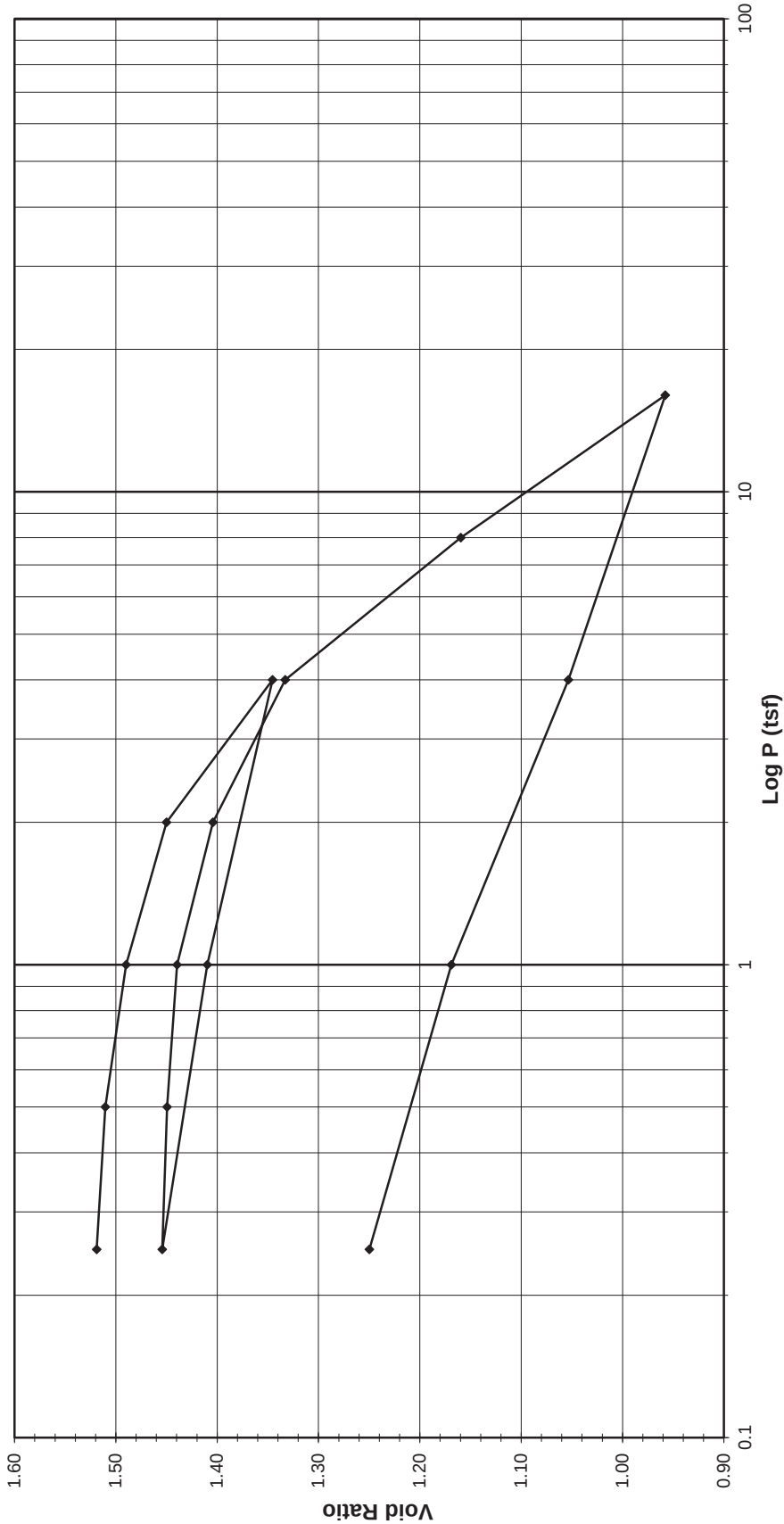


ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Falcon Engineering	Boring No.	R-09
Client Reference	G24075.00 (I-6011A)	Depth (ft)	8.5-10.5
Project No.	R-2025-045-001	Sample No.	ST-5
Lab ID	R-2025-045-001-005	Visual Description	Purple Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Falcon Engineering	Boring No.	R-09
Client Reference	G24075.00 (I-6011A)	Depth (ft)	8.5-10.5
Project No.	R-2025-045-001	Sample No.	ST-5
Lab ID	R-2025-045-001-005	Visual Description	Purple Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Consolidometer No. R-487
1 Division = 0.0001 (in.)

Sample Properties		Initial	Final
Water Content			
Tare Number		712	491
Wt. Tare & WS (g)		422.59	222.92
Wt. Tare & DS (g)		303.38	183.86
Wt. Water (g)		119.21	39.06
Wt. Tare (g)		90.03	100.40
Wt. DS (g)		213.35	83.46
Water Content (%)		55.88	46.80
Sample Parameters			
Sample Diameter (in)		2.5	2.5
Sample Height (in)		1.0000	0.8906
Sample Volume (cc)		80.44	71.64
Wt. Wet Sample + Ring (g)		236.95	229.24
Wt. of Ring (g)		104.43	104.43
Wt. of Wet Sample (g)		132.52	124.81
Wet Density (pcf)		102.80	108.71
Wet Density (g/cc)		1.65	1.74
Water Content (%)		55.88	46.80
Wt. of Dry Sample (g)		85.02	85.02
Dry Density (pcf)		65.95	74.05
Dry Density (g/cc)		1.06	1.19
Void Ratio		1.5263	1.2499
Saturation (%)		97.75	99.97
Specific Gravity		2.67	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)
Seating	0	0	0	25.400	80.440	1.05690
0.25	39.2	10.3	28.9	25.327	80.208	1.05996
0.5	84.2	21.8	62.4	25.241	79.938	1.06354
1	183.2	38.8	144.4	25.033	79.278	1.07239
2	361.6	59.5	302.1	24.633	78.010	1.08982
4	792.3	75.8	716.5	23.580	74.677	1.13847
1	512.2	51.1	461.1	24.229	76.731	1.10799
0.25	307.6	22.1	285.5	24.675	78.144	1.08795
0.5	330.2	26.3	303.9	24.628	77.995	1.09003
1	386.7	43.2	343.5	24.528	77.677	1.09449
2	544.0	61.0	483.0	24.173	76.554	1.11054
4	841.8	76.1	765.6	23.455	74.281	1.14452
8	1558.4	106.9	1451.5	21.713	68.764	1.23636
16	2405.6	155.3	2250.2	19.684	62.339	1.36378
4	1960.6	89.3	1871.3	20.647	65.387	1.30021
1	1471.8	57.6	1414.2	21.808	69.064	1.23099
0.25	1120.5	26.6	1093.9	22.622	71.641	1.18671

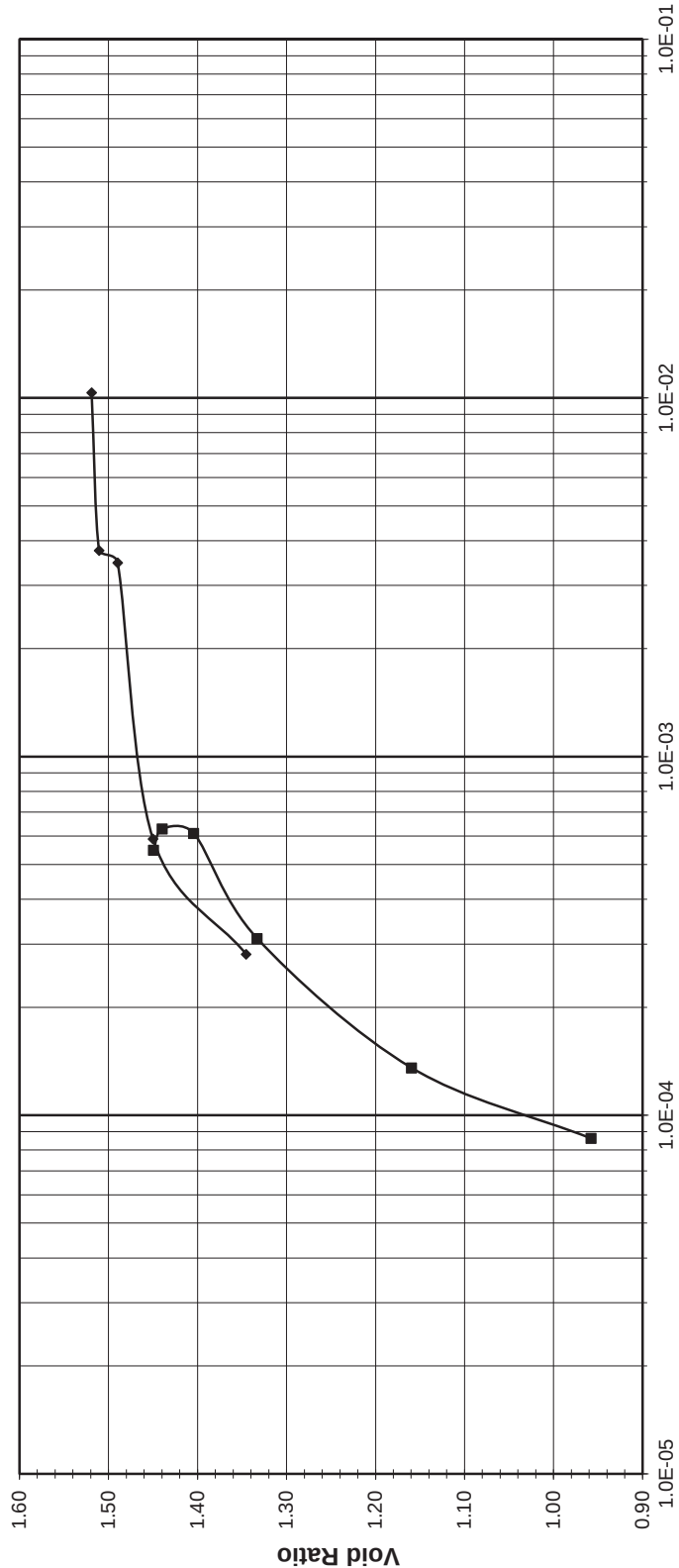
1.52626	1.51897	1.51049	1.48978	1.44995	1.34526	1.40977	1.45415	1.44948	1.43948	1.40423	1.33285	1.15956	0.95780	1.05352	1.16899	1.24992
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ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Falcon Engineering	Boring No.	R-09
Client Reference	G24075.00 (I-6011A)	Depth (ft)	8.5-10.5
Project No.	R-2025-045-001	Sample No.	ST-5
Lab ID	R-2025-045-001-005	Visual Description	Purple Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Coefficient of Consolidation (cm^2/sec)

—■— Second Cycle Up

—◆— First Cycle Up

page 3 of 20

Tested By		129-02-0411		Date	3/24/2025	Input Checked By	MPS	Date	4/10/2025
DCN: CT-24E Date: 5/3/12 Revision: 6 G:\H1 RALEIGH\2025 Projects\Falcon Eng\2025-045 - G24075.00 (I-6011A)\2025-045-001\2025-045-001-005 DOT GEOJAC-16T5F1 Cv.X\ismj\FINAL PLOT									

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page 3 of 20

G:\W1 RALEIGH\2025 Projects\Falcon Eng\2025-045 - G24075.00 (I-6011A)\2025-045-001\2025-045-001-005 DOT GEOJAC-16T5F1 Cvx.isxm\FINAL PLOT
CT-24E Date: 5/3/22 Revision: 6
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ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	Falcon Engineering	Boring No.	R-09
Client Reference	G24075.00 (I-6011A)	Depth (ft)	8.5-10.5
Project No.	R-2025-045-001	Sample No.	ST-5
Lab ID	R-2025-045-001-005	Visual Description	Purple Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Consolidometer No. R-487

$$1 \text{ Division} = 0.0001 \text{ (in.)}$$

Sample Properties		Initial	Final	C _v Test Data Summary				
		Load Increment	Dial Reading @ t ₅₀	Machine Deflection	Corrected Dial Reading @ t ₅₀	Sample Height @ t ₅₀	Time t ₅₀	C _v
		(tsf)	(div)	(div)	(div)	(cm)	(min.)	(cm ² /sec)
Water Content								
Tare Number		712	491					
Wt. Tare & WS (g)		422.59	222.92					
Wt. Tare & DS (g)		303.38	183.86					
Wt. Water (g)		119.21	39.06					
Wt. Tare (g)		90.03	100.40					
Wt. DS (g)		213.35	83.46					
Water Content (%)		55.88	46.80					
Sample Parameters								
Sample Diameter (in)		2.5	2.5					
Sample Height (in)		1.000	0.891					
Sample Volume (cc)		80.44	71.64					
Wt. Wet Sample + Ring (g)		236.95	229.24					
Wt. of Ring (g)		104.43	104.43					
Wt. of Wet Sample (g)		132.52	124.81					
Wet Density (pcf)		102.80	108.71					
Wet Density (g/cc)		1.65	1.74					
Water Content (%)		55.88	46.80					
Wt. of Dry Sample (g)		85.02	85.02					

SHEET 69

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DCN: CT-24E Date: 5/3/12 Revision: 6

2200 Westinghouse Blvd., Suite 103 • Raleigh, NC 27604 • Phone (919) 876-0405 • Fax (919) 876-0460 • www.geotechnics.net

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-005

Boring No.

Depth (ft)

Sample No.

Visual Description

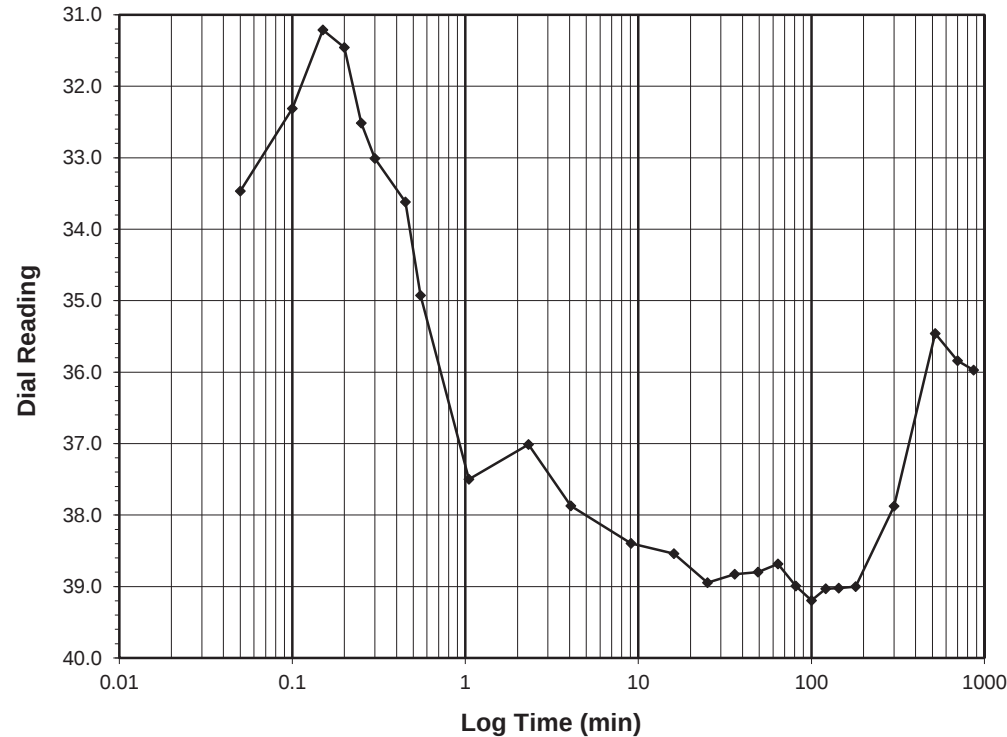
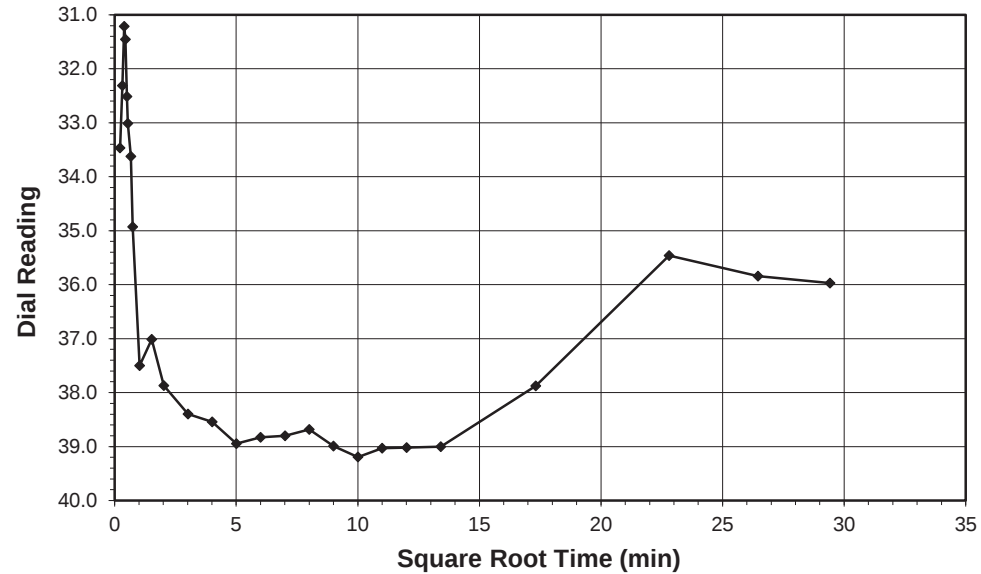
R-09

8.5-10.5

ST-5

Purple Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf)	0.0-0.25
Final Reading (div)	39.2
Consolidometer No.	R-487
1 Division (in)	0.0001
Start Date	3/24/2025
Start Time	18:12:34

Elapsed Time (min)	Dial Reading (div)
Initial	0.0
0.05	33.5
0.10	32.3
0.15	31.2
0.20	31.5
0.25	32.5
0.30	33.0
0.45	33.6
0.55	34.9
1.05	37.5
2.32	37.0
4.07	37.9
9.07	38.4
16.07	38.5
25.07	38.9
36.07	38.8
49.07	38.8
64.07	38.7
81.07	39.0
100.07	39.2
121.07	39.0
144.07	39.0
180.07	39.0
300.07	37.9
520.07	35.5
700.07	35.8
865.70	36.0

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-005

Boring No.

Depth (ft)

Sample No.

Visual Description

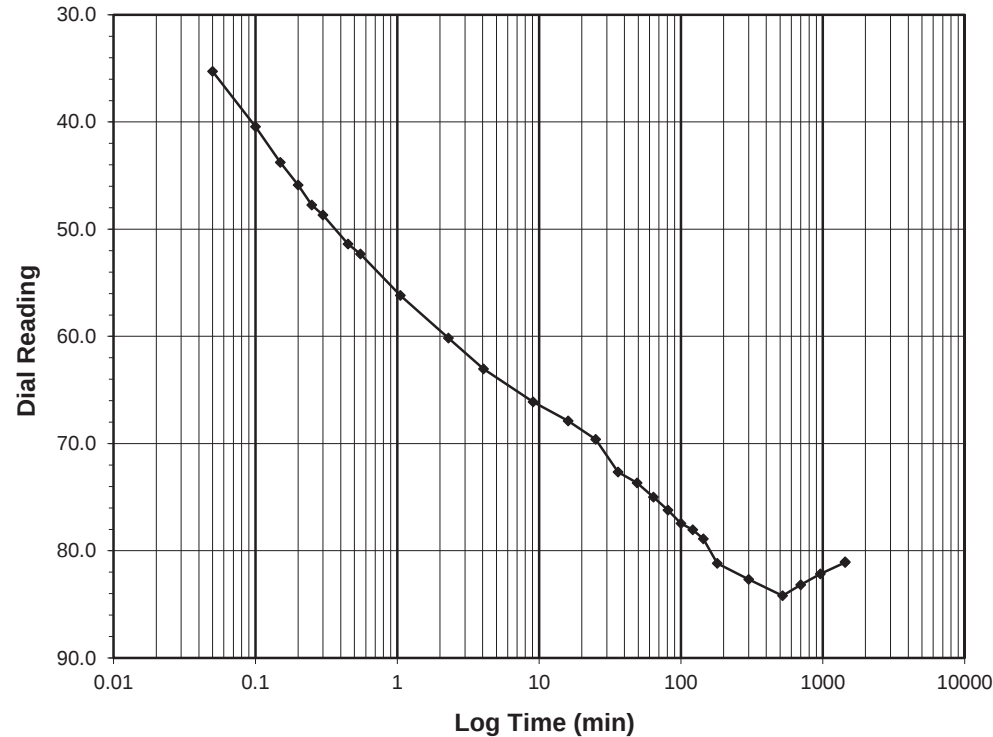
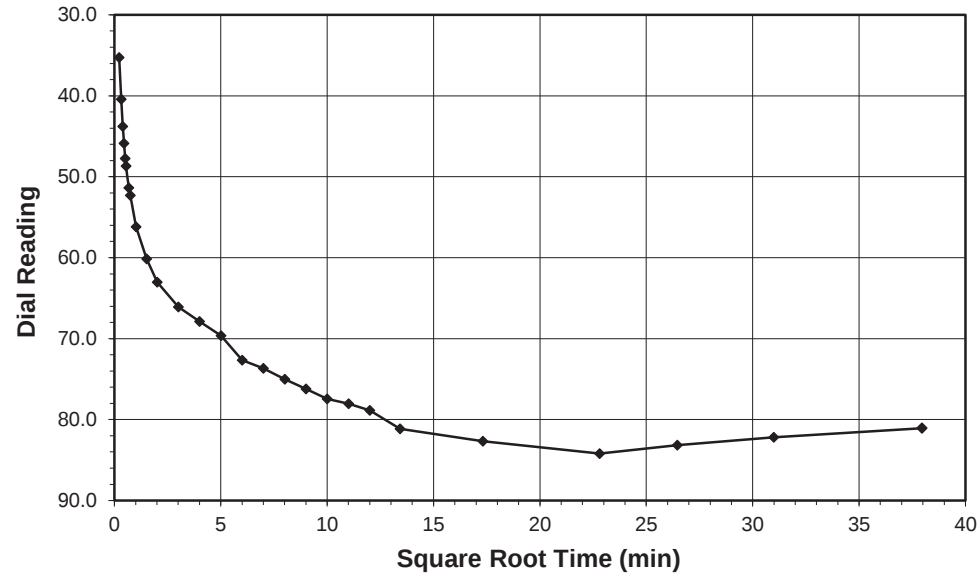
R-09

8.5-10.5

ST-5

Purple Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf)	0.25-0.5
Final Reading (div)	84.2
Consolidometer No.	R-487
1 Division (in)	0.0001
Start Date	3/25/2025
Start Time	8:38:16

Elapsed Time (min)	Dial Reading (div)
Initial	39.2
0.05	35.3
0.10	40.4
0.15	43.8
0.20	45.9
0.25	47.7
0.30	48.7
0.45	51.4
0.55	52.3
1.05	56.2
2.30	60.2
4.05	63.0
9.05	66.1
16.07	67.9
25.07	69.6
36.07	72.7
49.07	73.7
64.07	75.0
81.07	76.2
100.07	77.5
121.07	78.0
144.07	78.9
180.07	81.2
300.07	82.7
520.07	84.2
700.07	83.2
960.07	82.2
1440.07	81.1
1440.30	81.0

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-005

Boring No.

Depth (ft)

Sample No.

Visual Description

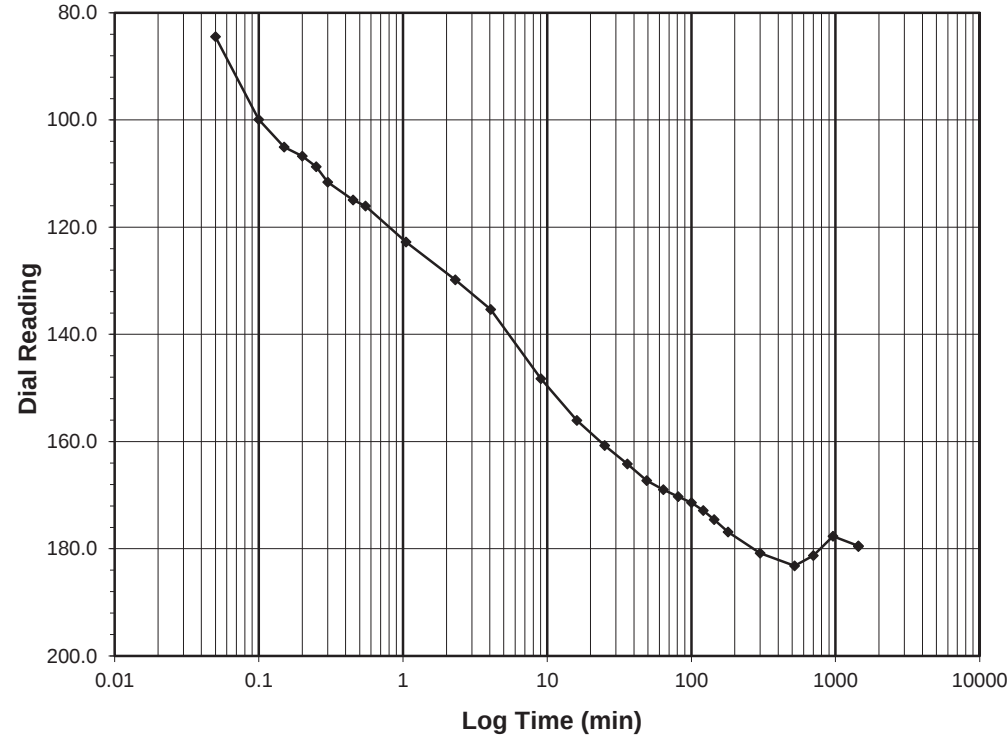
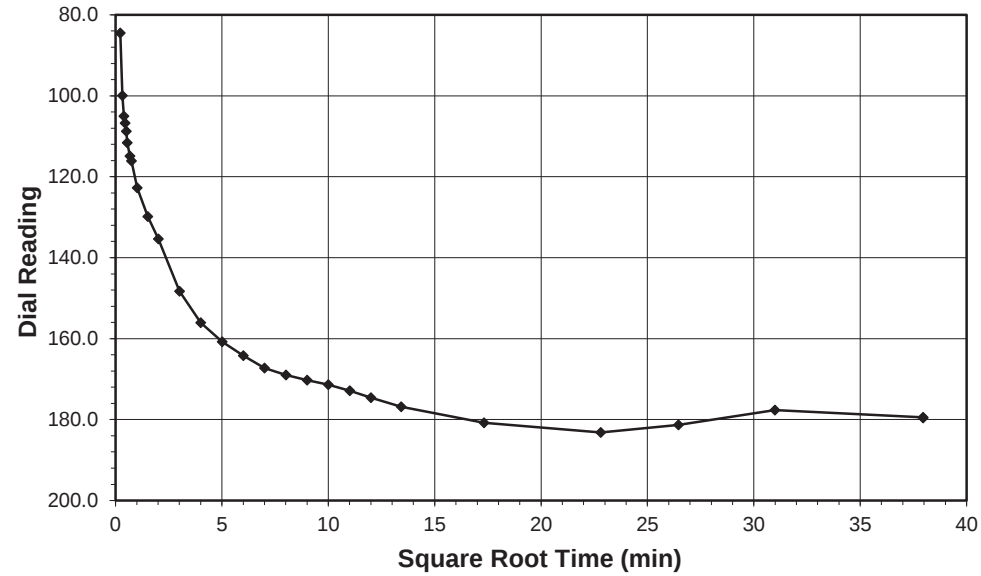
R-09

8.5-10.5

ST-5

Purple Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.5-1.0
Final Reading (div) 183.2
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 3/26/2025
Start Time 8:38:34

Elapsed Time (min)	Dial Reading (div)
Initial	84.2
0.05	84.5
0.10	99.9
0.15	105.1
0.20	106.7
0.25	108.7
0.30	111.6
0.45	114.9
0.55	116.1
1.05	122.7
2.30	129.8
4.05	135.4
9.05	148.3
16.05	156.0
25.05	160.8
36.05	164.2
49.05	167.3
64.05	169.0
81.05	170.3
100.07	171.4
121.07	172.9
144.07	174.6
180.07	176.9
300.07	180.8
520.07	183.2
700.07	181.3
960.07	177.7
1440.07	179.5
1440.22	179.6

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-005

Boring No.

Depth (ft)

Sample No.

Visual Description

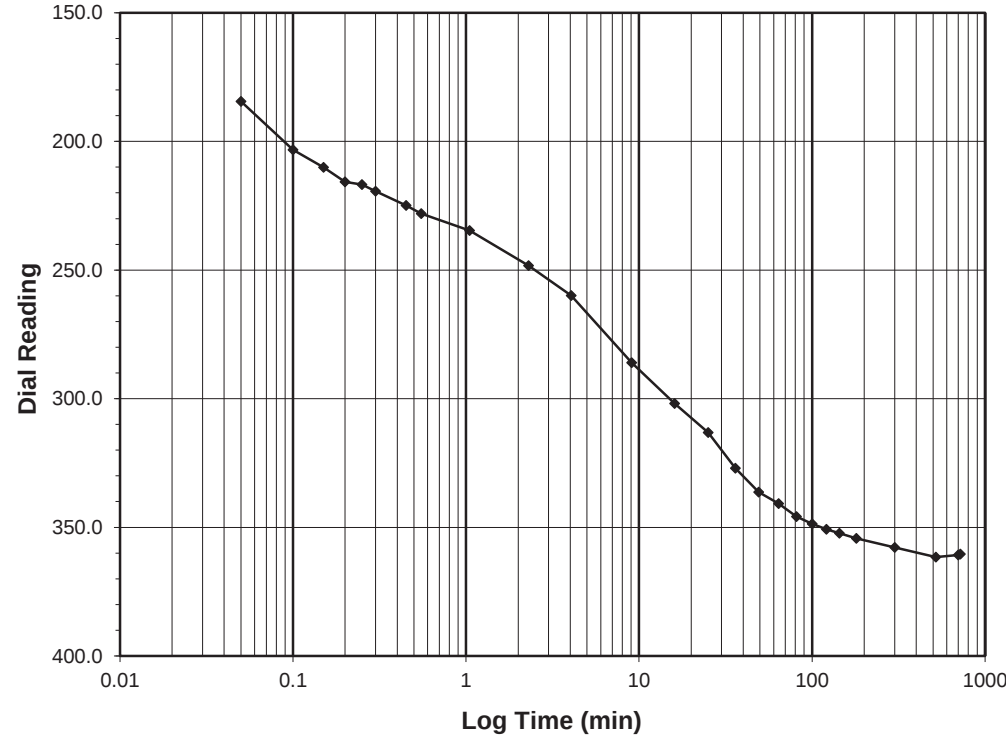
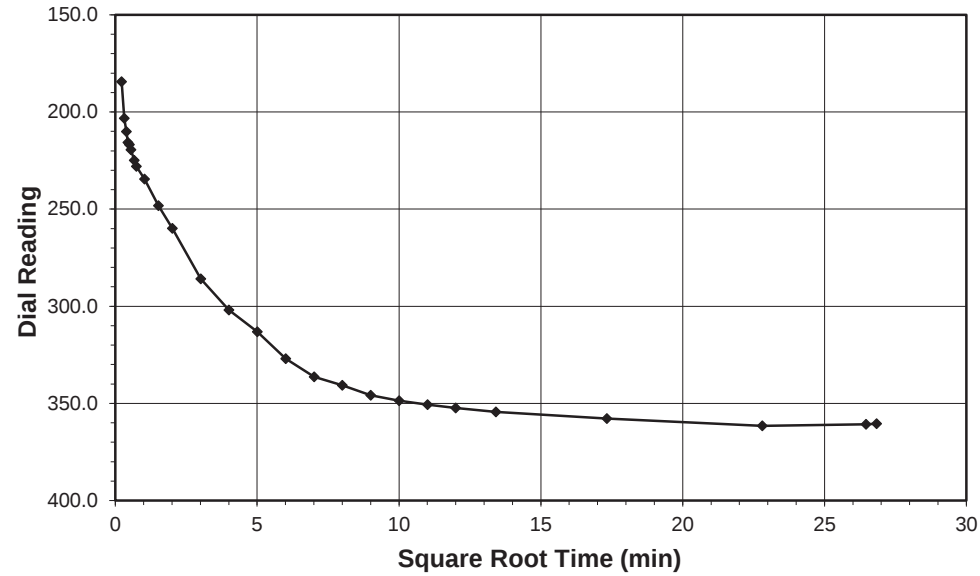
R-09

8.5-10.5

ST-5

Purple Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
Final Reading (div) 361.6
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 3/27/2025
Start Time 8:38:48

Elapsed Time (min)	Dial Reading (div)
Initial	183.2
0.05	184.4
0.10	203.2
0.15	210.0
0.20	215.7
0.25	216.8
0.30	219.4
0.45	224.8
0.55	228.0
1.05	234.6
2.30	248.3
4.05	259.9
9.05	285.9
16.05	301.9
25.07	313.1
36.07	327.1
49.07	336.3
64.07	340.8
81.07	345.8
100.07	348.7
121.07	350.7
144.07	352.3
180.07	354.3
300.07	357.8
520.07	361.6
700.08	360.7
720.40	360.4

Tested By 129-02-0411 Date 3/26/2025 Checked By MPS Date 4/10/2025

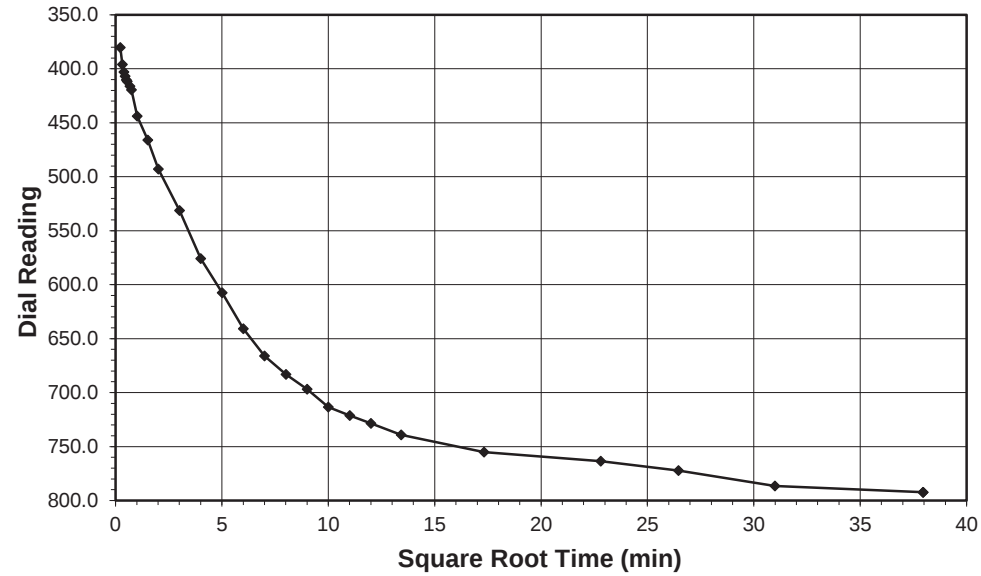
Tested By 129-02-0411 Date 3/27/2025 Checked By MPS Date 4/10/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-09
Client Project G24075.00 (I-6011A) Depth (ft) 8.5-10.5
Project No. R-2025-045-001 Sample No. ST-5
Lab ID R-2025-045-001-005 Visual Description Purple Clay

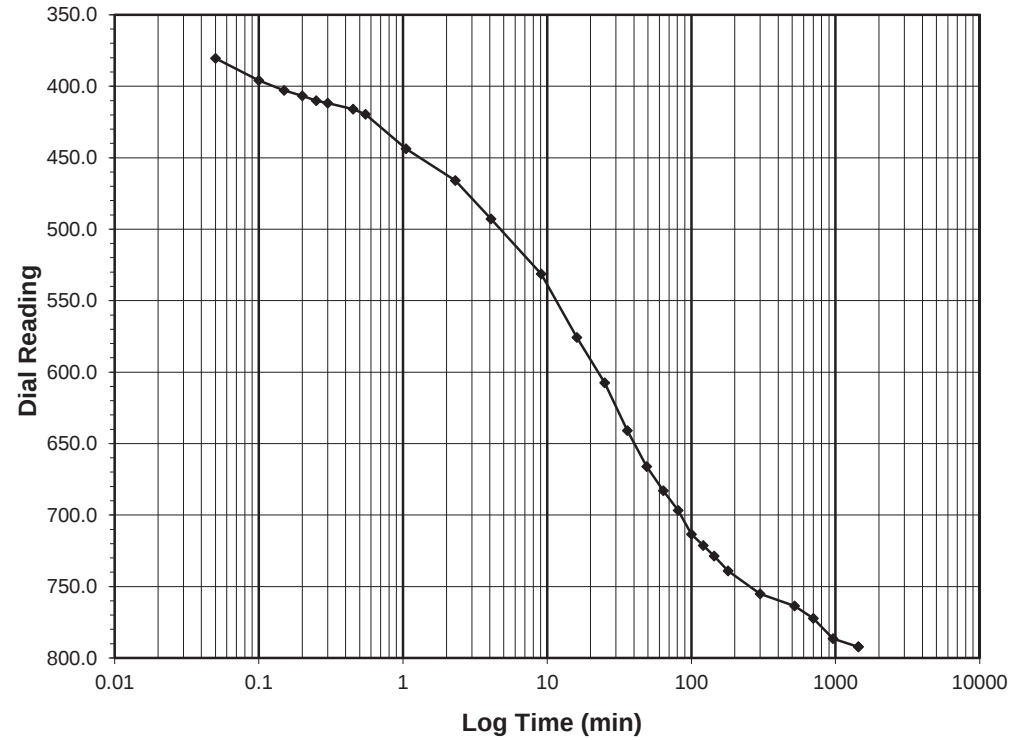
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-4.0
Final Reading (div) 792.3
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 3/27/2025
Start Time 20:39:12

Elapsed Time (min)	Dial Reading (div)
Initial	361.6
0.05	380.4
0.10	395.9
0.15	402.9
0.20	406.8
0.25	410.1
0.30	411.7
0.45	416.1
0.55	419.5
1.05	443.8
2.30	466.0
4.07	492.8
9.07	531.4
16.07	575.7
25.07	607.5
36.07	640.9
49.07	666.2
64.07	683.0
81.07	696.9
100.07	713.4
121.07	721.3
144.07	728.6
180.08	739.0
300.08	755.2
520.08	763.6
700.08	772.3
960.08	786.5
1440.08	792.3
1440.25	792.3



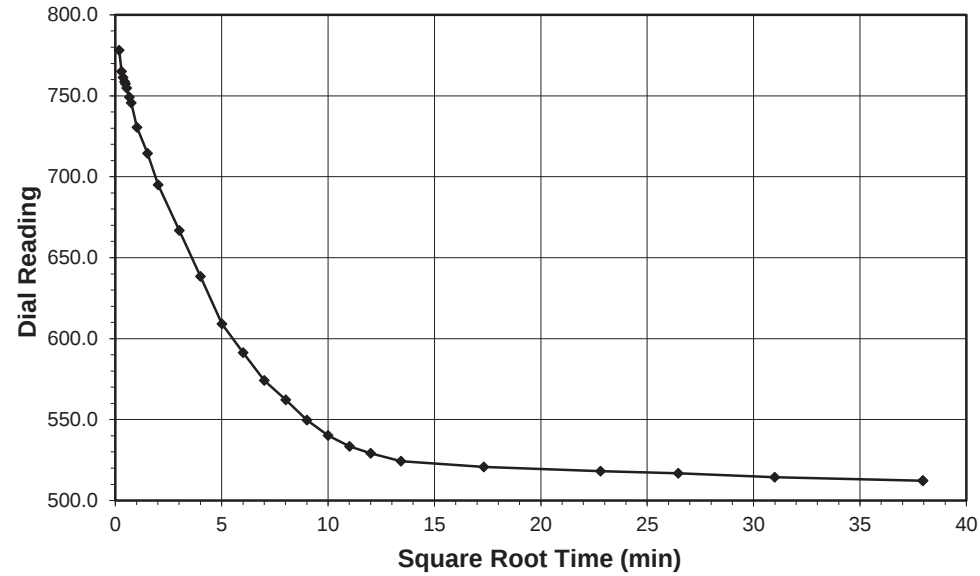
Tested By 129-02-0411 Date 3/27/2025 Checked By MPS Date 4/10/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client Falcon Engineering Boring No. R-09
Client Project G24075.00 (I-6011A) Depth (ft) 8.5-10.5
Project No. R-2025-045-001 Sample No. ST-5
Lab ID R-2025-045-001-005 Visual Description Purple Clay

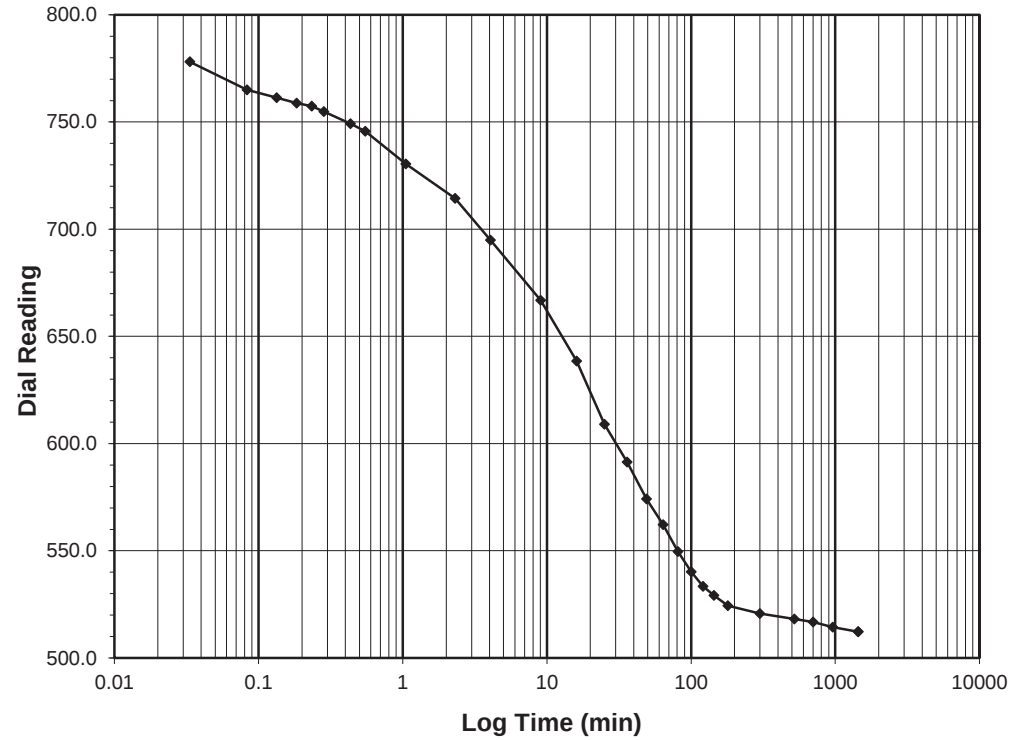
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-1.0
Final Reading (div) 512.2
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 3/28/2025
Start Time 20:39:27

Elapsed Time (min)	Dial Reading (div)
Initial	792.3
0.03	778.1
0.08	765.0
0.13	761.4
0.18	758.7
0.23	757.4
0.28	754.8
0.43	749.3
0.55	745.7
1.05	730.5
2.30	714.4
4.05	694.9
9.05	666.9
16.05	638.4
25.05	609.1
36.05	591.3
49.05	574.1
64.05	562.2
81.05	549.6
100.05	540.2
121.05	533.4
144.05	529.2
180.07	524.4
300.07	520.7
520.07	518.2
700.07	516.8
960.07	514.4
1440.07	512.2
1440.23	512.3



Tested By 129-02-0411 Date 3/28/2025 Checked By MPS Date 4/10/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-005

Boring No.

Depth (ft)

Sample No.

Visual Description

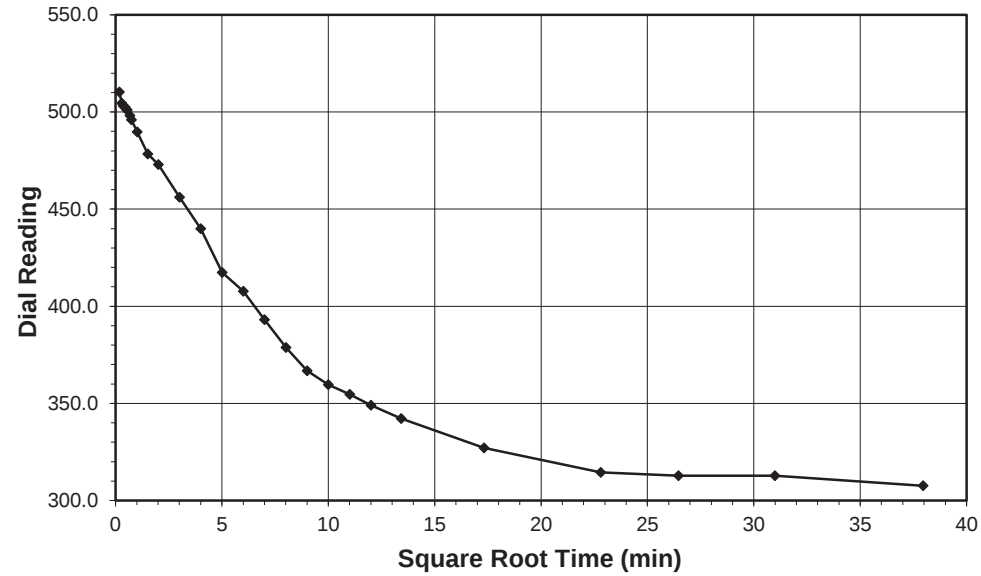
R-09

8.5-10.5

ST-5

Purple Clay

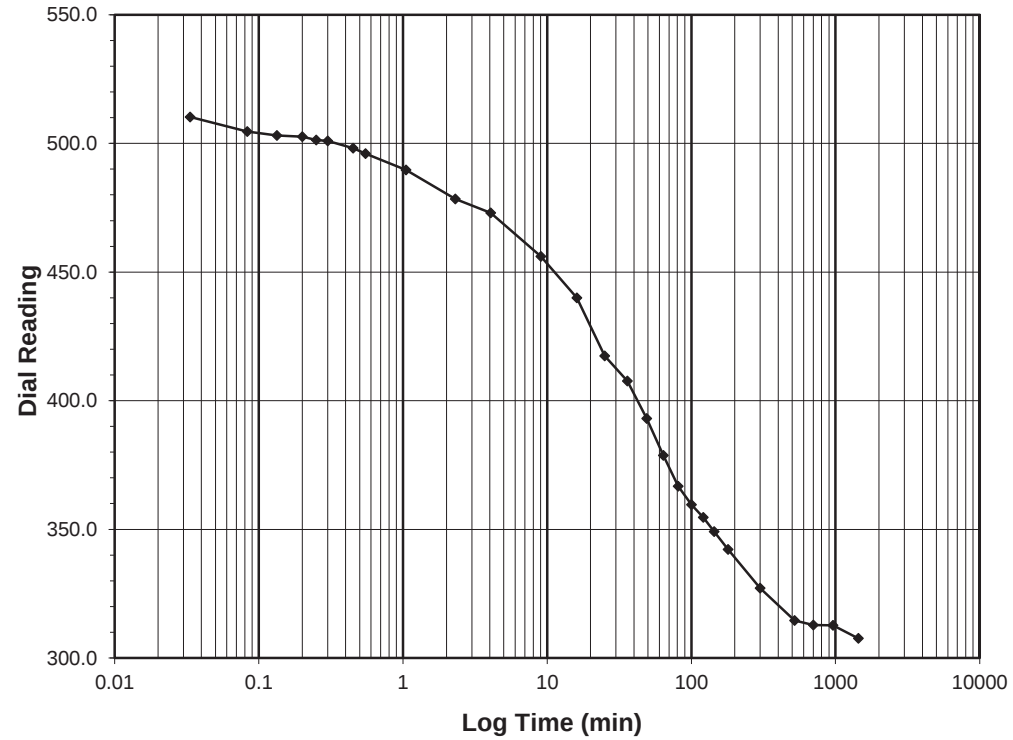
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-0.25
Final Reading (div) 307.6
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 3/29/2025
Start Time 20:39:42

Elapsed Time (min)	Dial Reading (div)
Initial	512.2
0.03	510.3
0.08	504.6
0.13	503.1
0.20	502.6
0.25	501.4
0.30	500.9
0.45	498.2
0.55	496.0
1.05	489.7
2.30	478.4
4.05	473.0
9.05	456.1
16.05	440.0
25.05	417.4
36.05	407.7
49.05	393.1
64.07	378.7
81.07	366.7
100.07	359.6
121.07	354.6
144.07	349.1
180.07	342.2
300.08	327.1
520.08	314.5
700.08	312.8
960.08	312.7
1440.07	307.6



Tested By 129-02-0411 Date 3/29/2025 Checked By MPS Date 4/10/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-005

Boring No.

Depth (ft)

Sample No.

Visual Description

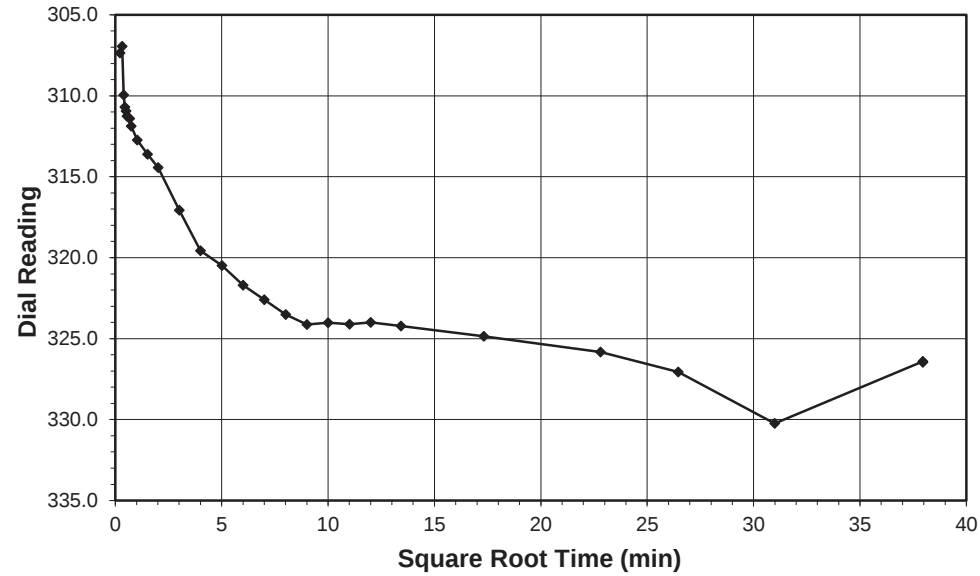
R-09

8.5-10.5

ST-5

Purple Clay

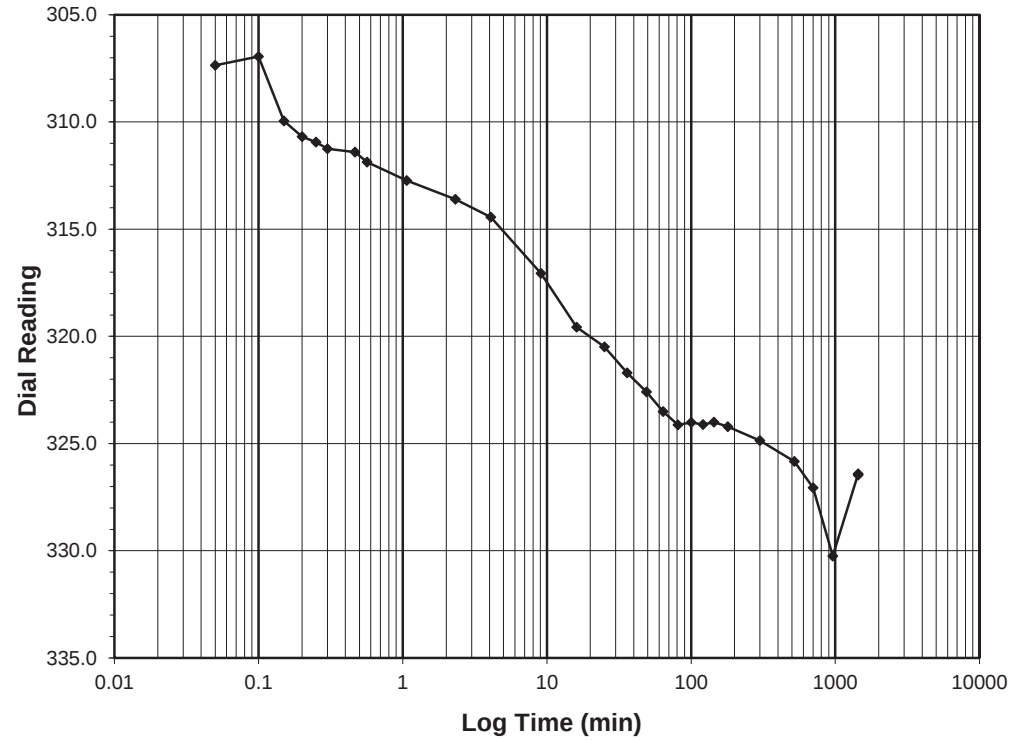
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.25-0.5
Final Reading (div) 330.2
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 3/30/2025
Start Time 20:39:47

Elapsed Time (min)	Dial Reading (div)
Initial	307.6
0.05	307.4
0.10	306.9
0.15	309.9
0.20	310.7
0.25	310.9
0.30	311.3
0.47	311.4
0.57	311.9
1.07	312.7
2.32	313.6
4.07	314.4
9.07	317.1
16.07	319.6
25.07	320.5
36.07	321.7
49.07	322.6
64.07	323.5
81.07	324.1
100.07	324.0
121.07	324.1
144.07	324.0
180.07	324.2
300.08	324.9
520.08	325.8
700.08	327.1
960.08	330.2
1440.08	326.4
1440.32	326.5



Tested By 129-02-0411 Date 3/30/2025 Checked By MPS Date 4/10/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-005

Boring No.

Depth (ft)

Sample No.

Visual Description

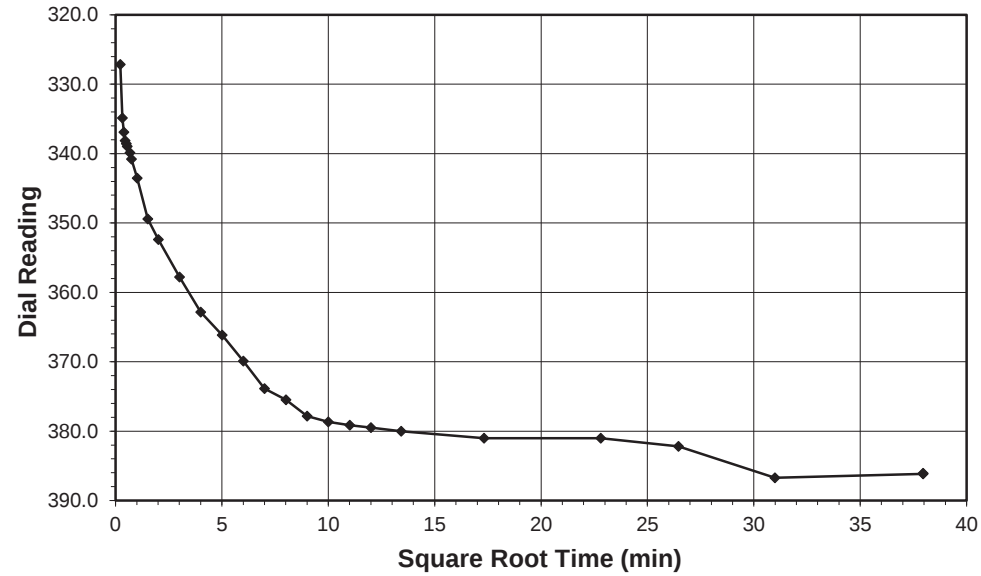
R-09

8.5-10.5

ST-5

Purple Clay

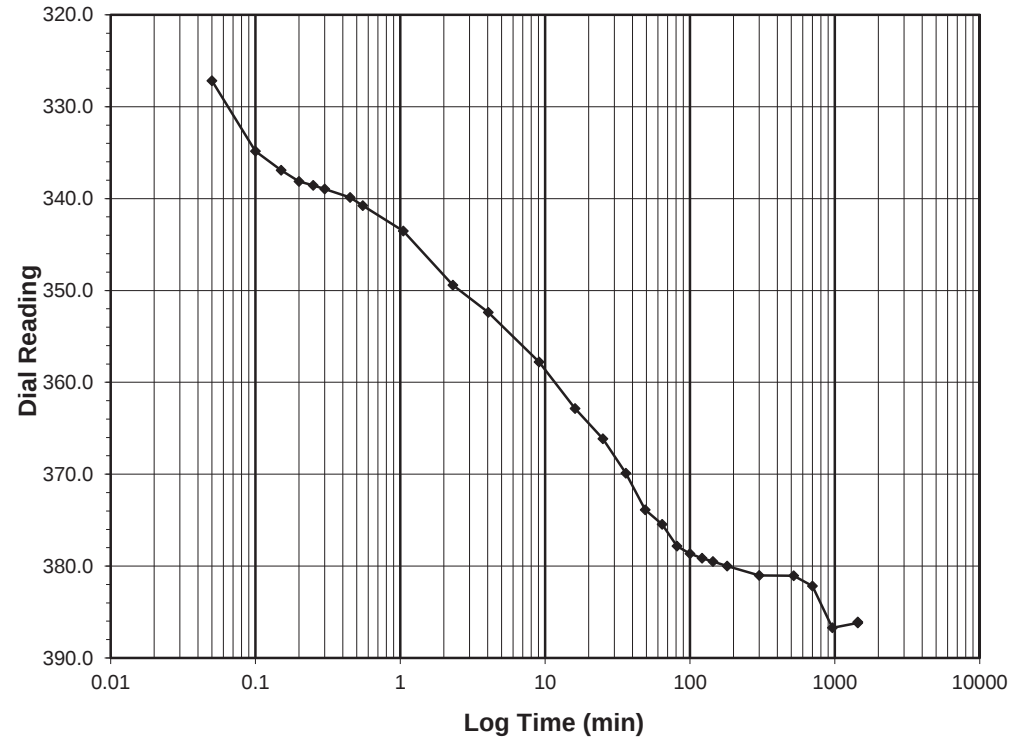
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.5-1.0
Final Reading (div) 386.7
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 3/31/2025
Start Time 20:40:06

Elapsed Time (min)	Dial Reading (div)
Initial	330.2
0.05	327.2
0.10	334.9
0.15	336.9
0.20	338.1
0.25	338.6
0.30	339.0
0.45	339.9
0.55	340.8
1.05	343.5
2.30	349.4
4.05	352.4
9.05	357.8
16.05	362.9
25.05	366.2
36.05	369.9
49.05	373.9
64.05	375.5
81.05	377.8
100.07	378.7
121.07	379.1
144.07	379.5
180.07	380.0
300.07	381.0
520.07	381.0
700.07	382.2
960.07	386.7
1440.07	386.2
1440.25	386.1



Tested By 129-02-0411 Date 3/31/2025 Checked By MPS Date 4/10/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-005

Boring No.

Depth (ft)

Sample No.

Visual Description

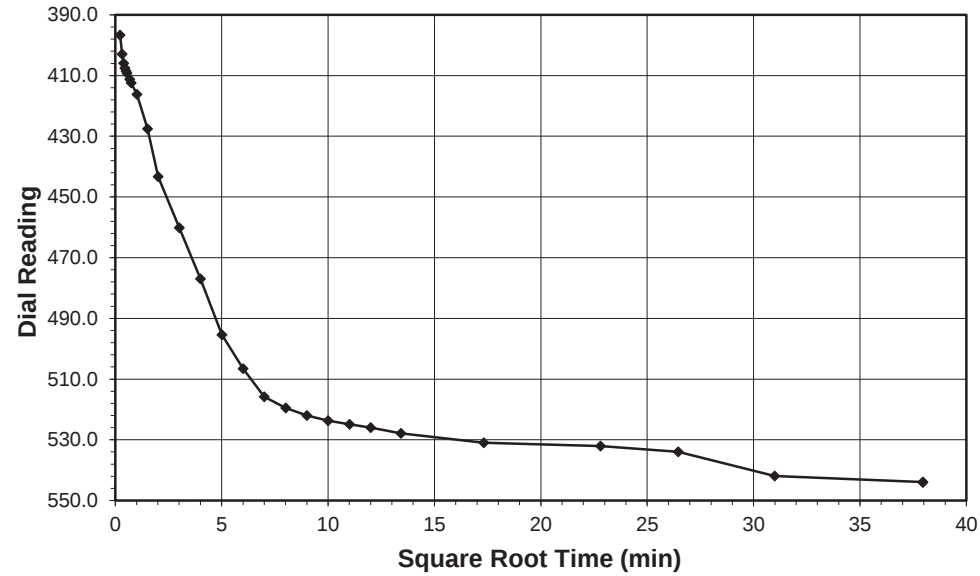
R-09

8.5-10.5

ST-5

Purple Clay

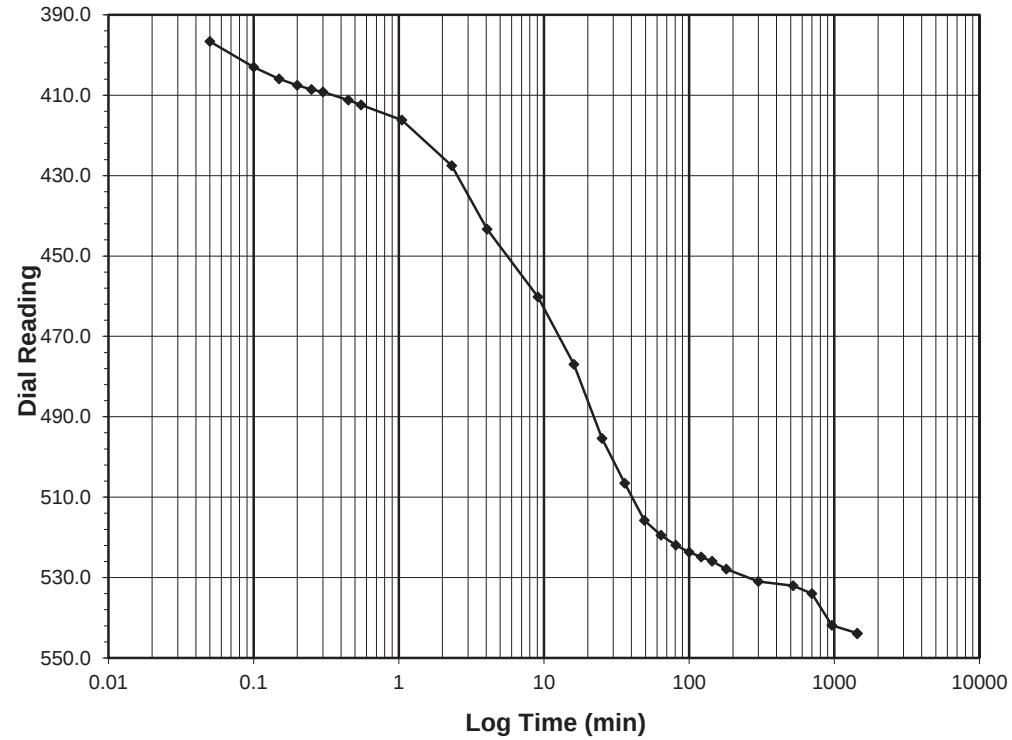
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
Final Reading (div) 544.0
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 4/1/2025
Start Time 20:40:21

Elapsed Time (min)	Dial Reading (div)
Initial	386.7
0.05	396.7
0.10	403.0
0.15	405.9
0.20	407.6
0.25	408.6
0.30	409.2
0.45	411.2
0.55	412.4
1.05	416.2
2.32	427.5
4.07	443.4
9.07	460.2
16.07	476.9
25.07	495.4
36.07	506.5
49.07	515.8
64.07	519.5
81.08	522.0
100.08	523.7
121.08	524.9
144.08	526.0
180.08	527.9
300.08	531.0
520.08	532.1
700.08	534.0
960.10	541.9
1440.10	543.9
1440.20	544.0



Tested By 129-02-0411 Date 4/1/2025 Checked By MPS Date 4/10/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



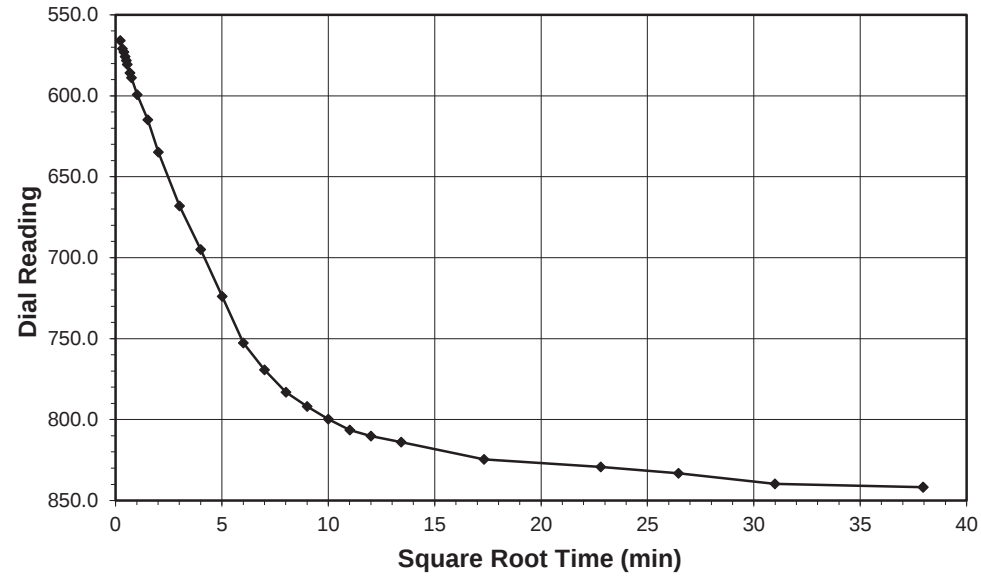
ClientFalcon EngineeringBoring No.R-09

Client ProjectG24075.00 (I-6011A)Depth (ft)8.5-10.5

Project No.R-2025-045-001Sample No.ST-5

Lab IDR-2025-045-001-005Visual DescriptionPurple Clay

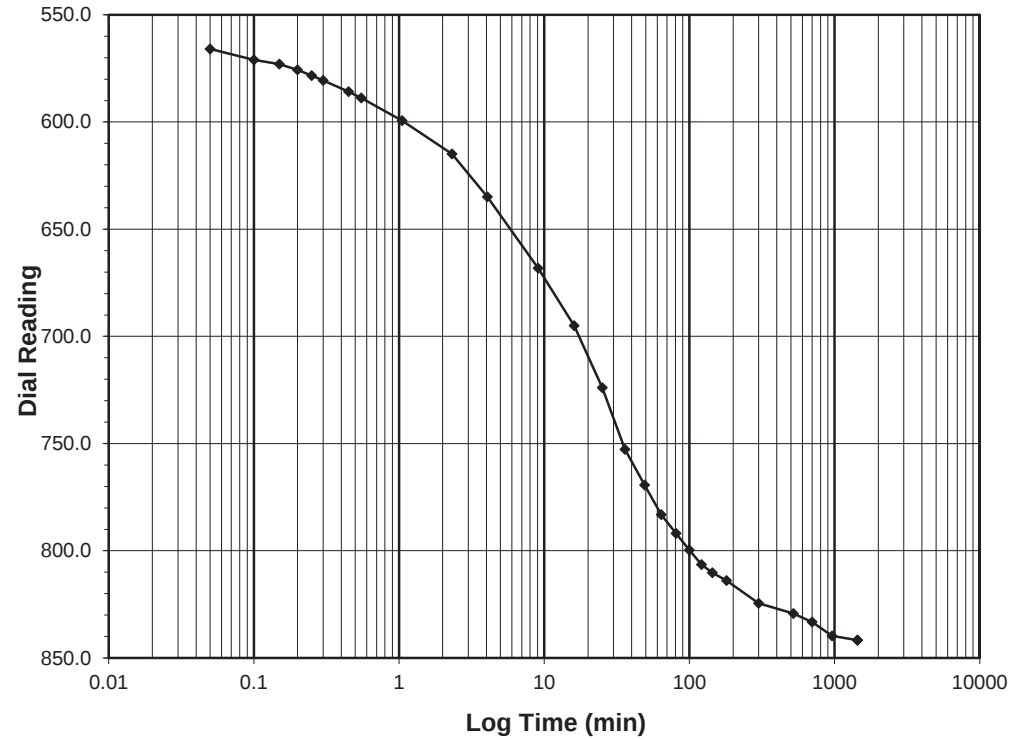
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-4.0
Final Reading (div) 841.8
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 4/2/2025
Start Time 20:40:33

Elapsed Time (min)	Dial Reading (div)
Initial	544.0
0.05	565.9
0.10	571.0
0.15	572.9
0.20	575.7
0.25	578.3
0.30	580.7
0.45	585.8
0.55	588.8
1.05	599.4
2.32	614.8
4.07	634.9
9.07	668.2
16.07	694.9
25.07	723.9
36.07	752.7
49.07	769.3
64.07	783.2
81.07	792.0
100.07	799.7
121.07	806.4
144.07	810.3
180.07	813.9
300.07	824.6
520.07	829.3
700.07	833.2
960.07	839.7
1440.07	841.7
1440.28	841.8



Tested By 129-02-0411 Date 4/2/2025 Checked By MPS Date 4/10/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



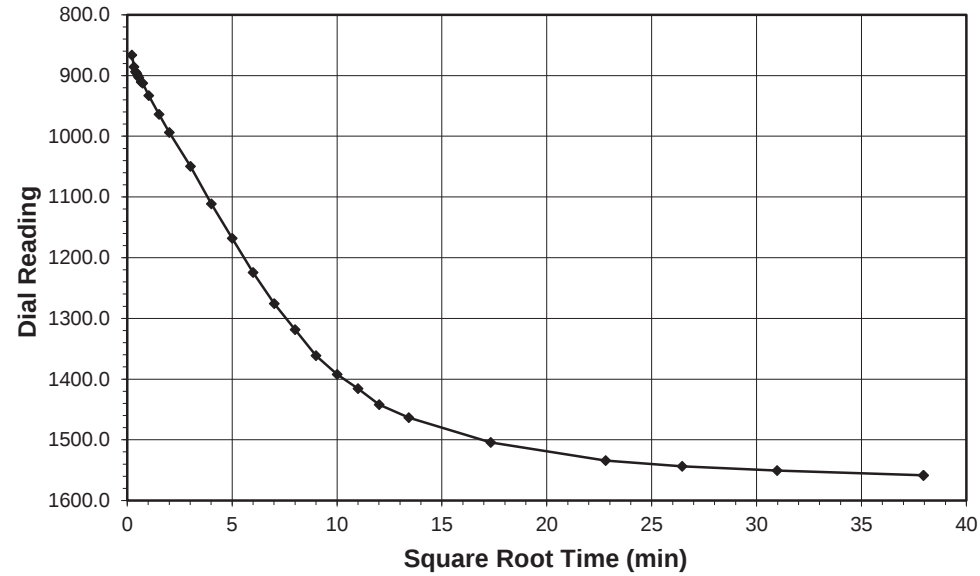
ClientFalcon EngineeringBoring No.R-09

Client ProjectG24075.00 (I-6011A)Depth (ft)8.5-10.5

Project No.R-2025-045-001Sample No.ST-5

Lab IDR-2025-045-001-005Visual DescriptionPurple Clay

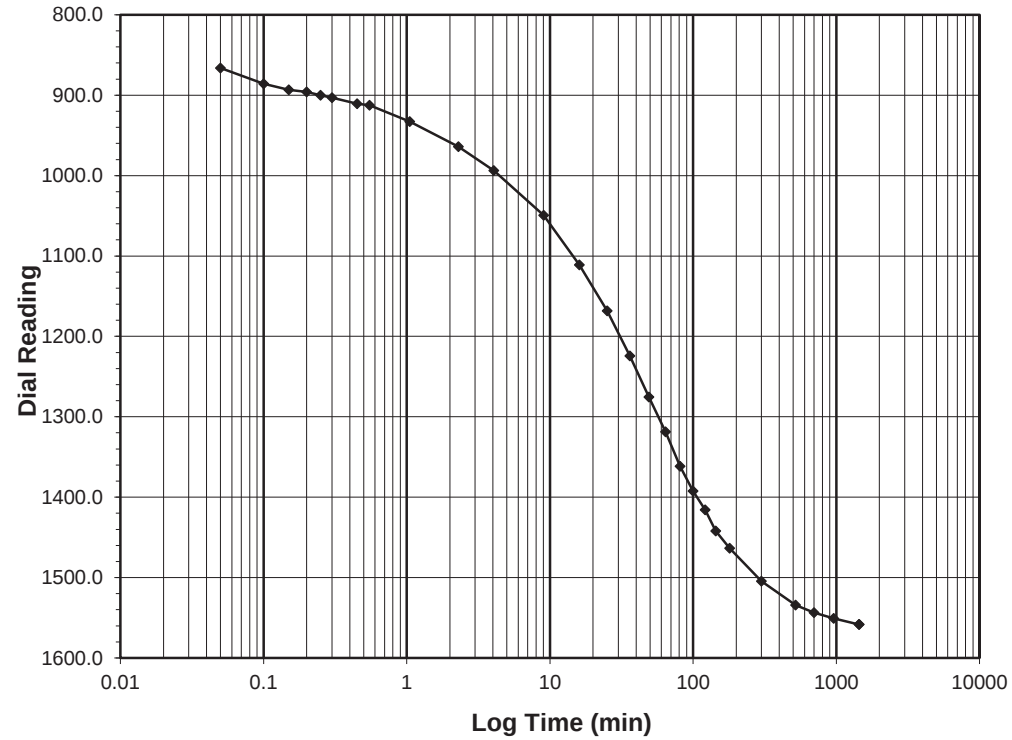
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-8.0
Final Reading (div) 1558.4
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 4/3/2025
Start Time 20:40:50

Elapsed Time (min)	Dial Reading (div)
Initial	841.8
0.05	866.1
0.10	885.7
0.15	893.5
0.20	896.1
0.25	900.1
0.30	903.2
0.45	910.6
0.55	912.5
1.05	933.0
2.30	963.8
4.05	993.7
9.05	1049.6
16.07	1111.2
25.07	1168.2
36.07	1224.4
49.07	1275.5
64.07	1318.5
81.07	1361.4
100.07	1392.4
121.07	1415.6
144.07	1442.2
180.08	1463.4
300.08	1504.3
520.08	1534.2
700.08	1543.8
960.08	1550.8
1440.08	1558.4
1440.33	1558.4



Tested By 129-02-0411 Date 4/3/2025 Checked By MPS Date 4/10/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-005

Boring No.

Depth (ft)

Sample No.

Visual Description

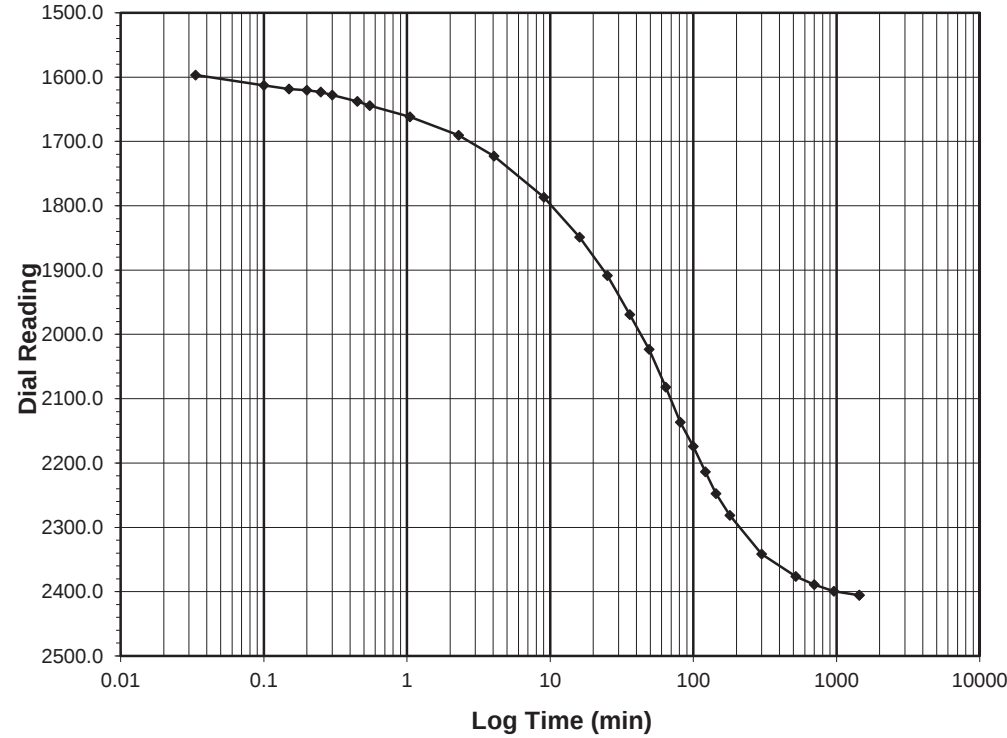
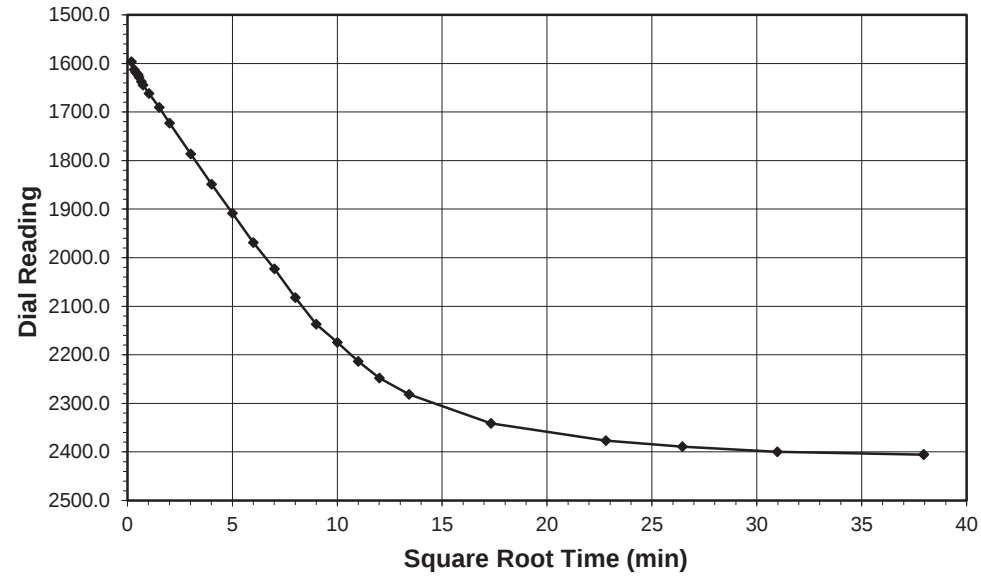
R-09

8.5-10.5

ST-5

Purple Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf)	8.0-16.0
Final Reading (div)	2405.6
Consolidometer No.	R-487
1 Division (in)	0.0001
Start Date	4/4/2025
Start Time	20:41:10

Elapsed Time (min)	Dial Reading (div)
Initial	1558.4
0.03	1596.7
0.10	1613.0
0.15	1618.3
0.20	1620.5
0.25	1623.1
0.30	1628.0
0.45	1637.7
0.55	1644.5
1.05	1661.9
2.30	1690.5
4.05	1723.0
9.05	1786.7
16.05	1849.0
25.05	1908.5
36.05	1969.2
49.05	2023.1
64.05	2082.0
81.05	2136.7
100.05	2174.3
121.07	2213.6
144.07	2247.7
180.07	2281.4
300.07	2341.4
520.07	2376.5
700.07	2389.0
960.07	2399.5
1440.07	2405.6
1440.15	2405.5

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



Client

Client Project

Project No.

Lab ID

Falcon Engineering

G24075.00 (I-6011A)

R-2025-045-001

R-2025-045-001-005

Boring No.

Depth (ft)

Sample No.

Visual Description

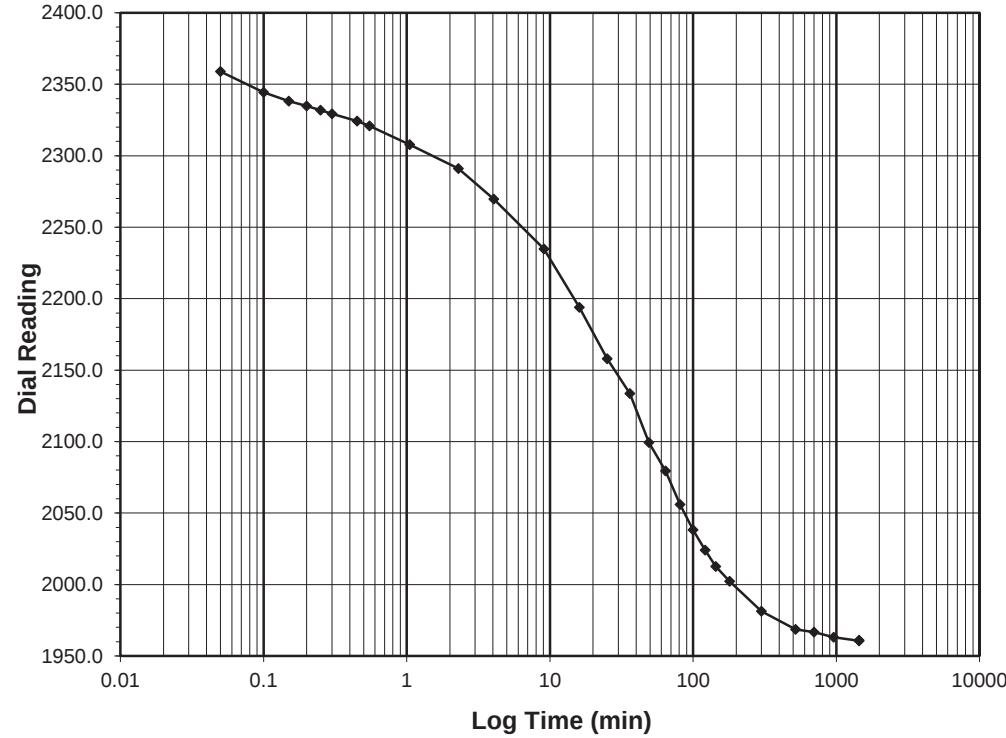
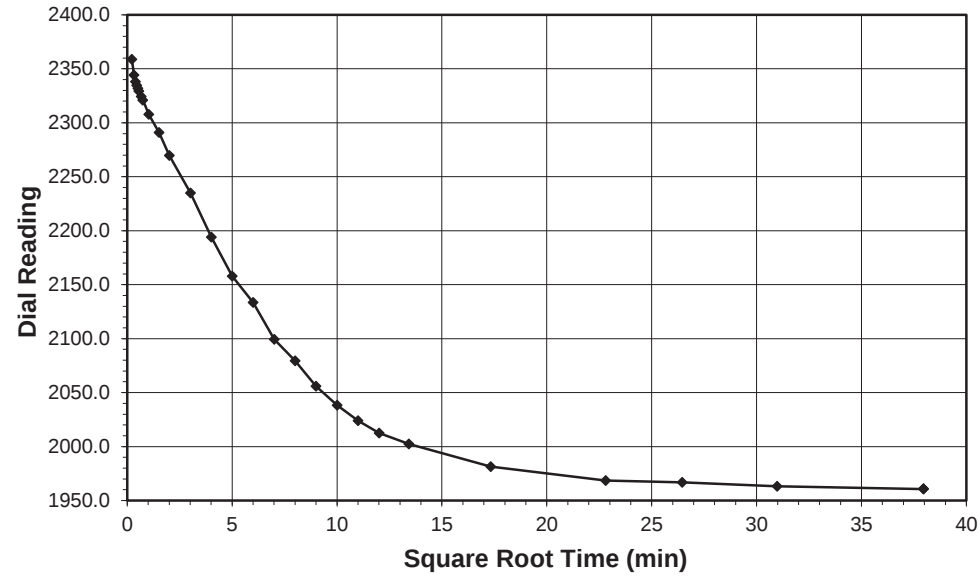
R-09

8.5-10.5

ST-5

Purple Clay

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf)	16.0-4.0
Final Reading (div)	1960.6
Consolidometer No.	R-487
1 Division (in)	0.0001
Start Date	4/5/2025
Start Time	20:41:20

Elapsed Time (min)	Dial Reading (div)
Initial	2405.6
0.05	2358.9
0.10	2344.3
0.15	2338.2
0.20	2334.8
0.25	2331.9
0.30	2329.3
0.45	2324.3
0.55	2320.9
1.05	2307.8
2.30	2291.0
4.05	2269.7
9.07	2234.8
16.07	2193.9
25.07	2157.9
36.07	2133.5
49.07	2099.3
64.07	2079.5
81.07	2056.1
100.08	2038.2
121.08	2024.1
144.08	2012.6
180.08	2002.3
300.08	1981.3
520.08	1968.5
700.08	1966.7
960.08	1963.1
1440.08	1960.6
1440.32	1960.9

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



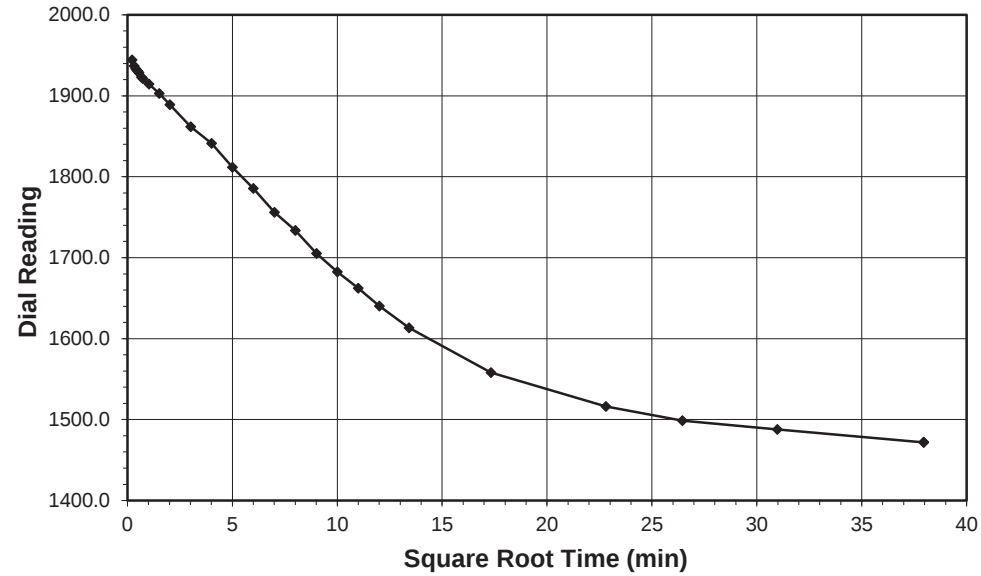
ClientFalcon EngineeringBoring No.R-09

Client ProjectG24075.00 (I-6011A)Depth (ft)8.5-10.5

Project No.R-2025-045-001Sample No.ST-5

Lab IDR-2025-045-001-005Visual DescriptionPurple Clay

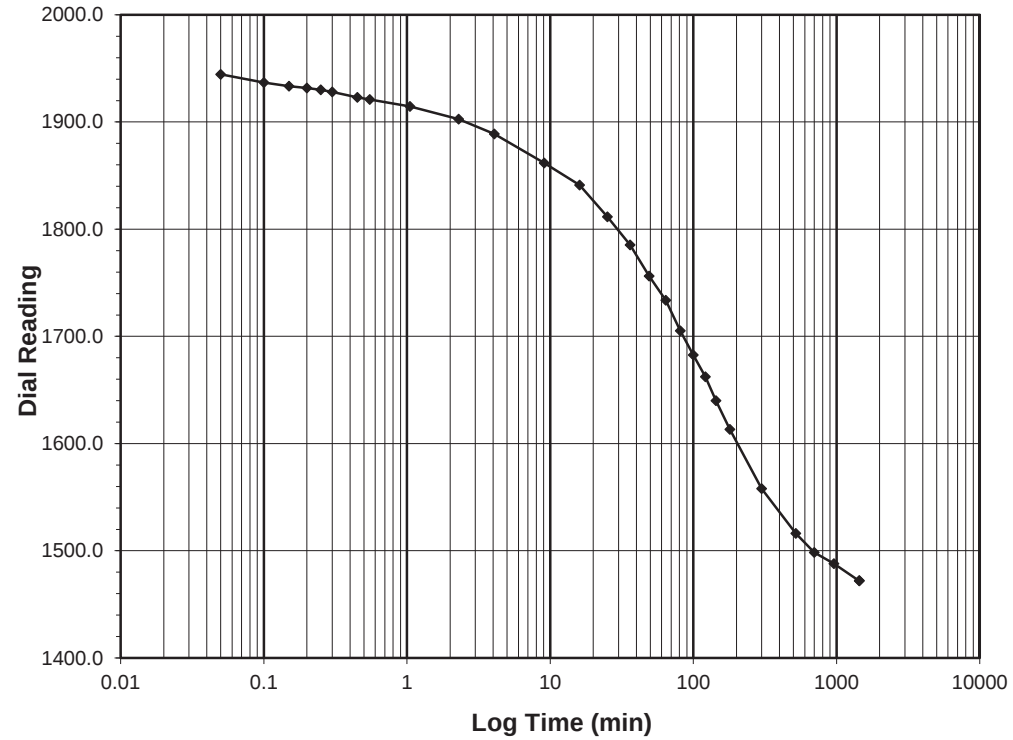
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-1.0
Final Reading (div) 1471.8
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 4/6/2025
Start Time 20:41:39

Elapsed Time (min)	Dial Reading (div)
Initial	1960.6
0.05	1944.5
0.10	1936.8
0.15	1933.4
0.20	1931.7
0.25	1929.9
0.30	1928.2
0.45	1923.1
0.55	1921.1
1.05	1914.4
2.30	1902.8
4.07	1888.9
9.07	1861.7
16.07	1841.2
25.07	1811.6
36.07	1785.4
49.07	1756.2
64.07	1733.7
81.08	1705.1
100.08	1682.6
121.08	1662.4
144.08	1640.1
180.08	1613.3
300.08	1558.0
520.08	1516.1
700.08	1498.5
960.08	1487.9
1440.08	1471.8
1440.23	1472.1



Tested By 129-02-0411 Date 4/6/2025 Checked By MPS Date 4/10/2025

ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216



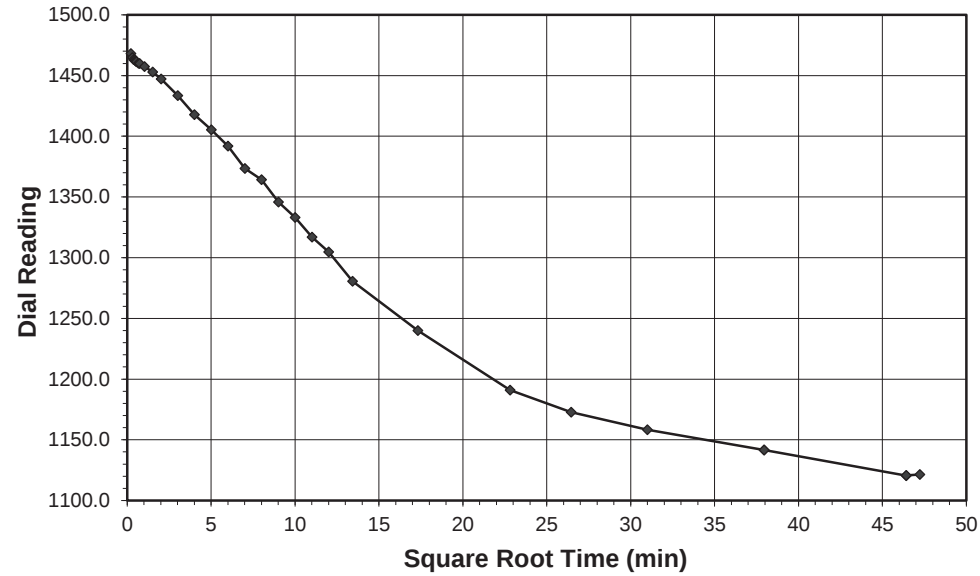
ClientFalcon EngineeringBoring No.R-09

Client ProjectG24075.00 (I-6011A)Depth (ft)8.5-10.5

Project No.R-2025-045-001Sample No.ST-5

Lab IDR-2025-045-001-005Visual DescriptionPurple Clay

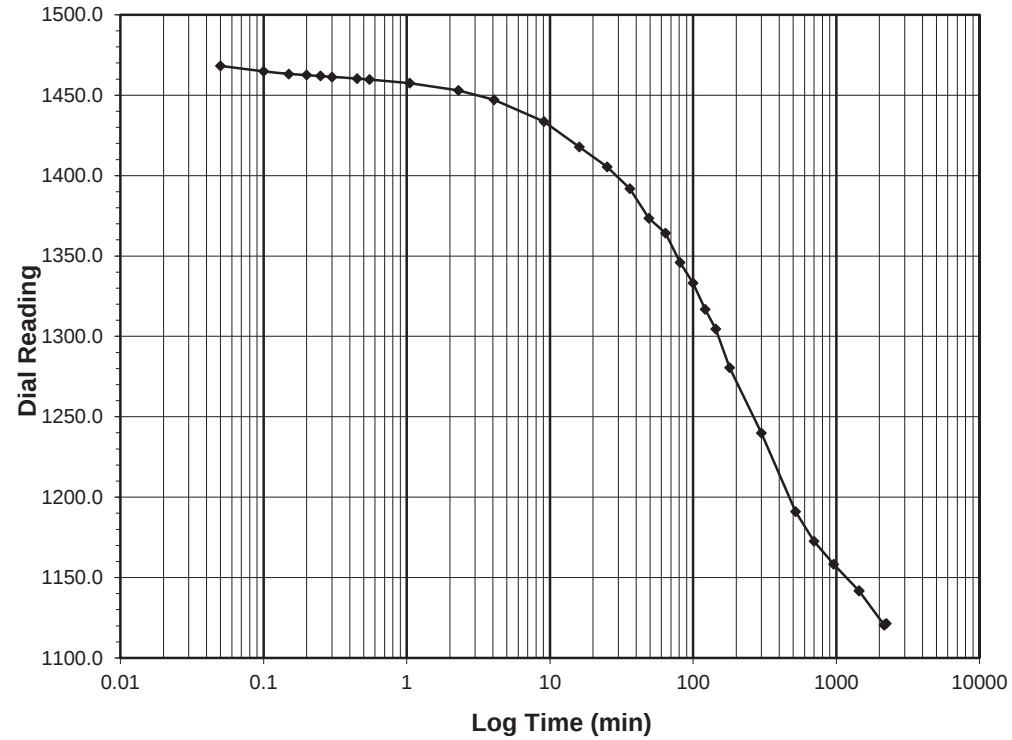
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-0.25
Final Reading (div) 1120.5
Consolidometer No. R-487
1 Division (in) 0.0001

Start Date 4/7/2025
Start Time 20:41:53

Elapsed Time (min)	Dial Reading (div)
Initial	1471.8
0.05	1468.2
0.10	1464.8
0.15	1463.1
0.20	1462.5
0.25	1462.0
0.30	1461.3
0.45	1460.2
0.55	1459.8
1.05	1457.5
2.30	1452.9
4.07	1447.2
9.07	1433.6
16.07	1417.7
25.07	1405.4
36.07	1391.8
49.07	1373.4
64.07	1364.3
81.07	1345.9
100.07	1333.2
121.07	1316.8
144.07	1304.6
180.07	1280.6
300.08	1239.9
520.08	1191.0
700.08	1172.7
960.08	1158.3
1440.08	1141.7
1440.42	1141.7
2154.43	1120.5
2231.00	1121.4



Tested By 129-02-0411 Date 4/7/2025 Checked By MPS Date 4/10/2025



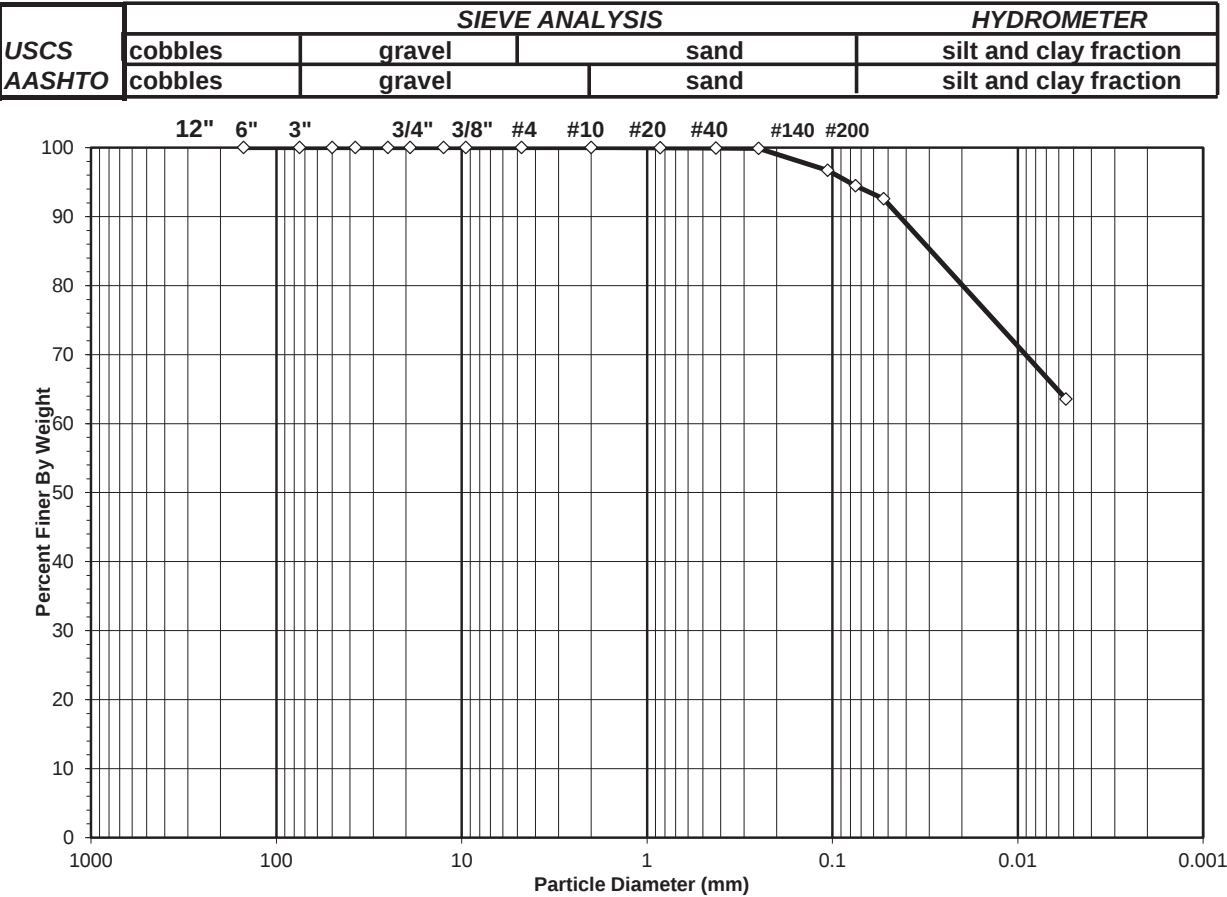
SIEVE AND HYDROMETER ANALYSIS
NCDOT MOD. AASHTO T-88,

Client
Client Reference
Project No.
Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-005

Boring No.
Depth (ft)
Sample No.
Soil Color

R-09
8.5-10.5
ST-5
Purple



Sieve Size (mm)	Percent Finer	USCS %		AASHTO %		NCDOT SOIL MORTAR %	
100	100.00	Gravel	0.00	Gravel	0.00	Coarse Sand Ret. #60	0.11
2	100.00	Sand	5.51	Coarse Sand	0.06	Fine Sand Ret. #270	7.31
0.075	94.49	Silt&Clay	94.49	Fine Sand	5.46	Silt 0.05-0.005mm	29.02
				Silt & Clay	94.49	Clay <0.005mm	63.56
AASHTO (GI) A-7-6 (65)							



WASH SIEVE ANALYSIS
NCDOT MOD. AASHTO T-88,

Client
Client Reference
Project No.
Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-005

Boring No.
Depth (ft)
Sample No.
Soil Color

R-09
8.5-10.5
ST-5
Purple

Minus #10 for Hygroscopic (10-15gm)		Hydrometer Specimen 50 or 100gms	
Tare No.	W	Air Dried Hydrometer Material (gm)	55.04
Wgt.Tare + Wet Specimen (gm)	29.92	Corrected Dry Wt. of Hydro Mtrl. (gm)	52.97
Wgt.Tare + Dry Specimen (gm)	29.36		
Weight of Tare (gm)	15.03	Weight of -#270 Material	49.04
Weight of Water (gm)	0.56	Weight of -#10; +#270 Material	3.93
Weight of Dry Soil (gm)	14.33		
Moisture Content (%)		3.9	

Tare No.	414		
Wgt. Tare + Air Dry Soil (gm)	462.47	Dry Weight of Material Ret. #10 (gm)	0.00
Weight of Tare (gm)	144.75	Corrected Dry Sample Wt - #10 (gm)	305.77
Air Dried Wgt.Total Sample (gm)	317.72		
Total Dry Weight Sample (gm)	305.8	J - Factor (Percent Finer than #10)	1.0000

Sieve Size	Sieve Opening (mm)	Wgt.of Soil Retained (gm)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	0.00	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25.0	0.00	0.00	0.00	100.00	100.00
3/4"	19.0	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	0.00	0.00	100.00	100.00
3/8"	9.5	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2.00	0.00	0.00	0.00	100.00	100.00
#20	0.85	0.01	0.02	0.02	99.98	99.98
#40	0.425	0.02	0.04	0.06	99.94	99.94
#60	0.25	0.03	0.06	0.11	99.89	99.89
#140	0.106	1.69	3.19	3.30	96.70	96.70
#200	0.075	1.17	2.21	5.51	94.49	94.49
#270	0.053	1.01	1.91	7.42	92.58	92.58
Pan	-	49.04	92.58	100.00	-	-

Tested By 129-02-0411Date 4/1/25Checked By AESDate 4/1/25



HYDROMETER ANALYSIS
NCDOT MOD. AASHTO T-88,

Client

Client Reference

Project No.

Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-005

Boring No.

Depth (ft)

Sample No.

Soil Color

R-09
8.5-10.5
ST-5
Purple

Elapsed Time (min)		R Measured	Temp. (° C)	Composite Correction	R Corrected	N (%)	K Factor	Diameter (mm)	N' (%)
7:50:00	0	NA	NA	NA	NA	NA	NA	NA	NA
7:50:28	0.47	54.0	20.9	-1.78	49.8	93.6	0.01342	0.0536	93.6
8:50:00	60.00	38.0	21	-1.80	33.8	63.6	0.01340	0.0055	63.6

Corrections	
a - Factor	0.996
Percent Finer than # 10	100.00
Specific Gravity	2.67 Measured

Note: Hydrometer test is performed on - #10 sieve material.

LL

PL

PI

=

81

19

62

Tested By 129-02-0411

Date 3/28/25

Checked By AES

Date 4/1/25



ATTERBERG LIMITS
AASHTO T-89, T-90 (DOT Modified)

Client

Client Reference

Project No.

Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-005

Boring No.

Depth (ft)

Sample No.

Soil Description

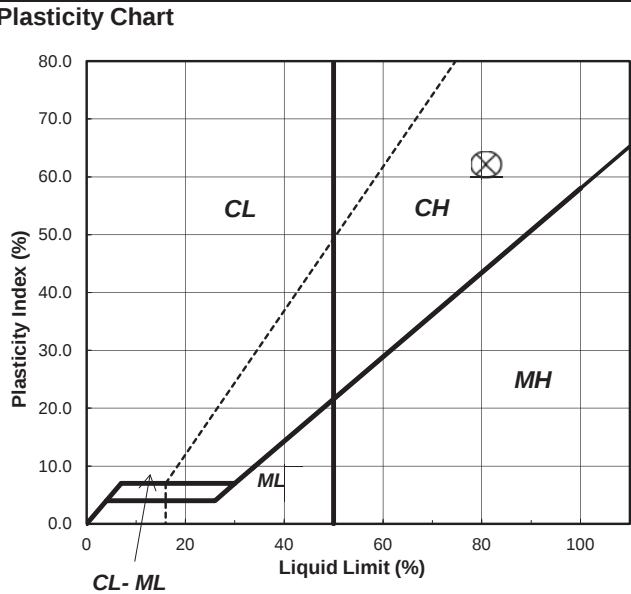
R-09
8.5-10.5
ST-5
PURPLE FAT CLAY
(Minus No. 40 sieve material, Airdried)

Note: The USCS symbol used with this test refers only to the minus No. 40 sieve material. See the "Sieve and Hydrometer Analysis" graph page for the complete material description .

Liquid Limit Test		1
Tare Number		A-P
Wt. of Tare & WS (gm)		29.87
Wt. of Tare & DS (gm)		23.43
Wt. of Tare (gm)		15.47
Wt. of Water (gm)		6.4
Wt. of DS (gm)		8.0
Moisture Content (%)		80.9
Number of Blows		25

Plastic Limit Test	1	2	Range	Test Results	
Tare Number	21	15		Liquid Limit (%)	81
Wt. of Tare & WS (gm)	14.77	14.72		Plastic Limit (%)	19
Wt. of Tare & DS (gm)	13.56	13.51		Plasticity Index (%)	62
Wt. of Tare (gm)	7.04	6.99		USCS Symbol	CH
Wt. of Water (gm)	1.2	1.2			
Wt. of DS (gm)	6.5	6.5			
Moisture Content (%)	18.6	18.6	0.0		

Note: The acceptable range of the two Moisture contents is ± 2.6



Tested By 129-02-0411

Date 3/24/25

Checked By AES

Date 3/25/25



SPECIFIC GRAVITY
ASTM D 854-14

Client:
Client Reference:
Project No.:
Lab ID:

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-005

Boring No.:
Depth (ft):
Sample No.:
Visual Description:

R-09
8.5-10.5
ST-5
Purple Fat Clay

(Minus No.4 sieve material,oven dried)

Replicate Number	1	2
Pycnometer ID:	R 543	R 544
Weight of Pycnometer & Soil & Water (g):	693	695.48
Temperature (°C):	21.7	21.6
Weight of Pycnometer & Water (g):	661.44	663.92
Tare Number:	543	544
Weight of Tare & Dry Soil (g):	213.73	216.22
Weight of Tare (g):	163.17	165.86
Weight of Dry Soil (g):	50.56	50.36
Specific Gravity of Soil @ Measured Temperature:	2.661	2.678
Specific Gravity of Water @ Measured Temperature:	0.99784	0.99786
Conversion Factor for Measured Temperature:	0.99963	0.99966
Specific Gravity @ 20° Celsius:	2.662	2.679

Average Specific Gravity @ 20° Celsius2.67

Tested By 129-02-0411Date 3/25/25Checked By AESDate 3/26/25

page 1 of 1DCN: CT-S5DATE: 3/26/18REVISION: 21



SHELBY TUBE UNIT WEIGHT
ASTM D7263-09

Client
Client Reference
Project No.
Lab ID

Falcon Engineering
G24075.00 (I-6011A)
R-2025-045-001
R-2025-045-001-005

Boring No.:
Depth Pushed (ft):
Shelby Tube No.:
Recovery (ft):

R-09
8.5-10.5
ST-5
2.0'

MOISTURE CONTENT

Tare Number	700
Wt. Tare & WS (g)	491.68
Wt. Tare & DS (g)	358.29
Wt. Tare (g)	91.05
Moisture Content (%)	49.91

UNIT WEIGHT	
Wt. Tube & WS. (g)	1275.99
Wt. Of Tube (g)	0.00
Wt. Of WS. (g)	1275.99
Length 1 (in.)	7.101
Length 2 (in.)	7.149
Length 3 (in.)	7.121
Top Diameter (in.)	2.845
Middle Diameter (in.)	2.847
Bottom Diameter (in.)	2.832
Sample Volume (cc)	740.18
Moisture Content(%)	49.91
Unit Wet Wt .(g/cc)	1.72
Unit Wet Wt. (pcf)	107.57
Unit Dry Wt. (g/cc)	1.15
Unit Dry Wt. (pcf)	71.8

Tested By DLDate 3/19/25Checked By AESDate 3/21/25

page 1 of 1DCN: CT-S37A DATE: 1/7/15 REVISION: 1e