SKANSKA

September 30, 2025

Letter No. 244
BY-CRE-03660

Evelyn Pao, P.E., Project Director
Washington State Department of Transportation
18911 N Creek Pkwy S, Suite 150
Bothell, WA 98011

Project: Contract No.: 9727, I-405, Brickyard to SR 527 Improvement Project

Subject: WSDOT SL No. 9727-149, *WSDOT Laboratory Testing Package 01*

Dear Ms. Pao:

Skanska has reviewed the fourth laboratory test package transmitted on September 4, 2025 under SL 9727-149, and would like to bring to WSDOT's attention a discrepancy and potential error. To assist in clarifying, we have attached an annotated copy of the package.

Specifically, on **page 11**, the consolidation test report for **Boring B-3-25, Sample 20** indicates a reported **dry density of 128.4 pcf**. This value appears unusually high for ESU 2C material. In contrast, on **page 50** of the PDF, the same sample is reported with a **moist density of 123 pcf**. As you know, it is unlikely for a moist density to be lower than the corresponding dry density. We kindly request your review and correction or clarification of this discrepancy.

Additionally, we would appreciate confirmation on whether the results of the laboratory testing performed by both Haley & Aldrich and WSDOT on **Borings B-1-25, B-2-25, and B-3-25** may be relied upon as factual data for the design changes being implemented at the following project locations:

- I-405 Mainline Bridge Abutment 10
- Retaining Wall 23.72R
- Retaining Wall 23.73R
- Retaining Wall 23.74R

Your clarification will help ensure that the design progresses with accurate and reliable data.

Thank you for your attention to this matter. We look forward to your response.

SKANSKA

Sincerely,

Patrick Prendergast, Project Executive

Skanska USA Civil
18911 N Creek Pkwy S, Suite 300
Bothell, WA 98011

Attachment:

1. SL9727 - 149 - WSDOT Lab Test Package 4_annotated by GeoEngineers

Washington State Department of Transportation

I-405/SR 167 Program
777 108th Avenue NE, Ste. 800
Bellevue, WA 98004
206-410-0400
www.wsdot.wa.gov

September 4, 2025

Patrick Prendergast, P.E.
Vice President
Skanska USA Civil
18911 North Creek Parkway, Suite 300
Bothell, WA 98011

WSDOT SL No. 9727-149

Reference: **Contract No. 9727**
I-405, Brickyard to SR 527 Improvement Project

Subject: **WSDOT Laboratory Testing Package 01**

Mr. Prendergast:

In response to your request and to assist in expediting the investigation of the soil conditions in the vicinity of the northeast quadrant of the I-405 and SR522 interchange, WSDOT performed laboratory testing of samples provided by Skanska for the subject project. The contents of this laboratory submittal cover the following tests performed:

INDEX TESTS

- Liquid Limit, Plastic Limit, and Plasticity Index of Soils following AASHTO T89 and T90;
- Specific Gravity of Soil following AASHTO T100;
- Laboratory Determination of Moisture Content of Soils following AASHTO T265; and
- Particle Size Analysis of Soils following AASHTO T88.

ADVANCED TESTS

- One-Dimensional Consolidation Properties of Soils following AASHTO T216; and
- Standard Test Method for Consolidated Undrained Triaxial Compression Test for Cohesive Soils following ASTM D4767.

A representative from GeoEngineers personally delivered the soil samples to the State Materials laboratory for testing. They identified the specific portions of each sample to be tested and supplied all necessary parameters for the advanced testing procedures.

These results are for the exclusive use of Skanska and for the specific application to this project and site. The State Materials Laboratory completed this laboratory work in accordance with generally accepted geotechnical practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed. We make no other warranty, expressed or implied.

Attachments

1. Laboratory Request Transmittals
2. 009727 B-3-25 20 104.7’ Console Report and Summary
3. 009727 B-2-25 25 125.5’ Triaxial Report and Summary
4. 009727 B-1-25 30 180.83’ Triaxial Report and Summary
5. 009727 B-1-25 Lab and Atterberg Summary
6. 009727 B-2-25 Lab and Atterberg Summary
7. 009727 B-3-25 Lab and Atterberg Summary

If you have any questions, please contact me at (425) 495-1577.

Sincerely,

Evelyn Pao, P.E.
Project Director
EP:sb

cc: L. Hodgson, R. Woeck, D. Case, D. Holmquist, J. Slavicek, S. Berriz, B. Kane, N. Bergeman, R. Gehrlein, E-File:

ATTACHMENT 1:

Laboratory Request Transmittals

Job No SR

B-1-25 Hole No. Project I-405, Brickyard to SR 527 Improvement Project

Lab No.

7/3/2025 Date Drill Inspector

Engineer Kirsten Hooper (GeoEngineers)

Washington State Department of Transportation

LABORATORY SAMPLE TRANSMITTAL

Job:

Boring: B-1-25

Sample No.	Depth		Sample Info		Laboratory Testing Request								Information for Editing Boring Logs		
	Start	Stop	Sample Type/Recovery (ft)	Add to Specialized Test request form	GR	PI	Hydro	PH	Resistivity	LOI	3 Point PI	Core Testing	Use Inspector's Desc.	Sample is like Sample:	Comments
1	30.0	31.5	SPT 0.75	GS Needed											
4	50.0	52.0	ST 2	GS Needed											
25	155.0	156.5	SPT 1.5	GS Needed											
30	180.0	182.0	ST 2	Yes		x									*** We want a % Fines and AL from the sample used for the triaxial

Specialized Test Request Form

Project Information Section	
Submission Date:	**7/3/2025**
Drop Dead Due Date:	ASAP
Project Manager:	Kirsten Hooper (GeoEngineers)
Project Name:	
SR Number:	
Group Number:	
Project Number:	

STEP 1:	Enable Macros (Click "**Enable Content**" on the yellow ribbon above)
STEP 2:	**Fill in all boxes** that are highlighted green
STEP 3:	Select the desired **Specialized Test** from the dropdown menu
STEP 4:	Select the **Test Type** for the Specialized Test from the dropdown menu
STEP 5:	Fill out the needed **Test Parameters**
STEP 6:	Select any **Index Testing** for the samples on the Transmittal Tab
STEP 7:	Click the **Submit and Process** button on the **Transmittal Tab** to submit the request
NOTE:	you can import the dirt file and click the **"Add to Specialized Test request form"** checkbox next to the sample on the **Transmittal Tab** you want to test **and add it to this form** the checkbox can also be **unchecked** after being checked to **remove it from the form. Every specialized test includes a hydro and 3pi**

Sample Information Section			Specialized Test Information Section		Test Parameters Section		
Boring	**Sample Number**	**Depth (ft)**	**Specialized Test**	**Test Type**	**Needed Test Parameters Explained**	**Test Parameters**	**Comments**
B-1-25	1	30					This is a specific gravity test
B-1-25	4	50					This is a specific gravity test
B-1-25	25	155					This is a specific gravity test
B-1-25	30	180	Triaxial	CU (Consolidated Undrained)	Specify confining pressure in PSI (Example: Confining Pressure: 12, 20, 35)	**Confining Pressure:** **76 psi**	We want this to be a two point TxCU. Hopefully we will get two samples from this Shebly Tube. This is the first test We also want AL and %Fines on the sample that is run for the Triaxial
B-1-25	30	180	Triaxial	CU (Consolidated Undrained)	Specify confining pressure in PSI (Example: Confining Pressure: 12, 20, 35)	**Confining Pressure:** **157 psi**	We want this to be a two point TxCU. Hopefully we will get two samples from this Shebly Tube. This is the second test We also want AL, %Fines on this the sample that is run for Triaxial

Job No SR

B-2-25 Hole No. Project I-405, Brickyard to SR 527 Improvement Project

Lab No.

7/3/2025 Date Drill Inspector

Engineer Kirsten Hooper (GeoEngineers)

Washington State Department of Transportation

LABORATORY SAMPLE TRANSMITTAL

Job:

Boring: B-2-25

Sample No.	Depth		Sample Info		Laboratory Testing Request								Information for Editing Boring Logs		
	Start	Stop	Sample Type/Recovery (ft)	Add to Specialized Test request form	GR	PI	Hydro	PH	Resistivity	LOI	3 Point PI	Core Testing	Use Inspector's Desc.	Sample is like Sample:	Comments
22	108.5	110.5	ST 2	Yes							x				** We want an AL and %Fines for this sample
25	125.5	127.5	ST 2	Yes							x				** We want an AL and %Fines for this sample
27	133.5	140.0	SPT 1	GS Needed											

Specialized Test Request Form

Project Information Section	
Submission Date:	**7/3/2025**
Drop Dead Due Date:	ASAP
Project Manager:	Kirsten Hooper (GeoEngineers)
Project Name:	
SR Number:	
Group Number:	
Project Number:	

STEP 1:	Enable Macros (Click "**Enable Content**" on the yellow ribbon above)
STEP 2:	**Fill in all boxes** that are highlighted green
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STEP 7:	Click the **Submit and Process** button on the **Transmittal Tab** to submit the request
NOTE:	you can import the dirt file and click the **"Add to Specialized Test request form"** checkbox next to the sample on the **Transmittal Tab** you want to test **and add it to this form** the checkbox can also be **unchecked** after being checked to **remove it from the form. Every specialized test includes a hydro and 3pi**

Sample Information Section			Specialized Test Information Section		Test Parameters Section			
Boring	**Sample Number**	**Depth (ft)**	**Specialized Test**	**Test Type**	**Needed Test Parameters Explained**	**Test Parameters**		**Comments**
B-2-25	22	108.5	Consolidation	Load - Rebound - Load	Specify Load and Rebound Increments and calculated Overburden Pressure in PSF (double each load increment and divide by four for rebound increments the general Load-Rebound sequence above a depth of 50 feet is Load Sequence: 500-1000-2000-4000-8000 Rebound Sequence: 8000-2000-500)	**Load Sequence:**	**0-4000-8000-16000-32000-48000-64000-80000-**	We also want an AL and %Fines on the sample run for the consolidation
						Rebound Sequence:	**After 4 points on the virgin curve**	
						Overburden Pressure:	**6800**	
B-2-25	25	125.5	Triaxial	CU (Consolidated Undrained)	Specify confining pressure in PSI (Example: Confining Pressure: 12, 20, 35)	**Confining Pressure:**	**53**	We want this to be a two point TxCU. This is the first test
B-2-25	25	125.5	Triaxial	CU (Consolidated Undrained)	Specify confining pressure in PSI (Example: Confining Pressure: 12, 20, 35)	**Confining Pressure:**	**105**	We want this to be a two point TxCU. This is the second test
B-2-25	27	133.5						This is a specific gravity test

Job No SR

B-3-25 Hole No. Project I-405, Brickyard to SR 527 Improvement Project

Lab No.

7/3/2025 Date Drill Inspector

Engineer Kirsten Hooper (GeoEngineers)

Washington State Department of Transportation

LABORATORY SAMPLE TRANSMITTAL

Job:
Boring: B-3-25

Sample No.	Depth		Sample Info		Laboratory Testing Request								Information for Editing Boring Logs		
	Start	Stop	Sample Type/Recovery (ft)	Add to Specialized Test request form	GR	PI	Hydro	PH	Resistivity	LOI	3 Point PI	Core Testing	Use Inspector's Desc.	Sample is like Sample:	Comments
20	104.0	106.0	ST 2	yes							x				** We want an AL and a %Fines on the sample
23	119.0	120.5	SPT 1.5	GS Needed											

Specialized Test Request Form

Project Information Section	
Submission Date:	**7/3/2025**
Drop Dead Due Date:	ASAP
Project Manager:	Kirsten Hooper (GeoEngineers)
Project Name:	
SR Number:	
Group Number:	
Project Number:	

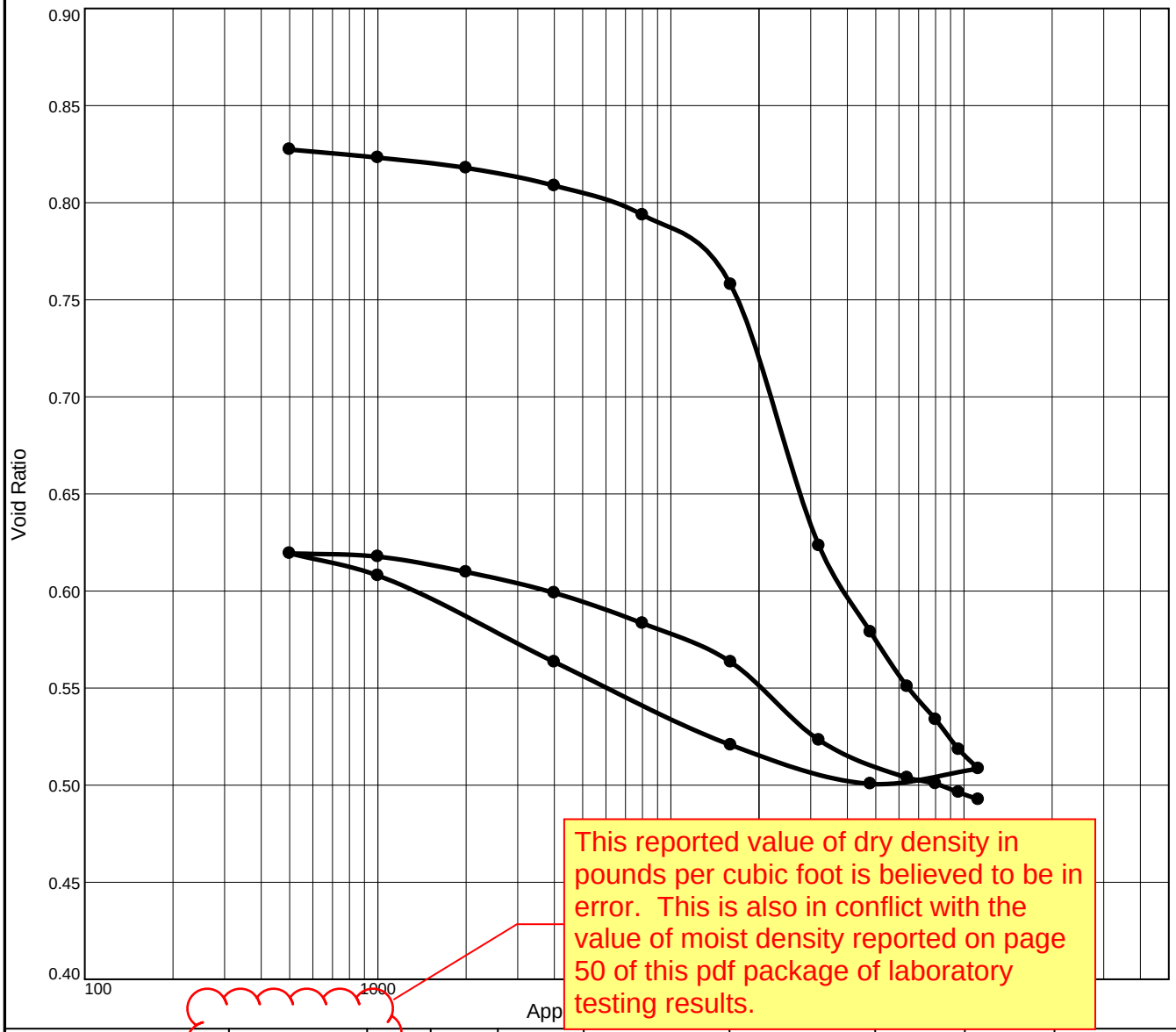
STEP 1:	Enable Macros (Click "**Enable Content**" on the yellow ribbon above)
STEP 2:	**Fill in all boxes** that are highlighted green
STEP 3:	Select the desired **Specialized Test** from the dropdown menu
STEP 4:	Select the **Test Type** for the Specialized Test from the dropdown menu
STEP 5:	Fill out the needed **Test Parameters**
STEP 6:	Select any **Index Testing** for the samples on the Transmittal Tab
STEP 7:	Click the **Submit and Process** button on the **Transmittal Tab** to submit the request
NOTE:	you can import the dirt file and click the **"Add to Specialized Test request form"** checkbox next to the sample on the **Transmittal Tab** you want to test **and add it to this form** the checkbox can also be **unchecked** after being checked to **remove it from the form. Every specialized test includes a hydro and 3pi**

Sample Information Section			Specialized Test Information Section		Test Parameters Section		
Boring	**Sample Number**	**Depth (ft)**	**Specialized Test**	**Test Type**	**Needed Test Parameters Explained**	**Test Parameters**	**Comments**
B-3-25	20	104	Consolidation	Load - Rebound - Load	Specify Load and Rebound Increments and calculated Overburden Pressure in PSF (double each load increment and divide by four for rebound increments the general Load-Rebound sequence above a depth of 50 feet is Load Sequence: 500-1000-2000-4000-8000 Rebound Sequence: 8000-2000-500)	**Load Sequence:** 0-4000-8000-16000-32000-48000-64000-80000- **Rebound Sequence:** After 4 points on the virgin curve if possible **Overburden Pressure:** 7500 psf	We also want an AL and %Fines on the sample run for the consolidation
B-3-25	23	119					This is a specific gravity test

ATTACHMENT 2:

009727 B-3-25 20 104.7’ Console Report and Summary

CONSOLIDATION TEST REPORT



This reported value of dry density in pounds per cubic foot is believed to be in error. This is also in conflict with the value of moist density reported on page 50 of this pdf package of laboratory testing results.

Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c	C_r	Initial Void Ratio
Saturation	Moisture									
102.5 %	31.3 %	128.4	38	14	2.74					0.836

MATERIAL DESCRIPTION	USCS	AASHTO
CL - LEAN CLAY	CL	T216

Project No. 009727 **Client:** Kirston Hooper (GeoEngineers)

Project: I-405/Brickyard to SR-527 Improvement Project

Source of Sample: B-3-25 **Depth:** 104.7' **Sample Number:** 20

Washington State Department of Transportation

Olympia, WA

Remarks:

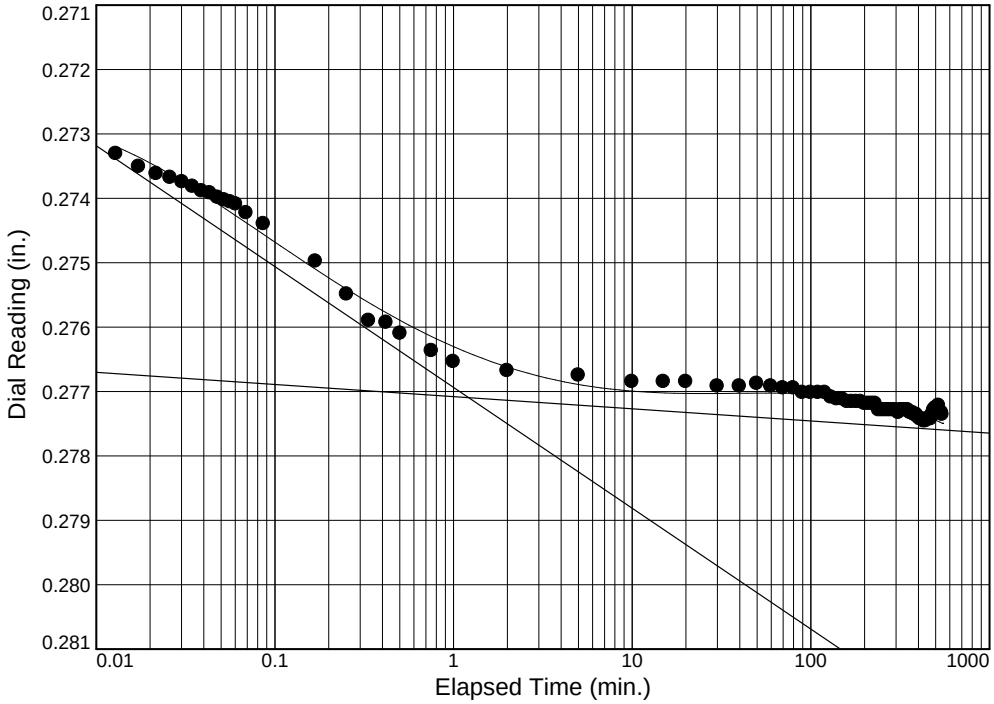
Figure

Tested By: TJM **Checked By:** SLW

Dial Reading vs. Time

Project No.: 009727
Project: I-405/Brickyard to SR-527 Improvement Project

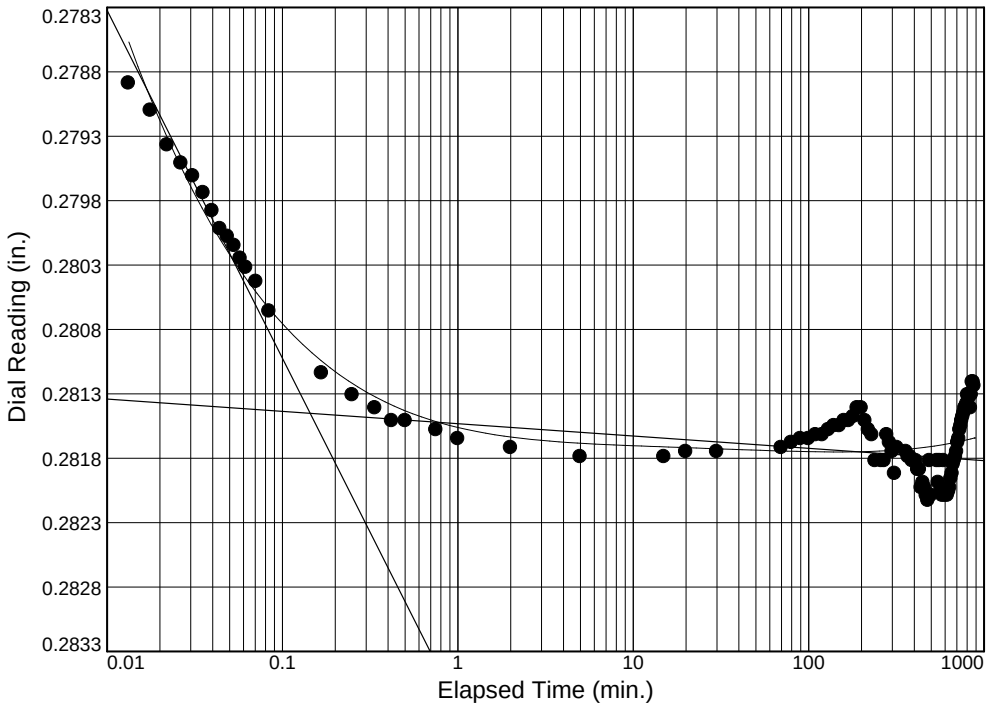
Source of Sample: B-3-25 Depth: 104.7' Sample Number: 20



Load No.= 1
Load= 500 psf
D_0 = 0.2736
D_{50} = 0.2754
D_{100} = 0.2771
T_{50} = 0.23 min.

C_v @ T_{50}
1.186 ft.^{2}/day

C_α = 0.000



Load No.= 3
Load= 2000 psf
D_0 = 0.2791
D_{50} = 0.2803
D_{100} = 0.2815
T_{50} = 0.05 min.

C_v @ T_{50}
5.258 ft.^{2}/day

C_α = 0.000

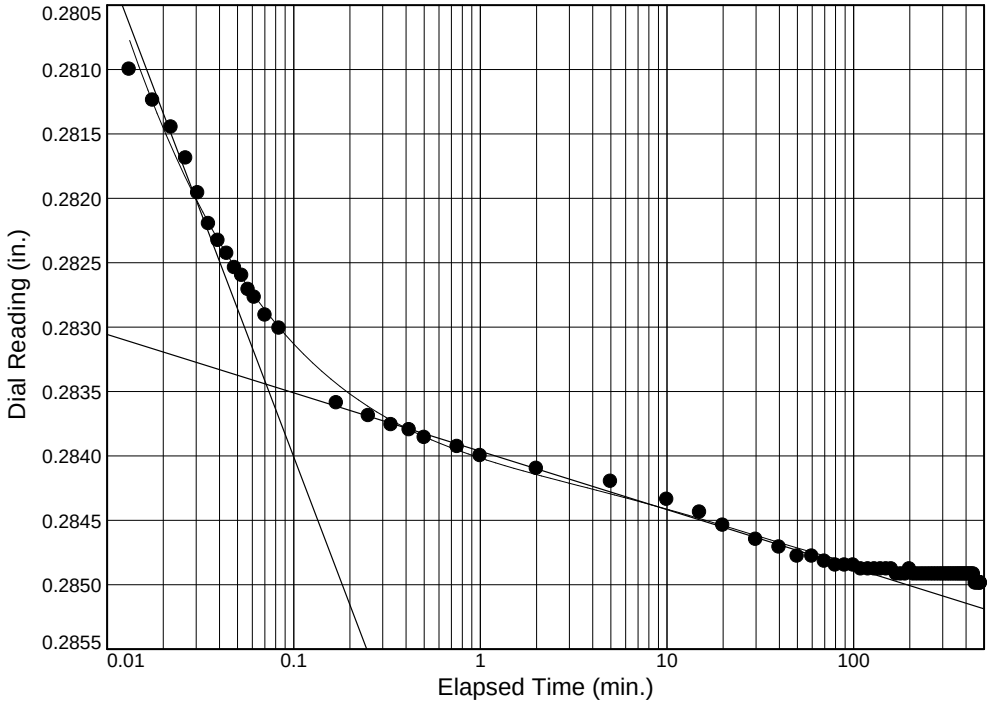
Figure

Washington State Department of Transportation

Dial Reading vs. Time

Project No.: 009727
Project: I-405/Brickyard to SR-527 Improvement Project

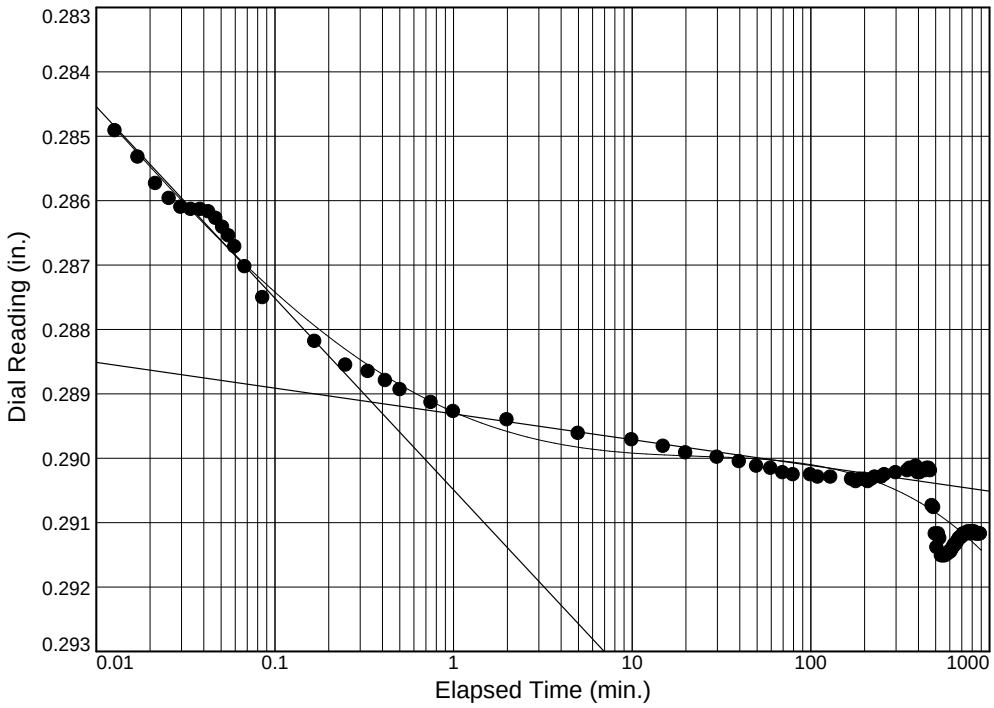
Source of Sample: B-3-25 Depth: 104.7' Sample Number: 20



Load No.= 4
Load= 4000 psf
D_0 = 0.2812
D_{50} = 0.2823
D_{100} = 0.2834
T_{50} = 0.04 min.

C_v @ T_{50}
6.812 ft.^{2}/day

C_α = 0.001



Load No.= 5
Load= 8000 psf
D_0 = 0.2850
D_{50} = 0.2871
D_{100} = 0.2891
T_{50} = 0.07 min.

C_v @ T_{50}
3.731 ft.^{2}/day

C_α = 0.001

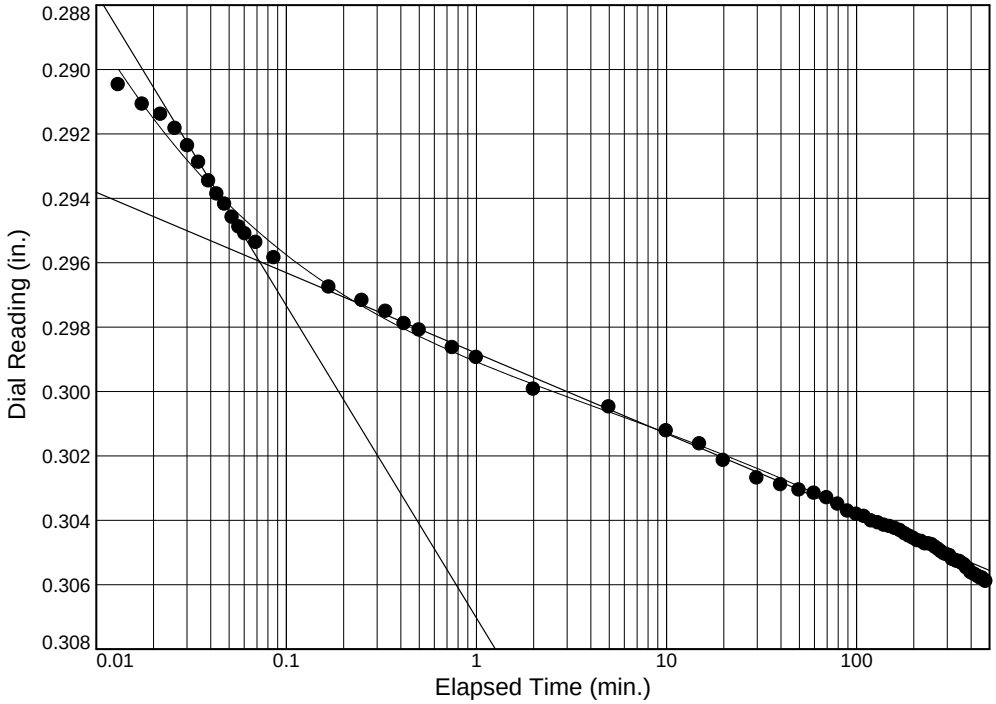
Figure

Washington State Department of Transportation

Dial Reading vs. Time

Project No.: 009727
Project: I-405/Brickyard to SR-527 Improvement Project

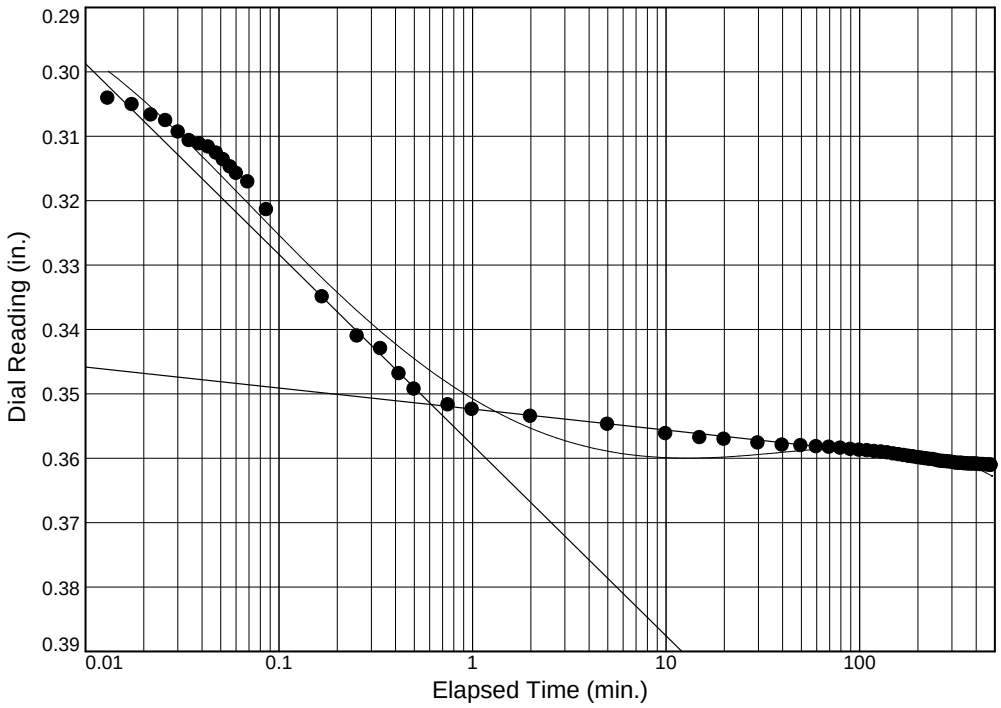
Source of Sample: B-3-25 Depth: 104.7' Sample Number: 20



Load No.= 6
Load= 16000 psf
D_0 = 0.2912
D_{50} = 0.2936
D_{100} = 0.2960
T_{50} = 0.04 min.

C_v @ T_{50}
6.684 ft.^{2}/day

C_α = 0.006



Load No.= 7
Load= 32000 psf
D_0 = 0.3059
D_{50} = 0.3288
D_{100} = 0.3517
T_{50} = 0.13 min.

C_v @ T_{50}
1.827 ft.^{2}/day

C_α = 0.008

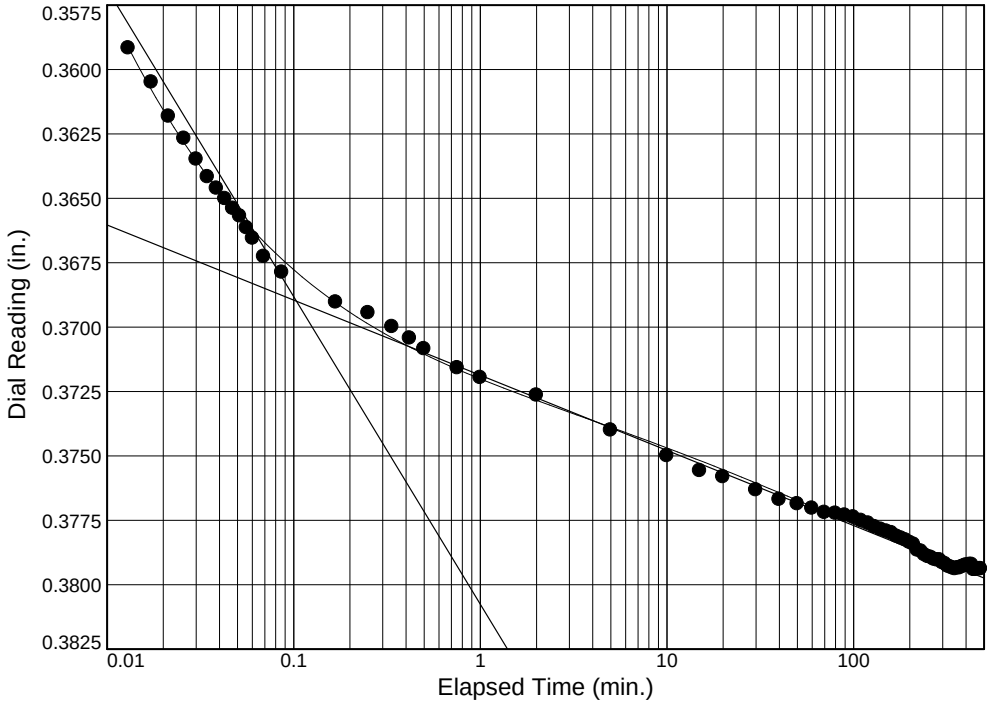
Figure

Washington State Department of Transportation

Dial Reading vs. Time

Project No.: 009727
Project: I-405/Brickyard to SR-527 Improvement Project

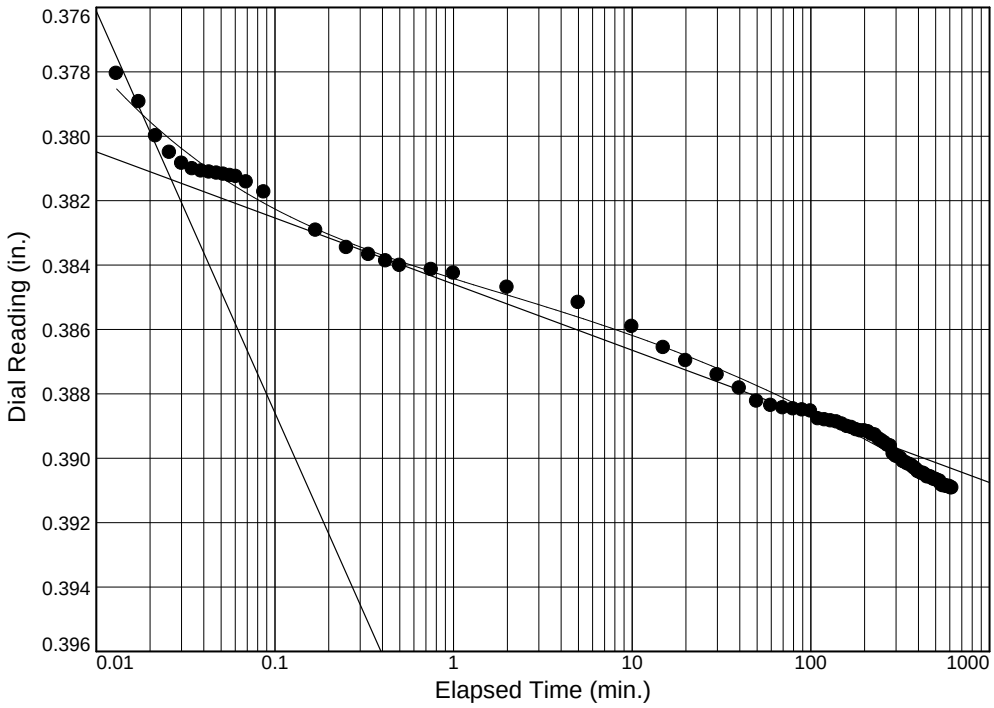
Source of Sample: B-3-25 Depth: 104.7' Sample Number: 20



Load No.= 8
Load= 48000 psf
D_0 = 0.3611
D_{50} = 0.3651
D_{100} = 0.3690
T_{50} = 0.04 min.

C_v @ T_{50}
4.888 ft.^{2}/day

C_α = 0.007



Load No.= 9
Load= 64000 psf
D_0 = 0.3777
D_{50} = 0.3795
D_{100} = 0.3813
T_{50} = 0.02 min.

C_v @ T_{50}
10.198 ft.^{2}/day

C_α = 0.005

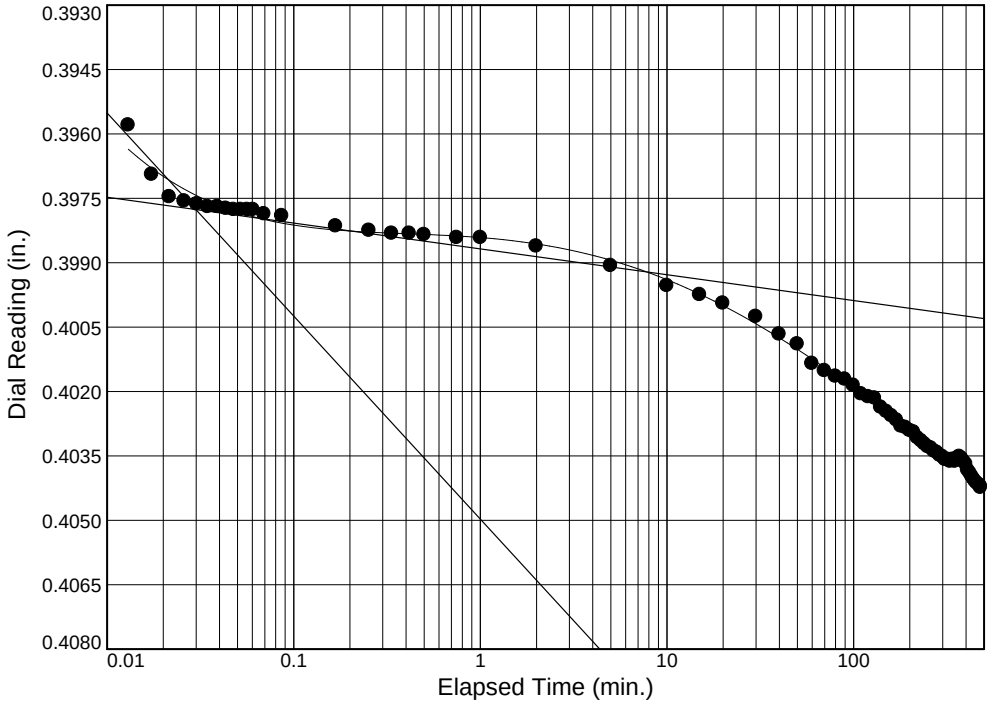
Figure

Washington State Department of Transportation

Dial Reading vs. Time

Project No.: 009727
Project: I-405/Brickyard to SR-527 Improvement Project

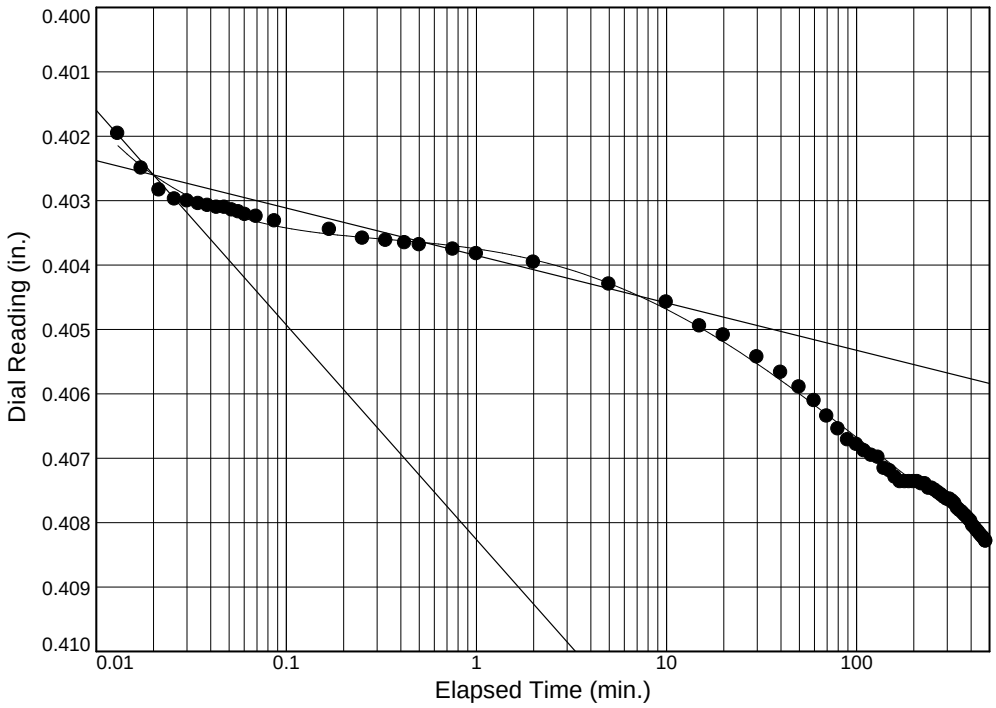
Source of Sample: B-3-25 Depth: 104.7' Sample Number: 20



Load No.= 11
Load= 96000 psf
D_0 = 0.3979
D_{50} = 0.3978
D_{100} = 0.3978
T_{50} = 0.05 min.

C_v @ T_{50}
3.911 ft.^{2}/day

C_α = 0.001



Load No.= 12
Load= 112000 psf
D_0 = 0.4042
D_{50} = 0.4034
D_{100} = 0.4026
T_{50} = 0.09 min.

C_v @ T_{50}
2.066 ft.^{2}/day

C_α = 0.002

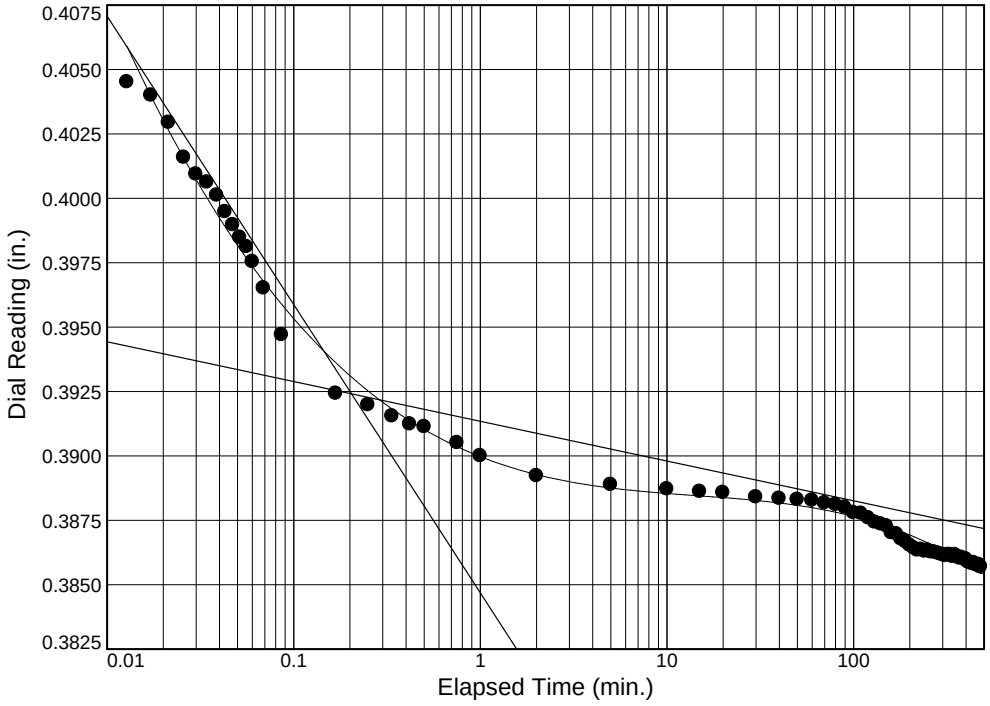
Figure

Washington State Department of Transportation

Dial Reading vs. Time

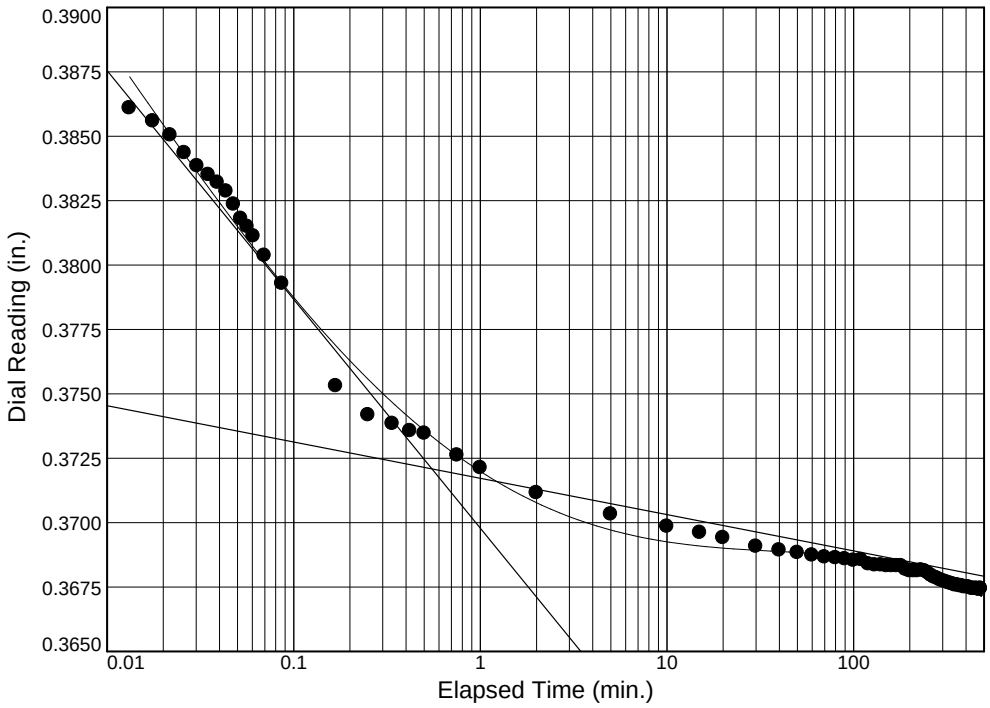
Project No.: 009727
Project: I-405/Brickyard to SR-527 Improvement Project

Source of Sample: B-3-25 Depth: 104.7' Sample Number: 20



Load No.= 15
Load= 4000 psf
D_0 = 0.4033
D_{50} = 0.3978
D_{100} = 0.3924
T_{50} = 0.05 min.

C_v @ T_{50}
3.666 ft.^{2}/day



Load No.= 16
Load= 1000 psf
D_0 = 0.3857
D_{50} = 0.3789
D_{100} = 0.3721
T_{50} = 0.10 min.

C_v @ T_{50}
2.176 ft.^{2}/day

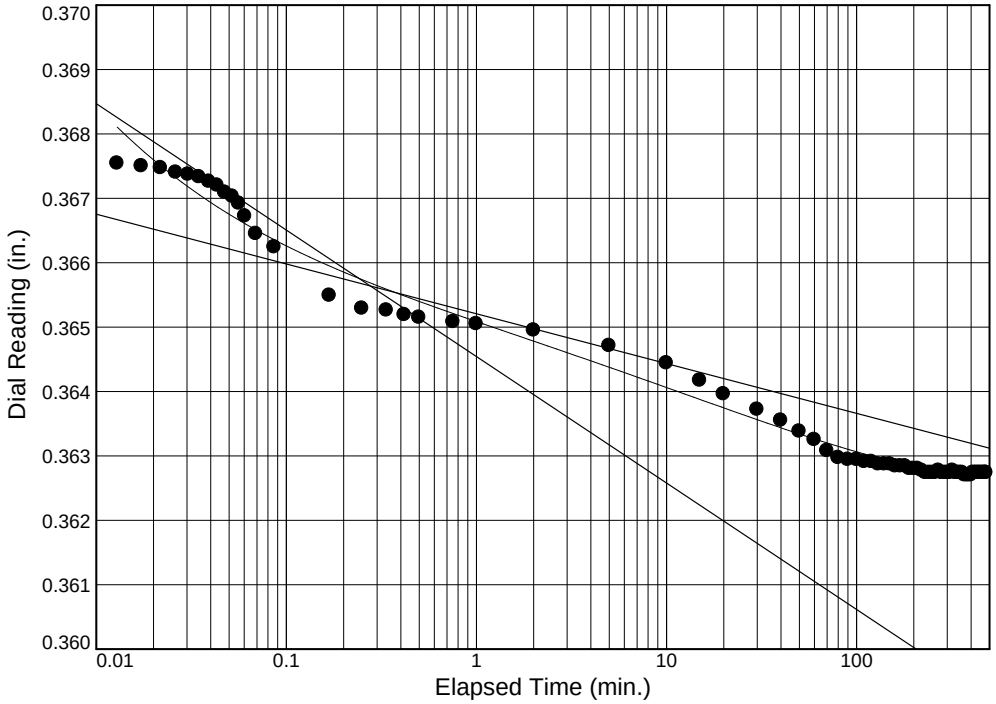
Figure

Washington State Department of Transportation

Dial Reading vs. Time

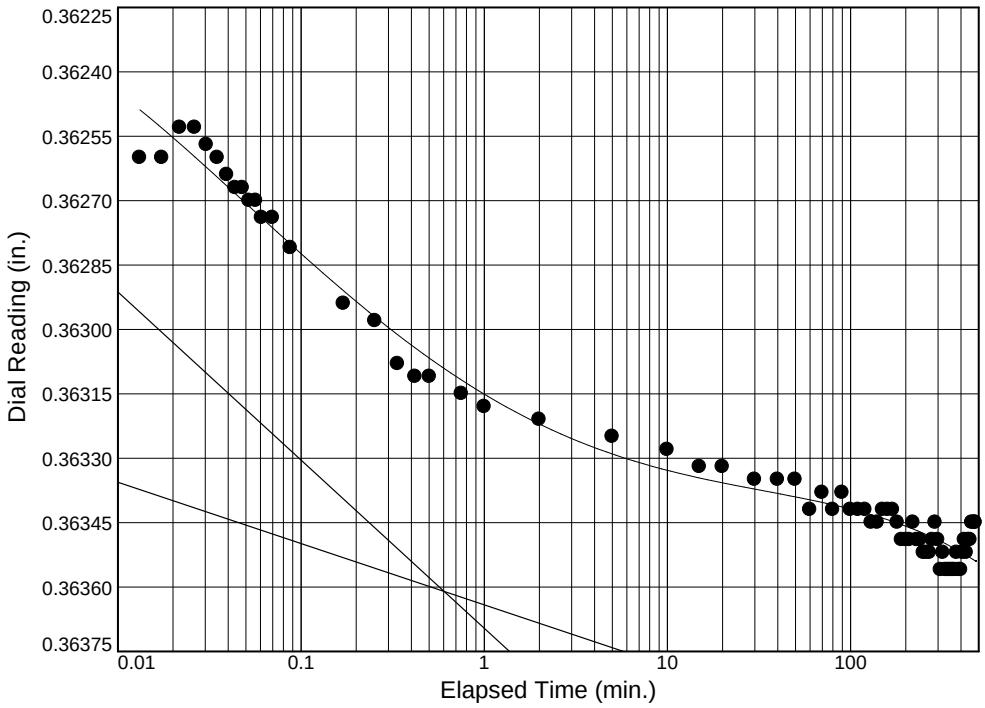
Project No.: 009727
Project: I-405/Brickyard to SR-527 Improvement Project

Source of Sample: B-3-25 Depth: 104.7' Sample Number: 20



Load No.= 17
Load= 500 psf
D_0 = 0.3674
D_{50} = 0.3665
D_{100} = 0.3656
T_{50} = 0.07 min.

C_v @ T_{50}
3.258 ft.^{2}/day



Load No.= 18
Load= 1000 psf
D_0 = 0.3627
D_{50} = 0.3632
D_{100} = 0.3636
T_{50} = 1.25 min.

C_v @ T_{50}
0.174 ft.^{2}/day

C_α = 0.000

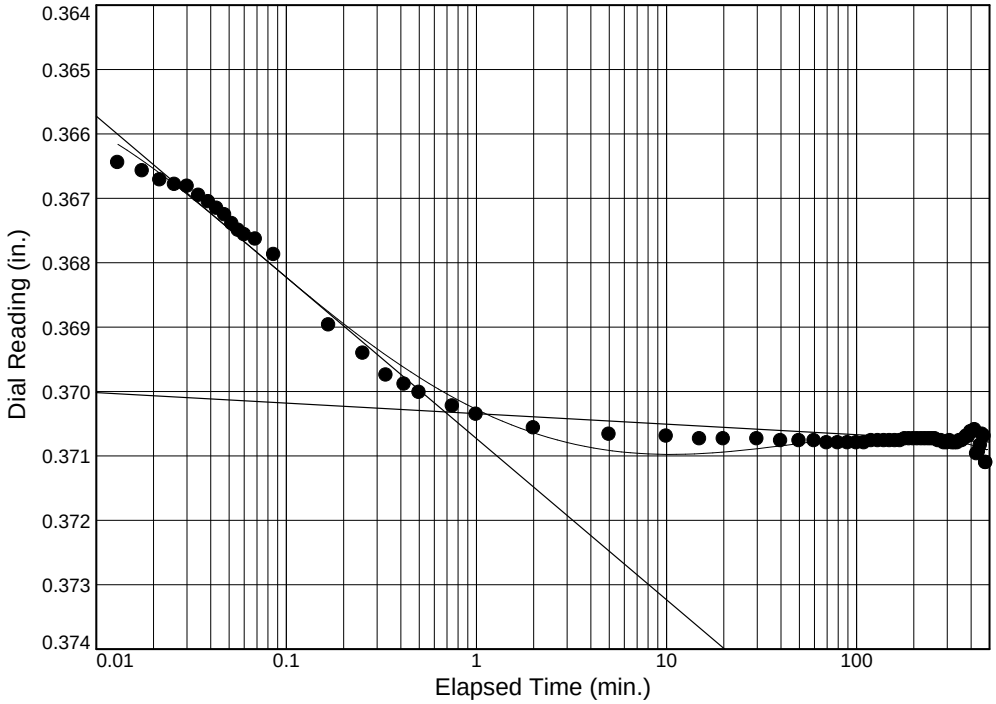
Figure

Washington State Department of Transportation

Dial Reading vs. Time

Project No.: 009727
Project: I-405/Brickyard to SR-527 Improvement Project

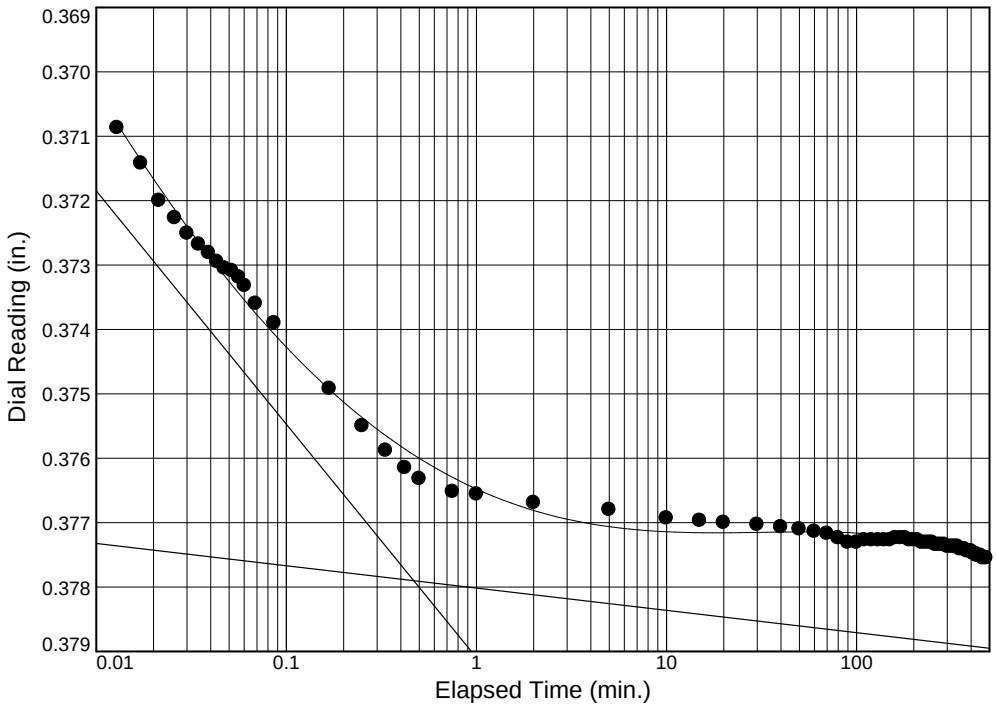
Source of Sample: B-3-25 Depth: 104.7' Sample Number: 20



Load No.= 20
Load= 4000 psf
D_0 = 0.3667
D_{50} = 0.3685
D_{100} = 0.3703
T_{50} = 0.13 min.

C_v @ T_{50}
1.648 ft.^{2}/day

C_α = 0.000



Load No.= 21
Load= 8000 psf
D_0 = 0.3711
D_{50} = 0.3745
D_{100} = 0.3779
T_{50} = 0.12 min.

C_v @ T_{50}
1.766 ft.^{2}/day

C_α = 0.001

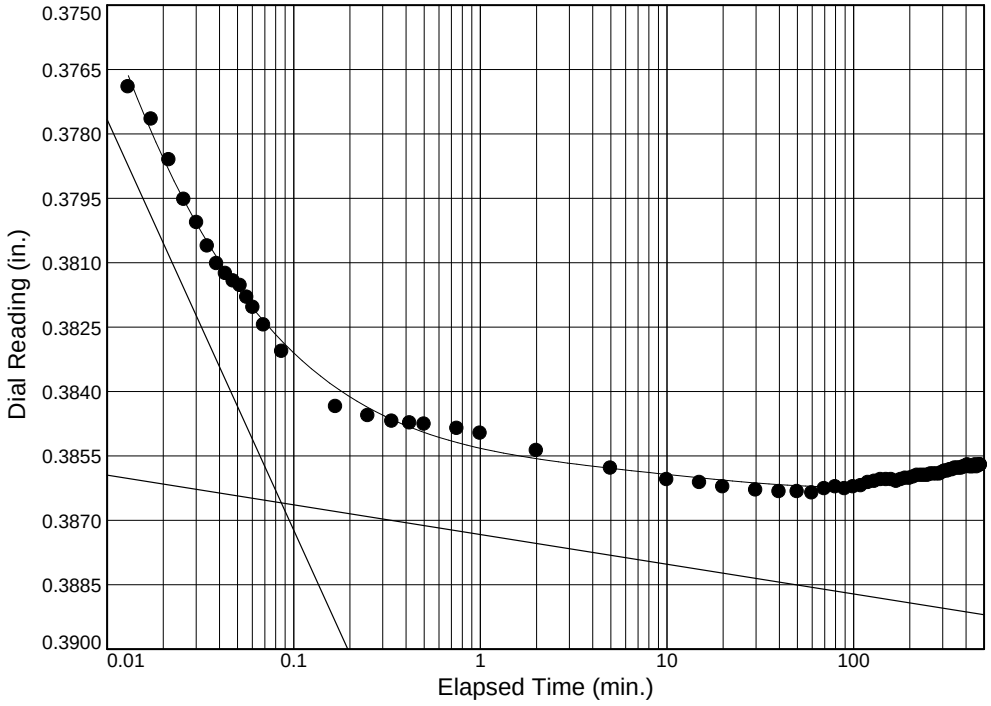
Figure

Washington State Department of Transportation

Dial Reading vs. Time

Project No.: 009727
Project: I-405/Brickyard to SR-527 Improvement Project

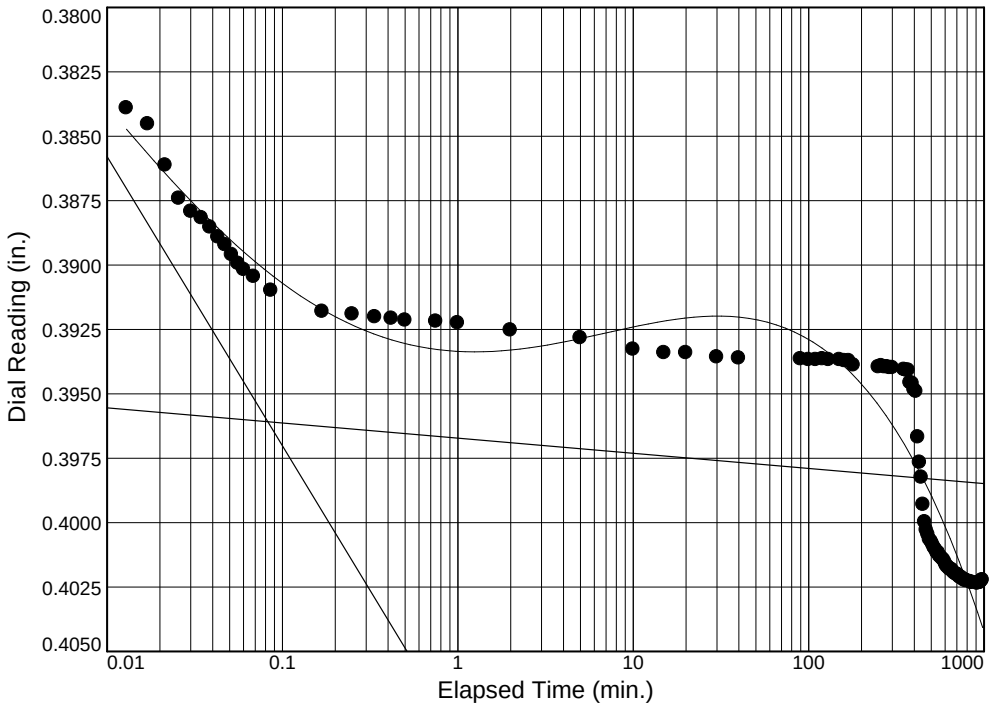
Source of Sample: B-3-25 Depth: 104.7' Sample Number: 20



Load No.= 22
Load= 16000 psf
D_0 = 0.3775
D_{50} = 0.3821
D_{100} = 0.3866
T_{50} = 0.06 min.

C_v @ T_{50}
3.382 ft.^{2}/day

C_α = 0.002



Load No.= 23
Load= 32000 psf
D_0 = 0.3857
D_{50} = 0.3909
D_{100} = 0.3961
T_{50} = 0.11 min.

C_v @ T_{50}
1.806 ft.^{2}/day

C_α = 0.001

Figure

Washington State Department of Transportation

CONSOLIDATION TEST DATA

8/22/2025

Client: Kirston Hooper (GeoEngineers)
Project: I-405/Brickyard to SR-527 Improvement Project
Project Number: 009727
Location: B-3-25
Depth: 104.7' **Sample Number:** 20
Material Description: CL - LEAN CLAY
Liquid Limit: 38 **Plasticity Index:** 14
USCS: CL **AASHTO:** T216
Tested by: TJM **Checked by:** SLW

Test Specimen Data

NATURAL MOISTURE
Wet w+t = 873.30 g.
Dry w+t = 717.11 g.
Tare Wt. = 218.20 g.
Moisture = 31.3 %

VOID RATIO
Spec. Gr. = 2.74
Est. Ht. Solids = 0.411 in.
Init. V.R. = 0.836
Init. Sat. = 102.5 %

AFTER TEST
Wet w+t = 151.76 g.
Dry w+t = 139.30 g.
Tare Wt. = 81.53 g.
Moisture = 21.6 %

UNIT WEIGHT
Height = 0.754 in.
Diameter = 1.998 in.
Weight = 104.60 g.
Dry Dens. = 128.4 pcf

TEST START
Height = 0.754 in.
Diameter = 1.998 in.

Dry Wt. = 57.77* g.

* Final dry weight used as mineral solids weight

End-Of-Load Summary

Pressure (psf)	Final Dial (in.)	Machine Defl. (in.)	Deformation (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Strain
start	0.27362		0.00000			0.836	
500	0.27774	0.00038	0.00374	1.186	0.000	0.827	0.5 Comprs.
1000	0.27955	0.00048	0.00545		0.000	0.823	0.7 Comprs.
2000	0.28196	0.00072	0.00762	5.258	0.000	0.818	1.0 Comprs.
4000	0.28605	0.00106	0.01137	6.812	0.001	0.809	1.5 Comprs.
8000	0.29258	0.00140	0.01756	3.731	0.001	0.794	2.3 Comprs.
16000	0.30821	0.00231	0.03228	6.684	0.006	0.758	4.3 Comprs.
32000	0.36543	0.00429	0.08752	1.827	0.008	0.623	11.6 Comprs.
48000	0.38589	0.00650	0.10577	4.888	0.007	0.579	14.0 Comprs.
64000	0.39910	0.00817	0.11731	10.198	0.005	0.551	15.6 Comprs.
80000	0.40859	0.01072	0.12425		0.003	0.534	16.5 Comprs.
96000	0.41745	0.01324	0.13059	3.911	0.001	0.518	17.3 Comprs.
112000	0.42395	0.01566	0.13467	2.066	0.002	0.508	17.9 Comprs.
48000	0.41799	0.00650	0.13787			0.501	18.3 Comprs.
16000	0.40557	0.00231	0.12964			0.521	17.2 Comprs.
4000	0.38677	0.00106	0.11209	3.666		0.563	14.9 Comprs.
1000	0.36792	0.00048	0.09382	2.176		0.608	12.4 Comprs.
500	0.36312	0.00038	0.08912	3.258		0.619	11.8 Comprs.
1000	0.36393	0.00048	0.08983	0.174	0.000	0.618	11.9 Comprs.
2000	0.36741	0.00072	0.09307		0.001	0.610	12.3 Comprs.
4000	0.37217	0.00106	0.09749	1.648	0.000	0.599	12.9 Comprs.
8000	0.37895	0.00140	0.10393	1.766	0.001	0.583	13.8 Comprs.

End-Of-Load Summary (Continued)

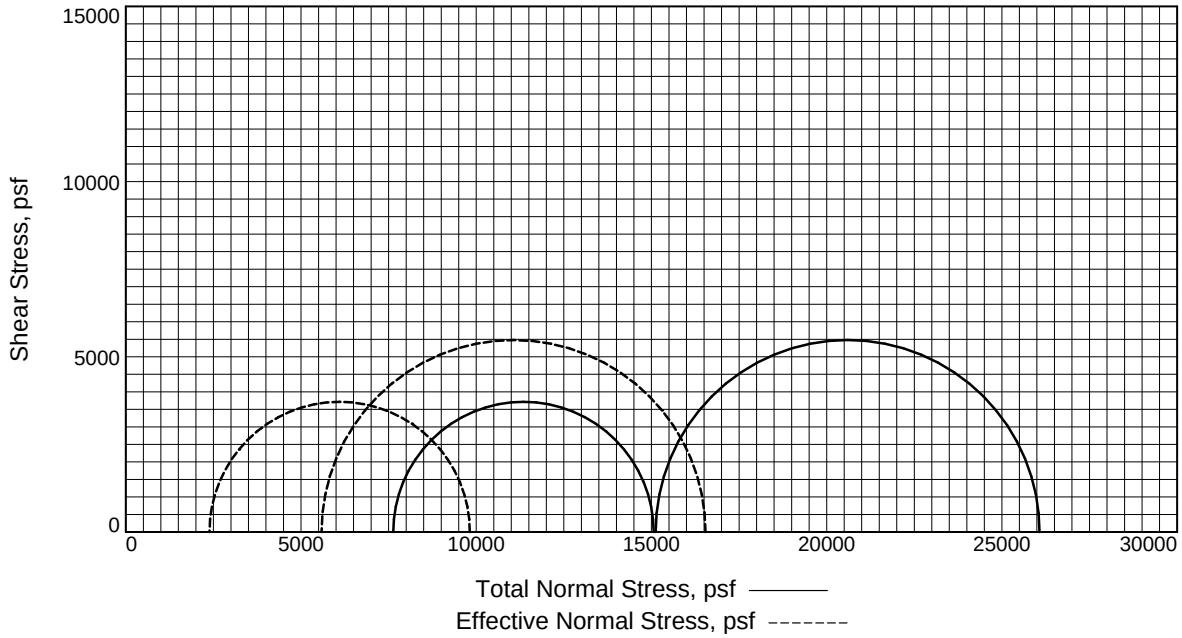
Pressure (psf)	Final Dial (in.)	Machine Defl. (in.)	Deformation (in.)	C_v (ft.^{2}/day)	C_α	Void Ratio	% Strain
16000	0.38803	0.00231	0.11210	3.382	0.002	0.563	14.9 Comprs.
32000	0.40652	0.00429	0.12861	1.806	0.001	0.523	17.1 Comprs.
64000	0.41836	0.00817	0.13657		0.001	0.504	18.1 Comprs.
80000	0.42218	0.01072	0.13784		0.003	0.501	18.3 Comprs.
96000	0.42653	0.01324	0.13967		0.007	0.496	18.5 Comprs.
112000	0.43045	0.01566	0.14117		0.002	0.493	18.7 Comprs.

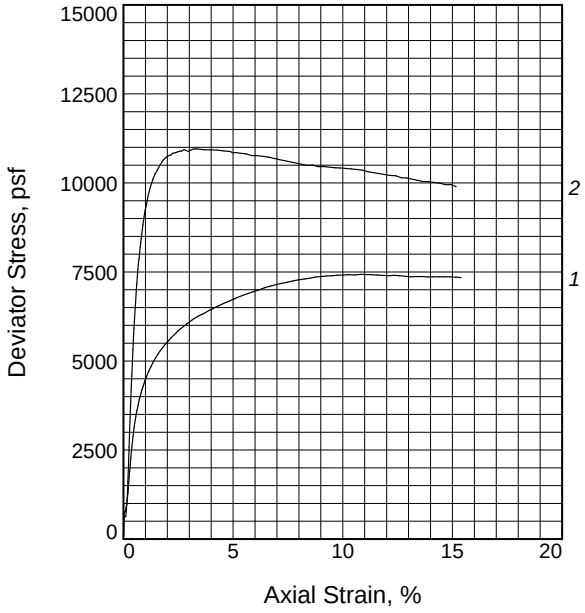
Compression index (C_C), psf = **Preconsolidation pressure (P_p), psf =**

Overburden (σ_{VO}), psf = **Recompression index (C_r) =**

ATTACHMENT 3:

009727 B-2-25 25 125.5’ Triaxial Report and Summary





Sample No.		1	2
Initial	Water Content, %	26.1	26.1
	Dry Density, pcf	97.4	99.6
	Saturation, %	94.1	99.3
	Void Ratio	0.7630	0.7229
	Diameter, in.	2.867	2.865
	Height, in.	6.051	5.986
At Test	Water Content, %	22.8	24.3
	Dry Density, pcf	105.5	103.0
	Saturation, %	100.0	100.0
	Void Ratio	0.6268	0.6670
	Diameter, in.	2.791	2.834
	Height, in.	5.892	5.921
Strain rate, %/min.		0.0083	0.0083
Eff. Cell Pressure, psi		53.000	105.000
Fail. Stress, psf		7430.1	10955.3
Excess Pore Pr., psf		5245.0	9533.4
Strain, %		10.8	3.4
Ult. Stress, psf		7341.6	9952.2
Excess Pore Pr., psf		5685.4	10593.0
Strain, %		15.4	14.9
$\bar{\sigma}_1$ Failure, psf		9817.1	16542.0
$\bar{\sigma}_3$ Failure, psf		2387.0	5586.6

Type of Test:
CU with Pore Pressures
Sample Type: Shebly Tube
Description: CL - LEAN CLAY

LL= 34 **PL=** 21 **PI=** 13
Specific Gravity= 2.75
Remarks:

Client: Kirston Hooper (GeoEngineers)

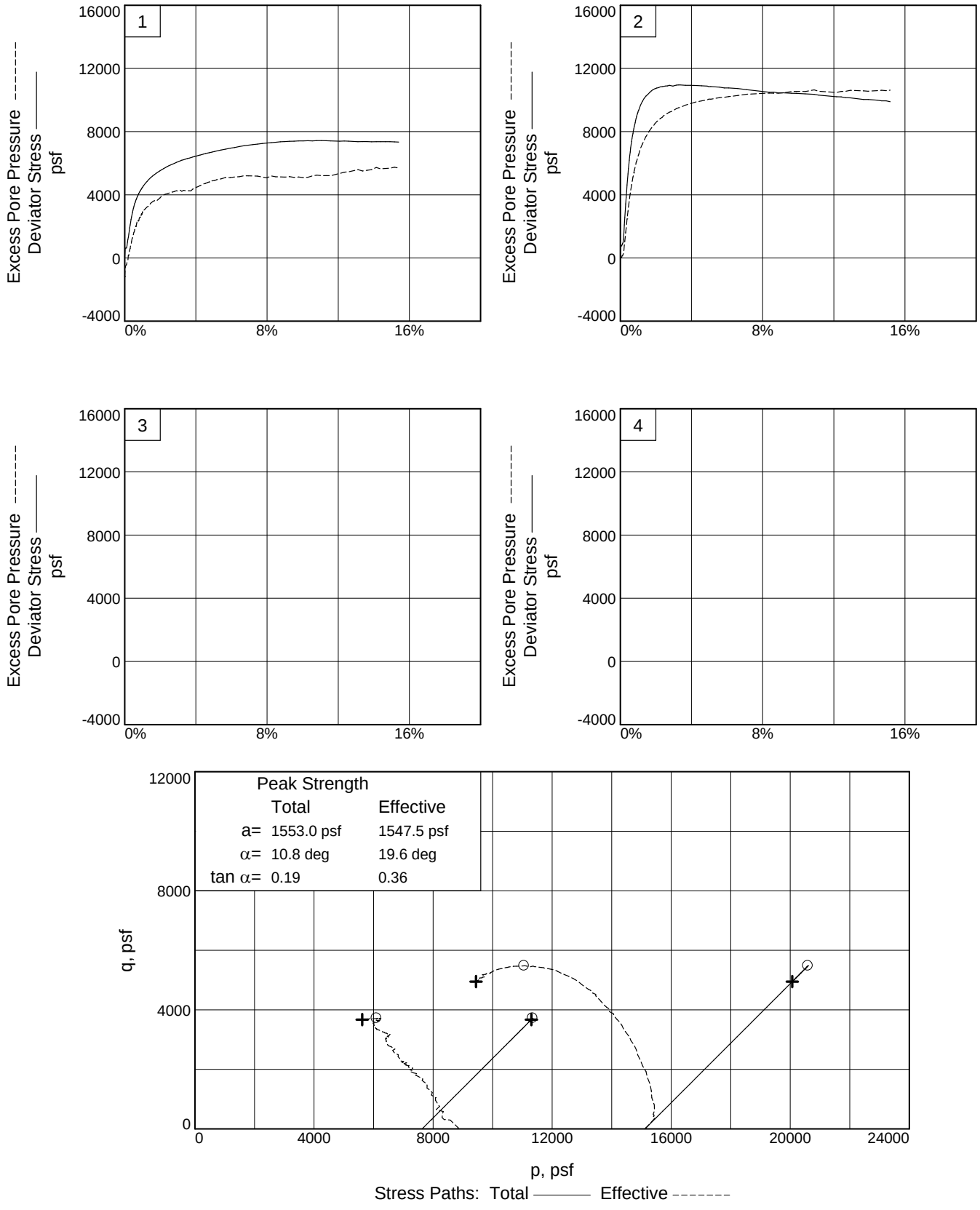
Project: I-405/Brickyard to SR-527 Improvement Project

Source of Sample: B-2-25 **Depth:** 125.5
Sample Number: 25
Proj. No.: 009727 **Date Sampled:** 7/10/2025

TRIAXIAL SHEAR TEST REPORT
Washington State Department of Transportation
Olympia, WA

Figure 2

Tested By: TJM **Checked By:** SLW



Client: Kirston Hooper (GeoEngineers)

Project: I-405/Brickyard to SR-527 Improvement Project

Source of Sample: B-2-25 **Depth:** 125.5 **Sample Number:** 25

Project No.: 009727

Figure 2

Washington State Department of Transportation

Tested By: TJM **Checked By:** SLW

TRIAXIAL COMPRESSION TEST

CU with Pore Pressures

8/22/2025
11:57 AM

Date: 7/10/2025
Client: Kirston Hooper (GeoEngineers)
Project: I-405/Brickyard to SR-527 Improvement Project
Project No.: 009727
Location: B-2-25
Depth: 125.5 **Sample Number:** 25
Description: CL - LEAN CLAY
Remarks:
Type of Sample: Shebly Tube
Specific Gravity=2.75 **LL=**34 **PL=**21 **PI=**13
Test Method: COE uniform strain

Parameters for Specimen No. 1

Specimen Parameter	Initial	Saturated	Consolidated	Final
Moisture content: Moist soil+tare, gms.	823.600			1431.790
Moisture content: Dry soil+tare, gms.	697.820			1171.770
Moisture content: Tare, gms.	216.200			212.770
Moisture, %	26.1	26.8	22.8	27.1
Moist specimen weight, gms.	1259.17			
Diameter, in.	2.867	2.853	2.791	
Area, in.²	6.456	6.393	6.117	
Height, in.	6.051	6.021	5.892	
Net decrease in height, in.		0.029	0.129	
Wet density, pcf	122.8	125.3	129.6	
Dry density, pcf	97.4	98.8	105.5	
Void ratio	0.7630	0.7375	0.6268	
Saturation, %	94.1	100.0	100.0	

Test Readings for Specimen No. 1

Membrane modulus = 0.12 kN/cm²
Membrane thickness = 0.08 cm
Consolidation cell pressure = 129.870 psi (18701.3 psf)
Consolidation back pressure = 76.870 psi (11069.3 psf)
Consolidation effective confining stress = 7632.0 psf
Strain rate, %/min. = 0.0083
Fail. Stress = 7430.1 psf **at reading no.** 103
Ult. Stress = 7341.6 psf **at reading no.** 119

Test Readings for Specimen No. 1

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress psf	Minor Eff. Stress psf	Major Eff. Stress psf	1:3 Ratio	Pore Press. psi	P psf	Q psf
0	8.1310	0.000	0.0	0.0	0.0	8814.5	8814.5	1.00	68.658	8814.5	0.0
1	8.1310	2.783	2.8	0.0	65.5	8814.6	8880.1	1.01	68.658	8847.3	32.8
2	8.1325	25.113	25.1	0.0	591.0	8278.2	8869.2	1.07	72.382	8573.7	295.5
3	8.1340	26.657	26.7	0.1	627.2	8132.8	8760.0	1.08	73.392	8446.4	313.6
4	8.1370	26.697	26.7	0.1	627.8	8057.5	8685.3	1.08	73.915	8371.4	313.9
5	8.1385	32.473	32.5	0.1	763.4	7919.6	8683.0	1.10	74.873	8301.3	381.7
6	8.1401	42.517	42.5	0.2	999.3	7811.4	8810.7	1.13	75.624	8311.1	499.6
7	8.1416	49.487	49.5	0.2	1162.8	7761.8	8924.6	1.15	75.969	8343.2	581.4
8	8.1431	55.418	55.4	0.2	1301.9	7458.2	8760.1	1.17	78.077	8109.1	650.9
9	8.1446	64.167	64.2	0.2	1507.0	7462.0	8969.0	1.20	78.051	8215.5	753.5
10	8.1461	73.439	73.4	0.3	1724.3	7281.3	9005.6	1.24	79.306	8143.4	862.2
11	8.1476	81.400	81.4	0.3	1910.7	7128.3	9039.0	1.27	80.368	8083.6	955.4
12	8.1491	89.278	89.3	0.3	2095.1	7031.1	9126.2	1.30	81.043	8078.6	1047.6
13	8.1506	96.880	96.9	0.3	2272.9	6807.9	9080.9	1.33	82.593	7944.4	1136.5
14	8.1521	104.025	104.0	0.4	2440.0	6750.1	9190.0	1.36	82.994	7970.1	1220.0
15	8.1537	110.742	110.7	0.4	2596.8	6598.5	9195.3	1.39	84.047	7896.9	1298.4
16	8.1552	117.160	117.2	0.4	2746.6	6423.2	9169.8	1.43	85.264	7796.5	1373.3
17	8.1567	122.918	122.9	0.4	2880.9	6359.6	9240.4	1.45	85.706	7800.0	1440.4
18	8.1582	128.763	128.8	0.5	3017.1	6283.2	9300.3	1.48	86.236	7791.8	1508.5
19	8.1597	133.776	133.8	0.5	3133.7	6141.9	9275.6	1.51	87.218	7708.8	1566.9
20	8.1612	138.727	138.7	0.5	3248.9	6006.7	9255.6	1.54	88.157	7631.1	1624.4
21	8.1627	143.034	143.0	0.5	3348.9	5976.9	9325.8	1.56	88.364	7651.4	1674.4
22	8.1642	147.349	147.3	0.6	3449.0	5844.1	9293.1	1.59	89.286	7568.6	1724.5
23	8.1658	150.719	150.7	0.6	3527.0	5734.3	9261.2	1.62	90.049	7497.8	1763.5
24	8.1673	154.272	154.3	0.6	3609.2	5607.0	9216.1	1.64	90.933	7411.6	1804.6
25	8.1688	157.790	157.8	0.6	3690.5	5641.5	9332.1	1.65	90.693	7486.8	1845.3
26	8.1703	160.937	160.9	0.7	3763.2	5469.0	9232.2	1.69	91.891	7350.6	1881.6
27	8.1718	164.354	164.4	0.7	3842.1	5327.7	9169.8	1.72	92.872	7248.7	1921.0
28	8.1733	167.316	167.3	0.7	3910.3	5351.0	9261.2	1.73	92.711	7306.1	1955.1
29	8.1748	169.864	169.9	0.7	3968.8	5241.8	9210.6	1.76	93.469	7226.2	1984.4
30	8.1763	172.547	172.5	0.8	4030.5	5291.1	9321.5	1.76	93.127	7306.3	2015.2
31	8.1779	175.029	175.0	0.8	4087.4	5269.2	9356.5	1.78	93.279	7312.9	2043.7
32	8.1794	177.442	177.4	0.8	4142.7	5102.1	9244.8	1.81	94.439	7173.5	2071.3
33	8.1809	180.000	180.0	0.8	4201.3	5067.9	9269.2	1.83	94.676	7168.6	2100.7
34	8.1824	182.037	182.0	0.9	4247.8	5064.8	9312.6	1.84	94.698	7188.7	2123.9
35	8.1839	184.091	184.1	0.9	4294.6	4877.6	9172.2	1.88	95.998	7024.9	2147.3
36	8.1854	186.262	186.3	0.9	4344.1	4929.3	9273.4	1.88	95.639	7101.3	2172.0
37	8.1869	188.222	188.2	0.9	4388.7	4829.7	9218.4	1.91	96.330	7024.0	2194.3
38	8.1884	190.430	190.4	1.0	4439.0	4869.1	9308.1	1.91	96.057	7088.6	2219.5
39	8.1899	192.140	192.1	1.0	4477.7	4712.0	9189.7	1.95	97.148	6950.8	2238.9
40	8.1915	194.037	194.0	1.0	4520.7	4750.0	9270.7	1.95	96.884	7010.3	2260.4
41	8.1930	195.925	195.9	1.1	4563.5	4631.2	9194.7	1.99	97.709	6913.0	2281.8
42	8.1990	202.669	202.7	1.2	4715.7	4525.8	9241.5	2.04	98.441	6883.6	2357.9
43	8.2051	208.503	208.5	1.3	4846.4	4402.2	9248.7	2.10	99.299	6825.4	2423.2
44	8.2111	214.406	214.4	1.4	4978.5	4342.3	9320.8	2.15	99.715	6831.6	2489.2
45	8.2172	219.551	219.6	1.5	5092.6	4162.6	9255.3	2.22	100.963	6709.0	2546.3
46	8.2232	223.902	223.9	1.6	5188.1	4072.6	9260.8	2.27	101.588	6666.7	2594.1

Test Readings for Specimen No. 1

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress psf	Minor Eff. Stress psf	Major Eff. Stress psf	1:3 Ratio	Pore Press. psi	P psf	Q psf
47	8.2292	227.994	228.0	1.7	5277.5	4006.2	9283.7	2.32	102.049	6645.0	2638.7
48	8.2353	231.905	231.9	1.8	5362.4	4035.7	9398.1	2.33	101.844	6716.9	2681.2
49	8.2413	235.601	235.6	1.9	5442.1	3934.4	9376.5	2.38	102.548	6655.4	2721.1
50	8.2474	238.902	238.9	2.0	5512.6	3839.6	9352.2	2.44	103.206	6595.9	2756.3
51	8.2534	242.402	242.4	2.1	5587.5	3704.4	9291.9	2.51	104.145	6498.1	2793.8
52	8.2595	245.727	245.7	2.2	5658.2	3638.7	9296.9	2.56	104.602	6467.8	2829.1
53	8.2655	248.673	248.7	2.3	5720.1	3596.2	9316.3	2.59	104.896	6456.3	2860.0
54	8.2716	251.620	251.6	2.4	5781.8	3565.8	9347.5	2.62	105.108	6456.6	2890.9
55	8.2776	254.576	254.6	2.5	5843.5	3524.7	9368.2	2.66	105.393	6446.5	2921.8
56	8.2837	257.230	257.2	2.6	5898.3	3463.1	9361.3	2.70	105.821	6412.2	2949.1
57	8.2897	259.589	259.6	2.7	5946.1	3454.9	9401.0	2.72	105.878	6427.9	2973.0
58	8.2958	262.051	262.1	2.8	5996.1	3419.3	9415.4	2.75	106.125	6417.3	2998.1
59	8.3018	264.668	264.7	2.9	6049.6	3377.2	9426.8	2.79	106.417	6402.0	3024.8
60	8.3079	266.726	266.7	3.0	6090.2	3394.6	9484.9	2.79	106.296	6439.7	3045.1
61	8.3139	269.128	269.1	3.1	6138.6	3332.0	9470.6	2.84	106.731	6401.3	3069.3
62	8.3200	271.654	271.7	3.2	6189.6	3410.0	9599.6	2.82	106.189	6504.8	3094.8
63	8.3260	273.314	273.3	3.3	6220.8	3348.1	9568.9	2.86	106.619	6458.5	3110.4
64	8.3320	275.337	275.3	3.4	6260.2	3372.7	9633.0	2.86	106.448	6502.8	3130.1
65	8.3381	277.109	277.1	3.5	6293.8	3385.1	9678.9	2.86	106.363	6532.0	3146.9
66	8.3441	278.564	278.6	3.6	6320.1	3374.4	9694.6	2.87	106.436	6534.5	3160.1
67	8.3502	280.390	280.4	3.7	6354.8	3383.7	9738.5	2.88	106.372	6561.1	3177.4
68	8.3562	282.265	282.3	3.8	6390.5	3270.4	9660.9	2.95	107.159	6465.6	3195.2
69	8.3623	284.191	284.2	3.9	6427.2	3224.5	9651.7	2.99	107.477	6438.1	3213.6
70	8.3683	285.401	285.4	4.0	6447.7	3158.1	9605.8	3.04	107.938	6382.0	3223.8
71	8.3744	287.696	287.7	4.1	6492.6	3112.6	9605.2	3.09	108.255	6358.9	3246.3
72	8.3804	289.144	289.1	4.2	6518.3	3048.6	9566.9	3.14	108.699	6307.7	3259.1
73	8.3865	290.817	290.8	4.3	6549.0	3006.2	9555.1	3.18	108.994	6280.7	3274.5
74	8.3925	292.545	292.5	4.4	6580.8	2942.9	9523.7	3.24	109.433	6233.3	3290.4
75	8.3986	293.998	294.0	4.5	6606.4	2912.7	9519.1	3.27	109.643	6215.9	3303.2
76	8.4046	295.789	295.8	4.6	6639.5	2862.1	9501.6	3.32	109.994	6181.8	3319.7
77	8.4107	297.095	297.1	4.7	6661.6	2819.6	9481.3	3.36	110.289	6150.5	3330.8
78	8.4167	298.671	298.7	4.8	6689.8	2756.3	9446.1	3.43	110.729	6101.2	3344.9
79	8.4227	300.386	300.4	5.0	6720.9	2745.7	9466.6	3.45	110.802	6106.2	3360.5
80	8.4288	301.676	301.7	5.1	6742.5	2722.8	9465.3	3.48	110.962	6094.0	3371.2
81	8.4348	303.337	303.3	5.2	6772.3	2680.0	9452.3	3.53	111.259	6066.2	3386.1
82	8.4500	307.098	307.1	5.4	6837.7	2621.5	9459.2	3.61	111.665	6040.3	3418.9
83	8.4651	310.366	310.4	5.7	6891.7	2537.6	9429.4	3.72	112.248	5983.5	3445.9
84	8.4802	313.837	313.8	5.9	6949.8	2543.5	9493.3	3.73	112.207	6018.4	3474.9
85	8.4953	316.802	316.8	6.2	6996.4	2506.1	9502.5	3.79	112.466	6004.3	3498.2
86	8.5104	320.398	320.4	6.4	7056.4	2488.3	9544.8	3.84	112.590	6016.6	3528.2
87	8.5255	323.376	323.4	6.7	7102.5	2431.2	9533.7	3.92	112.987	5982.4	3551.2
88	8.5407	326.063	326.1	7.0	7141.8	2433.9	9575.7	3.93	112.968	6004.8	3570.9
89	8.5558	328.728	328.7	7.2	7180.3	2438.0	9618.4	3.95	112.939	6028.2	3590.2
90	8.5709	330.987	331.0	7.5	7209.7	2450.4	9660.0	3.94	112.854	6055.2	3604.8
91	8.5860	333.720	333.7	7.7	7249.1	2502.0	9751.1	3.90	112.495	6126.6	3624.5
92	8.6011	335.939	335.9	8.0	7277.0	2557.1	9834.1	3.85	112.112	6195.6	3638.5
93	8.6162	338.060	338.1	8.2	7302.5	2439.1	9741.6	3.99	112.932	6090.3	3651.2

Test Readings for Specimen No. 1

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress psf	Minor Eff. Stress psf	Major Eff. Stress psf	1:3 Ratio	Pore Press. psi	P psf	Q psf
94	8.6314	340.049	340.0	8.5	7324.9	2489.7	9814.6	3.94	112.580	6152.2	3662.5
95	8.6465	342.525	342.5	8.7	7357.6	2501.0	9858.6	3.94	112.502	6179.8	3678.8
96	8.6616	344.113	344.1	9.0	7370.9	2513.3	9884.2	3.93	112.416	6198.8	3685.5
97	8.6767	345.783	345.8	9.3	7385.8	2480.5	9866.3	3.98	112.644	6173.4	3692.9
98	8.6918	347.243	347.2	9.5	7396.0	2529.8	9925.8	3.92	112.302	6227.8	3698.0
99	8.7069	348.924	348.9	9.8	7410.7	2505.1	9915.9	3.96	112.473	6210.5	3705.4
100	8.7221	349.981	350.0	10.0	7412.0	2543.1	9955.2	3.91	112.210	6249.1	3706.0
101	8.7372	351.553	351.6	10.3	7424.1	2524.3	9948.4	3.94	112.340	6236.3	3712.1
102	8.7523	352.161	352.2	10.5	7415.7	2436.7	9852.3	4.04	112.949	6144.5	3707.8
103	8.7674	353.860	353.9	10.8	7430.1	2387.0	9817.1	4.11	113.293	6102.1	3715.0
104	8.7825	354.816	354.8	11.1	7428.7	2417.5	9846.2	4.07	113.082	6131.9	3714.4
105	8.7976	355.686	355.7	11.3	7425.5	2415.8	9841.3	4.07	113.094	6128.5	3712.7
106	8.8128	356.196	356.2	11.6	7414.6	2422.6	9837.2	4.06	113.046	6129.9	3707.3
107	8.8430	357.355	357.4	12.1	7395.5	2278.9	9674.4	4.25	114.044	5976.7	3697.8
108	8.8581	358.803	358.8	12.3	7403.8	2201.2	9605.0	4.36	114.584	5903.1	3701.9
109	8.8732	359.471	359.5	12.6	7395.9	2170.7	9566.7	4.41	114.795	5868.7	3698.0
110	8.9035	359.977	360.0	13.1	7362.9	2039.7	9402.5	4.61	115.706	5721.1	3681.4
111	8.9186	361.486	361.5	13.4	7371.9	2121.8	9493.7	4.47	115.135	5807.7	3685.9
112	8.9337	362.559	362.6	13.6	7371.9	2080.7	9452.6	4.54	115.421	5766.7	3685.9
113	8.9488	363.059	363.1	13.9	7360.1	2038.3	9398.4	4.61	115.715	5718.3	3680.1
114	8.9639	364.427	364.4	14.1	7365.8	1899.7	9265.5	4.88	116.678	5582.6	3682.9
115	8.9790	365.431	365.4	14.4	7364.1	1990.0	9354.1	4.70	116.050	5672.1	3682.0
116	8.9942	366.539	366.5	14.6	7364.2	1962.3	9326.6	4.75	116.243	5644.4	3682.1
117	9.0093	367.579	367.6	14.9	7362.9	1947.9	9310.9	4.78	116.343	5629.4	3681.5
118	9.0244	368.147	368.1	15.2	7352.1	1884.6	9236.7	4.90	116.782	5560.7	3676.0
119	9.0382	368.637	368.6	15.4	7341.6	1946.6	9288.1	4.77	116.352	5617.4	3670.8

Parameters for Specimen No. 2

Specimen Parameter	Initial	Saturated	Consolidated	Final
Moisture content: Moist soil+tare, gms.	823.600			1455.470
Moisture content: Dry soil+tare, gms.	697.820			1212.400
Moisture content: Tare, gms.	216.200			214.870
Moisture, %	26.1	26.5	24.3	24.4
Moist specimen weight, gms.	1272.95			
Diameter, in.	2.865	2.869	2.834	
Area, in.²	6.447	6.464	6.306	
Height, in.	5.986	5.994	5.921	
Net decrease in height, in.		-0.008	0.073	
Wet density, pcf	125.7	125.6	128.0	
Dry density, pcf	99.6	99.2	103.0	
Void ratio	0.7229	0.7298	0.6670	
Saturation, %	99.3	100.0	100.0	

Test Readings for Specimen No. 2

Membrane modulus = 0.12 kN/cm²
Membrane thickness = 0.08 cm
Consolidation cell pressure = 154.970 psi (22315.7 psf)
Consolidation back pressure = 49.970 psi (7195.7 psf)
Consolidation effective confining stress = 15120.0 psf
Strain rate, %/min. = 0.0083
Fail. Stress = 10955.3 psf **at reading no.** 64
Ult. Stress = 9952.2 psf **at reading no.** 94

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress psf	Minor Eff. Stress psf	Major Eff. Stress psf	1:3 Ratio	Pore Press. psi	P psf	Q psf
0	8.1479	0.000	0.0	0.0	0.0	15120.0	15120.0	1.00	49.970	15120.0	0.0
1	8.1479	3.070	3.1	0.0	70.1	15116.3	15186.4	1.00	49.996	15151.4	35.0
2	8.1494	29.417	29.4	0.0	671.6	15093.4	15764.9	1.04	50.155	15429.2	335.8
3	8.1509	33.331	33.3	0.1	760.7	15095.8	15856.5	1.05	50.138	15476.1	380.4
4	8.1524	34.124	34.1	0.1	778.6	15073.9	15852.5	1.05	50.290	15463.2	389.3
5	8.1539	36.579	36.6	0.1	834.4	14989.3	15823.7	1.06	50.877	15406.5	417.2
6	8.1554	40.065	40.1	0.1	913.7	14968.1	15881.8	1.06	51.025	15425.0	456.9
7	8.1569	43.138	43.1	0.2	983.5	14900.4	15883.9	1.07	51.495	15392.1	491.8
8	8.1584	52.264	52.3	0.2	1191.3	14840.1	16031.4	1.08	51.914	15435.8	595.7
9	8.1599	70.753	70.8	0.2	1612.3	14626.2	16238.5	1.11	53.399	15432.4	806.2
10	8.1614	91.831	91.8	0.2	2092.1	14300.7	16392.9	1.15	55.659	15346.8	1046.1
11	8.1629	113.122	113.1	0.3	2576.5	14043.4	16619.9	1.18	57.447	15331.6	1288.3
12	8.1644	132.345	132.3	0.3	3013.6	13778.8	16792.4	1.22	59.284	15285.6	1506.8
13	8.1659	150.523	150.5	0.3	3426.7	13490.3	16916.9	1.25	61.288	15203.6	1713.3
14	8.1674	168.882	168.9	0.3	3843.6	13232.6	17076.2	1.29	63.077	15154.4	1921.8
15	8.1689	185.776	185.8	0.4	4227.1	12927.6	17154.7	1.33	65.195	15041.1	2113.5
16	8.1704	203.388	203.4	0.4	4626.6	12648.3	17274.9	1.37	67.134	14961.6	2313.3
17	8.1719	218.663	218.7	0.4	4972.8	12388.2	17361.0	1.40	68.941	14874.6	2486.4
18	8.1734	234.182	234.2	0.4	5324.4	12163.4	17487.8	1.44	70.502	14825.6	2662.2
19	8.1749	248.746	248.7	0.5	5654.1	11921.4	17575.5	1.47	72.183	14748.4	2827.0
20	8.1764	260.492	260.5	0.5	5919.6	11688.7	17608.2	1.51	73.799	14648.4	2959.8
21	8.1779	272.496	272.5	0.5	6190.8	11497.0	17687.8	1.54	75.130	14592.4	3095.4
22	8.1794	285.788	285.8	0.5	6491.1	11232.4	17723.5	1.58	76.967	14478.0	3245.6
23	8.1809	295.389	295.4	0.6	6707.5	11048.0	17755.4	1.61	78.248	14401.7	3353.7

Test Readings for Specimen No. 2

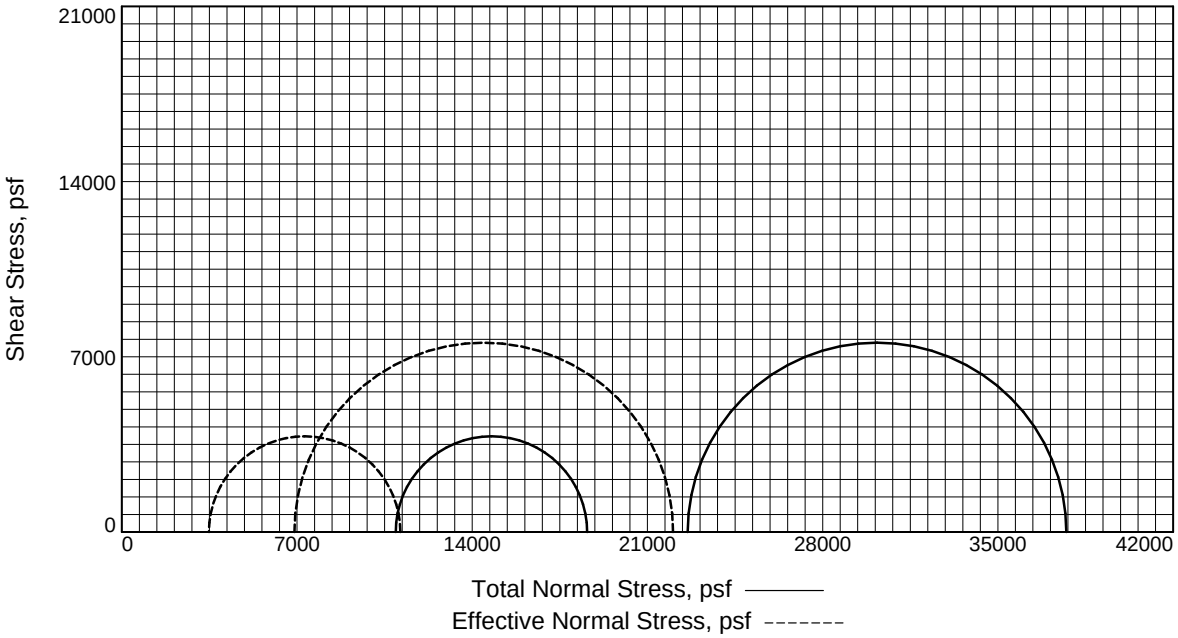
No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress psf	Minor Eff. Stress psf	Major Eff. Stress psf	1:3 Ratio	Pore Press. psi	P psf	Q psf
24	8.1824	307.050	307.0	0.6	6970.5	10853.6	17824.0	1.64	79.598	14338.8	3485.2
25	8.1839	316.268	316.3	0.6	7177.9	10681.1	17859.0	1.67	80.796	14270.0	3589.0
26	8.1853	324.672	324.7	0.6	7366.8	10491.8	17858.6	1.70	82.110	14175.2	3683.4
27	8.1868	333.196	333.2	0.7	7558.3	10311.1	17869.4	1.73	83.365	14090.2	3779.1
28	8.1883	341.064	341.1	0.7	7734.8	10191.0	17925.7	1.76	84.199	14058.3	3867.4
29	8.1898	347.321	347.3	0.7	7874.7	9992.1	17866.8	1.79	85.580	13929.4	3937.3
30	8.1913	354.695	354.7	0.7	8039.8	9907.2	17947.0	1.81	86.170	13927.1	4019.9
31	8.1928	361.084	361.1	0.8	8182.5	9735.1	17917.6	1.84	87.365	13826.4	4091.3
32	8.1943	367.215	367.2	0.8	8319.4	9590.0	17909.3	1.87	88.373	13749.6	4159.7
33	8.1958	372.398	372.4	0.8	8434.6	9481.1	17915.8	1.89	89.129	13698.4	4217.3
34	8.1973	378.142	378.1	0.8	8562.6	9362.7	17925.3	1.91	89.951	13644.0	4281.3
35	8.1988	384.321	384.3	0.9	8700.3	9235.4	17935.6	1.94	90.835	13585.5	4350.1
36	8.2003	390.077	390.1	0.9	8828.3	9093.0	17921.3	1.97	91.824	13507.2	4414.2
37	8.2018	395.000	395.0	0.9	8937.4	8999.6	17937.0	1.99	92.473	13468.3	4468.7
38	8.2033	399.627	399.6	0.9	9039.8	8943.4	17983.3	2.01	92.863	13463.4	4519.9
39	8.2048	403.632	403.6	1.0	9128.1	8802.8	17930.9	2.04	93.840	13366.8	4564.0
40	8.2063	407.956	408.0	1.0	9223.5	8723.0	17946.6	2.06	94.393	13334.8	4611.8
41	8.2078	411.802	411.8	1.0	9308.1	8636.8	17944.9	2.08	94.992	13290.8	4654.0
42	8.2093	414.383	414.4	1.0	9364.0	8546.8	17910.8	2.10	95.617	13228.8	4682.0
43	8.2153	428.704	428.7	1.1	9677.8	8167.2	17845.0	2.18	98.253	13006.1	4838.9
44	8.2213	439.549	439.5	1.2	9912.4	7911.6	17824.0	2.25	100.029	12867.8	4956.2
45	8.2273	448.583	448.6	1.3	10105.8	7655.2	17761.0	2.32	101.809	12708.1	5052.9
46	8.2332	455.460	455.5	1.4	10250.2	7431.7	17681.9	2.38	103.361	12556.8	5125.1
47	8.2392	460.621	460.6	1.5	10355.7	7246.2	17602.0	2.43	104.649	12424.1	5177.9
48	8.2452	466.233	466.2	1.6	10471.1	7062.4	17533.6	2.48	105.925	12298.0	5235.6
49	8.2512	471.794	471.8	1.7	10585.2	6890.3	17475.4	2.54	107.121	12182.8	5292.6
50	8.2572	475.692	475.7	1.8	10661.6	6772.5	17434.2	2.57	107.938	12103.4	5330.8
51	8.2632	478.810	478.8	1.9	10720.4	6610.7	17331.1	2.62	109.063	11970.9	5360.2
52	8.2692	481.203	481.2	2.0	10762.9	6492.9	17255.8	2.66	109.880	11874.4	5381.5
53	8.2751	482.577	482.6	2.1	10782.5	6373.8	17156.3	2.69	110.707	11765.1	5391.3
54	8.2811	485.480	485.5	2.3	10836.2	6286.5	17122.7	2.72	111.313	11704.6	5418.1
55	8.2871	486.339	486.3	2.4	10844.1	6212.6	17056.7	2.75	111.827	11634.7	5422.1
56	8.2931	488.014	488.0	2.5	10870.2	6089.4	16959.6	2.79	112.683	11524.5	5435.1
57	8.2991	489.450	489.4	2.6	10890.9	6030.2	16921.0	2.81	113.094	11475.6	5445.4
58	8.3051	490.159	490.2	2.7	10895.3	5959.0	16854.3	2.83	113.588	11406.7	5447.7
59	8.3111	492.460	492.5	2.8	10935.1	5890.6	16825.7	2.86	114.063	11358.1	5467.6
60	8.3230	491.207	491.2	3.0	10884.6	5813.9	16698.5	2.87	114.596	11256.2	5442.3
61	8.3290	493.249	493.2	3.1	10918.5	5722.2	16640.6	2.91	115.233	11181.4	5459.2
62	8.3350	495.006	495.0	3.2	10945.9	5664.3	16610.3	2.93	115.634	11137.3	5473.0
63	8.3410	495.926	495.9	3.3	10954.8	5614.4	16569.2	2.95	115.981	11091.8	5477.4
64	8.3470	496.469	496.5	3.4	10955.3	5586.6	16542.0	2.96	116.174	11064.3	5477.7
65	8.3650	497.077	497.1	3.7	10934.3	5440.5	16374.8	3.01	117.189	10907.7	5467.2
66	8.3829	498.475	498.5	4.0	10930.5	5337.8	16268.4	3.05	117.902	10803.1	5465.3
67	8.4009	499.698	499.7	4.3	10922.8	5235.1	16157.9	3.09	118.615	10696.5	5461.4
68	8.4188	500.256	500.3	4.6	10900.3	5171.5	16071.8	3.11	119.057	10621.6	5450.2
69	8.4368	500.951	501.0	4.9	10880.7	5109.2	15989.9	3.13	119.490	10549.6	5440.4
70	8.4428	499.946	499.9	5.0	10847.4	5060.9	15908.3	3.14	119.825	10484.6	5423.7

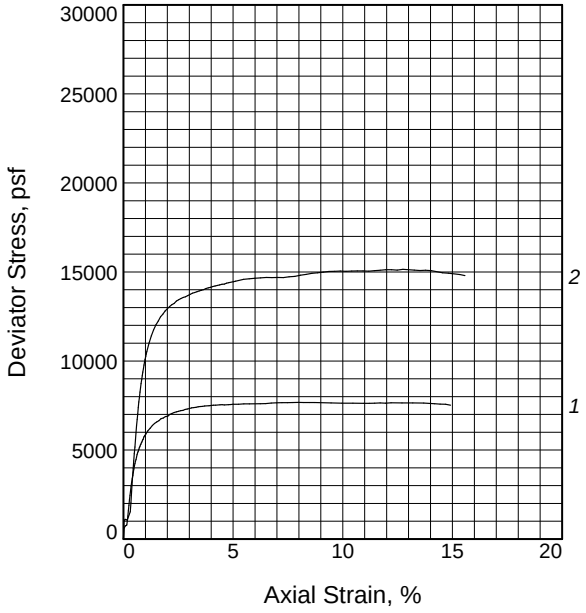
Test Readings for Specimen No. 2

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress psf	Minor Eff. Stress psf	Major Eff. Stress psf	1:3 Ratio	Pore Press. psi	P psf	Q psf
71	8.4488	500.765	500.8	5.1	10853.6	5065.0	15918.6	3.14	119.796	10491.8	5426.8
72	8.4787	501.711	501.7	5.6	10816.2	4965.1	15781.3	3.18	120.490	10373.2	5408.1
73	8.4937	500.819	500.8	5.8	10768.0	4945.9	15714.0	3.18	120.623	10330.0	5384.0
74	8.5086	502.086	502.1	6.1	10766.3	4902.1	15668.4	3.20	120.927	10285.3	5383.2
75	8.5386	503.022	503.0	6.6	10728.3	4835.0	15563.3	3.22	121.393	10199.2	5364.1
76	8.5685	502.339	502.3	7.1	10655.7	4751.5	15407.3	3.24	121.973	10079.4	5327.9
77	8.6433	501.538	501.5	8.4	10494.0	4679.0	15173.0	3.24	122.477	9926.0	5247.0
78	8.6583	503.260	503.3	8.6	10501.0	4687.2	15188.2	3.24	122.420	9937.7	5250.5
79	8.6733	502.514	502.5	8.9	10456.4	4687.5	15143.9	3.23	122.418	9915.7	5228.2
80	8.6882	504.066	504.1	9.1	10459.6	4665.6	15125.2	3.24	122.570	9895.4	5229.8
81	8.7182	505.281	505.3	9.6	10426.5	4582.1	15008.6	3.28	123.150	9795.4	5213.2
82	8.7331	506.455	506.5	9.9	10421.5	4571.2	14992.7	3.28	123.226	9781.9	5210.7
83	8.7631	507.863	507.9	10.4	10391.8	4579.0	14970.9	3.27	123.171	9775.0	5195.9
84	8.7930	509.148	509.1	10.9	10359.3	4477.4	14836.7	3.31	123.877	9657.1	5179.7
85	8.8080	508.368	508.4	11.1	10314.1	4559.9	14874.0	3.26	123.304	9716.9	5157.1
86	8.8678	508.984	509.0	12.2	10209.1	4638.2	14847.4	3.20	122.760	9742.8	5104.6
87	8.8828	510.032	510.0	12.4	10200.7	4574.9	14775.6	3.23	123.200	9675.3	5100.3
88	8.8978	508.779	508.8	12.7	10146.3	4565.3	14711.6	3.22	123.266	9638.5	5073.1
89	8.9127	509.916	509.9	12.9	10139.5	4503.7	14643.3	3.25	123.694	9573.5	5069.8
90	8.9576	509.182	509.2	13.7	10036.8	4539.3	14576.1	3.21	123.447	9557.7	5018.4
91	8.9726	510.509	510.5	13.9	10033.4	4561.6	14595.0	3.20	123.292	9578.3	5016.7
92	9.0025	511.459	511.5	14.4	9993.1	4523.3	14516.3	3.21	123.559	9519.8	4996.5
93	9.0175	510.797	510.8	14.7	9950.7	4501.3	14452.0	3.21	123.711	9476.7	4975.3
94	9.0325	512.396	512.4	14.9	9952.2	4527.0	14479.2	3.20	123.532	9503.1	4976.1
95	9.0459	510.905	510.9	15.2	9896.9	4494.5	14391.4	3.20	123.758	9442.9	4948.4

ATTACHMENT 4:

009727 B-1-25 30 180.83’ Triaxial Report and Summary





Sample No.		1	2
Initial	Water Content, %	28.2	28.2
	Dry Density, pcf	93.0	94.7
	Saturation, %	90.9	94.5
	Void Ratio	0.8592	0.8263
	Diameter, in.	2.873	2.845
	Height, in.	5.755	5.865
At Test	Water Content, %	26.2	22.8
	Dry Density, pcf	100.2	106.0
	Saturation, %	100.0	100.0
	Void Ratio	0.7258	0.6321
	Diameter, in.	2.803	2.740
	Height, in.	5.615	5.652
Strain rate, %/min.		0.0083	0.0083
Eff. Cell Pressure, psi		76.000	157.000
Fail. Stress, psf		7645.7	15127.6
Excess Pore Pr., psf		7463.2	15712.8
Strain, %		11.7	12.0
Ult. Stress, psf		7570.7	14794.7
Excess Pore Pr., psf		7468.7	15735.0
Strain, %		14.7	15.6
$\bar{\sigma}_1$ Failure, psf		11126.5	22022.8
$\bar{\sigma}_3$ Failure, psf		3480.8	6895.2

Type of Test:
CU with Pore Pressures

Sample Type: Shelby Tube

Description: CL - LEAN CLAY

LL= 30 **PL=** 21 **PI=** 9

Specific Gravity= 2.77

Remarks:

Client: Kirston Hooper (GeoEngineers)

Project: I-405/Brickyard to SR-527 Improvement Project

Source of Sample: B-1-25 **Depth:** 180.83 - 181.83

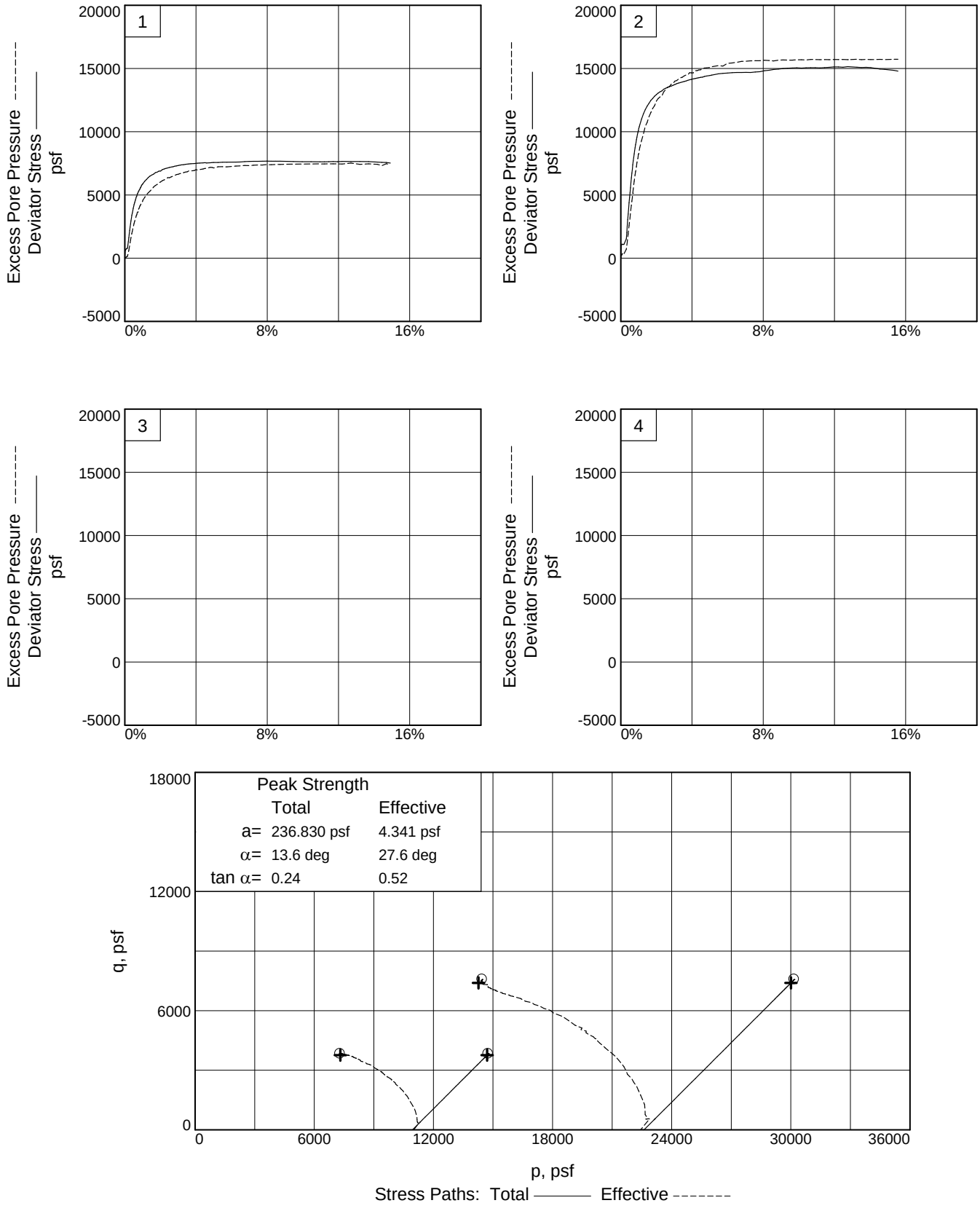
Sample Number: 30

Proj. No.: 009727 **Date Sampled:** 7/10/2025

TRIAXIAL SHEAR TEST REPORT
Washington State Department of Transportation
Olympia, WA

Figure 3

Tested By: TJM **Checked By:** SLW



Client: Kirston Hooper (GeoEngineers)

Project: I-405/Brickyard to SR-527 Improvement Project

Source of Sample: B-1-25 **Depth:** 180.83 - 181.83 **Sample Number:** 30

Project No.: 009727 **Figure** _____

Washington State Department of Transportation

Tested By: TJM **Checked By:** SLW

TRIAXIAL COMPRESSION TEST

CU with Pore Pressures

8/22/2025
11:55 AM

Date: 7/10/2025
Client: Kirston Hooper (GeoEngineers)
Project: I-405/Brickyard to SR-527 Improvement Project
Project No.: 009727
Location: B-1-25
Depth: 180.83 - 181.83 **Sample Number:** 30
Description: CL - LEAN CLAY
Remarks:
Type of Sample: Shelby Tube
Specific Gravity=2.77 **LL=**30 **PL=**21 **PI=**9
Test Method: COE uniform strain

Parameters for Specimen No. 1

Specimen Parameter	Initial	Saturated	Consolidated	Final
Moisture content: Moist soil+tare, gms.	1151.100			948.770
Moisture content: Dry soil+tare, gms.	944.860			784.100
Moisture content: Tare, gms.	213.100			215.880
Moisture, %	28.2	31.0	26.2	29.0
Moist specimen weight, gms.	1167.89			
Diameter, in.	2.873	2.873	2.803	
Area, in.²	6.485	6.483	6.170	
Height, in.	5.755	5.754	5.615	
Net decrease in height, in.		0.001	0.139	
Wet density, pcf	119.2	121.9	126.5	
Dry density, pcf	93.0	93.0	100.2	
Void ratio	0.8592	0.8586	0.7258	
Saturation, %	90.9	100.0	100.0	

Test Readings for Specimen No. 1

Membrane modulus = .12 kN/cm²
Membrane thickness = 0.06 cm
Consolidation cell pressure = 126.080 psi (18155.5 psf)
Consolidation back pressure = 50.080 psi (7211.5 psf)
Consolidation effective confining stress = 10944.0 psf
Strain rate, %/min. = 0.0083
Fail. Stress = 7645.7 psf **at reading no.** 99
Ult. Stress = 7570.7 psf **at reading no.** 107

Test Readings for Specimen No. 1

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress psf	Minor Eff. Stress psf	Major Eff. Stress psf	1:3 Ratio	Pore Press. psi	P psf	Q psf
0	8.1110	0.000	0.0	0.0	0.0	11009.0	11009.0	1.00	49.629	11009.0	0.0
1	8.1124	26.394	26.4	0.0	615.9	10936.8	11552.7	1.06	50.130	11244.7	307.9
2	8.1138	28.073	28.1	0.0	654.9	10887.2	11542.0	1.06	50.475	11214.6	327.4
3	8.1152	31.097	31.1	0.1	725.3	10854.3	11579.6	1.07	50.703	11216.9	362.6
4	8.1166	32.161	32.2	0.1	749.9	10838.2	11588.1	1.07	50.815	11213.2	374.9
5	8.1180	32.882	32.9	0.1	766.5	10816.3	11582.8	1.07	50.967	11199.6	383.3
6	8.1194	34.054	34.1	0.1	793.6	10793.0	11586.7	1.07	51.128	11189.9	396.8
7	8.1208	43.807	43.8	0.2	1020.7	10665.4	11686.0	1.10	52.015	11175.7	510.3
8	8.1222	55.593	55.6	0.2	1294.9	10519.2	11814.2	1.12	53.030	11166.7	647.5
9	8.1236	69.282	69.3	0.2	1613.4	10321.8	11935.2	1.16	54.401	11128.5	806.7
10	8.1250	81.461	81.5	0.2	1896.6	10137.3	12033.9	1.19	55.682	11085.6	948.3
11	8.1264	94.615	94.6	0.3	2202.3	9922.4	12124.6	1.22	57.175	11023.5	1101.1
12	8.1278	105.615	105.6	0.3	2457.7	9719.7	12177.4	1.25	58.582	10948.6	1228.8
13	8.1292	116.252	116.3	0.3	2704.5	9520.9	12225.4	1.28	59.963	10873.2	1352.3
14	8.1305	127.053	127.1	0.3	2955.1	9318.6	12273.7	1.32	61.367	10796.2	1477.5
15	8.1319	136.655	136.7	0.4	3177.6	9153.7	12331.3	1.35	62.513	10742.5	1588.8
16	8.1333	145.737	145.7	0.4	3388.0	8981.8	12369.8	1.38	63.706	10675.8	1694.0
17	8.1347	153.586	153.6	0.4	3569.5	8809.0	12378.5	1.41	64.906	10593.8	1784.8
18	8.1361	161.295	161.3	0.4	3747.8	8643.4	12391.1	1.43	66.057	10517.2	1873.9
19	8.1375	169.489	169.5	0.5	3937.2	8491.4	12428.6	1.46	67.112	10460.0	1968.6
20	8.1389	176.269	176.3	0.5	4093.6	8328.8	12422.5	1.49	68.241	10375.6	2046.8
21	8.1403	182.586	182.6	0.5	4239.3	8194.3	12433.6	1.52	69.175	10314.0	2119.6
22	8.1417	188.197	188.2	0.5	4368.5	8063.2	12431.7	1.54	70.085	10247.5	2184.2
23	8.1431	192.361	192.4	0.6	4464.0	7938.7	12402.7	1.56	70.950	10170.7	2232.0
24	8.1445	198.013	198.0	0.6	4594.0	7808.3	12402.3	1.59	71.856	10105.3	2297.0
25	8.1459	204.293	204.3	0.6	4738.5	7698.7	12437.3	1.62	72.617	10068.0	2369.3
26	8.1473	208.981	209.0	0.6	4846.1	7579.6	12425.7	1.64	73.444	10002.7	2423.0
27	8.1487	211.958	212.0	0.7	4913.9	7504.7	12418.5	1.65	73.964	9961.6	2456.9
28	8.1501	217.099	217.1	0.7	5031.8	7364.7	12396.5	1.68	74.936	9880.6	2515.9
29	8.1515	221.317	221.3	0.7	5128.3	7292.5	12420.8	1.70	75.438	9856.6	2564.1
30	8.1529	224.089	224.1	0.7	5191.2	7206.2	12397.4	1.72	76.037	9801.8	2595.6
31	8.1543	228.216	228.2	0.8	5285.5	7083.0	12368.5	1.75	76.892	9725.8	2642.7
32	8.1557	230.095	230.1	0.8	5327.7	7013.2	12340.9	1.76	77.377	9677.0	2663.8
33	8.1571	234.224	234.2	0.8	5421.9	6931.1	12353.0	1.78	77.948	9642.0	2711.0
34	8.1585	235.828	235.8	0.8	5457.7	6825.6	12283.3	1.80	78.680	9554.5	2728.8
35	8.1599	240.410	240.4	0.9	5562.3	6757.2	12319.5	1.82	79.155	9538.4	2781.2
36	8.1613	241.352	241.4	0.9	5582.7	6725.4	12308.1	1.83	79.376	9516.7	2791.4
37	8.1627	246.119	246.1	0.9	5691.5	6616.9	12308.4	1.86	80.129	9462.6	2845.8
38	8.1640	249.030	249.0	0.9	5757.4	6548.4	12305.8	1.88	80.605	9427.1	2878.7
39	8.1654	251.458	251.5	1.0	5812.1	6477.6	12289.7	1.90	81.097	9383.6	2906.1
40	8.1668	253.239	253.2	1.0	5851.8	6458.8	12310.5	1.91	81.228	9384.6	2925.9
41	8.1682	255.277	255.3	1.0	5897.4	6356.1	12253.5	1.93	81.941	9304.8	2948.7
42	8.1738	263.806	263.8	1.1	6088.3	6132.9	12221.3	1.99	83.490	9177.1	3044.2
43	8.1794	270.010	270.0	1.2	6225.3	5928.9	12154.2	2.05	84.907	9041.6	3112.6
44	8.1850	276.951	277.0	1.3	6378.8	5773.9	12152.7	2.10	85.983	8963.3	3189.4
45	8.1906	282.103	282.1	1.4	6491.0	5639.7	12130.7	2.15	86.915	8885.2	3245.5
46	8.1961	286.146	286.1	1.5	6577.3	5491.9	12069.2	2.20	87.942	8780.6	3288.7

Test Readings for Specimen No. 1

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress psf	Minor Eff. Stress psf	Major Eff. Stress psf	1:3 Ratio	Pore Press. psi	P psf	Q psf
47	8.2017	289.578	289.6	1.6	6649.5	5320.8	11970.3	2.25	89.130	8645.5	3324.8
48	8.2073	294.647	294.6	1.7	6759.1	5198.6	11957.7	2.30	89.979	8578.1	3379.5
49	8.2129	296.681	296.7	1.8	6798.9	5115.4	11914.3	2.33	90.556	8514.8	3399.4
50	8.2185	300.728	300.7	1.9	6884.6	4973.0	11857.7	2.38	91.545	8415.3	3442.3
51	8.2240	301.288	301.3	2.0	6890.4	4910.1	11800.5	2.40	91.982	8355.3	3445.2
52	8.2296	306.592	306.6	2.1	7004.6	4811.5	11816.1	2.46	92.667	8313.8	3502.3
53	8.2352	308.967	309.0	2.2	7051.7	4751.6	11803.3	2.48	93.083	8277.5	3525.9
54	8.2408	311.559	311.6	2.3	7103.7	4678.7	11782.4	2.52	93.589	8230.5	3551.8
55	8.2464	313.511	313.5	2.4	7140.9	4574.6	11715.6	2.56	94.312	8145.1	3570.5
56	8.2519	315.258	315.3	2.5	7173.4	4584.6	11758.0	2.56	94.243	8171.3	3586.7
57	8.2575	317.131	317.1	2.6	7208.6	4511.7	11720.3	2.60	94.749	8116.0	3604.3
58	8.2631	318.302	318.3	2.7	7227.9	4454.5	11682.4	2.62	95.146	8068.5	3613.9
59	8.2687	320.841	320.8	2.8	7278.1	4388.8	11666.9	2.66	95.602	8027.8	3639.0
60	8.2743	322.043	322.0	2.9	7297.9	4329.6	11627.5	2.69	96.013	7978.5	3648.9
61	8.2798	323.946	323.9	3.0	7333.5	4303.6	11637.1	2.70	96.194	7970.3	3666.7
62	8.2854	325.656	325.7	3.1	7364.7	4249.2	11613.8	2.73	96.572	7931.5	3682.3
63	8.2910	326.811	326.8	3.2	7383.2	4250.2	11633.4	2.74	96.565	7941.8	3691.6
64	8.2966	327.674	327.7	3.3	7395.1	4176.3	11571.4	2.77	97.078	7873.8	3697.5
65	8.3022	329.338	329.3	3.4	7425.0	4133.8	11558.8	2.80	97.373	7846.3	3712.5
66	8.3077	330.316	330.3	3.5	7439.4	4110.9	11550.3	2.81	97.532	7830.6	3719.7
67	8.3133	331.287	331.3	3.6	7453.6	4033.9	11487.5	2.85	98.067	7760.7	3726.8
68	8.3189	332.365	332.4	3.7	7470.1	4043.5	11513.6	2.85	98.000	7778.5	3735.1
69	8.3301	333.757	333.8	3.9	7485.9	4015.1	11501.0	2.86	98.198	7758.0	3743.0
70	8.3357	334.844	334.8	4.0	7502.5	3945.2	11447.8	2.90	98.682	7696.5	3751.3
71	8.3412	335.879	335.9	4.1	7517.9	3976.4	11494.3	2.89	98.466	7735.4	3759.0
72	8.3468	336.295	336.3	4.2	7519.4	3931.6	11451.0	2.91	98.778	7691.3	3759.7
73	8.3580	337.903	337.9	4.4	7539.7	3886.4	11426.1	2.94	99.091	7656.2	3769.9
74	8.3636	338.758	338.8	4.5	7550.9	3842.6	11393.5	2.97	99.395	7618.0	3775.5
75	8.3691	338.331	338.3	4.6	7533.5	3845.3	11378.9	2.96	99.376	7612.1	3766.8
76	8.3803	339.641	339.6	4.8	7547.0	3759.1	11306.0	3.01	99.975	7532.5	3773.5
77	8.3859	340.520	340.5	4.9	7558.6	3765.9	11324.5	3.01	99.928	7545.2	3779.3
78	8.3915	341.389	341.4	5.0	7570.0	3805.6	11375.6	2.99	99.652	7590.6	3785.0
79	8.4054	342.253	342.3	5.2	7569.3	3712.5	11281.8	3.04	100.299	7497.2	3784.6
80	8.4194	344.252	344.3	5.5	7593.5	3709.1	11302.6	3.05	100.322	7505.8	3796.8
81	8.4333	345.161	345.2	5.7	7593.5	3720.4	11313.9	3.04	100.244	7517.2	3796.8
82	8.4612	347.369	347.4	6.2	7601.8	3657.1	11258.9	3.08	100.684	7458.0	3800.9
83	8.4752	348.476	348.5	6.5	7605.9	3642.4	11248.2	3.09	100.786	7445.3	3802.9
84	8.4891	350.795	350.8	6.7	7636.1	3613.6	11249.7	3.11	100.986	7431.7	3818.1
85	8.5031	352.392	352.4	7.0	7650.4	3618.1	11268.5	3.11	100.955	7443.3	3825.2
86	8.5170	353.650	353.6	7.2	7657.2	3593.1	11250.3	3.13	101.128	7421.7	3828.6
87	8.5310	354.625	354.6	7.5	7657.8	3577.0	11234.8	3.14	101.240	7405.9	3828.9
88	8.5449	356.160	356.2	7.7	7670.3	3572.9	11243.2	3.15	101.268	7408.0	3835.1
89	8.5589	357.295	357.3	8.0	7674.0	3542.8	11216.8	3.17	101.478	7379.8	3837.0
90	8.5728	357.993	358.0	8.2	7668.2	3553.4	11221.6	3.16	101.404	7387.5	3834.1
91	8.5868	358.942	358.9	8.5	7667.7	3530.4	11198.2	3.17	101.563	7364.3	3833.9
92	8.6007	360.000	360.0	8.7	7669.5	3526.0	11195.5	3.18	101.594	7360.7	3834.7
93	8.6426	361.882	361.9	9.5	7646.6	3504.1	11150.7	3.18	101.746	7327.4	3823.3

Test Readings for Specimen No. 1

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress psf	Minor Eff. Stress psf	Major Eff. Stress psf	1:3 Ratio	Pore Press. psi	P psf	Q psf
94	8.6705	363.154	363.2	10.0	7631.4	3500.0	11131.3	3.18	101.775	7315.7	3815.7
95	8.6984	365.291	365.3	10.5	7633.9	3488.0	11121.9	3.19	101.858	7304.9	3816.9
96	8.7263	366.766	366.8	11.0	7622.2	3485.3	11107.4	3.19	101.877	7296.3	3811.1
97	8.7403	367.882	367.9	11.2	7624.0	3491.8	11115.8	3.18	101.832	7303.8	3812.0
98	8.7542	369.193	369.2	11.5	7629.8	3479.8	11109.6	3.19	101.915	7294.7	3814.9
99	8.7682	371.004	371.0	11.7	7645.7	3480.8	11126.5	3.20	101.908	7303.7	3822.8
100	8.7821	371.441	371.4	12.0	7633.1	3483.5	11116.7	3.19	101.889	7300.1	3816.6
101	8.7961	373.319	373.3	12.2	7650.1	3497.6	11147.7	3.19	101.791	7322.6	3825.0
102	8.8240	375.126	375.1	12.7	7643.6	3421.6	11065.2	3.23	102.319	7243.4	3821.8
103	8.8519	377.241	377.2	13.2	7643.0	3525.0	11167.9	3.17	101.601	7346.4	3821.5
104	8.8798	379.042	379.0	13.7	7635.5	3479.8	11115.3	3.19	101.915	7297.5	3817.7
105	8.9077	379.437	379.4	14.2	7599.4	3520.5	11119.9	3.16	101.632	7320.2	3799.7
106	8.9216	379.335	379.3	14.4	7575.4	3621.8	11197.2	3.09	100.928	7409.5	3787.7
107	8.9356	380.204	380.2	14.7	7570.7	3475.3	11046.0	3.18	101.946	7260.7	3785.3
108	8.9483	378.732	378.7	14.9	7521.3	3552.0	11073.3	3.12	101.413	7312.7	3760.7

Parameters for Specimen No. 2

Specimen Parameter	Initial	Saturated	Consolidated	Final
Moisture content: Moist soil+tare, gms.	1151.100			1341.460
Moisture content: Dry soil+tare, gms.	944.860			1110.580
Moisture content: Tare, gms.	213.100			213.150
Moisture, %	28.2	29.8	22.8	25.7
Moist specimen weight, gms.	1187.87			
Diameter, in.	2.845	2.844	2.740	
Area, in.²	6.357	6.352	5.895	
Height, in.	5.865	5.863	5.652	
Net decrease in height, in.		0.002	0.211	
Wet density, pcf	121.4	123.0	130.1	
Dry density, pcf	94.7	94.8	106.0	
Void ratio	0.8263	0.8241	0.6321	
Saturation, %	94.5	100.0	100.0	

Test Readings for Specimen No. 2

Membrane modulus = .12 kN/cm²
Membrane thickness = 0.06 cm
Consolidation cell pressure = 207.320 psi (29854.1 psf)
Consolidation back pressure = 50.320 psi (7246.1 psf)
Consolidation effective confining stress = 22608.0 psf
Strain rate, %/min. = 0.0083
Fail. Stress = 15127.6 psf **at reading no.** 100
Ult. Stress = 14794.7 psf **at reading no.** 111

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress psf	Minor Eff. Stress psf	Major Eff. Stress psf	1:3 Ratio	Pore Press. psi	P psf	Q psf
0	8.0748	0.000	0.0	0.0	0.0	22608.0	22608.0	1.00	50.320	22608.0	0.0
1	8.0748	1.131	1.1	0.0	27.6	22431.8	22459.4	1.00	51.544	22445.6	13.8
2	8.0762	40.991	41.0	0.0	1001.0	22345.9	23346.9	1.04	52.140	22846.4	500.5
3	8.0777	43.811	43.8	0.1	1069.6	22365.0	23434.6	1.05	52.007	22899.8	534.8
4	8.0792	45.418	45.4	0.1	1108.5	22303.4	23412.0	1.05	52.435	22857.7	554.3
5	8.0821	44.311	44.3	0.1	1081.0	22159.7	23240.6	1.05	53.433	22700.2	540.5
6	8.0850	45.078	45.1	0.2	1099.1	22260.7	23359.7	1.05	52.732	22810.2	549.5
7	8.0924	62.907	62.9	0.3	1531.8	21897.9	23429.7	1.07	55.252	22663.8	765.9
8	8.0938	83.382	83.4	0.3	2029.8	21643.6	23673.4	1.09	57.017	22658.5	1014.9
9	8.0953	104.464	104.5	0.4	2542.4	21362.6	23905.0	1.12	58.969	22633.8	1271.2
10	8.0968	125.077	125.1	0.4	3043.3	21008.3	24051.6	1.14	61.429	22530.0	1521.6
11	8.0982	143.436	143.4	0.4	3489.1	20687.7	24176.7	1.17	63.656	22432.2	1744.5
12	8.0997	162.823	162.8	0.4	3959.6	20345.7	24305.3	1.19	66.030	22325.5	1979.8
13	8.1012	180.381	180.4	0.5	4385.4	20040.5	24425.9	1.22	68.150	22233.2	2192.7
14	8.1026	197.084	197.1	0.5	4790.3	19692.7	24483.0	1.24	70.565	22087.9	2395.1
15	8.1041	212.472	212.5	0.5	5163.0	19400.4	24563.4	1.27	72.595	21981.9	2581.5
16	8.1056	229.187	229.2	0.5	5567.7	18997.3	24564.9	1.29	75.395	21781.1	2783.8
17	8.1070	246.001	246.0	0.6	5974.6	18708.1	24682.6	1.32	77.403	21695.4	2987.3
18	8.1085	261.851	261.9	0.6	6357.9	18416.8	24774.7	1.35	79.425	21595.7	3178.9
19	8.1100	277.156	277.2	0.6	6727.7	18084.1	24811.8	1.37	81.736	21448.0	3363.9
20	8.1114	289.524	289.5	0.6	7026.1	17812.4	24838.5	1.39	83.623	21325.4	3513.1
21	8.1129	304.278	304.3	0.7	7382.2	17478.7	24860.9	1.42	85.940	21169.8	3691.1
22	8.1144	317.281	317.3	0.7	7695.7	17143.3	24839.0	1.45	88.269	20991.1	3847.8
23	8.1158	328.680	328.7	0.7	7970.1	16831.2	24801.2	1.47	90.437	20816.2	3985.0

Test Readings for Specimen No. 2

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress psf	Minor Eff. Stress psf	Major Eff. Stress psf	1:3 Ratio	Pore Press. psi	P psf	Q psf
24	8.1173	340.528	340.5	0.8	8255.2	16520.7	24776.0	1.50	92.593	20648.3	4127.6
25	8.1188	350.306	350.3	0.8	8490.0	16280.8	24770.9	1.52	94.259	20525.8	4245.0
26	8.1202	360.204	360.2	0.8	8727.6	16012.5	24740.1	1.55	96.122	20376.3	4363.8
27	8.1217	370.470	370.5	0.8	8974.0	15767.8	24741.8	1.57	97.822	20254.8	4487.0
28	8.1232	378.653	378.7	0.9	9169.9	15566.2	24736.0	1.59	99.222	20151.1	4584.9
29	8.1246	387.291	387.3	0.9	9376.6	15359.8	24736.4	1.61	100.655	20048.1	4688.3
30	8.1261	395.561	395.6	0.9	9574.3	15057.3	24631.6	1.64	102.756	19844.4	4787.2
31	8.1276	403.940	403.9	0.9	9774.6	14797.8	24572.4	1.66	104.557	19685.1	4887.3
32	8.1290	411.003	411.0	1.0	9942.9	14718.8	24661.6	1.68	105.106	19690.2	4971.4
33	8.1305	416.999	417.0	1.0	10085.3	14392.9	24478.2	1.70	107.369	19435.6	5042.6
34	8.1320	424.032	424.0	1.0	10252.7	14353.6	24606.3	1.71	107.642	19479.9	5126.3
35	8.1334	429.916	429.9	1.0	10392.2	14105.8	24498.0	1.74	109.363	19301.9	5196.1
36	8.1349	435.774	435.8	1.1	10531.1	13867.6	24398.6	1.76	111.017	19133.1	5265.5
37	8.1408	456.012	456.0	1.2	11008.6	13298.1	24306.6	1.83	114.972	18802.4	5504.3
38	8.1466	473.293	473.3	1.3	11413.8	12797.0	24210.8	1.89	118.452	18503.9	5706.9
39	8.1525	487.566	487.6	1.4	11745.6	12191.6	23937.2	1.96	122.656	18064.4	5872.8
40	8.1584	499.671	499.7	1.5	12024.5	11875.3	23899.9	2.01	124.852	17887.6	6012.3
41	8.1642	509.331	509.3	1.6	12244.1	11428.0	23672.1	2.07	127.959	17550.1	6122.1
42	8.1701	519.676	519.7	1.7	12479.6	11094.6	23574.2	2.12	130.274	17334.4	6239.8
43	8.1760	526.347	526.3	1.8	12626.5	10767.8	23394.3	2.17	132.544	17081.0	6313.2
44	8.1818	534.376	534.4	1.9	12805.5	10557.3	23362.8	2.21	134.005	16960.1	6402.8
45	8.1877	540.371	540.4	2.0	12935.5	10184.3	23119.7	2.27	136.596	16652.0	6467.7
46	8.1936	545.997	546.0	2.1	13056.3	9975.5	23031.8	2.31	138.046	16503.6	6528.2
47	8.1994	550.977	551.0	2.2	13161.4	9859.1	23020.6	2.33	138.854	16439.8	6580.7
48	8.2053	554.384	554.4	2.3	13228.8	9767.0	22995.8	2.35	139.493	16381.4	6614.4
49	8.2112	560.704	560.7	2.4	13365.4	9459.4	22824.7	2.41	141.630	16142.0	6682.7
50	8.2170	564.408	564.4	2.5	13439.3	9279.7	22719.0	2.45	142.878	15999.3	6719.7
51	8.2229	567.778	567.8	2.6	13505.2	9103.1	22608.3	2.48	144.104	15855.7	6752.6
52	8.2288	570.938	570.9	2.7	13565.9	9046.9	22612.8	2.50	144.494	15829.9	6782.9
53	8.2346	573.252	573.3	2.8	13606.3	8864.9	22471.2	2.53	145.758	15668.0	6803.2
54	8.2405	576.686	576.7	2.9	13673.2	8785.8	22459.0	2.56	146.307	15622.4	6836.6
55	8.2464	579.999	580.0	3.0	13737.0	8607.5	22344.5	2.60	147.546	15476.0	6868.5
56	8.2522	583.508	583.5	3.1	13805.4	8555.5	22360.8	2.61	147.907	15458.2	6902.7
57	8.2581	585.917	585.9	3.2	13847.5	8443.6	22291.1	2.64	148.684	15367.3	6923.8
58	8.2640	588.409	588.4	3.3	13891.5	8339.5	22231.0	2.67	149.407	15285.3	6945.7
59	8.2698	590.796	590.8	3.5	13932.9	8294.3	22227.2	2.68	149.720	15260.8	6966.4
60	8.2757	593.108	593.1	3.6	13972.3	8196.8	22169.1	2.70	150.398	15183.0	6986.2
61	8.2816	595.360	595.4	3.7	14010.3	8125.6	22135.9	2.72	150.892	15130.8	7005.2
62	8.2875	598.466	598.5	3.8	14068.2	8106.4	22174.6	2.74	151.025	15140.5	7034.1
63	8.2933	600.878	600.9	3.9	14109.7	7937.0	22046.7	2.78	152.202	14991.9	7054.8
64	8.2992	602.816	602.8	4.0	14139.9	7950.7	22090.6	2.78	152.107	15020.7	7070.0
65	8.3051	605.315	605.3	4.1	14183.2	7947.6	22130.8	2.78	152.128	15039.2	7091.6
66	8.3109	607.194	607.2	4.2	14211.8	7779.2	21991.1	2.83	153.297	14885.1	7105.9
67	8.3168	609.189	609.2	4.3	14243.1	7771.0	22014.1	2.83	153.355	14892.6	7121.5
68	8.3226	611.164	611.2	4.4	14273.7	7721.7	21995.5	2.85	153.697	14858.6	7136.9
69	8.3285	613.242	613.2	4.5	14306.7	7705.3	22012.0	2.86	153.811	14858.7	7153.4
70	8.3344	614.436	614.4	4.6	14319.0	7623.2	21942.2	2.88	154.381	14782.7	7159.5

Test Readings for Specimen No. 2

No.	Def. Dial in.	Load Dial	Load lbs.	Strain %	Deviator Stress psf	Minor Eff. Stress psf	Major Eff. Stress psf	1:3 Ratio	Pore Press. psi	P psf	Q psf
71	8.3402	617.335	617.3	4.7	14370.9	7564.3	21935.2	2.90	154.790	14749.8	7185.5
72	8.3461	619.324	619.3	4.8	14401.5	7559.2	21960.7	2.91	154.826	14759.9	7200.8
73	8.3578	622.738	622.7	5.0	14449.3	7520.5	21969.8	2.92	155.094	14745.2	7224.7
74	8.3637	624.879	624.9	5.1	14483.2	7464.7	21947.9	2.94	155.482	14706.3	7241.6
75	8.3842	631.612	631.6	5.5	14583.2	7378.1	21961.3	2.98	156.083	14669.7	7291.6
76	8.3989	634.921	634.9	5.7	14619.3	7416.8	22036.1	2.97	155.814	14726.5	7309.7
77	8.4136	637.737	637.7	6.0	14643.7	7196.4	21840.1	3.03	157.345	14518.2	7321.9
78	8.4282	640.771	640.8	6.3	14672.8	7164.6	21837.3	3.05	157.566	14500.9	7336.4
79	8.4429	643.252	643.3	6.5	14688.8	7118.0	21806.8	3.06	157.889	14462.4	7344.4
80	8.4576	645.000	645.0	6.8	14687.8	7045.5	21733.3	3.08	158.393	14389.4	7343.9
81	8.4723	647.110	647.1	7.0	14694.9	7031.8	21726.6	3.09	158.488	14379.2	7347.4
82	8.4869	648.531	648.5	7.3	14686.1	7000.3	21686.3	3.10	158.707	14343.3	7343.0
83	8.5016	652.228	652.2	7.6	14728.4	6992.4	21720.8	3.11	158.762	14356.6	7364.2
84	8.5162	655.058	655.1	7.8	14750.8	6988.0	21738.8	3.11	158.793	14363.4	7375.4
85	8.5309	660.096	660.1	8.1	14822.4	6951.3	21773.7	3.13	159.047	14362.5	7411.2
86	8.5456	663.869	663.9	8.3	14865.0	6978.4	21843.4	3.13	158.859	14410.9	7432.5
87	8.5603	668.543	668.5	8.6	14927.3	7008.8	21936.2	3.13	158.648	14472.5	7463.7
88	8.5749	671.781	671.8	8.8	14957.1	6945.9	21902.9	3.15	159.085	14424.4	7478.5
89	8.5896	675.299	675.3	9.1	14992.6	6933.5	21926.1	3.16	159.170	14429.8	7496.3
90	8.6042	678.876	678.9	9.4	15029.0	6942.8	21971.7	3.16	159.106	14457.3	7514.5
91	8.6189	681.242	681.2	9.6	15038.2	6946.9	21985.0	3.16	159.078	14466.0	7519.1
92	8.6336	683.854	683.9	9.9	15052.5	6911.6	21964.1	3.18	159.323	14437.9	7526.2
93	8.6482	685.008	685.0	10.1	15034.5	6911.6	21946.1	3.18	159.323	14428.9	7517.2
94	8.6629	687.809	687.8	10.4	15052.3	6933.2	21985.5	3.17	159.173	14459.4	7526.2
95	8.6776	690.216	690.2	10.7	15061.3	6889.7	21951.0	3.19	159.475	14420.4	7530.6
96	8.6922	692.246	692.2	10.9	15061.7	6900.7	21962.4	3.18	159.399	14431.5	7530.8
97	8.7069	693.566	693.6	11.2	15046.4	6904.8	21951.2	3.18	159.370	14428.0	7523.2
98	8.7216	696.731	696.7	11.4	15071.0	6902.1	21973.0	3.18	159.389	14437.5	7535.5
99	8.7362	699.800	699.8	11.7	15093.0	6908.6	22001.5	3.18	159.344	14455.0	7546.5
100	8.7509	703.475	703.5	12.0	15127.6	6895.2	22022.8	3.19	159.437	14459.0	7563.8
101	8.7656	705.546	705.5	12.2	15127.5	6897.6	22025.1	3.19	159.420	14461.3	7563.7
102	8.7802	706.585	706.6	12.5	15105.0	6891.1	21996.0	3.19	159.465	14443.6	7552.5
103	8.7949	710.610	710.6	12.7	15146.0	6906.2	22052.1	3.19	159.361	14479.1	7573.0
104	8.8242	712.708	712.7	13.3	15100.3	6876.0	21976.4	3.20	159.570	14426.2	7550.2
105	8.8389	713.807	713.8	13.5	15078.4	6909.9	21988.3	3.18	159.334	14449.1	7539.2
106	8.8536	716.735	716.7	13.8	15094.8	6885.3	21980.1	3.19	159.506	14432.7	7547.4
107	8.8682	717.837	717.8	14.0	15072.5	6901.7	21974.2	3.18	159.391	14438.0	7536.3
108	8.8976	716.682	716.7	14.6	14957.4	6885.6	21843.0	3.17	159.503	14364.3	7478.7
109	8.9122	717.760	717.8	14.8	14934.4	6903.1	21837.5	3.16	159.382	14370.3	7467.2
110	8.9416	718.227	718.2	15.3	14853.0	6876.0	21729.1	3.16	159.570	14302.6	7426.5
111	8.9547	717.373	717.4	15.6	14794.7	6873.0	21667.7	3.15	159.591	14270.3	7397.4

ATTACHMENT 5:

009727 B-1-25 Lab and Atterberg Summary

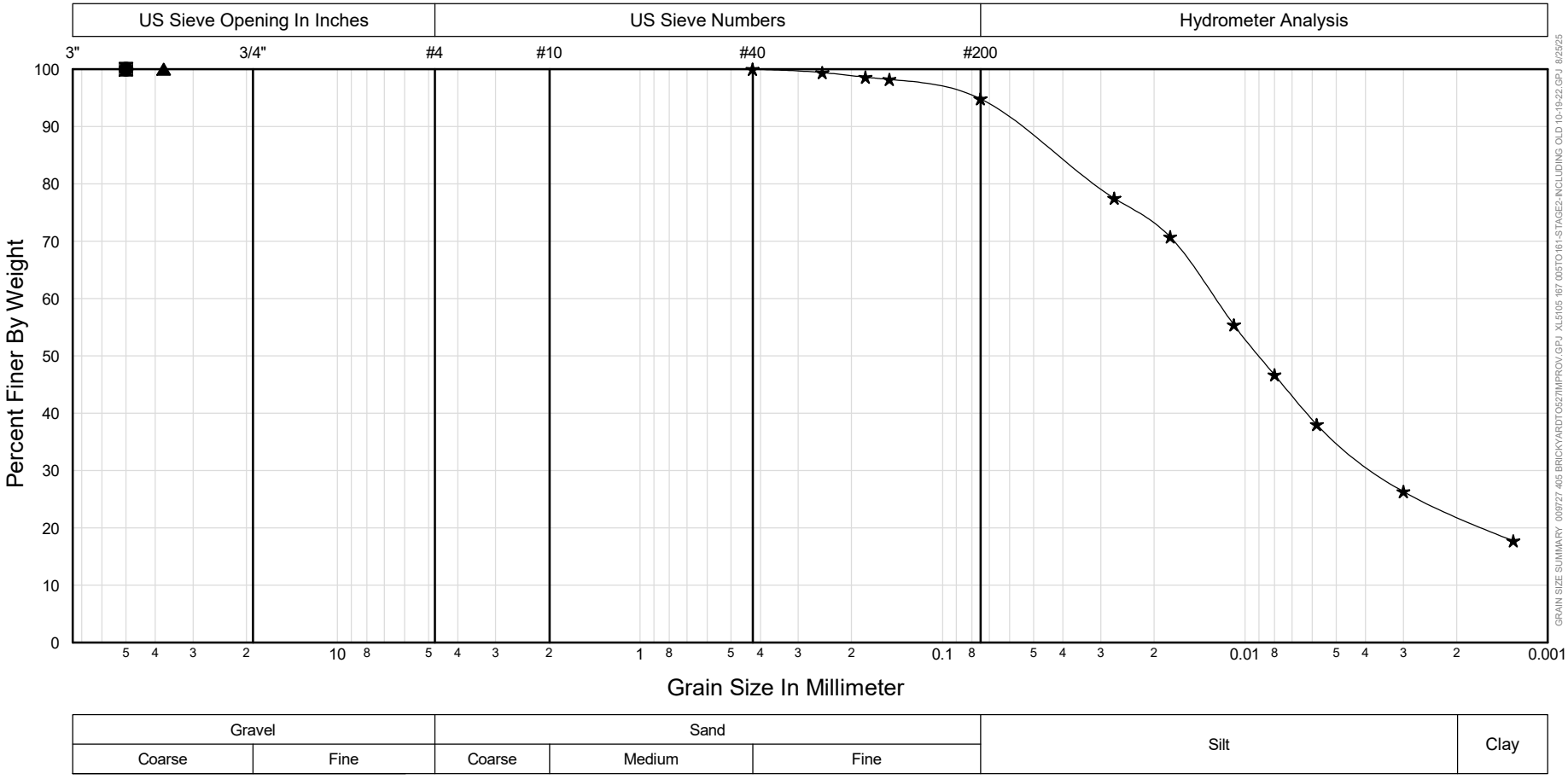
WSDOT

GRAIN SIZE ANALYSIS SUMMARY FOR B-1-25

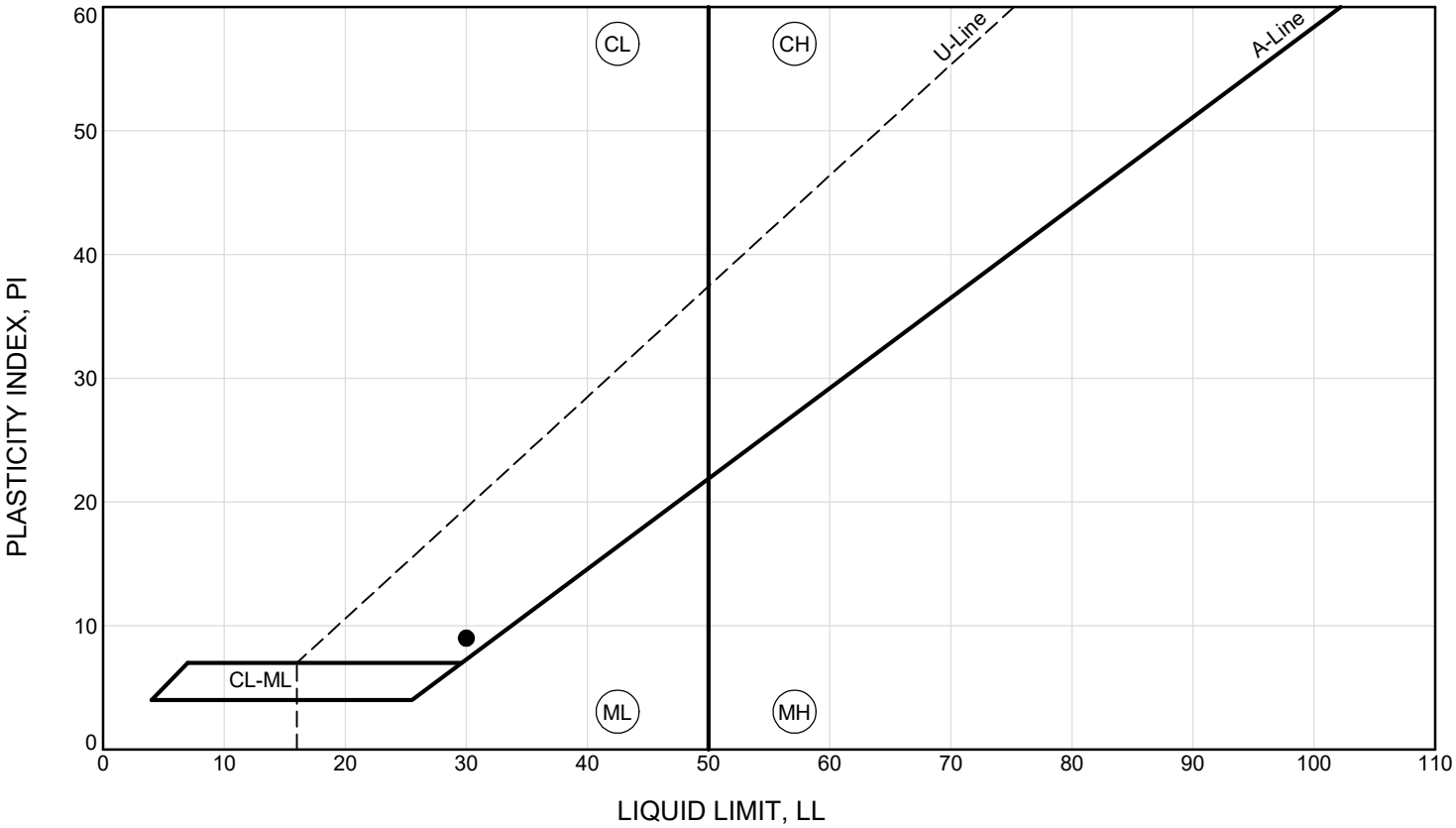
Job No: **009727**
Project: **I-405/Brickyard to SR-527 Improvement Project**

Symbol	Depth (feet)	Sample No.	USCS	Description	Test Date	MC (%)	LL	PL	PI	Moist Density (lbs/ft^3)	Specific Gravity	Gravel (%)	Sand (%)	Fines (%)	C_c	C_u	D_{90} (mm)	D_{60} (mm)	D_{50} (mm)	D_{30} (mm)	D_{20} (mm)	D_{10} (mm)
●	30.0	1		Specific Gravity Only	7-10-25	36					2.75	N/A	N/A									
⊠	50.0	4		Specific Gravity Only	7-10-25	33					2.73	N/A	N/A									
▲	155.0	25		Specific Gravity Only	7-10-25	37					2.75	N/A	N/A									
★	180.0	30	CL	LEAN CLAY	7-17-25	28	30	21	9	120	2.77	0.0	5.2	94.8			0.056	0.013	0.009	0.004	0.002	

**Sample was assumed to be non-plastic based on visual-manual examination procedures. Therefore, the ASTM Group Name is estimated based on the grain size distribution only.*



Job No: **009727**
Project: **I-405/Brickyard to SR-527 Improvement Project**



Symbol	Hole No.	Depth (feet)	Sample No.	USCS	Description	Comment	MC (%)	LL	PL	PI	Fines (%)	Silt (%)	Clay (%)
●	B-1-25	180.0	30	CL	LEAN CLAY		28	30	21	9	94.8	72.7	22.2

** Sample was assumed to have less than 15% sand/gravel based on visual-manual examination procedures. Therefore, the ASTM Group Name is estimated based on the Atterberg Limits only.*

ABBREVIATIONS:
LL = liquid limit; MC = moisture content; n/a = test attempted; NP = nonplastic; PI = plasticity index; PL = plastic limit; USCS = Unified Soil Classification System code
USCS codes listed on graph: CL = lean clay; CH = fat clay; ML = silt; MH = elastic silt; CL-ML = silty clay

ATTACHMENT 6:

009727 B-2-25 Lab and Atterberg Summary

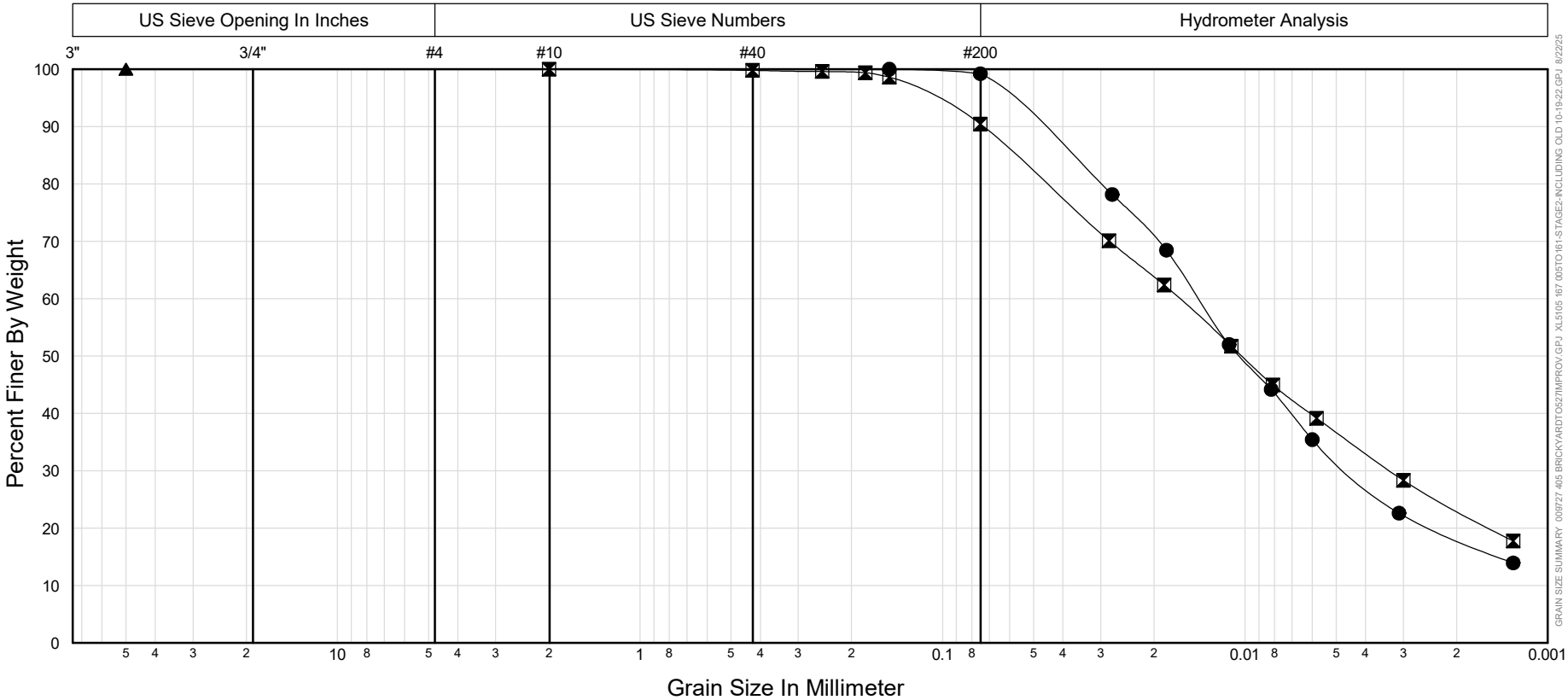
WSDOT

GRAIN SIZE ANALYSIS SUMMARY FOR B-2-25

Job No: **009727**
Project: **I-405/Brickyard to SR-527 Improvement Project**

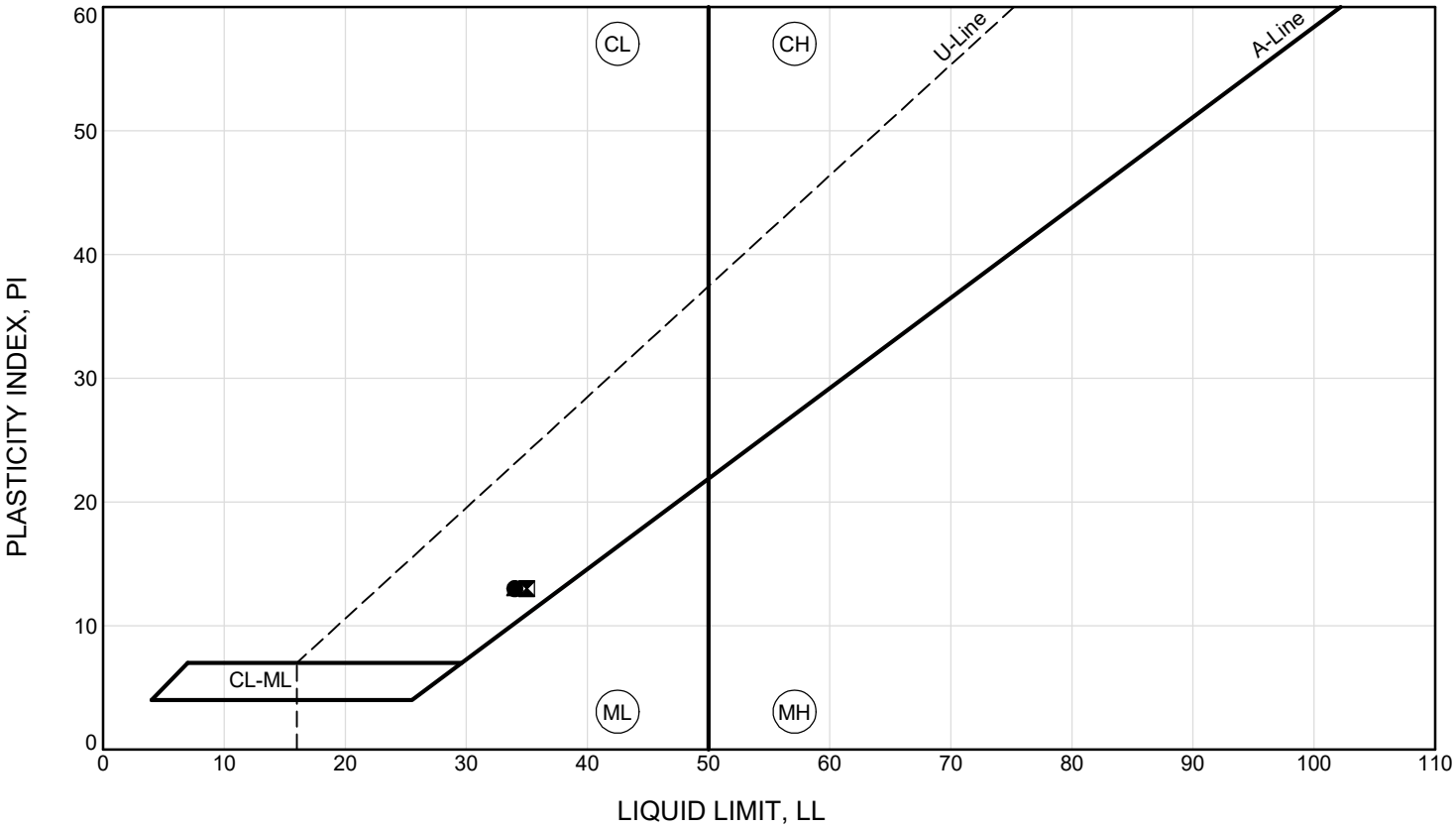
Symbol	Depth (feet)	Sample No.	USCS	Description	Test Date	MC (%)	LL	PL	PI	Moist Density (lbs/ft^3)	Specific Gravity	Gravel (%)	Sand (%)	Fines (%)	C_c	C_u	D_{90} (mm)	D_{60} (mm)	D_{50} (mm)	D_{30} (mm)	D_{20} (mm)	D_{10} (mm)
●	110.0	P-27(22)	CL	LEAN CLAY	7-10-25	29	34	21	13	123	2.71	0.0	0.8	99.2			0.048	0.014	0.010	0.005	0.002	
⊠	127.0	P-32(25)	CL	LEAN CLAY	7-10-25	26	34	21	13	124	2.75	0.0	9.6	90.4			0.073	0.017	0.010	0.003	0.002	
▲	133.5	D-34(27)		Specific Gravity Only	7-10-25	33					2.79	N/A	N/A									

**Sample was assumed to be non-plastic based on visual-manual examination procedures. Therefore, the ASTM Group Name is estimated based on the grain size distribution only.*



Gravel		Sand			Silt	Clay
Coarse	Fine	Coarse	Medium	Fine		

Job No: **009727**
Project: **I-405/Brickyard to SR-527 Improvement Project**



Symbol	Hole No.	Depth (feet)	Sample No.	USCS	Description	Comment	MC (%)	LL	PL	PI	Fines (%)	Silt (%)	Clay (%)
●	B-2-25	110.0	P-27(22)	CL	LEAN CLAY		29	34	21	13	99.2	81.0	18.2
⊠	B-2-25	126.0	P-32(25)		Atterberg Only		30	35	22	13			
▲	B-2-25	127.0	P-32(25)	CL	LEAN CLAY		26	34	21	13	90.4	67.3	23.2

** Sample was assumed to have less than 15% sand/gravel based on visual-manual examination procedures. Therefore, the ASTM Group Name is estimated based on the Atterberg Limits only.*

ABBREVIATIONS:
LL = liquid limit; MC = moisture content; n/a = test attempted; NP = nonplastic; PI = plasticity index; PL = plastic limit; USCS = Unified Soil Classification System code
USCS codes listed on graph: CL = lean clay; CH = fat clay; ML = silt; MH = elastic silt; CL-ML = silty clay

ATTACHMENT 7:

009727 B-3-25 Lab and Atterberg Summary

WSDOT

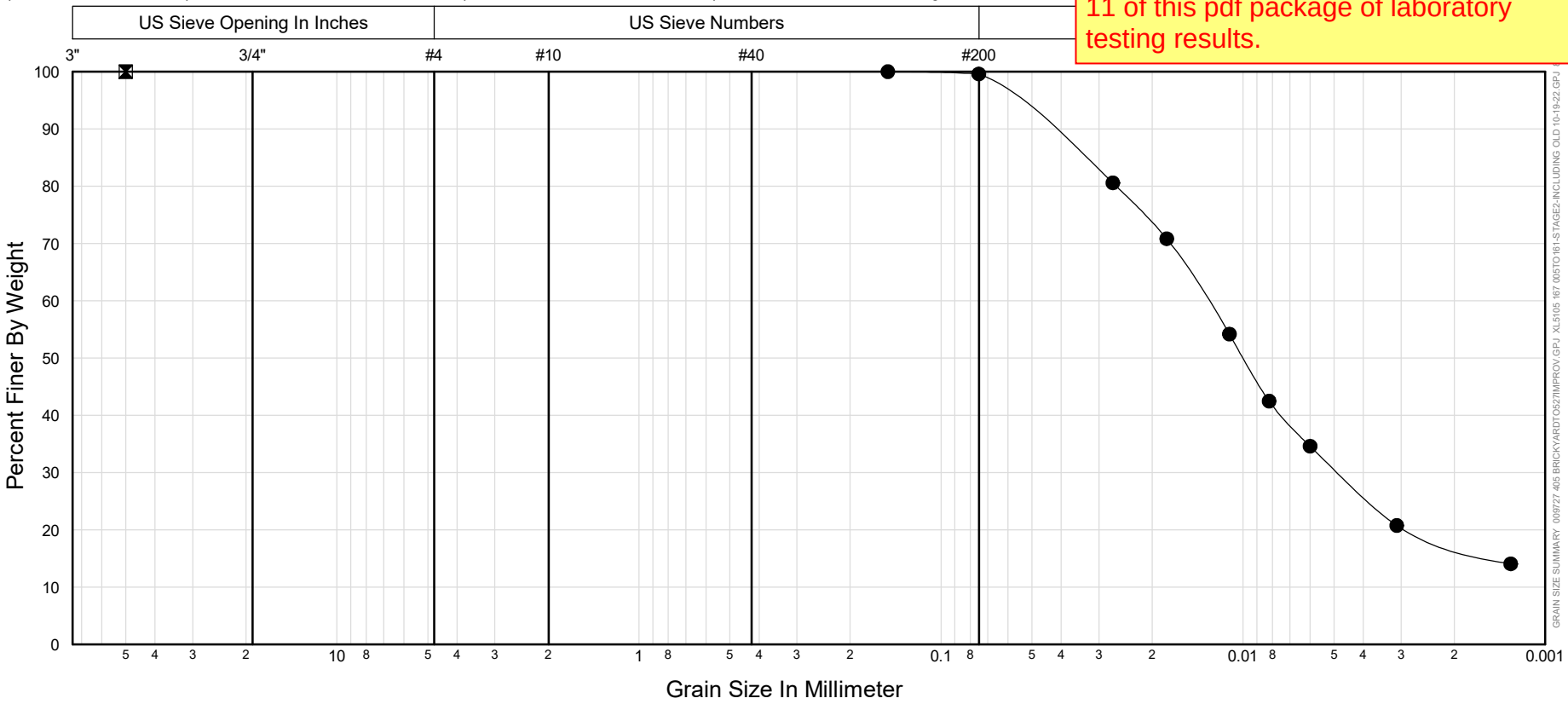
GRAIN SIZE ANALYSIS SUMMARY FOR B-3-25

Job No: **009727**
Project: **I-405/Brickyard to SR-527 Improvement Project**

Symbol	Depth (feet)	Sample No.	USCS	Description	Test Date	MC (%)	LL	PL	PI	Moist Density (lbs/ft^3)	Specific Gravity	Gravel (%)	Sand (%)	Fines (%)	C_c	C_u	D_{90} (mm)	D_{60} (mm)	D_{50} (mm)	D_{30} (mm)	D_{20} (mm)	D_{10} (mm)
●	104.0	P-24(20)	CL	LEAN CLAY	7-17-25	31	38	24	14	123	2.74	0.0	0.4	99.6			0.045	0.013	0.010	0.005	0.003	
⊠	119.0	D-28(23)		Specific Gravity Only	7-17-25	36					2.76	N/A	N/A									

*Sample was assumed to be non-plastic based on visual-manual examination procedures. Therefore, the ASTM Group Name is estimated based on the grain size distribution o

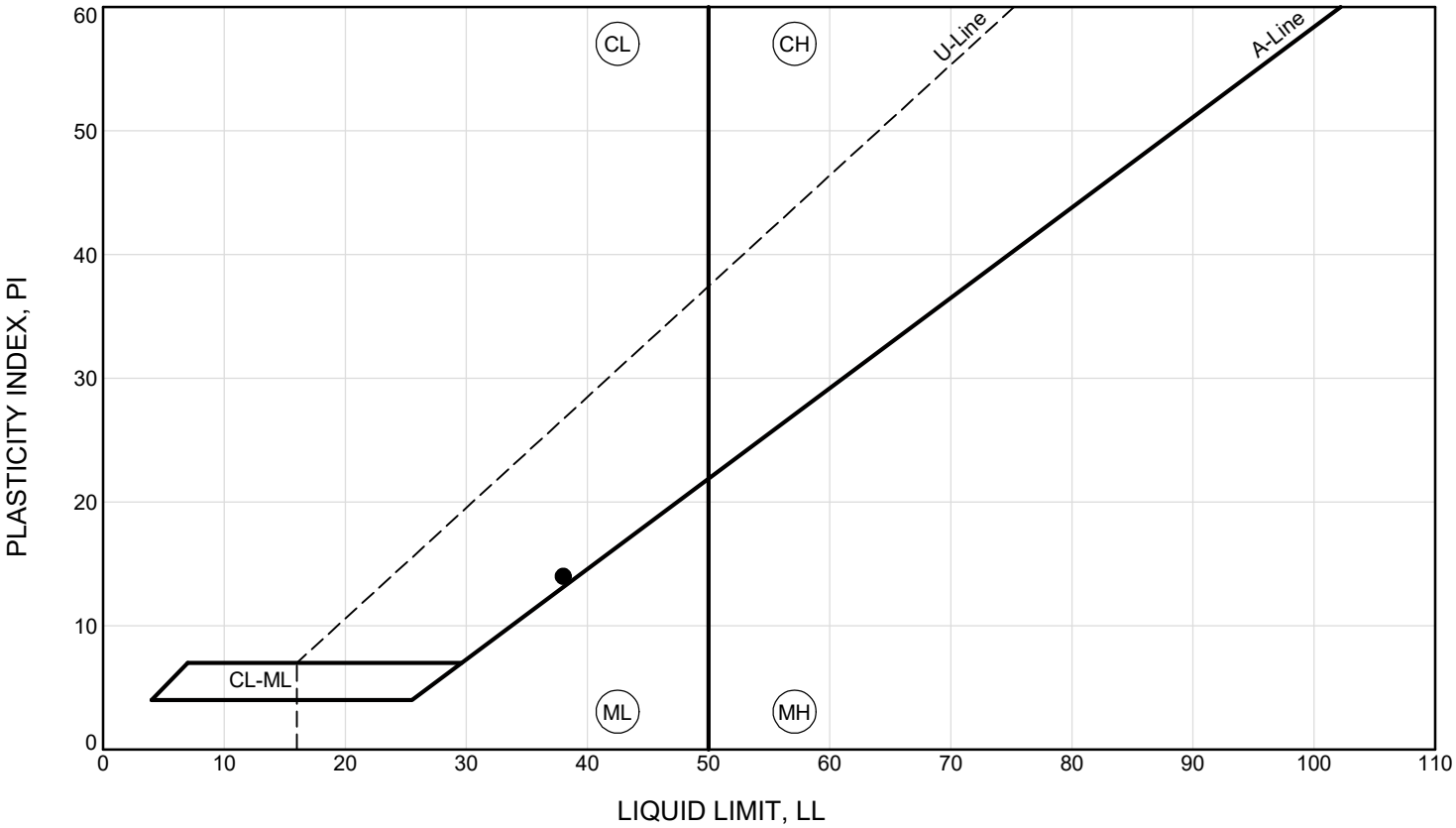
This reported value of moist density in pounds per cubic foot is in conflict with the value of dry density reported on page 11 of this pdf package of laboratory testing results.



WSDOT

ATTERBERG LIMITS SUMMARY

Job No: **009727**
Project: **I-405/Brickyard to SR-527 Improvement Project**



Symbol	Hole No.	Depth (feet)	Sample No.	USCS	Description	Comment	MC (%)	LL	PL	PI	Fines (%)	Silt (%)	Clay (%)
●	B-3-25	104.0	P-24(20)	CL	LEAN CLAY		31	38	24	14	99.6	82.2	17.4

** Sample was assumed to have less than 15% sand/gravel based on visual-manual examination procedures. Therefore, the ASTM Group Name is estimated based on the Atterberg Limits only.*

ABBREVIATIONS:
LL = liquid limit; MC = moisture content; n/a = test attempted; NP = nonplastic; PI = plasticity index; PL = plastic limit; USCS = Unified Soil Classification System code
USCS codes listed on graph: CL = lean clay; CH = fat clay; ML = silt; MH = elastic silt; CL-ML = silty clay

Date: August 26,2025

TO: Evelyn Pao, P.E., Project Director
I-405/Brickyard to SR 527 Improvement Project
I-405/SR 167 Program, MS: N-12

FROM: Samuel Wade *Samuel Wade*
State Construction Materials Office - Soils Laboratory, MS: 47365

SUBJECT: I-405, Brickyard to SR527 Improvement Project
WSDOT Technical Transmittal 01

Washington State Materials Laboratory performed laboratory testing at the request of the I-405, Brickyard to SR527 Improvement Project Office for the subject project. The contents of this laboratory submittal cover the following tests performed:

INDEX TESTS

- Liquid Limit, Plastic Limit, and Plasticity Index of Soils following AASHTO T89 and T90;
- Specific Gravity of Soil following AASHTO T100;
- Laboratory Determination of Moisture Content of Soils following AASHTO T265; and
- Particle Size Analysis of Soils following AASHTO T88.

ADVANCED TESTS

- One-Dimensional Consolidation Properties of Soils following AASHTO T216; and
- Standard Test Method for Consolidated Undrained Triaxial Compression Test for Cohesive Soils following ASTM D4767.

A representative from GeoEngineers personally delivered the soil samples to the State Materials laboratory for testing. They identified the specific portions of each sample to be tested and supplied all necessary parameters for the advanced testing procedures as shown in attachment 1.

These results are for the exclusive use of WSDOT and for the specific application to this project and site. The State Materials Laboratory completed this laboratory work in accordance with generally accepted geotechnical practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed. We make no other warranty, express or implied.

ATTACHMENTS

Attachment 1: Laboratory Request Transmittals
Attachment 2: 009727 B-3-25 20 104.7’ Console Report and Summary
Attachment 3: 009727 B-2-25 25 125.5’ Triaxial Report and Summary
Attachment 4: 009727 B-1-25 30 180.83’ Triaxial Report and Summary
Attachment 5: 009727 B-1-25 Lab and Atterberg Summary
Attachment 6: 009727 B-2-25 Lab and Atterberg Summary
Attachment 7: 009727 B-3-25 Lab and Atterberg Summary