February 2, 2024 CT Project No. 21000720

Mr. Daryl Hennessy
City Administrator
9 E. Granville Street, P.O. Box 508
Sunbury, Ohio 43074

Re: Geotechnical Subsurface Investigation
Proposed Walnut Street Stabilization
Sunbury, Ohio

Dear Mr. Hennessy:

CT Consultants, Inc. (CT Consultants) has completed the geotechnical subsurface investigation for the referenced project. The purpose of this investigation was to provide soil and bedrock data for proprietary design of a soil nail/rock anchor wall at the above referenced location.

This report includes a description of the investigative procedures and findings and laboratory tests. Due to the proprietary nature of soil nail/rock anchor walls, design and construction recommendations are not included as part of the geotechnical subsurface investigation. Rather, soil and bedrock strength properties are provided for use by the proprietary system designer.

PROJECT DESCRIPTION

We understand that the project includes repair of a slope failure located along the northeast side (Big Walnut Creek side) of Walnut Street, just southeast of the intersection with McGill Street, in Sunbury, Ohio. The general area of the project is shown on the attached Site Location Map (Plate 1.0).

It was indicated that the repair will include installation of a soil nail/rock anchor-type retaining wall. The wall is planned for the upper 10 feet of the approximately 30 feet high slope extending down to Big Walnut Creek.

Since the flood level of the creek is well below the failure area, it is presumed that the slope failure is not associated with water conditions associated with the creek. Rather, it is presumed that the slope failure is a result of loss of soil strength and/or weathering of rock, possibly in

combination with surface water infiltration, in the upper portion of the slope. As such, the new 10 feet high wall would remedy the upper-slope failure, but would not provide resistance to natural weathering of the lower-portion of the slope or weathering associated with the creek flow. If the lower portion of the slope is weathered in the future such that the new wall is undermined, the entire slope would be affected.

It was indicated that preliminary evaluations include soil nails/rock anchors on the order of 20 feet in length, with an inclination of approximately 15 degrees down from horizontal. A drainage system is planned to alleviate hydrostatic pressure behind the wall face.

INVESTIGATIVE PROCEDURES

Field Procedures

This subsurface investigation included two test borings, designated as Borings B-1 and B-2, performed by CT on December 20 and 21, 2023. The approximate locations of the borings and current site features are shown on the Test Boring Location Plan (Plate 2.0).

The test boring was performed in general accordance with geotechnical investigative procedures outlined in ASTM Standard D 6151. The test boring performed during this investigation was drilled with a track-mounted drilling rig utilizing 3¼-inch inside-diameter hollow stem augers. Boring B-1 was performed to a depth of 26.4 feet below existing grade. Boring B-2 was performed to a depth of 26.5 feet.

Within the borings, soil samples were obtained continuously using 18-inch or 24-inch sample intervals. Split-spoon samples were obtained by the Standard Penetration Test (SPT) Method (ASTM D 1586), which consists of driving a 2-inch outside diameter split-barrel sampler into the soil with a 140-pound weight falling freely through a distance of 30 inches. The sampler was driven in three or four successive 6-inch increments with the number of blows per increment being recorded. The sum of the number of blows required to advance the sampler the second and third 6-inch increments is termed the Standard Penetration Resistance (N-value) and is presented on the Logs of Test Borings attached to this report. The samples were sealed in jars and transported to our laboratory for further classification and testing.

Core runs were completed using an NQ diamond-bit core barrel and coring techniques in general accordance with ASTM D 2113 immediately following auger refusal. Within each boring, four core runs were performed at lengths of 5 feet each. Recovery of the core is expressed as the percentage ratio of the recovered rock length to the total length of the core run. The Rock Quality Designation (RQD) is the percentage ratio of the summed length of rock pieces 4 inches in length and greater to the total length of the run. The rock core samples are designated as “RC” on the Logs of Test Borings.

Soil and rock conditions encountered in the test borings are presented in the Logs of Test Borings, along with information related to sample data, SPT results, water conditions observed in the boring, and laboratory test data. It should be noted that these logs have been prepared on the basis of laboratory classification and testing as well as field logs of the encountered soils.

Laboratory Procedures

All samples of the subsoils were visually or manually classified using the Unified Soil Classification System (ASTM D 2487 and D 2488) and were tested in the laboratory for moisture content (ASTM D 2216). Unconfined compressive strength estimates were obtained for the intact cohesive samples using a calibrated hand penetrometer. Atterberg limits tests (ASTM D 4318) and a particle size analyses (ASTM D 6913 and D 7928) were performed on samples from Borings B-1 (SS-2) and B-2 (SS-2) to evaluate soil classification and index properties. The results of these tests are presented on the Logs of Test Borings and the Grain Size Analysis sheet attached to this report.

Recovered rock core specimens were visually classified in general accordance with Ohio Department of Transportation (ODOT) “Specifications for Geotechnical Explorations” (SGE) criteria. Photographs of the recovered cores are attached to this report.

Four selected intact rock specimens were tested for unconfined compressive strength in accordance with ASTM D 7012, Method C. The rock unconfined compressive strength test specimens were prepared using a tile saw to obtain flat perpendicular ends with respect to the longitudinal specimen. The planeness of the bearing surfaces of the specimens were checked by means of an angle. ASTM D 7012 requires that we indicate the sample was not prepared using specialized equipment per ASTM D 4543, and that the reported results may differ from those obtained using a test specimen prepared per ASTM D 4543. Additionally, four selected rock specimens were tested for slake durability in accordance with ASTM D 4644. Point load index determinations were performed on four rock specimens in accordance with ASTM D 5731. Results of these tests are presented on the Logs of Test Borings as well as laboratory test results sheets attached to this report.

For potential preliminary corrosivity evaluations, pH determinations were performed in accordance with ASTM D 4972 on two soil samples and four friable rock specimens. Results of these tests are presented on the Logs of Test Borings attached to this report.

ENCOUNTERED CONDITIONS

Borings B-1 and B-2 were performed through existing pavement and encountered asphalt on the order of 4 inches and 7 inches in thickness, underlain by crushed stone approximately 12 inches and 4 inches in thickness, respectively.

Underlying the pavement materials in Borings B-1 and B-2, cohesive soils were encountered to a depth of 2 feet and 5.5 feet, respectively. The cohesive soils consisted of lean clay (CL) with sand and varying amounts of gravel. SPT N-values generally ranged from 10 to 24 blows per foot (bpf), indicating medium stiff to stiff consistency. Unconfined compressive strengths were on the order of 5,500 pounds per square foot (psf) or greater, with the higher strengths likely indicative of desiccation phenomena. Moisture contents for the cohesive soils ranged from 15 to 18 percent.

Underlying the cohesive soils in Boring B-1, clayey gravel (GC) with sand was encountered to a depth of 3.2 feet. Within the clayey gravel, an SPT N-value of 21 bpf indicating medium dense compactness, and a moisture content of 14 percent were determined.

The soils at the site were underlain by weathered sandstone. Within Boring B-1, the weathered sandstone was approximately 3-feet-thick and extended to 6.4 feet prior to encountering auger refusal. Within Boring B-2, the weathered sandstone was approximately 1-foot-thick, and extended to 6.5 feet.

The underlying bedrock predominantly consisted of sandstone. Within the sandstone, RQD values ranged from 8 to 82 percent, increasing with depth, indicating the rock mass quality of the sandstone bedrock can be generally described as varying from very poor near the surface to good at depths of approximately 20 to 25 feet. Unconfined compressive strengths ranged from 12,320 pounds per square inch (psi) to 14,190 psi, and they indicate that the rock can be generally characterized as strong.

Siltstone bedrock was encountered underlying the sandstone in Boring B-2. The reported RQD for the core run which included a small portion of the upper sandstone is 47 percent , indicating the rock mass quality can be generally described as poor.

Additional descriptions of the stratigraphy encountered in the borings, as well as additional laboratory test results, are presented on the Logs of Test Borings.

QUALIFICATION OF RECOMMENDATIONS

Our evaluation of subsurface conditions has been based on our understanding of the site and project information and the data obtained during our field investigation. The subsurface conditions presented were based on interpretation of the data obtained from one boring performed at a specific location. Regardless of the thoroughness of a subsurface investigation, there is the possibility that conditions will differ from those at the boring location, that conditions are not as anticipated by the designers, or that the construction process has altered the soil conditions. This potential is increased at previously developed sites. Therefore, experienced geotechnical engineers should observe earthwork and pavement construction to confirm that the conditions anticipated in design are noted. Otherwise, TTL assumes no responsibility for construction compliance with the design concepts, specifications, or recommendations.

The nature and extent of variations from the boring may not become evident until the course of construction. If such variations are encountered, it will be necessary to reevaluate the recommendations of this report after on-site observations of the conditions.

Our professional services have been performed, our findings derived, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. This warranty is in lieu of all other warranties either expressed or implied. CT Consultants is not responsible for the conclusions, opinions, or recommendations of others based on this data.

Soil samples collected during this investigation will be stored at our laboratory for 90 days from the date of this report. The samples will be discarded after this time unless you request that they be saved or delivered to you.

Should you have any questions regarding this report or require additional information, please contact our office.

Respectfully,

CT Consultants, Inc.

Katherine C. Hennicken, P.E.
Senior Geotechnical Engineer

Curtis E. Roupe, P.E.
Vice President/Market Leader

Attachments:
- Plate 1.0 – Site Location Map
- Plate 2.0 – Test Boring Location Plan
- Logs of Test Borings B-1 and B-2
- Legend Key
- Grain Size Distribution
- Rock Core Photographic Logs
- Slake Durability Test Results
- Point Load Index Results

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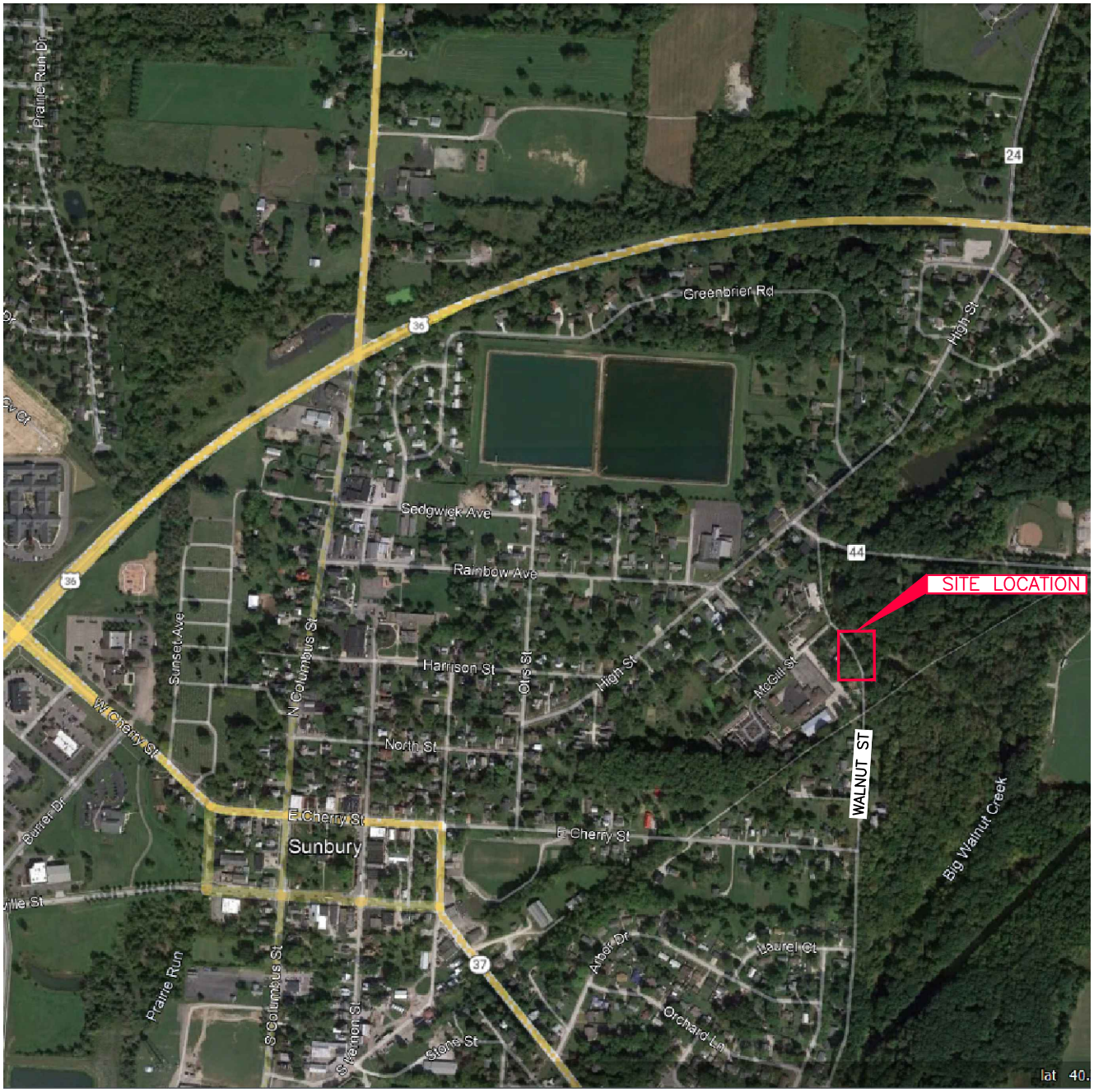

LEGEND

APPROXIMATE SITE LOCATION

N

APPROXIMATE SCALE – FEET

0 800 1,600

PLATE 1.0
SITE LOCATION MAP

WALNUT STREET STABALIZATION
SUNBURY, OHIO

PREPARED FOR
CITY OF SUNBURY, OHIO
SUNBURY, OHIO

DRAWN	TRR/1–18–24	CHECKED	KCH/1–26–24
REVISED		APPROVED	
JOB NO.	21000720		
DRAWING NUMBER	B_21000720–01–PLATE 1 SM		

your trusted advisor
consultants
engineers
architects
planners

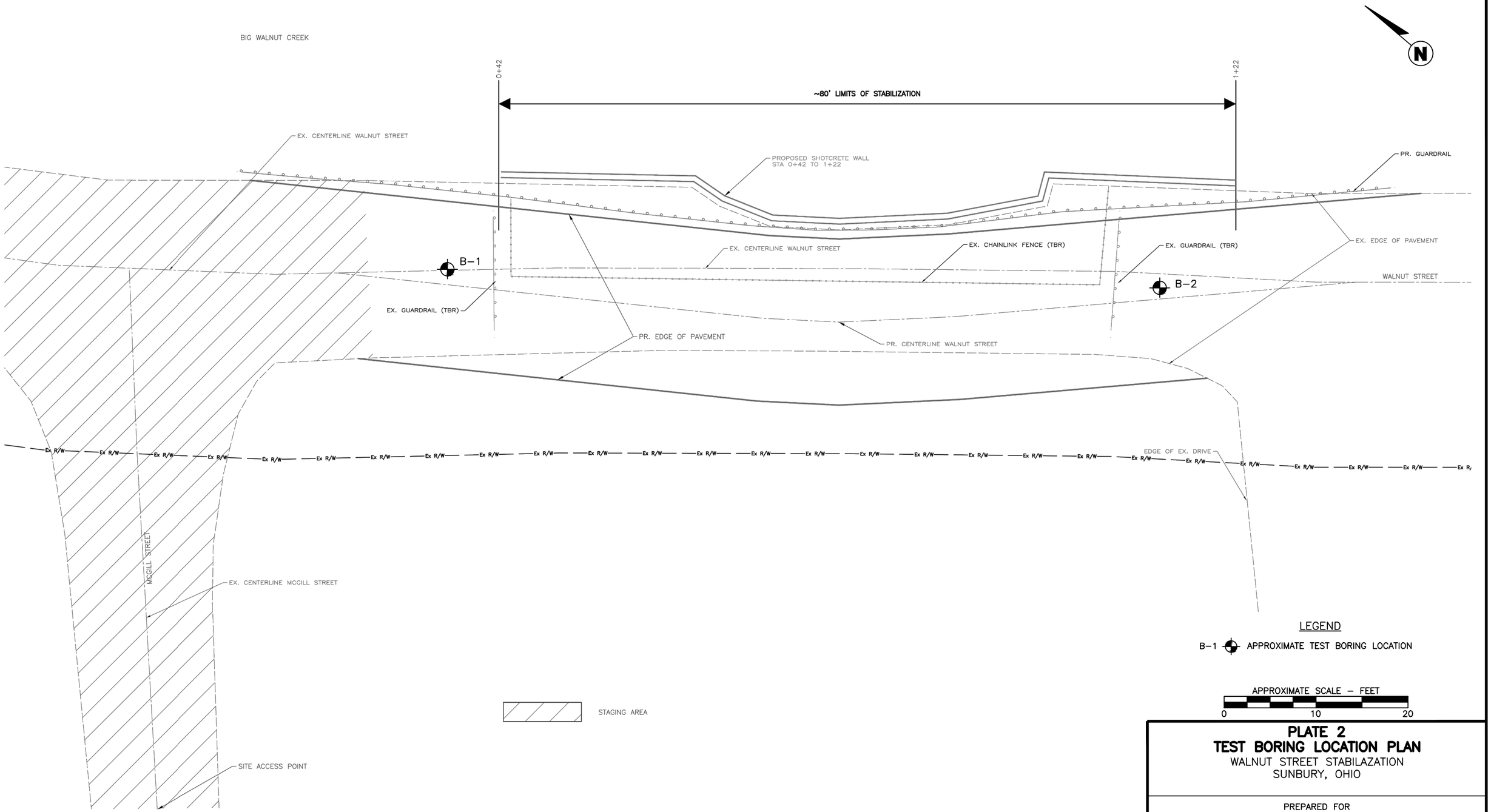

PLATE 2
TEST BORING LOCATION PLAN

WALNUT STREET STABILAZATION
SUNBURY, OHIO

PREPARED FOR
CITY OF SUNBURY, OHIO
SUNBURY, OHIO

DRAWN TRR/1-18-24	CHECKED KCH/1-26-24
REVISED	APPROVED
JOB NO. 21000720	
DRAWING NUMBER	
B_21000720-01-PLATE 2 BLP	

your trusted advisor consultants engineers architects planners

CT Consultants, Inc.
1915 N 12th Street
Toledo Ohio 43604
Telephone: (419)324-2222

BORING NUMBER B-1

CLIENT Village of Sunbury
PROJECT NAME Walnut Street Slope Remediation
PROJECT NUMBER 21000720
PROJECT LOCATION Sunbury, OH
DRILLING CONTRACTOR CT Consultants Inc. TB MP
RIG NO. D70
GROUND ELEVATION
DRILLING METHOD 3 1/4" HSA/NQ Rock Coring
GROUND WATER LEVELS:
DATE STARTED 12/20/23
COMPLETED 12/20/23
AT TIME OF DRILLING None
LOGGED BY KKC
CHECKED BY KCH
AT END OF DRILLING None
NOTES Auger refusal encountered at 6.4 and 20.0 feet of rock cored.
0hrs AFTER DRILLING Borehole Sealed w/Cement-Bentonite Grout & Patch

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL / SPT N VALUE
	0		ASPHALT - 4 Inches 0.3'	SS 1	83	8-11-16 (27)	NP 1.75		18
			CRUSHED STONE - 12 Inches 1.3'	SS 2	79	3-9-12-15 (21)	NP		14
	5		Moist Stiff to Very Stiff Brown LEAN CLAY w/Sand and Gravel (CL) 2.0'	SS 3	91	9-19-31-50/5" (50)	NP		17
			Moist Medium Dense Gray/Brown CLAYEY GRAVEL w/Sand and Trace Iron Oxide Stain Seam (GC) 3.2'	SS 4	20	50/5"	NP		3 >>
			Red/Brown WEATHERED SANDSTONE @4': pH - 8.45 @5.5': Brown 6.4'	RC 1	83 (7)				
	10		SANDSTONE, Green/Gray, Slightly Weathered, Strong, Jointed - Highly Fractured to Fractured, Tight @7.0' to 7.8': Slake Durability Index I_{d2} = 98.4% @7.8' to 8.0': Point Load $I_{S(50)}$ = 517 PSI @8.0' to 8.8': pH = 8.52 @11.4' to 12.0': Slake Durability Index I_{d2} = 98.8%	RC 2	100 (7)			
	15		@15.7 to 16.0': Unconfined Compressive Strength Qu = 14,410 PSI 16.4'	RC 3	100 (68)			141	
	20		SANDSTONE, Green/Gray, Slightly Weathered, Strong, Jointed - Fractured to Moderately Fractured, Tight @19.6' to 19.7': pH = 8.96 @19.7' to 19.9': Point Load $I_{S(50)}$ = 37 PSI	RC 4	80 (77)				
	25		25.3' SANDSTONE, Green/Gray, Slightly Weathered, Strong, Jointed - Slightly Fractured, Tight 26.4' Bottom of hole at 26.4 feet.						

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Toledo Ohio 43604
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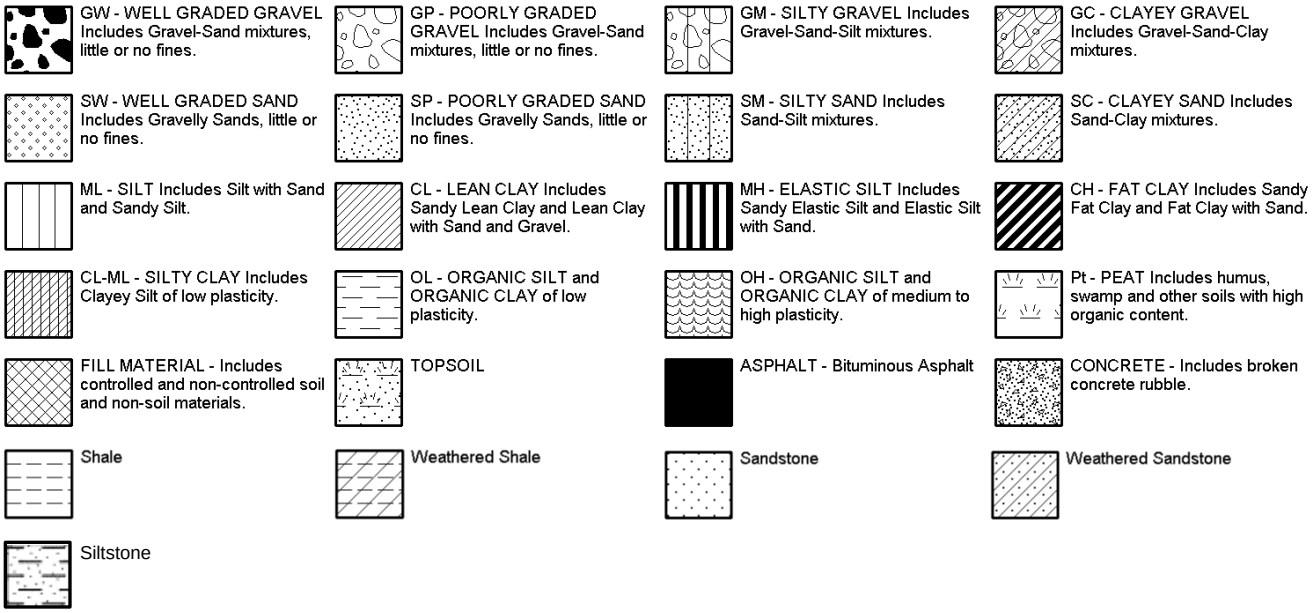
BORING NUMBER B-2

CLIENT Village of Sunbury
PROJECT NAME Walnut Street Slope Remediation
PROJECT NUMBER 21000720
PROJECT LOCATION Sunbury, OH
DRILLING CONTRACTOR CT Consultants Inc. TB MP
RIG NO. D70
GROUND ELEVATION
DRILLING METHOD 3 1/4" HSA/NQ Rock Coring
GROUND WATER LEVELS:
DATE STARTED 12/21/23 **COMPLETED** 12/21/23
AT TIME OF DRILLING None
LOGGED BY KKC **CHECKED BY** KCH
AT END OF DRILLING None
NOTES Auger refusal encountered at 6.5 and 20.0 feet of rock cored.
0hrs AFTER DRILLING Borehole Sealed w/Cement-Bentonite Grout & Patch

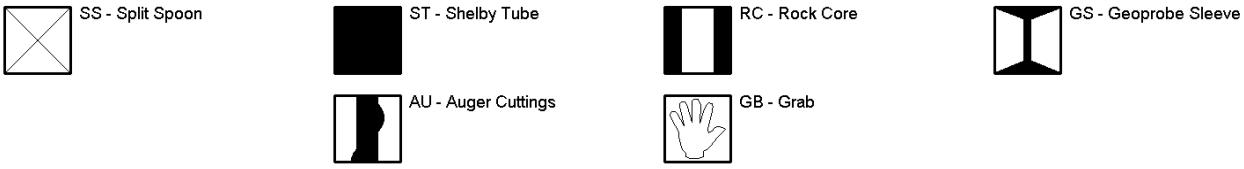
ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL / SPT N VALUE
	0		ASPHALT - 7 Inches						
			0.6'	SS 1	100	4-4-6 (10)	4.50		16
			CRUSHED STONE - 4 Inches						
			0.9'	SS 2	100	10-12-12-15 (24)	4.50		18
			Moist Stiff Brown LEAN CLAY w/Sand and Trace Gravel (CL)						
			2.0'	SS 3	100	6-10-11-31 (21)	2.75		15
	5		Moist Very Stiff to Hard Brown LEAN CLAY w/Sand and Trace Gravel (CL) @2.0' to 4.0': pH = 8.03 @4': Very Stiff, w/Gravel						
			5.5'	SS 4	0	50/2"	NR		>>
			Brown WEATHERED SANDSTONE						
			6.5'	RC 1	73 (8)			139	
	10		SANDSTONE, Green/Gray, Slightly Weathered, Strong, Jointed - Highly Fractured to Fractured, Tight @9.1' to 9.5': Moderately Fractured Segment, Unconfined Compressive Strength Qu = 12,320 PSI @9.5' to 9.6': pH = 8.75 @9.6' to 11.5': Slake Durability Index I_{d2} = 97.6%						
			@13.9' to 14.3': Point Load $I_{S(50)}$ = 112 PSI	RC 2	100 (27)				
	15		15.3'					149	
			SANDSTONE, Green/Gray, Slightly Weathered, Strong, Jointed - Fractured to Moderately Fractured, Tight @15.3' to 15.9': Unconfined Compressive Strength Qu = 14,180 PSI @16.5' to 17.0': Unconfined Compressive Strength Qu = 14,490 PSI	RC 3	100 (82)			150	
	20		23.0'						
			SILTSTONE, Gray, Moderately Weathered, Strong, Jointed - Fractured to Moderately Fractured, Tight @23.8' to 24.3': Point Load $I_{S(50)}$ = 753 PSI @24.3' to 25.2': Slake Durability Index I_{d2} = 88.3% @25.2' to 25.4': pH = 8.64	RC 4	98 (47)				
	25		26.5'						
			Bottom of hole at 26.5 feet.						

LEGEND KEY

Unified Soil Classification System Soil Symbols



Sample Symbols



Notes:

1. Exploratory borings were drilled on December 20 and 21, 2023, using 3¼-inch inside diameter hollow-stem augers, as well as NQ rock coring methods.

2. These logs are subject to the limitations, conclusions, and recommendations in the report and should not be interpreted separate from the report.

3. The borings were located in the field by CT.

4. Unconfined Compressive Strength (tsf):
   NP = Non-Plastic
   NR = No Recovery

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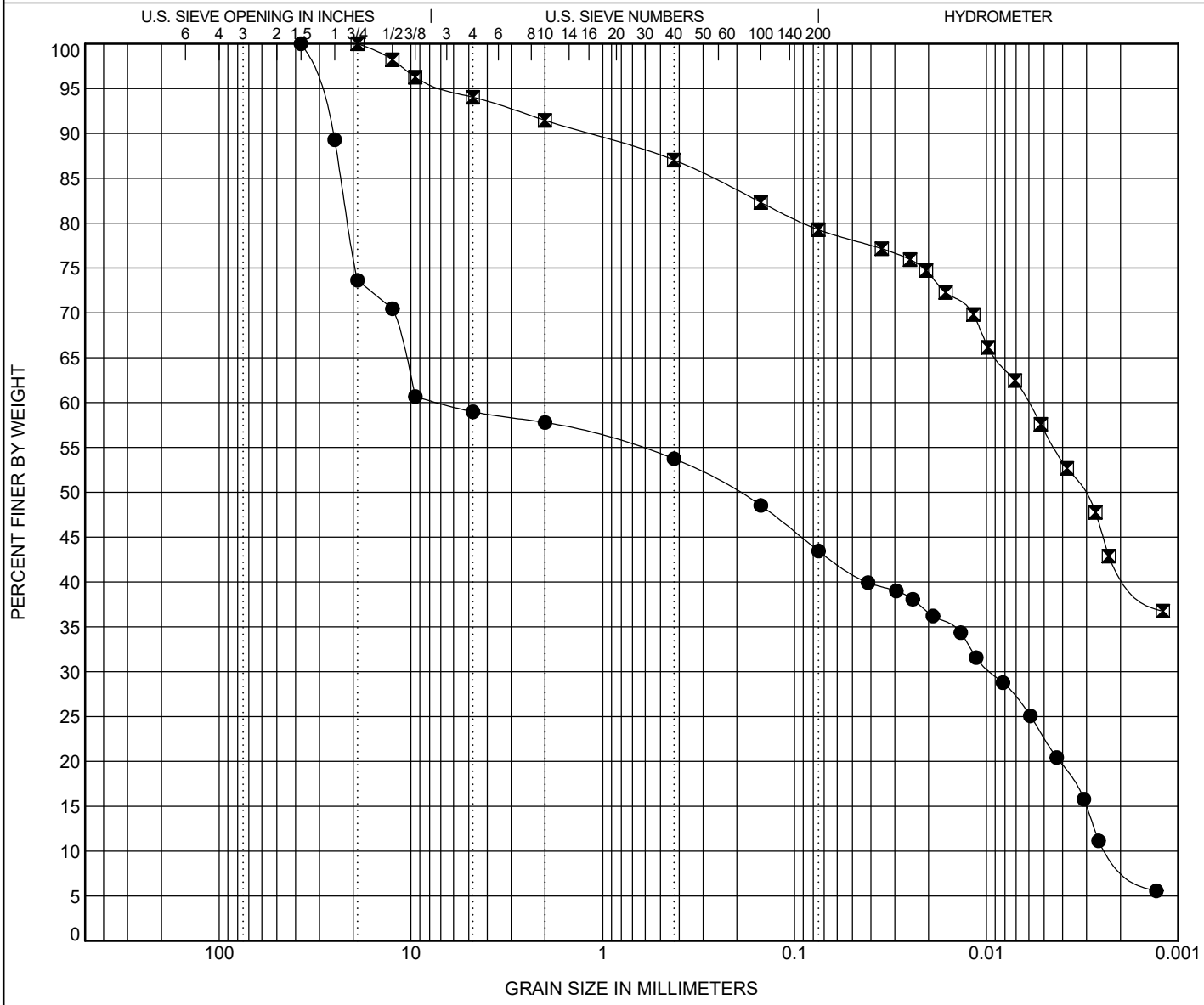
Telephone: (419)324-2222

GRAIN SIZE DISTRIBUTION

CLIENT Village of Sunbury **PROJECT NAME** Walnut Street Slope Remediation

PROJECT NUMBER 21000720 **PROJECT LOCATION** Sunbury, OH



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		USCS Classification	LL	PL	PI	Cc	Cu
●	**B-1**	**2.0**	**CLAYEY GRAVEL with SAND (GC)**	**32**	**21**	**11**	**0.0**	**3208.9**
⊠	**B-2**	**2.0**	**LEAN CLAY with SAND (CL)**	**36**	**21**	**15**		

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**B-1**	**2.0**	**37.5**	**7.233**	**0.009**	**0.002**	**41.0**	**15.5**	**20.8**	**22.6**
⊠	**B-2**	**2.0**	**19**	**0.006**			**6.0**	**14.8**	**22.3**	**57.0**

GRAIN SIZE 21000720.GPJ GINT US LAB.GDT 2/1/24

CORE PHOTO LOG - BORING B-1

Project: Walnut Street Stabilization
Project Location: Sunbury, Ohio
CT Project No.: 21000720
Core Date: December 20, 2023

Core Run	Depth (ft.)
RC-1	6.4 to 11.4
RC-2	11.4 to 16.4

CORE PHOTO LOG - BORING B-1

Project: Walnut Street Stabilization
Project Location: Sunbury, Ohio
CT Project No.: 21000720
Core Date: December 20, 2023

Core Run	Depth (ft.)
RC-3	16.4 to 21.4

Begin RC-3

End RC-3

CORE PHOTO LOG - BORING B-1

Project: Walnut Street Stabilization
Project Location: Sunbury, Ohio
CT Project No.: 21000720
Core Date: December 20, 2023

Core Run	Depth (ft.)
RC-4	21.4 to 26.4

Begin RC-4

End RC-4

CORE PHOTO LOG - BORING B-2

Project: Walnut Street Stabilization
Project Location: Sunbury, Ohio
CT Project No.: 21000720
Core Date: December 21, 2023

Core Run	Depth (ft.)
RC-1	6.5 to 11.5
RC-2	11.5 to 16.5

CORE PHOTO LOG - BORING B-2

Project: Walnut Street Stabilization
Project Location: Sunbury, Ohio
CT Project No.: 21000720
Core Date: December 21, 2023

Core Run	Depth (ft.)
RC-3	16.5 to 21.5

Begin RC-3

End RC-3

CORE PHOTO LOG - BORING B-2

Project: Walnut Street Stabilization
Project Location: Sunbury, Ohio
CT Project No.: 21000720
Core Date: December 21, 2023

Core Run	Depth (ft.)
RC-4	21.5 to 26.5

Begin RC-4

End RC-4

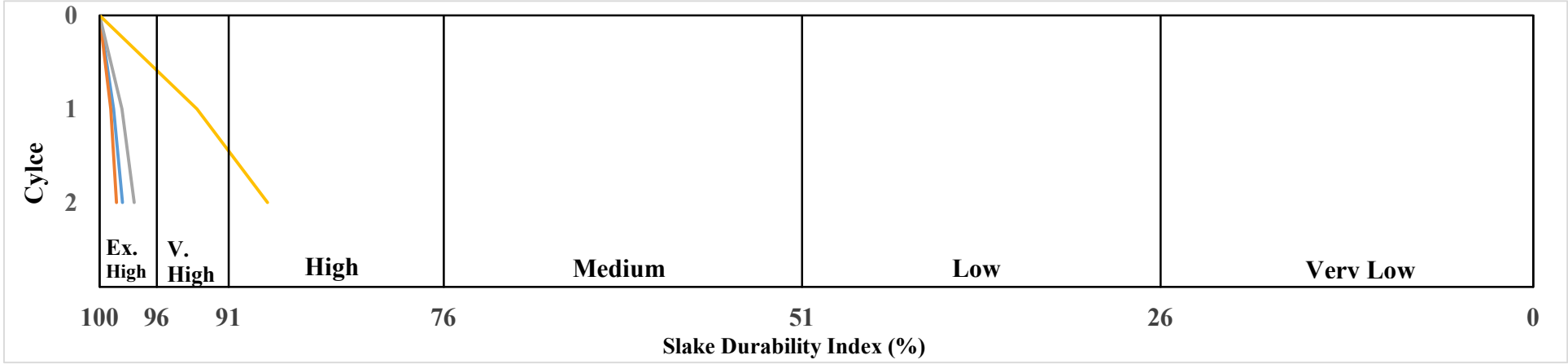
Laboratory Test Result Summary
Slake Durability of Shales and Other Similar Weak Rocks (ASTM D 4644)

CT Project No: 21000720
Client: City of Sunbury, Ohio
Project Name: Walnut Street Stabilization
Location: Sunbury, Ohio

Technician: *TM/KKC*
Date Tested: *1/18/2024 to 1/24/2024*

Sample No.	Boring ID	RC No.	Depth (ft)	As Received Moisture Content (%)	Slake Durability Index		I_{d2} Durability Classification*	I_{d2} Standard Description
					I_{d1} (%)	I_{d2} (%)		
1	B-1	RC-1	7.0 to 7.8	0.1	99.0	98.4	Extremely High	Type II
2	B-1	RC-2	11.4 to 12.0	0.1	99.2	98.8	Extremely High	Type I
3	B-2	RC-1	9.6 to 11.5	0.1	98.4	97.6	Extremely High	Type II
4	B-2	RC-4	24.3 to 25.2	0.5	93.2	88.3	High	Type II

** based on Franklin & Chandra, 1972*



Laboratory Test Results
Slake Durability of Shales and Other Similar Weak Rocks (ASTM D 4644)

Technician: TM/KKC
Date Tested: 1/18/2024 to 1/24/2024

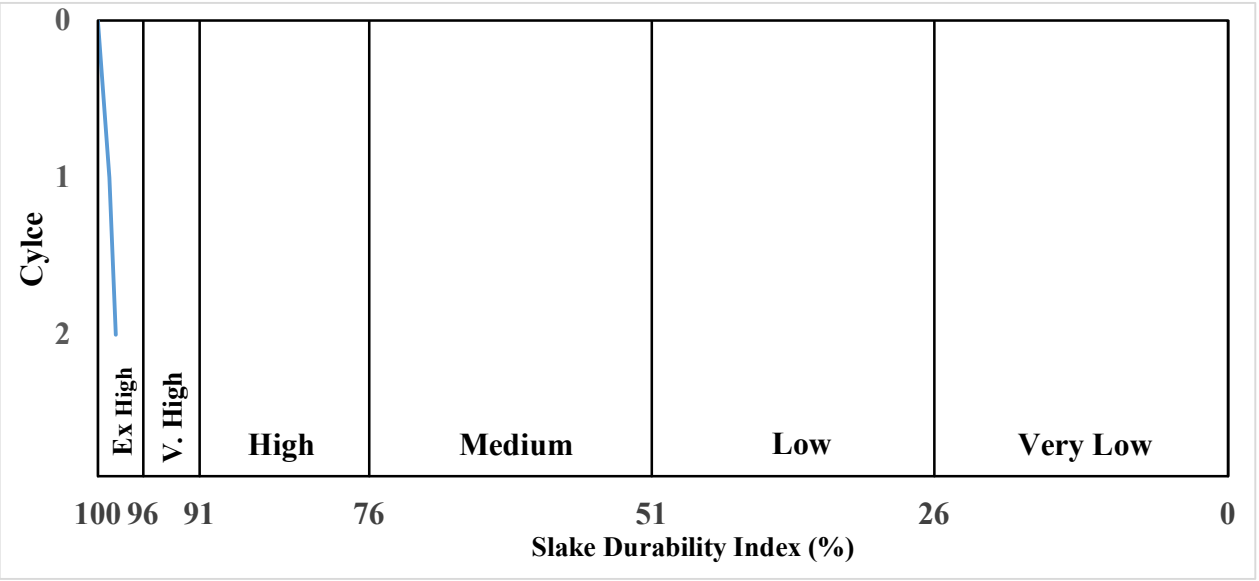
CT Project No: 21000720
Client: City of Sunbury, Ohio
Project Name: Walnut Street Stabilization
Location: Sunbury, Ohio

Sample No.	Boring ID	RC No.	Depth (ft)
1	B-1	RC-1	7.0 to 7.8

As Received Moisture Content (%)	Slake Durability Index		I_{d2} Durability Classification*
	I_{d1} (%)	I_{d2} (%)	
0.1	99.0	98.4	Extremely High

** based on Franklin & Chandra, 1972*

I_{d2} Standard Description
Type II—Retained specimens consist of large and small fragments.



Sample Before Testing

Sample After Cycle 1

Sample After Cycle 2

Laboratory Test Results
Slake Durability of Shales and Other Similar Weak Rocks (ASTM D 4644)

Technician: *TM/KKC*

Date Tested: *1/18/2024 to 1/24/2024*

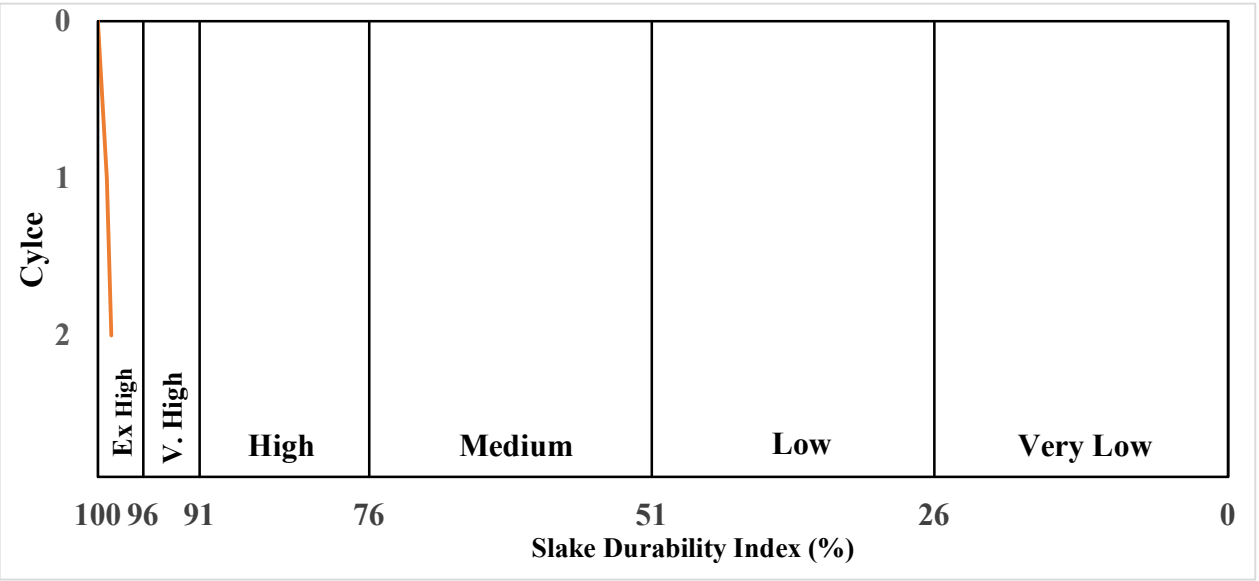
CT Project No: 21000720
Client: City of Sunbury, Ohio
Project Name: Walnut Street Stabilization
Location: Sunbury, Ohio

Sample No.	Boring ID	RC No.	Depth (ft)
2	B-1	RC-2	11.4 to 12.0

As Received Moisture Content (%)	Slake Durability Index		I_{d2} Durability Classification*
	I_{d1} (%)	I_{d2} (%)	
0.1	99.2	98.8	Extremely High

** based on Franklin & Chandra, 1972*

I_{d2} Standard Description
Type I—Retained specimens remain virtually unchanged.



Sample Before Testing

Sample After Cycle 1

Sample After Cycle 2

Laboratory Test Results
Slake Durability of Shales and Other Similar Weak Rocks (ASTM D 4644)

Technician: *TM/KKC*

Date Tested: *1/18/2024 to 1/24/2024*

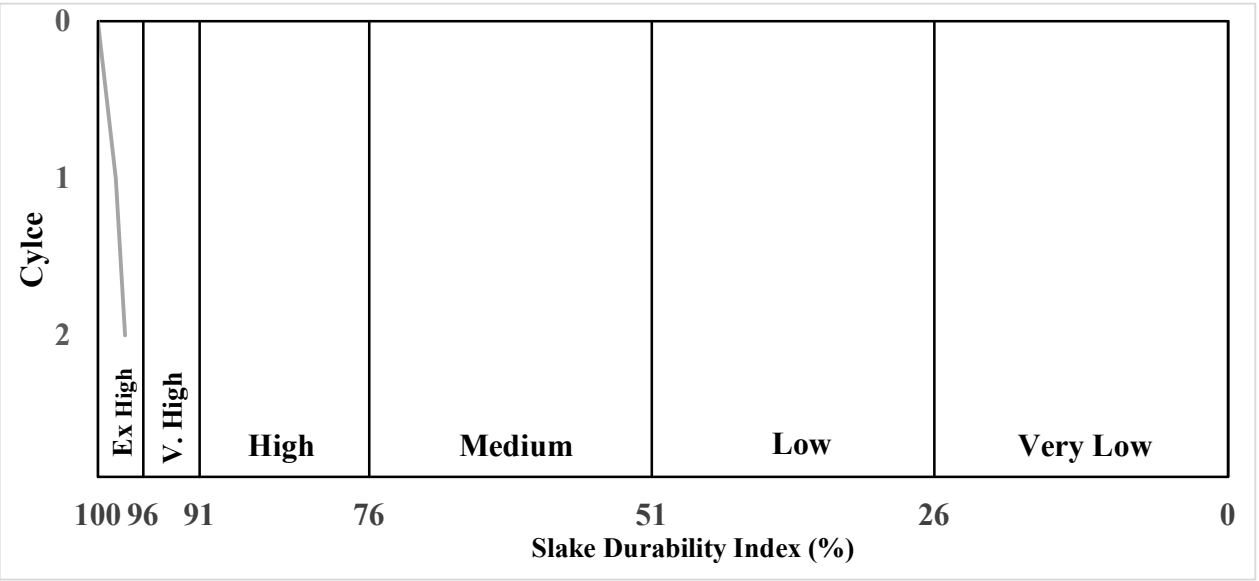
CT Project No: 21000720
Client: City of Sunbury, Ohio
Project Name: Walnut Street Stabilization
Location: Sunbury, Ohio

Sample No.	Boring ID	RC No.	Depth (ft)
3	B-2	RC-1	9.6 to 11.5

As Received Moisture Content (%)	Slake Durability Index		I_{d2} Durability Classification*
	I_{d1} (%)	I_{d2} (%)	
0.1	98.4	97.6	Extremely High

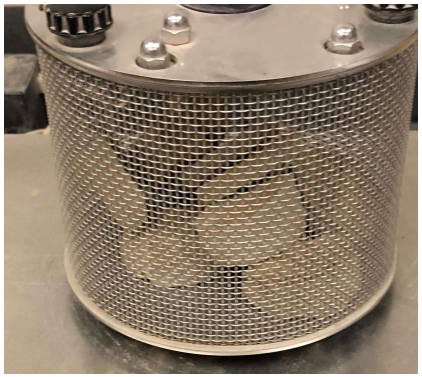
** based on Franklin & Chandra, 1972*

I_{d2} Standard Description
Type II—Retained specimens consist of large and small fragments.



Sample Before Testing

Sample After Cycle 1



Sample After Cycle 2

Laboratory Test Results
Slake Durability of Shales and Other Similar Weak Rocks (ASTM D 4644)

Technician: *TM/KKC*

Date Tested: *1/18/2024 to 1/24/2024*

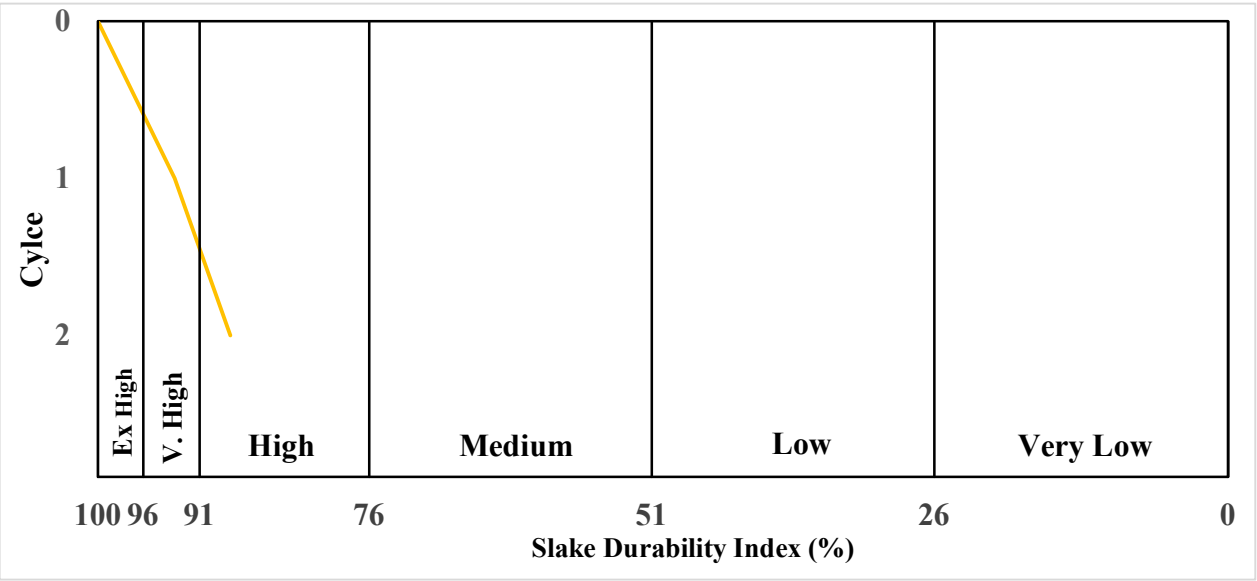
CT Project No: 21000720
Client: City of Sunbury, Ohio
Project Name: Walnut Street Stabilization
Location: Sunbury, Ohio

Sample No.	Boring ID	RC No.	Depth (ft)
4	B-2	RC-4	24.3 to 25.2

As Received Moisture Content (%)	Slake Durability Index		I_{d2} Durability Classification*
	I_{d1} (%)	I_{d2} (%)	
0.5	93.2	88.3	High

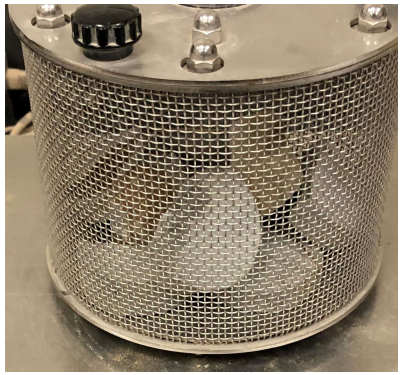
** based on Franklin & Chandra, 1972*

I_{d2} Standard Description
Type II—Retained specimens consist of large and small fragments.



Sample Before Testing

Sample After Cycle 1



Sample After Cycle 2

		Sample Depth	Diameter, W		Total Length, D			Length to Width Ratio	Load	Platen Penetration		Separation of Loading Points, D'	Axial Equivalent Diameter^2 (De^2) [4D'W/pi]	De	Uncorrected Is	F	Is(50) [F x Is]	Calculated Is(50)	Calculated Is(50)	Strength Conversion Factor, K	UCS Estimation		Tested UCS
Specimen	ID	(feet)	(in)	(mm)	(in)	(mm)	Test Type	[D/W]	kN	(in)	(mm)	(mm)	(mm^2)	(mm)	(MPa)	(De/50)^0.45	(Mpa)	(psi)	(tsf)	(Unitless)	(MPa)	(psi)	(psi)
1	B-1 (RC-1)	7.8 to 8.0	1.96	49.8	2.53	64.3	Axial	1.3	12.5	0.130	3.302	61.0	3864.1	62.2	3.2	1.1	3.6	517	37	23	74.4	10791	No Test
2	B-1 (RC-3)	19.7 to 19.9	1.96	49.8	2.82	71.6	Axial	1.4	1.0	0.025	0.635	71.0	4500.0	67.1	0.2	1.1	0.3	37	3	23	5.1	741	No Test
3	B-2 (RC-2)	13.9 to 14.3	1.96	49.8	2.29	58.2	Axial	1.2	2.5	0.110	2.794	55.4	3509.9	59.2	0.7	1.1	0.8	112	8	23	16.4	2376	No Test
4	B-2 (RC-4)	23.8 to 24.3	1.96	49.8	2.79	70.9	Axial	1.4	20.0	0.075	1.905	69.0	4371.2	66.1	4.6	1.1	5.2	753	54	23	105.2	15263	No Test