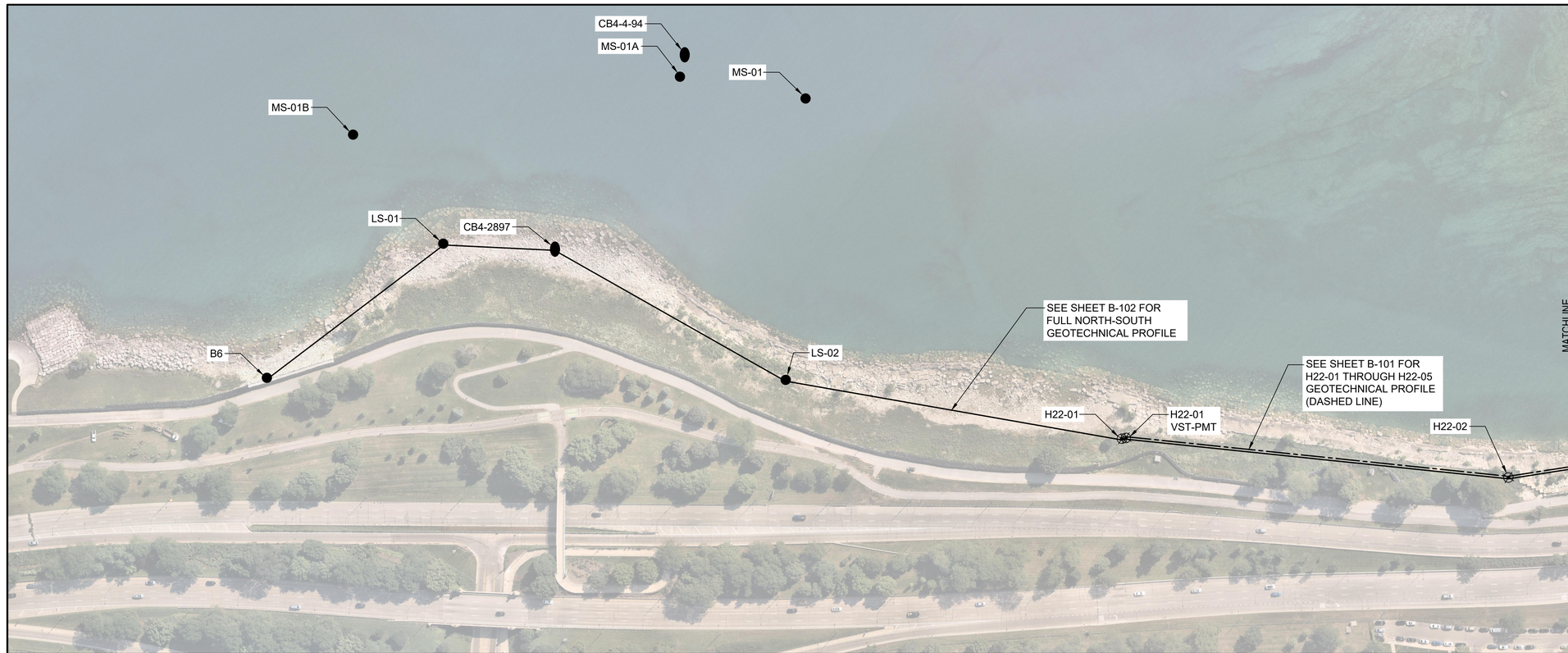
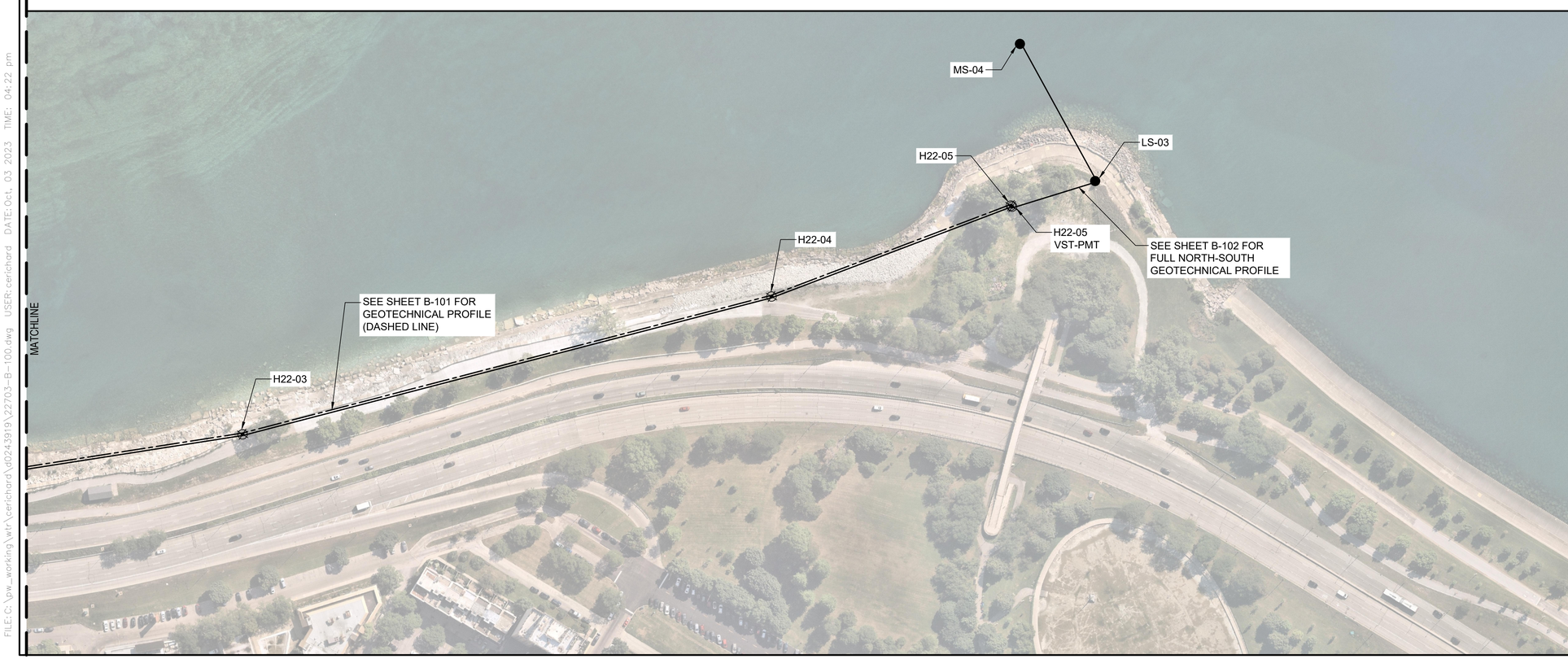
US Army Corps of Engineers®

Chicago District
Planning Branch
231 South La Salle Street
Suite 1500
Chicago, Illinois 60604
312-353-6400

Appendix C – Historical Borings Log

Draft Supplemental Environmental Assessment Morgan Shoal Revetment Reconstruction (45th - 51st)





SHEET NOTES

1. 2022 BORINGS WERE COMPLETED BY WANG ENGINEERING INC. IN 2022 AND HISTORICAL BORINGS ARE PERFORMED BY OTHERS IN THE 1990s AND EARLY 2000s.
2. SEE GEOTECHNICAL PROFILES OF UPPER PLAN AND LOWER PLAN ON SHEETS B-101 AND B-102, RESPECTIVELY.
3. VANE SHEAR AND PRESSURE METER TEST WERE COMPLETED ALONG WITH THE 2022 BORING SCHEDULE.

LEGEND

———	GEOTECHNICAL PROFILE B6 TO LS-03
— - —	GEOTECHNICAL PROFILE H22-01 TO H22-05
H22-02 ⊗	APPROXIMATE 2022 SOIL BORING LOCATION
H22-01 VST-PMT ⊗	APPROXIMATE 2022 SOIL BORING LOCATION (FOR VANE SHEAR AND PRESSURE METER TESTS)
MS-01 ●	APPROXIMATE 2004 SOIL BORING LOCATION (EXISTING)
CB4-4-94 ●	APPROXIMATE LOCATION OF PREVIOUS HISTORICAL BORINGS

0' 50' 100' 200'

NOT FOR CONSTRUCTION

CDOT

CHICAGO PARK DISTRICT

PBC

CHICAGO SHORELINE PROTECTION PROJECT

MORGAN SHOAL REVETMENT RECONSTRUCTION
45TH STREET TO 51ST STREET
CHICAGO, IL 60653

CHICAGO PARK DISTRICT
CITY OF CHICAGO, MAYOR LORI E. LIGHTFOOT

Architect of Record:

SMITHGROUP

ADDRESS: 35 EAST WACKER
SUITE 900
CHICAGO, ILLINOIS 60601
PHONE: 312.641.0770
WEB: www.smithgroup.com

Stantec Consulting Services, Inc.
Chicago, IL
Structural Engineers of Record

Infrastructure Engineering, Inc.
Chicago, IL
Civil Engineers of Record

Latent Design Corporation
Chicago, IL
Architects

Wang Engineering, Inc.
Lombard, IL
Geotechnical Consultant

Living Habitats, LLC
Chicago, IL
Ecological Consultant

American Surveying & Engineering
Chicago, IL
Surveying Consultant

CCJM Engineers
Chicago, IL
MEP Consultant

Thornton Tomasetti
Chicago, IL
Structural Consultant

Issuance

Mark	Description	Date
1	Schematic Design	05/2022
2	60% Detailed Design	01/2023
3	90% Final Engineering	10/2023

PBC Project Name: Chicago Shoreline Protection Project

PBC Contract No.: 22703

Project No.: 13578

Title: 2022 AND PREVIOUS HISTORICAL BORINGS

Sheet

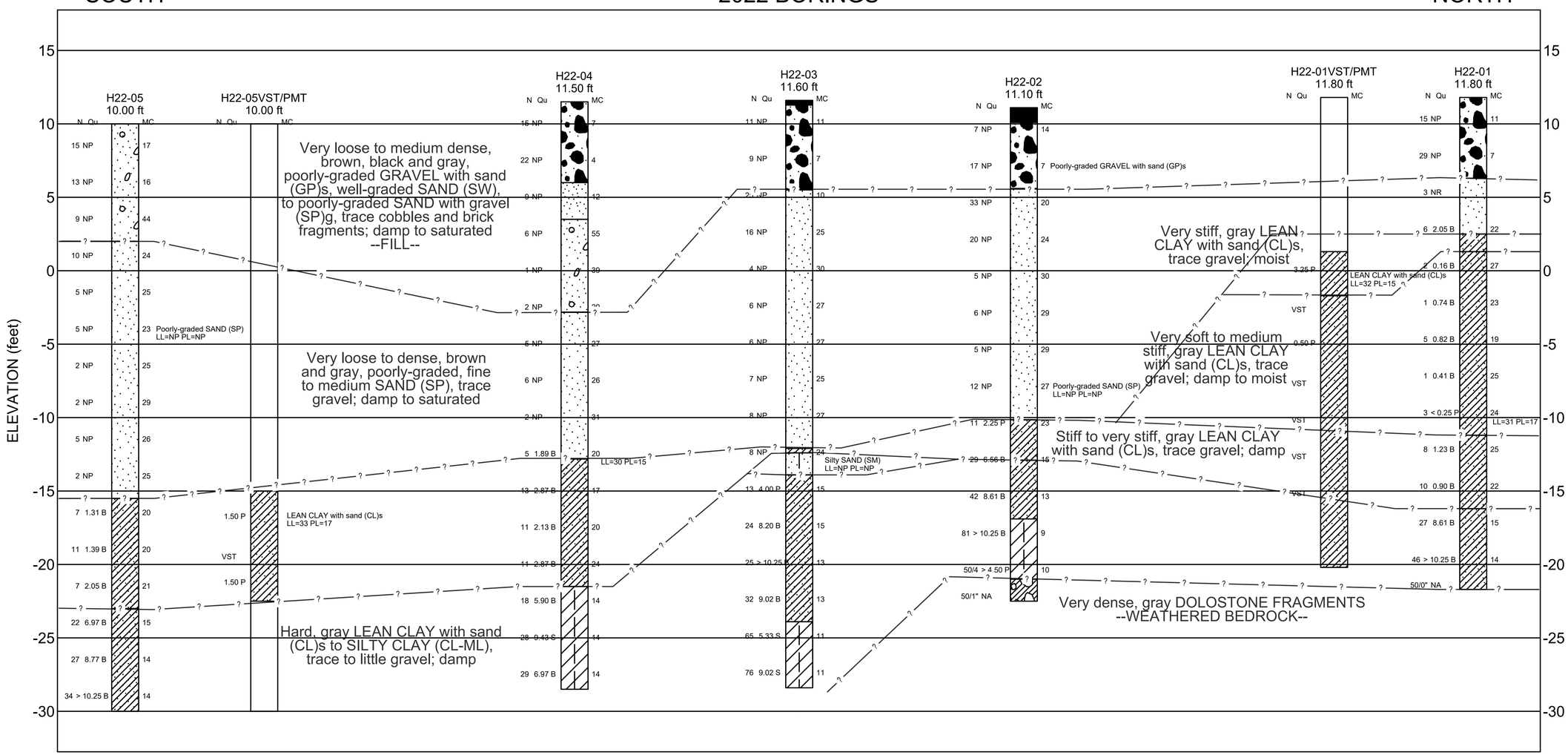
B-100

SHEET NOTES

1. THIS GEOTECHNICAL PROFILE ALONG THE ALIGNMENT WAS PREPARED BY WANG ENGINEERING INC (WEI). ALL INFORMATION AND LITHOLOGICAL INTERPRETATIONS ARE FOR INFORMATION ONLY. FOR GEOTECHNICAL INFORMATION REFER TO GEOTECHNICAL DATA REPORT PREPARED BY (WEI) AND INCLUDED IN THE SPECIFICATIONS.
2. THE BOUNDARY BETWEEN THE SOIL LAYERS AND LITHOLOGIES SHOWN ON THIS DRAWING AND PRESENTED IN THE WANG GEOTECHNICAL REPORT ARE BOTH BASED ON INTERPRETATIONS AND APPROXIMATIONS AND COULD VARY IN THE FIELD, ESPECIALLY BETWEEN THE BOREHOLE LOGS.

NOT FOR CONSTRUCTION

SOUTH — 2022 BORINGS — NORTH



LITHOLOGY GRAPHICS

- USCS Poorly-graded Sandy Gravel
- USCS Poorly-graded Sand
- USCS Low Plasticity Sandy Clay
- Topsoil
- USCS Low Plasticity Silty Clay
- Weathered bedrock
- USCS Silty Sand
- USCS Well-graded Sand
- USCS Poorly-graded Gravelly Sand

0' 50' 100' 200'

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CHICAGO PARK DISTRICT
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CHICAGO SHORELINE PROTECTION PROJECT
MORGAN SHOAL REVETMENT RECONSTRUCTION
45TH STREET TO 51ST STREET
CHICAGO, IL 60653

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CITY OF CHICAGO, MAYOR LORI E. LIGHTFOOT

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SMITHGROUP
ADDRESS: 35 EAST WACKER
SUITE 900
CHICAGO, ILLINOIS 60601
PHONE: 312.641.0770
WEB: www.smithgroup.com

Stantec Consulting Services, Inc.
Chicago, IL
Structural Engineers of Record

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Chicago, IL
Civil Engineers of Record

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Lombard, IL
Geotechnical Consultant

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Chicago, IL
Ecological Consultant

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Structural Consultant

Issuance

Mark	Description	Date
1	Schematic Design	05/2022
2	60% Detailed Design	01/2023
3	90% Final Engineering	10/2023

PBC Project Name: Chicago Shoreline Protection Project
PBC Contract No.: 22703
Project No.: 13578

Title
GEOTECHNICAL PROFILE
SHEET 1 OF 2

Sheet
B-101

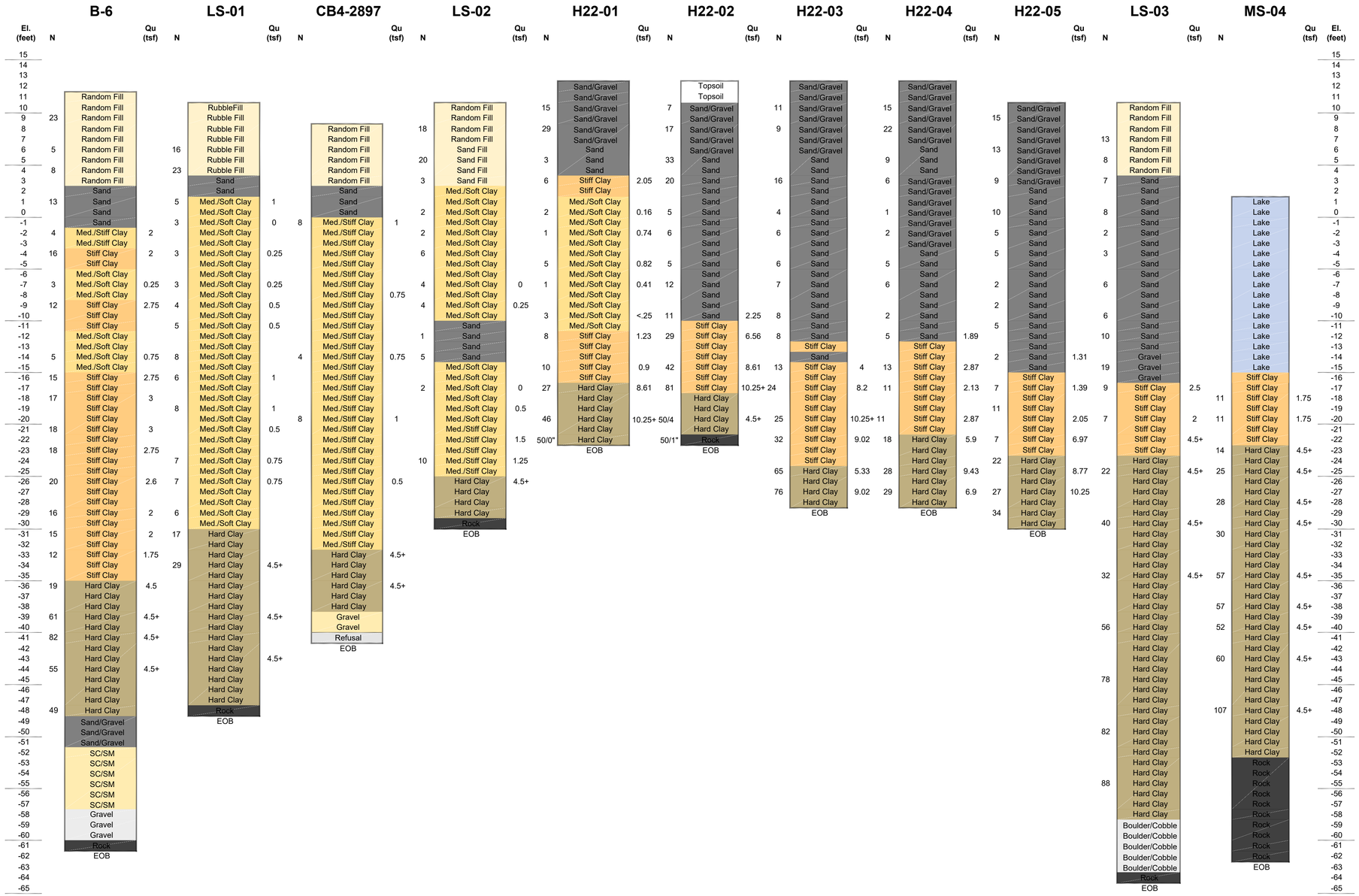
SHEET NOTES

1. N REPRESENTS THE STANDARD PENETRATION BLOW COUNTS AND QU (TSF) REPRESENTS UNCONFINED COMPRESSION STRENGTH OF THE SOIL MATERIAL LAYERS.
2. THIS BOREHOLE LOG PROFILE IS FOR INFORMATION ONLY. IN CASE OF DISCREPANCY BETWEEN THIS PROFILE INFORMATION AND BOREHOLE LOG INFORMATION FOR LITHOLOGY, N AND QU VALUES, THE INFORMATION IN THE BOREHOLE LOGS SHALL GOVERN.

NOT FOR CONSTRUCTION

LEGEND

FILL/ RUBBLE	FILL MATERIAL
SP/SM & GW/GM	SAND AND GRAVEL LOOSE TO MEDIUM DENSE, FINE TO MEDIUM GRAINED
CL & CL/ML	SOFT TO MEDIUM TO STIFF CLAY
CL	STIFF SILTY CLAY
CL/ML & SC/SM	HARD SILTY CLAY - CLAYEY SAND /GRAVEL - HARDPAN
ROCK	BEDROCK/ BOULDER/ REFUSAL



CDOT

CHICAGO PARK DISTRICT

PBC

CHICAGO SHORELINE PROTECTION PROJECT

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45TH STREET TO 51ST STREET
CHICAGO, IL 60653

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ADDRESS: 35 EAST WACKER
SUITE 900
CHICAGO, ILLINOIS 60601
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Issuance

Mark	Description	Date
1	Schematic Design	05/2022
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3	90% Final Engineering	10/2023

PBC Project Name: Chicago Shoreline Protection Project
PBC Contract No.: 22703
Project No.: 13578

Title
GEOTECHNICAL PROFILE
SHEET 2 OF 2

Sheet
B-102

FILE: C:\pw_working\wtr\cerichard\d0243919\22703-B-102.dwg USER: cerichard DATE: Oct. 03 2023 TIME: 04:22 pm

Wang Engineering
A Terracon Company

BORING LOG LEGEND

Relative Drilling Resistance		
RDR	Term	Criterion
1	Very Easy	No chatter, very little resistance, very fast and steady drill advance
2	Easy	No chatter, some resistance, fast and steady drill advance rate
3	Moderate	Some chatter, firm drill resistance, moderate advance
4	Hard	Frequent chatter, variable drill resistance, slow advance rate
5	Very Hard	Constant chatter, variable and very slow drill advance, nearly refusal

Coarse Gradation (mm) (ASTM D2488)	
Gravel	4.75 to 75
Cobbles	75 to 300
Boulders	> 300

Proportional Terms (%) (ASTM D2488)	
Trace	<5
Few	5 to 10
Little	15 to 25
Some	30 to 45
Mostly	50 to 100

Relative Density of Non-Cohesive Soils (ASTM D1586)	
No. of Blows/ft	Relative Density
0 - 4	Very Loose
4 - 10	Loose
10 - 30	Medium Dense
30 - 50	Dense
> 50	Very Dense

Consistency of Cohesive Soils (ASTM D1586)	
Qu (tsf)	Consistency
< 0.25	Very Soft
0.25 - 0.50	Soft
0.50 - 1.00	Medium Stiff
1.00 - 2.00	Stiff
2.00 - 4.00	Very Stiff
> 4.00	Hard

Soil Moisture Conditions	
Term	Appearance and Feel
Dry	Soil sample looks and feels powdery or dusty; no indication of moisture. Free-running granular soils.
Damp	Cohesive soils cannot be molded easily without adding water. Granular soil may not flow very easily.
Moist	Soil is near the optimum moisture content. Cohesive soils are near the plastic limit. Soil changes color slightly when exposed to air for a short period.
Wet	One may feel a high degree of moisture, yet no free water is visible. Water may become visible if the sample is squeezed. Cohesive soil appears weak and sticks to and/or stains hands. Granular soils tend to cohere.
Saturated	Applied to granular soils that have free surface water; water drains freely from the sample.

Sample Type Symbols

Split Spoon
Shelby Tube
No Recovery (NR)
In-situ Vane Shear Test (VST)
S_u = Shear Strength
undis = Undisturbed soil
remold = Remolded soil

Drill Rig:
17 D50 A [87%]
- SPT Hammer Efficiency
- Rig Type (A or T)
- Rig Model
- Calibration Year

A = All Terrain Vehicle Rig
T = Truck Mounted Rig

NP= Non-plastic
NA= Not applicable
L_L = Liquid Limit
P_L = Plastic Limit
HSA = Hollow Stem Auger
SPT = Standard Penetration Test
Q_u = Unconfined Compressive Strength Test
P = Calibrated Pocket Penetrometer
S = Shear failure (Rimac)
B = Bulge failure (Rimac)

12/27/2022

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Page 1 of 1

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lomard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG H22-01

WEI Job No.: KE225171

Client: SmithGroup
Project: Morgan Shoal Revetment
Location: Chicago, IL

Datum: LWD
Elevation: 11.80 ft
North: 1873791.73 ft
East: 1187869.21 ft
Station: NA
Offset: NA

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/6in)	Qu (tsf)	Moisture Content (%)
	Medium dense, brown, poorly-graded GRAVEL with sand (GP)s, trace brick fragments; damp --FILL-- --RDR 2--		X	1	7 7 8	NP	11
6		6	X	2	20 19 10	NP	7
4.3	Very loose to loose, gray, poorly-graded, fine SAND (SP); moist to saturated --RDR 2--		O	3	1 1 2	NR	
2.5	Very stiff, gray LEAN CLAY with sand (CL)s, trace gravel; moist --RDR 2--	10	X	4	4 3 3	2.05 B	22
1.3	Very soft to medium stiff, gray LEAN CLAY with sand (CL)s, trace gravel; moist --RDR 2--		X	5	1 1 1	0.16 B	27
		15	X	6	0 0 1	0.74 B	23
			X	7	1 2 3	0.82 B	19
		20	X	8	0 0 1	0.41 B	25
	--L_L(%)=31, P_L(%)=15--		X	9	0 2 1	<0.25 P	24
-11.2	Medium stiff to stiff, gray LEAN CLAY with sand (CL)s, trace gravel; damp --RDR 2--	25	X	10	1 4 4	1.23 B	25
	Hard, gray LEAN CLAY with sand (CL)s, trace to little gravel; damp --RDR 2-3--	30	X	11	4 4 6	0.90 B	22
			X	12	5 10 17	8.61 B	15
			X	13	20 25 25	>10.25 B	14
-21.7	--Roller Bit REFUSAL-- Boring terminated at 33.50 ft	35		14	50/0"		
		40					
		45					
		50					

GENERAL NOTES

Begin Drilling: 11-01-2022 Complete Drilling: 11-01-2022
Drilling Contractor: Wang Testing Services Drill Rig: 21GeoA[96%]
Driller: RR&AG Logger: M. Rojo Checked by: J. Bensen
Drilling Method: 2.25" ID HSA to 10 ft, mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ 8.50 ft
At Completion of Drilling: ▼ mud in borehole
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC - KE225171.GPJ - WANGENG.GDT - 12/28/22

Page 1 of 1

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lomard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG H22-01VST/PMT

WEI Job No.: KE225171

Client: SmithGroup
Project: Morgan Shoal Revetment
Location: Chicago, IL

Datum: LWD
Elevation: 11.80 ft
North: 1873787.09 ft
East: 1187873.70 ft
Station: NA
Offset: NA

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/6in)	Qu (tsf)	Moisture Content (%)
	Blind drill to 26 feet						
0.8	Very stiff, gray LEAN CLAY with sand (CL)s, trace gravel --L_L(%)=32, P_L(%)=15-- --%Gravel=0.6-- --%Sand=25.4-- --%Silt=26.6-- --%Clay=47.3-- --specific gravity= 2.668--		X	1	PUSH	3.25 P	
-1.7	Gray LEAN CLAY with sand (CL)s, trace gravel --VST#1: 14.5 feet-- --$S_{u\ undis}$= 1,596.5 psf-- --$S_{u\ remold}$= 430.9 psf--	15	X	2			
			X	3	PUSH	0.50 P	
	--VST#2: 19.5 feet-- --$S_{u\ undis}$= 2,197.8 psf-- --$S_{u\ remold}$= 430.9 psf--	20	X	4			
	--VST#3: 22.0 feet-- --$S_{u\ undis}$= 2,887.3 psf-- --$S_{u\ remold}$= 1,379.0 psf--		X	5			
	--VST#4: 24.5 feet--	25	X	6			
	--$S_{u\ undis}$= 1,809.9 psf-- --$S_{u\ remold}$= 1,121.1 psf--						
	--VST#5: 27.0 feet-- --$S_{u\ undis}$= 1,809.9 psf-- --$S_{u\ remold}$= 1,379.0 psf--	30	X	7			
	--Pressuremeter Test # 1: 30 ft-- --Modulus Eo: 95 tsf-- --Limit pressure PL: 8.4 tsf-- --Initial pressure P0: 1.3 tsf--						
30.2	Boring terminated at 32.00 ft	35					
		40					
		45					
		50					

GENERAL NOTES

Begin Drilling: 11-03-2022 Complete Drilling: 11-03-2022
Drilling Contractor: Wang Testing Services Drill Rig: 21GeoA[96%]
Driller: RR&AG Logger: M. Rojo Checked by: J. Bensen
Drilling Method: 2.25" ID HSA to 10 ft, mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ NA
At Completion of Drilling: ▼ NA
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC - KE225171.GPJ - WANGENG.GDT - 12/28/22

Page 1 of 1

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lomard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG H22-02

WEI Job No.: KE225171

Client: SmithGroup
Project: Morgan Shoal Revetment
Location: Chicago, IL

Datum: LWD
Elevation: 11.10 ft
North: 1873234.75 ft
East: 1188153.29 ft
Station: NA
Offset: NA

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/6in)	Qu (tsf)	Moisture Content (%)
10.1	12-inch thick, black SILTY SAND (SM) --TOPSOIL-- Loose to medium dense, black and gray, poorly-graded GRAVEL with sand (GP)s, trace cobbles; damp --FILL-- --RDR 2--		X	1	1 3 4	NP	14
6	--L_L(%)=NP, P_L(%)=NP-- --%Gravel=56.3-- --%Sand=31.5-- --%Silt=6.5-- --%Clay=5.8--	6	X	2	24 9 8	NP	7
3.6	Loose to dense, brown, poorly-graded SAND (SP), trace gravel; damp to saturated --RDR 2--		X	3	12 16 17	NP	20
		10	X	4	8 10 10	NP	24
			X	5	2 2 3	NP	30
		15	X	6	1 3 3	NP	29
			X	7	3 2 3	NP	29
	--L_L(%)=NP, P_L(%)=NP-- --%Gravel=0.0-- --%Sand=96.6-- --%Silt=2.4-- --%Clay=1.0--	20	X	8	2 6 6	NP	27
-10.2	--black, medium SAND-- Very stiff, gray LEAN CLAY with sand (CL)s, trace gravel; damp --RDR 2--		X	9	4 4 7	2.25 P	23
-12.9	Hard, gray LEAN CLAY with sand (CL)s, trace gravel; damp	25	X	10	6 10 19	6.56 B	15
	--RDR 2--						
-16.9	Hard, gray SILTY CLAY (CL-ML), trace gravel; damp --2-4--	30	X	11	12 20 22	8.61 B	13
			X	12	13 30 51	>10.25 B	9
21.0	Very dense, gray DOLOSTONE FRAGMENTS		X	13	29 35 50/4	>4.50 P	10
22.5	--WEATHERED BEDROCK-- --Roller Bit REFUSAL-- Boring terminated at 33.60 ft	35		14	50/1"		
		40					
		45					
		50					

GENERAL NOTES

Begin Drilling: 11-01-2022 Complete Drilling: 11-01-2022
Drilling Contractor: Wang Testing Services Drill Rig: 21GeoA[96%]
Driller: RR&AG Logger: M. Rojo Checked by: J. Bensen
Drilling Method: 2.25" ID HSA to 10 ft, mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ 9.00 ft
At Completion of Drilling: ▼ mud in borehole
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC - KE225171.GPJ - WANGENG.GDT - 12/28/22

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Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lomard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG H22-03

WEI Job No.: KE225171

Client: SmithGroup
Project: Morgan Shoal Revetment
Location: Chicago, IL

Datum: LWD
Elevation: 11.60 ft
North: 1872874.69 ft
East: 1188473.16 ft
Station: NA
Offset: NA

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/6in)	Qu (tsf)	Moisture Content (%)
11.3	4-inch thick, black LEAN CLAY (CL) --TOPSOIL-- Loose to medium dense, black and gray, poorly-graded GRAVEL with sand (GP)s, trace brick fragments; damp --FILL-- --RDR 2--		X	1	8 6 6	NP	11
6		6	X	2	1 2 7	NP	7
5.5	Loose to medium dense, brown, poorly-graded, fine SAND (SP), trace gravel; damp to saturated --RDR 2--		X	3	7 9 16	NP	10
		10	X	4	4 7 9	NP	25
			X	5	2 2 2	NP	30
		15	X	6	1 2 4	NP	27
			X	7	2 4 4	NP	27
		20	X	8	1 2 5	NP	25
			X	9	2 4 4	NP	27
-12.1	Soft (0.25P), gray LEAN CLAY with sand (CL)s, trace gravel;	25	X	10	0 4 4	NP	24
	moist Loose, gray, silty SAND (SM), few lean clay laminations; moist --RDR 2-- --L_L(%)=NP, P_L(%)=NP-- --%Gravel=0.4-- --%Sand=73.2-- --%Silt=23.4-- --%Clay=3.0--	30	X	11	3 5 6	4.00 P	15
	Hard, gray LEAN CLAY with sand (CL)s; damp --RDR 2--		X	12	9 11 13	8.20 B	15
			X	13	9 11 14	>10.25 B	13
-29.9	Hard, gray SILTY CLAY (CL-ML), trace gravel; damp --RDR 2-- --rig chatter @ 37.0 feet-- --possible cobbles--	35	X	14	12 12 20	9.02 B	13
			X	15	19 29 36	5.33 S	11
-31.4	Boring terminated at 40.00 ft	40	X	16	21 39 37	9.02 S	11
		45					
		50					

GENERAL NOTES

Begin Drilling: 10-31-2022 Complete Drilling: 10-31-2022
Drilling Contractor: Wang Testing Services Drill Rig: 21GeoA[96%]
Driller: RR&AG Logger: M. Rojo Checked by: J. Bensen
Drilling Method: 2.25" ID HSA to 10 ft, mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ 8.00 ft
At Completion of Drilling: ▼ mud in borehole
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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Page 1 of 1

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lomard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG H22-04

WEI Job No.: KE225171

Client: SmithGroup
Project: Morgan Shoal Revetment
Location: Chicago, IL

Datum: LWD
Elevation: 11.50 ft
North: 1872274.04 ft
East: 1189125.35 ft
Station: NA
Offset: NA

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/6in)	Qu (tsf)	Moisture Content (%)
	Medium dense, brown, poorly-graded GRAVEL with sand (GP)s, trace brick fragments; damp --FILL-- --RDR 2--		X	1	3 5 10	NP	7
6		6	X	2	9 11 11	NP	4
4.0	Loose, black, well-graded SAND (SW), trace gravel and brick fragments; damp --FILL-- --RDR 2--		X	3	3 5 4	NP	12
2.5	Brown, poorly-graded, fine SAND (SP); damp Very loose to loose, black, poorly-graded, medium SAND with gravel (SP)g, trace brick fragments; saturated --FILL-- --RDR 2--	10	X	4	0 0 6	NP	55
			X	5	0 0 1	NP	39
-2.8	Very loose to loose, gray, poorly-graded, fine SAND (SP), trace gravel; saturated --RDR 2--	15	X	6	1 1 1	NP	29
			X	7	1 1 4	NP	27
		20	X	8	2 2 4	NP	26
			X	9	2 1 1	NP	31
-12.8	Stiff to very stiff, gray LEAN	25	X	10	3 2 3	1.89 B	20
	CLAY with sand (CL)s, trace gravel; damp --RDR 2-- --L_L(%)=30, P_L(%)=15-- --specific gravity= 2.720--		X	11	3 4 9	2.87 B	17
		30	X	12	3 4 7	2.13 B	20
			X	13	3 4 7	2.87 B	24
-21.5	Hard, gray SILTY CLAY (CL-ML), trace gravel; damp --RDR 2-3--	35	X	14	7 7 11	5.90 B	14
			X	15	13 13 15	9.43 S	14
-28.5	Boring terminated at 40.00 ft	40	X	16	8 13 16	6.97 B	14
		45					
		50					

GENERAL NOTES

Begin Drilling: 11-02-2022 Complete Drilling: 11-02-2022
Drilling Contractor: Wang Testing Services Drill Rig: 21GeoA[96%]
Driller: RR&AG Logger: M. Rojo Checked by: J. Bensen
Drilling Method: 2.25" ID HSA to 16 ft, mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ 8.00 ft
At Completion of Drilling: ▼ mud in borehole
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC - KE225171.GPJ - WANGENG.GDT - 12/28/22

Page 1 of 1

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lomard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG H22-05

WEI Job No.: KE225171

Client: SmithGroup
Project: Morgan Shoal Revetment
Location: Chicago, IL

Datum: LWD
Elevation: 10.00 ft
North: 1872024.75 ft
East: 1189459.10 ft
Station: NA
Offset: NA

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/6in)	Qu (tsf)	Moisture Content (%)
	Loose to medium dense, black and brown, poorly-graded, fine to medium SAND with gravel (SP)g, trace brick fragments; damp to saturated --FILL-- --RDR 2--		X	1	4 5 10	NP	17
6		6	X	2	6 6 7	NP	16
3.5			X	3	3 5 4	NP	44
2.0	Very loose to medium dense, brown to gray, poorly-graded, fine SAND (SP), trace gravel; saturated --RDR 2--	10	X	4	5 5 5	NP	24
			X	5	2 2 3	NP	25
	--L_L(%)=NP, P_L(%)=NP-- --%Gravel=0.0-- --%Sand=95.6-- --%Silt=2.9-- --%Clay=1.6--	15	X	6	1 2 3	NP	23
			X	7	1 1 1	NP	25
		20	X	8	1 1 1	NP	29
			X	9	1 1 4	NP	26
		25	X	10	1 1 1	NP	25
-15.5	Stiff to very stiff, gray LEAN CLAY with sand (CL)s, trace gravel; moist --RDR 2--		X	11	3 3 4	1.31 B	20
		30	X	12	4 4 8	1.39 B	20
			X	13	8 4 3	2.05 B	21
-28.0	Hard, gray LEAN CLAY with sand (CL)s, trace gravel; damp --RDR 2--	35	X	14	8 9 13	6.97 B	15
			X	15	7 11 16	8.77 B	14
-30.0	Boring terminated at 40.00 ft	40	X	16	10 13 21	>10.25 B	14
		45					
		50					

GENERAL NOTES

Begin Drilling: 10-31-2022 Complete Drilling: 10-31-2022
Drilling Contractor: Wang Testing Services Drill Rig: 21GeoA[96%]
Driller: RR&AG Logger: M. Rojo Checked by: J. Bensen
Drilling Method: 2.25" ID HSA to 15 ft, mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ 6.00 ft
At Completion of Drilling: ▼ mud in borehole
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC - KE225171.GPJ - WANGENG.GDT - 12/28/22

Page 1 of 1

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lomard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG H22-05VST/PMT

WEI Job No.: KE225171

Client: SmithGroup
Project: Morgan Shoal Revetment
Location: Chicago, IL

Datum: LWD
Elevation: 10.00 ft
North: 1872027.31 ft
East: 1189459.42 ft
Station: NA
Offset: NA

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/6in)	Qu (tsf)	Moisture Content (%)
	Blind drill to 26 feet						
-16.0	Gray LEAN CLAY with sand (CL)s, trace gravel --L_L(%)=33, P_L(%)=17-- --%Gravel=0.9-- --%Sand=19.5-- --%Silt=30.5-- --%Clay=49.1-- --specific gravity= 2.717--		X	1	PUSH	1.50 P	
	--VST#1: 29.5 feet-- --$S_{u\ undis}$= 2,628.7 psf-- --$S_{u\ remold}$= 1,982.3 psf--	6	X	2			
			X	3	PUSH	1.50 P	
-22.5	Blind drill to 40 feet						
	--Pressuremeter Test # 1: 40 ft-- --Modulus Eo: 81 tsf-- --Limit pressure PL: 19.1 tsf-- --Initial pressure P0: 2.5 tsf--	30					
-30.0	Boring terminated at 40.00 ft	40					
		45					
		50					

GENERAL NOTES

Begin Drilling: 11-02-2022 Complete Drilling: 11-02-2022
Drilling Contractor: Wang Testing Services Drill Rig: 21GeoA[96%]
Driller: RR&AG Logger: M. Rojo Checked by: J. Bensen
Drilling Method: 2.25" ID HSA to 15 ft, mud rotary thereafter, boring
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ NA
At Completion of Drilling: ▼ NA
Time After Drilling: NA
Depth to Water: ▽ NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

WANGENGINC - KE225171.GPJ - WANGENG.GDT - 12/28/22

NOT FOR CONSTRUCTION

CDOT
CHICAGO PARK DISTRICT
PBC

CHICAGO SHORELINE PROTECTION PROJECT

MORGAN SHOAL REVETMENT RECONSTRUCTION
45TH STREET TO 51ST STREET
CHICAGO, IL 60653

CHICAGO PARK DISTRICT
CITY OF CHICAGO, MAYOR LORI E. LIGHTFOOT

Architect of Record:
SMITHGROUP
ADDRESS: 35 EAST WACKER SUITE 900 CHICAGO, ILLINOIS 60601
PHONE: 312.641.0770
WEB: www.smithgroup.com

Stantec Consulting Services, Inc.
Chicago, IL
Structural Engineers of Record

Infrastructure Engineering, Inc.
Chicago, IL
Civil Engineers of Record

Latent Design Corporation
Chicago, IL
Architects

Wang Engineering, Inc.
Lombard, IL
Geotechnical Consultant

Living Habitats, LLC
Chicago, IL
Ecological Consultant

American Surveying & Engineering
Chicago, IL
Surveying Consultant

CCJM Engineers
Chicago, IL
MEP Consultant

Thornton Tomasetti
Chicago, IL
Structural Consultant

Issuance

Mark	Description	Date
1	Schematic Design	05/2022
2	60% Detailed Design	01/2023
3	90% Final Engineering	10/2023

PBC Project Name: Chicago Shoreline Protection Project
PBC Contract No.: 22703
Project No.: 13578
Title: 2022 BORING LOGS

Sheet
B-103

FILE: C:\pw_working\wtr\cerichard\d0243919\22703-B-103.dwg USER: cerichard DATE: Oct. 03 2023 TIME: 04:23 pm

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: B-6 | Sheet No.: 1 of 4 | Job No.: 4070029

Date Started: 12/27/02 | Date Completed: 12/27/02 | Logged By: J. Casana | Checked By: M. Djavid
Total Depth (ft): 71.1 | Depth to Water (ft): 6.5 WD | Northing: 1875002
Drilling Contr.: CS Environmetal | Driller: M. Natali | Easting: 1187207
Drill Rig: Diedrich D-120 | Hammer: Automatic Automatic | Ground Elev.: 10.7 ft

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
0	10.7												Borehole advanced with 3.25" ID (6" OD) HSA with center plug and stinger tip bit. Soil blind-drilled to 1.0'.
1	9.7												
2	8.7	1	SS	HSA	6 8 15	23		8.8		Brown organic CLAY with sands and gravels (FILL-SC).			
3	7.7									3.0			
4	6.7	2	SS	HSA	2 3 2	5		12.0		Brown silty CLAY, trace sands and gravels (FILL-SC).			
5	5.7												
6	4.7									6.0			
7	3.7	3	SS	HSA	1 1 7	8		10.7		Sandy CLAY with gravel (FILL-SC).			Random Fill Groundwater table at 6.5'.
8	2.7												
9	1.7									8.5			
10	0.7	4	SS	HSA	3 5 8	13		16.0		Brown medium SAND, trace gravels (SP).			
11	-0.3												
12	-1.3	5	SS	HSA	1 2 2	4	2.0	14.0		11.8 Gray silty CLAY, trace gravels (CL).			
13	-2.3												
14	-3.3	6	SS	HSA	2 8 8	16	2.0	14.9		Same as above (ML).			
15	-4.3												
16	-5.3												
17	-6.3	7	SS	HSA	1 1 2	3	0.25	12.3		Same as above (CL).			
18	-7.3												
19	-8.3	8	SS	HSA	3 6 6	12	2.75	11.4					Clay Fill
20	-9.3												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: B-6 | Sheet No.: 2 of 4 | Job No.: 4070029

Date Started: 12/27/02 | Date Completed: 12/27/02 | Logged By: J. Casana | Checked By: M. Djav
Total Depth (ft): 71.1 | Depth to Water (ft): 6.5 WD | Northing: 1875002
Drilling Contr.: CS Environmetal | Driller: M. Natali | Easting: 1187207
Drill Rig: Diedrich D-120 | Hammer: Automatic Automatic | Ground Elev.: 10.7 ft

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
20	-9.3									Continuation:			
21	-10.3												
22	-11.3	9	ST										Thin-walled tube sampled from 21.0'-23.0'. Visual observation of stiff clay, wet.
23	-12.3												
24	-13.3	10	SS	HSA	1 2 3	5	0.75	16.5		Gray silty CLAY, trace gravels (CL).			Spoon contains 4" sand lense.
25	-14.3									25.5			
26	-15.3									Gray silty CLAY, trace gravels (CL).			
27	-16.3	11	SS	HSA	5 6 9	15	2.75	15.0					
28	-17.3												
29	-18.3	12	SS	HSA	4 7 10	17	3.0	14.5		Brownish-gray silty CLAY, trace gravels (CL).			
30	-19.3												
31	-20.3												
32	-21.3	13	SS	HSA	5 8 10	18	3.0	13.2					
33	-22.3												
34	-23.3	14	SS	HSA	5 8 10	18	2.75	11.7					
35	-24.3												
36	-25.3												
37	-26.3	15	SS	HSA	13 10 10	20	2.5	11.4					Upper Wadsworth Till
38	-27.3												
39	-28.3	16	SS	HSA	5 8 8	16	2.0	11.7					
40	-29.3												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: B-6 | Sheet No.: 3 of 4 | Job No.: 4070029

Date Started: 12/27/02 | Date Completed: 12/27/02 | Logged By: J. Casana | Checked By: M. Djavid
Total Depth (ft): 71.1 | Depth to Water (ft): 6.5 WD | Northing: 1875002
Drilling Contr.: CS Environmetal | Driller: M. Natali | Easting: 1187207
Drill Rig: Diedrich D-120 | Hammer: Automatic Automatic | Ground Elev.: 10.7 ft

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
40	-29.3									Continuation:			
41	-30.3												
42	-31.3	17	SS	HSA	5 6 9	15	2.0	12.5					
43	-32.3												
44	-33.3	18	SS	HSA	5 5 7	12	1.75	11.8					
45	-34.3												
46	-35.3												
47	-36.3	19	SS	HSA	6 8 11	19	4.5	8.8		Silty CLAY, trace gravel (CL).			
48	-37.3												
49	-38.3	20	SS	HSA	15 23 38	61	4.5+	8.4					
50	-39.3												
51	-40.3												
52	-41.3	21	SS	HSA	19 40 42	82	4.5+	7.5					
53	-42.3												
54	-43.3	22	SS	HSA	26 25 30	55	4.5+	8.4		Gray silty CLAY, trace gravel (CL).			Spoon contains 5" gravel lense.
55	-44.3												
56	-45.3	23	SS		57/6"		4.5+	8.2		Gray silty CLAY, trace gravel (CL).			Potential of cobble/ boulder zone.
57	-46.3												
58	-47.3												
59	-48.3	24	SS	HSA	35 26 23	49		8.7		Gray gravelly medium SAND, dense (SC).			Wadsworth Till
60	-49.3												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: B-6 | Sheet No.: 4 of 4 | Job No.: 4070029

Date Started: 12/27/02 | Date Completed: 12/27/02 | Logged By: J. Casana | Checked By: M. Djav
Total Depth (ft): 71.1 | Depth to Water (ft): 6.5 WD | Northing: 1875002
Drilling Contr.: CS Environmetal | Driller: M. Natali | Easting: 1187207
Drill Rig: Diedrich D-120 | Hammer: Automatic Automatic | Ground Elev.: 10.7 ft

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
60	-49.3									Continuation:			
61	-50.3												
62	-51.3	25	SS	HSA	14 27			12.5					Driller terminated hammer after 12" due to sand clogging the sampler.
63	-52.3									Gray CLAY (SC).			
64	-53.3	26	SS		8 27			9.9		Same as above (SM).			Low recovery due to problems with sand heave.
65	-54.3												
66	-55.3												
67	-56.3	27	SS	HSA	36 50/5"			7.3		Gray silty CLAY (ML-CL).			Potential of cobble/ boulder zone.
68	-57.3												
69	-58.3	28	SS		76/6"			5.9		68.5 Gray coarse to fine GRAVEL with silt and clay (GP).			Potential of cobble/ boulder zone. Glacial Till
70	-59.3			HSA									
71	-60.3	29	SS		50/1"					71.0 71.1			Dolomite Bedrock
72	-61.3									Bedrock at 71.1'. End of boring.			Borehole tremie grouted with cement-bentonite grout upon completion and abandoned. Note: RDR criteria not taken for this borehole.
73	-62.3												
74	-63.3												
75	-64.3												
76	-65.3												
77	-66.3												
78	-67.3												
79	-68.3												
80	-69.3												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: MS-01 | Sheet No.: 1 of 3 | Job No.: 4070029

Date Started: 4/16/04 | Date Completed: 4/16/04 | Logged By: Patrick Drilling | Checked By: J. Jobst
Total Depth (ft): 43.0' | Depth to Water (ft): n/a | Northing: 1874516
Drilling Contr.: Patrick Drilling | Driller: J. Copak | Easting: 1188054
Drill Rig: CME-75 ATV | Hammer: Automatic | Ground Elev.: 0.2'

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
0	0.2									Lake Michigan			
1	-0.8												
2	-1.8												
3	-2.8												
4	-3.8												
5	-4.8												
6	-5.8												
7	-6.8												
8	-7.8												
9	-8.8												
10	-9.8												
11	-10.8												
12	-11.8												
13	-12.8												
14	-13.8												
15	-14.8												
16	-15.8												
17	-16.8												
18	-17.8												
19	-18.8												
20	-19.8									Lake bottom at 19.8'. Blind drill down to 20.0'. 19.8			Lake Michigan

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: MS-01 | Sheet No.: 2 of 3 | Job No.: 4070029

Date Started: 4/16/04 | Date Completed: 4/16/04 | Logged By: Patrick Drilling | Checked By: J. Jobst
Total Depth (ft): 43.0' | Depth to Water (ft): n/a | Northing: 1874516
Drilling Contr.: Patrick Drilling | Driller: J. Copak | Easting: 1188054
Drill Rig: CME-75 ATV | Hammer: Automatic | Ground Elev.: 0.2'

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
20	-19.8									Continuation:			
21	-20.8	1	SPT	HSA	2/18"					Soft gray silty CLAY, trace fine to medium sand, medium plasticity, wet (CL).			
22	-21.8												
23	-22.8	2	SPT	HSA	2 2 2	4	0.5						Silty Clay
24	-23.8												
25	-24.8												
26	-25.8	3	SPT	HSA	1 2 4	6	0.5			26.0 Hard dark gray silty CLAY, little to some fine to coarse sand, trace find gravel, low plasticity, moist (CL).			
27	-26.8												
28	-27.8	4	SPT	HSA	12 23 45	68	4.5+						
29	-28.8												
30	-29.8	5	SPT	HSA	75/6"		4.5+						Glacial Till
31	-30.8												
32	-31.8												
33	-32.8	6	SPT		50/3"		4.5+			33.0 Limestone bedrock. RUN 1: 33.0'-43.0' REC: 113"/120" (94%) RQD: 95"/120" (79%)			Auger refusal at 33.0'. Rock cored with NX-size core barrel.
34	-33.8												
35	-34.8												
36	-35.8												
37	-36.8												
38	-37.8												
39	-38.8												Bedroc.
40	-39.8												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: MS-01 | Sheet No.: 3 of 3 | Job No.: 4070029

Date Started: 4/16/04 | Date Completed: 4/16/04 | Logged By: Patrick Drilling | Checked By: J. Jobst
Total Depth (ft): 43.0' | Depth to Water (ft): n/a | Northing: 1874516
Drilling Contr.: Patrick Drilling | Driller: J. Copak | Easting: 1188054
Drill Rig: CME-75 ATV | Hammer: Automatic | Ground Elev.: 0.2'

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
40	-39.8									Continuation:			
41	-40.8												
42	-41.8												
43	-42.8									43.0			
44	-43.8									End of Boring. Borehole abandoned upon completion.			
45	-44.8												
46	-45.8												
47	-46.8												
48	-47.8												
49	-48.8												
50	-49.8												
51	-50.8												
52	-51.8												
53	-52.8												
54	-53.8												
55	-54.8												
56	-55.8												
57	-56.8												
58	-57.8												
59	-58.8												
60	-59.8												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: LS-01 | Sheet No.: 1 of 4 | Job No.: 4070029

Date Started: 5/11/04 | Date Completed: 5/11/04 | Logged By: J. Jobst | Checked By: J. Jobst
Total Depth (ft): 59.4 | Depth to Water (ft): 7.0 WD | Northing: 1874880
Drilling Contr.: Stryker Drilling | Driller: F. Stryker | Easting: 1187542
Drill Rig: Diedrich D-50 | Hammer: Automatic | Ground Elev.: 10.6

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
0	10.6									grass			
1	9.6												Auger down to 3.5' with 3.25" ID HSA with center plug. SPT interval 1-2.5' skipped due to excessive rubble near surface.
2	8.6												
3	7.6												
4	6.6	1	SPT	HSA	11 9 7	16				Brick and concrete rubble fill.			Random Fill
5	5.6												
6	4.6												
7	3.6	2	SPT	HSA	4 6 17	23				7.0 Medium dense dark gray fine to medium SAND, trace silt, wet (SP-SM).			Groundwater table at 7.0'.
8	2.6			RDR=1									
9	1.6	3	SPT	HSA	7 2 3	5	1.0			8.0 Firm to stiff dark gray silty CLAY, some fine to coarse sand, wet (CL).			
10	0.6												
11	-0.4			RDR=1						11.0			
12	-1.4	4	SPT	HSA	1 2 1	3	0.0			Very soft dark gray silty CLAY, trace fine sand, medium plastic, moist (CL).			
13	-2.4												
14	-3.4	5	SPT	RDR=1 HSA	1 1 2	3	0.25						Soft Clay Fill
15	-4.4												
16	-5.4	6	SPT	RDR=1 HSA	1 1 2	3	0.25						
17	-6.4												
18	-7.4												
19	-8.4	7	SPT	RDR=1 HSA	1 2 2	4	0.5			With sporadic fine to medium grained dark gray sand lenses.			
20	-9.4												

NOT FOR CONSTRUCTION

CDOT

CHICAGO PARK DISTRICT

PBC

CHICAGO SHORELINE PROTECTION PROJECT

MORGAN SHOAL REVETMENT RECONSTRUCTION
45TH STREET TO 51ST STREET
CHICAGO, IL 60653

CHICAGO PARK DISTRICT
CITY OF CHICAGO, MAYOR LORI E. LIGHTFOOT

Architect of Record:

SMITHGROUP

ADDRESS: 35 EAST WACKER
SUITE 900
CHICAGO, ILLINOIS 60601
PHONE: 312.641.0770
WEB: www.smithgroup.com

Stantec Consulting Services, Inc.
Chicago, IL
Structural Engineers of Record

Infrastructure Engineering, Inc.
Chicago, IL
Civil Engineers of Record

Latent Design Corporation
Chicago, IL
Architects

Wang Engineering, Inc.
Lombard, IL
Geotechnical Consultant

Living Habitats, LLC
Chicago, IL
Ecological Consultant

American Surveying & Engineering
Chicago, IL
Surveying Consultant

CCJM Engineers
Chicago, IL
MEP Consultant

Thornton Tomasetti
Chicago, IL
Structural Consultant

Issuance

Mark	Description	Date
1	Schematic Design	05/2022
2	60% Detailed Design	01/2023
3	90% Final Engineering	10/2023

PBC Project Name: Chicago Shoreline Protection Project
PBC Contract No.: 22703
Project No.: 13578

Title: HISTORICAL BORING LOGS SHEET 1 OF 5

Sheet: B-104

FILE: C:\pw_working\wtr\cerichard\d0243919\22703-B-104.dwg USER: cerichard DATE: Oct. 03 2023 TIME: 04:23 pm

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: LS-01
Sheet No.: 2 of 4
Job No.: 4070029

Date Started: 5/11/04 | Date Completed: 5/11/04 | Logged By: J. Jobst | Checked By: J. Jobst*
Total Depth (ft): 59.4 | Depth to Water (ft): 7.0 WD | Northing: 1874880
Drilling Contr.: Stryker Drilling | Driller: F. Stryker | Easting: 1187542
Drill Rig: Diedrich D-50 | Hammer: Automatic | Ground Elev.: 10.6

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
20	-9.4									Continuation:			
21	-10.4			RDR=1	2					With trace to some fine to medium sand, trace fine gravel. Grades black at bottom of spoon.			
22	-11.4	8	SPT HSA		2 3	5	0.5						
23	-12.4									23.0'			
24	-13.4	9	SPT HSA	RDR=2	4 4 4	8				Firm to stiff dark gray silty CLAY, with sand and silt lenses and shale pieces, moist (CL).			
25	-14.4												
26	-15.4			RDR=2	3								
27	-16.4	10	SPT HSA		3 3	6	1.0						
28	-17.4												
29	-18.4			RDR=2	2								
30	-19.4	11	SPT HSA		4 4	8	1.0						
31	-20.4			RDR=2									Thin-walled tube sampled from 31'-33 '.
32	-21.4	12	TW HSA				0.5						Silty Clay
33	-22.4												
34	-23.4	13	SPT HSA		6 3 4	7	0.75			With trace rock chips/fragments.			
35	-24.4												
36	-25.4			RDR=2	3								
37	-26.4	14	SPT HSA		3 4	7	0.75						
38	-27.4												
39	-28.4	15	SPT HSA	RDR=2	2 2 4	6							
40	-29.4												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: LS-01
Sheet No.: 3 of 4
Job No.: 4070029

Date Started: 5/11/04 | Date Completed: 5/11/04 | Logged By: J. Jobst | Checked By: J. Jobst
Total Depth (ft): 59.4 | Depth to Water (ft): 7.0 WD | Northing: 1874880
Drilling Contr.: Stryker Drilling | Driller: F. Stryker | Easting: 1187542
Drill Rig: Diedrich D-50 | Hammer: Automatic | Ground Elev.: 10.6

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
40	-29.4									Continuation:			
41	-30.4			RDR=2	3								
42	-31.4	16	SPT HSA		7 10	17				Hard, dark gray silty CLAY, trace dolomite chips, trace to some fine to coarse sand and fine gravel, moist (CL).			
43	-32.4												
44	-33.4	17	SPT	RDR=2	10 12 17	29	4.5+						Switch to sampling on 5-foot centers.
45	-34.4												
46	-35.4		HSA										
47	-36.4												
48	-37.4			RDR=3									
49	-38.4	18	SPT		37 50/5"		4.5+			Dry.			Potential cobbles and boulders.
50	-39.4												Glacial Till
51	-40.4		HSA										
52	-41.4			RDR=2 4									
53	-42.4												
54	-43.4	19	SPT		26 50/6"		4.5+						Potential cobbles and boulders.
55	-44.4												
56	-45.4		HSA										
57	-46.4												
58	-47.4			RDR=4 5									
59	-48.4	20	SPT		37 50/5"	50				Weathered dolomite.			Bedrock
60	-49.4									End of boring at 59.4'. Borehole			

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: LS-01
Sheet No.: 4 of 4
Job No.: 4070029

Date Started: 5/11/04 | Date Completed: 5/11/04 | Logged By: J. Jobst | Checked By: J. Jobs
Total Depth (ft): 59.4 | Depth to Water (ft): 7.0 WD | Northing: 1874880
Drilling Contr.: Stryker Drilling | Driller: F. Stryker | Easting: 1187542
Drill Rig: Diedrich D-50 | Hammer: Automatic | Ground Elev.: 10.6

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
60	-49.4									Continuation: backfilled with spoils and bentonite chips and abandoned upon completion.			
61	-50.4												
62	-51.4												
63	-52.4												
64	-53.4												
65	-54.4												
66	-55.4												
67	-56.4												
68	-57.4												
69	-58.4												
70	-59.4												
71	-60.4												
72	-61.4												
73	-62.4												
74	-63.4												
75	-64.4												
76	-65.4												
77	-66.4												
78	-67.4												
79	-68.4												
80	-69.4												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: LS-02
Sheet No.: 1 of 3
Job No.: 4070029

Date Started: 5/11/04 | Date Completed: 5/11/04 | Logged By: J. Jobst | Checked By: J. Jobst
Total Depth (ft): 41.1' | Depth to Water (ft): 7.0 WD | Northing: 1874298
Drilling Contr.: Stryker Drilling | Driller: F. Stryker | Easting: 1187656
Drill Rig: Diedrich D-50 | Hammer: Automatic | Ground Elev.: 10.3

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
0	10.3									grass			Auger down to 1.0' with 3.25" ID HSA with center plug.
1	9.3				7					Medium dense light brown to red sandy silty CLAY, trace to some brick, trace sod, dry (FILL).			
2	8.3	1	SPT HSA		8 10	18							
3	7.3												
4	6.3	2	SPT HSA		5 9 11	20				Medium dense light brown gravelly SAND, trace silt, dry (FILL).			Random Fill
5	5.3												
6	4.3												
7	3.3	3	SPT HSA		3 2 1	3				Very loose light orange/light gray medium SAND, trace fine sand, trace silt, moist.			Groundwater table at 7.0'.
8	2.3									Very soft dark gray silty CLAY grading to very loose silty SAND, moist (CL-SM).			
9	1.3	4	SPT HSA		1 1 1	2				Very soft dark gray sandy, silty CLAY, moist to wet.			
10	0.3												
11	-0.7			RDR=1	1					Very soft to soft dark gray silty CLAY, trace fine to coarse sand, trace fine gravel, moist (CL).			
12	-1.7	5	SPT HSA		1 1	2	vary						
13	-2.7												
14	-3.7	6	SPT HSA	RDR=1	3 4 4	8	vary			Very soft to firm.			
15	-4.7												
16	-5.7			RDR=1	2					Very soft.			
17	-6.7	7	SPT HSA		2 2	4	0.0						
18	-7.7												
19	-8.7	8	SPT HSA	RDR=1	1 2 2	4	0.25			Very soft to soft.			Soft Clay Fill
20	-9.7												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: LS-02
Sheet No.: 2 of 3
Job No.: 4070029

Date Started: 5/11/04 | Date Completed: 5/11/04 | Logged By: J. Jobst | Checked By: J. Jobs
Total Depth (ft): 41.1' | Depth to Water (ft): 7.0 WD | Northing: 1874298
Drilling Contr.: Stryker Drilling | Driller: F. Stryker | Easting: 1187656
Drill Rig: Diedrich D-50 | Hammer: Automatic | Ground Elev.: 10.3

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
20	-9.7									Continuation:			
21	-10.7			RDR=1	1					Very loose dark gray medium SAND, trace fine and coarse sand, trace silt, moist (SP-SM).			
22	-11.7	9	SPT HSA		0 1	1							
23	-12.7									23.0'			
24	-13.7	10	SPT HSA	RDR=2	1 2 3	5				Loose dark gray medium SAND with some lenses of dark gray clayey till, trace fine and coarse sand, trace silt, moist (.			
25	-14.7												
26	-15.7			RDR=3	3								
27	-16.7	11	SPT HSA		1 1	2	0.0			Very soft dark gray silty CLAY, trace fine sand, moist (CL).			Driller floods hole with water to battle heave.
28	-17.7												
29	-18.7	12	SPT HSA	RDR=1			0.5			Soft.			Push thin-walled tube from 28.5' to 30.5' but no recovery. Went back and drove SPT sample instead.
30	-19.7												
31	-20.7									Stiff dark gray silty CLAY, moist (CL).			Thin-walled tube sampled from 31' to 33'.
32	-21.7	13	TW HSA				1.5						Silty Clay
33	-22.7												
34	-23.7	14	SPT HSA		3 4 6	10	1.25						
35	-24.7												
36	-25.7			RDR=2	56					Hard dark gray silty CLAY, trace fine to coarse sand, trace find gravel, dry to moist (CL).			Potential cobbles and boulders.
37	-26.7	15	SPT HSA		50/3"		4.5+						
38	-27.7												Clay Till
39	-28.7	16	SPT HSA	RDR=4	30 45 50/3"					With fresh dolomite chips in tip of spoon.			Potential cobbles and boulders.
40	-29.7												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: LS-02
Sheet No.: 3 of 3
Job No.: 4070029

Date Started: 5/11/04 | Date Completed: 5/11/04 | Logged By: J. Jobst | Checked By: J. Jobst
Total Depth (ft): 41.1' | Depth to Water (ft): 7.0 WD | Northing: 1874298
Drilling Contr.: Stryker Drilling | Driller: F. Stryker | Easting: 1187656
Drill Rig: Diedrich D-50 | Hammer: Automatic | Ground Elev.: 10.3

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
40	-29.7									Continuation:			
41	-30.7	17	SPT	RDR=4 5	50/1"					Fresh dolomite chips.			Bedrock
42	-31.7									Auger refusal at 41.1'. End of boring. Borehole backfilled with cuttings and bentonite chips and abandoned.			
43	-32.7												
44	-33.7												
45	-34.7												
46	-35.7												
47	-36.7												
48	-37.7												
49	-38.7												
50	-39.7												
51	-40.7												
52	-41.7												
53	-42.7												
54	-43.7												
55	-44.7												
56	-45.7												
57	-46.7												
58	-47.7												
59	-48.7												
60	-49.7												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: LS-03
Sheet No.: 1 of 4
Job No.: 4070029

Date Started: 5/10/04 | Date Completed: 5/10/04 | Logged By: J. Jobst | Checked By: J. Jobs
Total Depth (ft): 74.0 | Depth to Water (ft): 6.3 WD | Northing: 1871934
Drilling Contr.: Stryker Drilling | Driller: F. Stryker | Easting: 1189567
Drill Rig: Diedrich D-50 | Hammer: Automatic | Ground Elev.: 9.7

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
0	9.7									grass			Auger down to 1.0' with 3.25" ID HSA with center plug.
1	8.7				6					Medium dense black silty CLAY, some coarse gravel and rock pieces, dry to moist (FILL).			
2	7.7	1	SPT HSA		7 6	13							Random Fill
3	6.7												
4	5.7	2	SPT HSA		5 4 4	8				Loose black/orange fine sandy CLAY, trace fine gravel and brick, moist (FILL).			
5	4.7												
6	3.7									With trace cinders.			
7	2.7	3	SPT HSA		1 1 6	7				Loose light to dark orange fine SAND, trace medium sand and silt, moist to wet (SP-SM).			Groundwater table at 6.3'.
8	1.7												
9	0.7	4	SPT HSA	RDR=2	3 4 4	8				Wet.			
10	-0.3												
11	-1.3			RDR=2	1								
12	-2.3	5	SPT HSA		1 1	2				Very loose.			
13	-3.3												
14	-4.3	6	SPT HSA	RDR=2	1 1 2	3				With trace black shale fragments.			Driller floods hole with water to battle heave.
15	-5.3												
16	-6.3			RDR=2	2								
17	-7.3	7	SPT HSA		2 4	6				Loose light to dark orange fine to medium SAND, wet (SP).			Sand/Clay Fill
18	-8.3												
19	-9.3	8	SPT HSA	RDR=2	2 2 4	6				Light gray/light brown.			
20	-10.3												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: LS-03
Sheet No.: 2 of 4
Job No.: 4070029

Date Started: 5/10/04 | Date Completed: 5/10/04 | Logged By: J. Jobst | Checked By: J. Jobst
Total Depth (ft): 74.0 | Depth to Water (ft): 6.3 WD | Northing: 1871934
Drilling Contr.: Stryker Drilling | Driller: F. Stryker | Easting: 1189567
Drill Rig: Diedrich D-50 | Hammer: Automatic | Ground Elev.: 9.7

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
20	-10.3									Continuation:			
21	-11.3			RDR=3	3					Medium dense dark gray/black silty SAND, some rock chips, moist (SW-SM).			Potential cobbles and boulders.
22	-12.3	9	SPT HSA		5 5	10							
23	-13.3									23.0'			
24	-14.3	10	SPT HSA	RDR=3	7 6 13	19				Medium dense dark gray medium to coarse sandy GRAVEL, trace silt, trace rock chips, wet (GW-SW).			
25	-15.3												
26	-16.3			RDR=3	3								
27	-17.3	11	SPT HSA		4 5	9	2.5			Very stiff dark gray silty CLAY, trace fine to medium sand, moist (CL).			
28	-18.3												
29	-19.3	12	SPT HSA	RDR=2	2 3 4	7	2.0						Silty Clay
30	-20.3												
31	-21.3			RDR=2									Thin-walled tube sampled from 31' to 33'.
32	-22.3	13	TW HSA				4.5+			Hard, dark gray silty CLAY, trace to some coarse sand, fine gravel, and rock chips, moist (CL).			
33	-23.3												
34	-24.3	14	SPT HSA		8 7 15	22	4.5+						
35	-25.3												
36	-26.3		HSA										Switch to sampling on 5' centers.
37	-27.3												
38	-28.3			RDR=2									
39	-29.3	15	SPT HSA		10 19 21	40	4.5+			Sand lense from 39.1' to 39.3' (light gray fine sand, trace silt, wet).			
40	-30.3												

NOT FOR CONSTRUCTION

CDOT

CHICAGO PARK DISTRICT PBC

CHICAGO SHORELINE PROTECTION PROJECT

MORGAN SHOAL REVETMENT RECONSTRUCTION
45TH STREET TO 51ST STREET
CHICAGO, IL 60653

CHICAGO PARK DISTRICT
CITY OF CHICAGO, MAYOR LORI E. LIGHTFOOT

Architect of Record:
SMITHGROUP
ADDRESS: 35 EAST WACKER SUITE 900 CHICAGO, ILLINOIS 60601
PHONE: 312.641.0770
WEB: www.smithgroup.com

Stantec Consulting Services, Inc.
Chicago, IL
Structural Engineers of Record

Infrastructure Engineering, Inc.
Chicago, IL
Civil Engineers of Record

Latent Design Corporation
Chicago, IL
Architects

Wang Engineering, Inc.
Lombard, IL
Geotechnical Consultant

Living Habitats, LLC
Chicago, IL
Ecological Consultant

American Surveying & Engineering
Chicago, IL
Surveying Consultant

CCJM Engineers
Chicago, IL
MEP Consultant

Thornton Tomasetti
Chicago, IL
Structural Consultant

Issuance

Mark	Description	Date
1	Schematic Design	05/2022
2	60% Detailed Design	01/2023
3	90% Final Engineering	10/2023

PBC Project Name: Chicago Shoreline Protection Project
PBC Contract No.: 22703
Project No.: 13578

Title: HISTORICAL BORING LOGS SHEET 2 OF 5

Sheet: B-105

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: LS-03
Sheet No.: 3 of 4
Job No.: 4070029

Date Started: 5/10/04 | Date Completed: 5/10/04 | Logged By: J. Jobst | Checked By: J. Jobst
Total Depth (ft): 74.0 | Depth to Water (ft): 6.3 WD | Northing: 1871934
Drilling Contr.: Stryker Drilling | Driller: F. Stryker | Easting: 1189567
Drill Rig: Diedrich D-50 | Hammer: Automatic | Ground Elev.: 9.7

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
40	-30.3									Continuation:			
41	-31.3		HSA							Dry with dolomite fragments.			Spoon bouncing. Potential cobbles and boulders.
42	-32.3												
43	-33.3			RDR=3									
44	-34.3	16	SPT	6 / 10 / 22		32	4.5+						
45	-35.3												
46	-36.3		HSA										
47	-37.3												
48	-38.3			RDR=3									
49	-39.3	17	SPT	15 / 25 / 31		56							
50	-40.3												
51	-41.3		HSA										
52	-42.3												Glacial Till
53	-43.3			RDR=4									
54	-44.3	18	SPT	19 / 26 / 52		78				Moist.			
55	-45.3												
56	-46.3		HSA										
57	-47.3												
58	-48.3			RDR=2									
59	-49.3	19	SPT	29 / 40 / 42		82							
60	-50.3												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: LS-03
Sheet No.: 4 of 4
Job No.: 4070029

Date Started: 5/10/04 | Date Completed: 5/10/04 | Logged By: J. Jobst | Checked By: J. Jobst
Total Depth (ft): 74.0 | Depth to Water (ft): 6.3 WD | Northing: 1871934
Drilling Contr.: Stryker Drilling | Driller: F. Stryker | Easting: 1189567
Drill Rig: Diedrich D-50 | Hammer: Automatic | Ground Elev.: 9.7

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
60	-50.3									Continuation:			
61	-51.3		HSA										
62	-52.3			RDR=4									
63	-53.3												
64	-54.3	20	SPT	19 / 36 / 52		88							
65	-55.3												
66	-56.3		HSA										
67	-57.3												
68	-58.3			RDR=5									
69	-59.3	21	SPT	34 / 72/6"						No recovery. Pushed cobble.			Potential cobbles and boulders.
70	-60.3												
71	-61.3		HSA										
72	-62.3			RDR=5									
73	-63.3												
74	-64.3	22	SPT	75/6"						Dolomite bedrock in tip of spoon. (73.0)			Spoon bouncing.
										End of boring at 74.0'. Borehole backfilled with cuttings and bentonite chips and abandoned upon completion. (74.0)			Bedrock
75	-65.3												
76	-66.3												
77	-67.3												
78	-68.3												
79	-69.3												
80	-70.3												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: MS-01A
Sheet No.: 1 of 2
Job No.: 4070029

Date Started: 4/26/04 | Date Completed: 4/26/04 | Logged By: J. Jobst | Checked By:
Total Depth (ft): 38.0' | Depth to Water (ft): n/a | Northing: 1874705
Drilling Contr.: Patrick Drilling | Driller: J. Copak | Easting: 1187974
Drill Rig: CME-75 ATV | Hammer: Automatic | Ground Elev.: 0.0

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
0	0									Lake Michigan			Move to location estimated 200' north of Boring MS-01.
1	-1												
2	-2												
3	-3												
4	-4												
5	-5												
6	-6												
7	-7												
8	-8												
9	-9												
10	-10												Lake Michigan
11	-11												
12	-12												
13	-13												
14	-14												
15	-15												
16	-16												
17	-17												
18	-18												
19	-19												
20	-20									Lake bottom at 20.0'.			

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: MS-01A
Sheet No.: 2 of 2
Job No.: 4070029

Date Started: 4/26/04 | Date Completed: 4/26/04 | Logged By: J. Jobst | Checked By:
Total Depth (ft): 38.0' | Depth to Water (ft): n/a | Northing: 1874705
Drilling Contr.: Patrick Drilling | Driller: J. Copak | Easting: 1187974
Drill Rig: CME-75 ATV | Hammer: Automatic | Ground Elev.: 0.0

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
20	-20									Continuation:			
21	-21									Blind drill down to top of rock.			Soil Overburden
22	-22												
23	-23												
24	-24												
25	-25												
26	-26												
27	-27												
28	-28												
29	-29												
30	-30												
31	-31												
32	-32												
33	-33									Auger refusal at 33.0'. (33.0)			
34	-34									DOLOMITE: Light greenish-gray, fine grained, very thinly bedded with green shaley partings (hard/firm), fresh, moderately hard, moderately dense, with few vugs/pitting. Weak bedding planes evident from core breakage along shaley partings. RUN 1: 33'-38'. REC: 52"/60" (87%) RQD: 37"/60" (62%)			Rock cored with NX- size core barrel.
35	-35												
36	-36												Bedrock
37	-37												
38	-38									End of boring. Borehole abandoned upon completion. (38.0)			
39	-39												
40	-40												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: MS-01B
Sheet No.: 1 of 3
Job No.: 4070029

Date Started: 4/26/04 | Date Completed: 4/26/04 | Logged By: J. Jobst | Checked By:
Total Depth (ft): 54.0' | Depth to Water (ft): n/a | Northing: 1875097
Drilling Contr.: Patrick Drilling | Driller: J. Copak | Easting: 1187611
Drill Rig: CME-75 ATV | Hammer: Automatic | Ground Elev.: -1.0

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
0	-1									Lake Michigan			Move to location north of Boring MS-01A.
1	-2												
2	-3												
3	-4												
4	-5												
5	-6												
6	-7												
7	-8												
8	-9												
9	-10												Lake Michigan
10	-11												
11	-12												
12	-13												
13	-14												
14	-15												
15	-16												
16	-17												
17	-18												
18	-19									Lake bottom at 18.0'. (18.0)			
19	-20									Blind drill down to top of rock.			
20	-21												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: MS-01B
Sheet No.: 2 of 3
Job No.: 4070029

Date Started: 4/26/04 | Date Completed: 4/26/04 | Logged By: J. Jobst | Checked By:
Total Depth (ft): 54.0' | Depth to Water (ft): n/a | Northing: 1875097
Drilling Contr.: Patrick Drilling | Driller: J. Copak | Easting: 1187611
Drill Rig: CME-75 ATV | Hammer: Automatic | Ground Elev.: -1.0

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
20	-21									Continuation:			
21	-22												
22	-23												
23	-24												
24	-25												
25	-26												
26	-27												
27	-28												
28	-29												
29	-30												
30	-31												
31	-32												
32	-33												
33	-34												
34	-35												Soil Overburden
35	-36												
36	-37												
37	-38												
38	-39												
39	-40												
40	-41												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: MS-01B
Sheet No.: 3 of 3
Job No.: 4070029

Date Started: 4/26/04 | Date Completed: 4/26/04 | Logged By: J. Jobst | Checked By:
Total Depth (ft): 54.0' | Depth to Water (ft): n/a | Northing: 1875097
Drilling Contr.: Patrick Drilling | Driller: J. Copak | Easting: 1187611
Drill Rig: CME-75 ATV | Hammer: Automatic | Ground Elev.: -1.0

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
40	-41									Continuation:			
41	-42												
42	-43												
43	-44												
44	-45												
45	-46												
46	-47												
47	-48												
48	-49												
49	-50									Auger refusal at 49.0'. Apparent top of rock at 49.0'. (49.0)			
50	-51									Interbedded hard dark gray clay and light olive gray dolomite. Rock: DOLOMITE: Light olive gray, fine grained, very thinly bedded, fresh, hard, dense. Soil: Hard dark gray silty CLAY, trace fine to coarse sand, with some rock chips, moist (CL).			Rock cored with NX- size core barrel. RUN 1: 49'-54'. REC: 41"/60" (68%) RQD: 4"/60" (7%)
51	-52												
52	-53												
53	-54									Rounded shale pieces at bottom of core run.			Soil/Bedrock
54	-55									End of boring. Borehole abandoned upon completion. (54.0)			
55	-56												
56	-57												
57	-58												
58	-59												
59	-60												
60	-61												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: MS-02
Sheet No.: 1 of 1
Job No.: 4070029

Date Started: 4/21/04 | Date Completed: 4/21/04 | Logged By: J. Jobst | Checked By:
Total Depth (ft): 14.0' | Depth to Water (ft): n/a | Northing: 1874117
Drilling Contr.: Patrick Drilling | Driller: T. Zwolinski | Easting: 1190036
Drill Rig: CME-75 ATV | Hammer: Automatic | Ground Elev.: 0.0

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
0	0									Lake Michigan			
1	-1												
2	-2												
3	-3												
4	-4												
5	-5												
6	-6												Lake Michigan
7	-7												
8	-8												
9	-9												
10	-10												
11	-11									Lake bottom at 11.5'. (11.5)			
12	-12												Auger down to 12.5' with 3.25" ID HSA with center plug.
13	-13	1	SPT HSA	21 / 50/3"						Brown to dark gray extremely dense weathered bedrock.			Weathered Rock
14	-14									Auger refusal at 14.0'. Drillers unable to core due to inability to seat core barrel. End of Boring. Borehole abandoned upon completion. (14.0)			Bedrock
15	-15												
16	-16												
17	-17												
18	-18												
19	-19												
20	-20												

NOT FOR CONSTRUCTION

CDOT

CHICAGO PARK DISTRICT

PBC

CHICAGO SHORELINE PROTECTION PROJECT

MORGAN SHOAL REVETMENT RECONSTRUCTION
45TH STREET TO 51ST STREET
CHICAGO, IL 60653

CHICAGO PARK DISTRICT
CITY OF CHICAGO, MAYOR LORI E. LIGHTFOOT

Architect of Record:
SMITHGROUP
ADDRESS: 35 EAST WACKER
SUITE 900
CHICAGO, ILLINOIS 60601
PHONE: 312.641.0770
WEB: www.smithgroup.com

Stantec Consulting Services, Inc.
Chicago, IL
Structural Engineers of Record

Infrastructure Engineering, Inc.
Chicago, IL
Civil Engineers of Record

Latent Design Corporation
Chicago, IL
Architects

Wang Engineering, Inc.
Lombard, IL
Geotechnical Consultant

Living Habitats, LLC
Chicago, IL
Ecological Consultant

American Surveying & Engineering
Chicago, IL
Surveying Consultant

CCJM Engineers
Chicago, IL
MEP Consultant

Thornton Tomasetti
Chicago, IL
Structural Consultant

Issuance

Mark	Description	Date
1	Schematic Design	05/2022
2	60% Detailed Design	01/2023
3	90% Final Engineering	10/2023

PBC Project Name: Chicago Shoreline Protection Project
PBC Contract No.: 22703
Project No.: 13578

Title
HISTORICAL BORING LOGS SHEET 3 OF 5

Sheet
B-106

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: MS-03
Sheet No.: 1 of 1
Job No.: 4070029

Date Started: 4/26/04	Date Completed: 4/26/04	Logged By: J. Jobst	Checked By:
Total Depth (ft): 12.2	Depth to Water (ft): n/a	Northing: 1873192	
Drilling Contr.: Patrick Drilling	Driller: J. Copak	Easting: 1189611	
Drill Rig: CME-75 ATV	Hammer: Automatic	Ground Elev.: 0.0	

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
0	0									Lake Michigan			
1	-1												Lake Michigan
2	-2												
3	-3												
4	-4												
5	-5												
6	-6												
7	-7												
8	-8												
9	-9												
10	-10												
11	-11												
12	-12									Lake bottom at 11.7'. (11.7)			Morgan Shoal
13	-13									Weathered dolomitic limestone, light olive gray, fine grained, no apparent bedding, hard, moderately dense to dense, vuggy with some pitting and solutioning.			Driller attempts to core but barge is drifting slightly due to wave action and no overburden material at hole location. Driller retrieves 0.5' of core before forced to end run. RUN 1: 11.7'-12.2'. REC: 6"/6" (100%) RQD: N/A
14	-14									End of boring at 12.2'. Borehole abandoned upon completion. (12.2)			
15	-15												
16	-16												
17	-17												
18	-18												
19	-19												
20	-20												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: MS-03A
Sheet No.: 1 of 1
Job No.: 4070029

Date Started: 4/26/04	Date Completed: 4/26/04	Logged By: J. Jobst	Checked By:
Total Depth (ft): 17.0	Depth to Water (ft): n/a	Northing: 1873161	
Drilling Contr.: Patrick Drilling	Driller: J. Copak	Easting: 1189594	
Drill Rig: CME-75 ATV	Hammer: Automatic	Ground Elev.: 0.0	

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
0	0												Drift south from original boring location (MS-03) until spuds dig into lake bottom.
1	-1												
2	-2												
3	-3												
4	-4												
5	-5												Lake Michigan
6	-6												
7	-7												
8	-8												
9	-9												
10	-10												
11	-11									Lake bottom at 11.0'. (11.0)			
12	-12									DOLOMITE: Light olive gray, fine grained, thinly bedded, slightly weathered in locations to fresh, hard, dense, with fine vugs, some solutioning and pitting. Some bedding planes have soft to medium firm gray clayey infilling.			RUN 1: 11.0'-17.0'. REC: 74"/72" (100%) RQD: 34"/74" (46%)
13	-13												
14	-14												Bedrock
15	-15												
16	-16												
17	-17									End of Boring at 17.0'. Borehole abandoned upon completion. (17.0)			
18	-18												
19	-19												
20	-20												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: MS-04
Sheet No.: 1 of 4
Job No.: 4070029

Date Started: 4/21/04	Date Completed: 4/21/04	Logged By: J. Jobst	Checked By:
Total Depth (ft): 62.0	Depth to Water (ft): n/a	Northing: 1872157	
Drilling Contr.: Patrick Drilling	Driller: T. Zwolinski	Easting: 1189688	
Drill Rig: CME-75 ATV	Hammer: Automatic	Ground Elev.: 0.1	

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
0	0.1									Lake Michigan			
1	-0.9												
2	-1.9												
3	-2.9												
4	-3.9												
5	-4.9												Lake Michigan
6	-5.9												
7	-6.9												
8	-7.9												
9	-8.9												
10	-9.9												
11	-10.9												
12	-11.9												
13	-12.9												
14	-13.9												
15	-14.9												
16	-15.9									Lake bottom at 16.0'. (16.0)			
17	-16.9									Medium (firm) gray silty CLAY, medium plastic, moist (CL).			Auger down to 17.0' with 3.25" ID HSA with center plug. Torvane = 1.75 tsf Auger drift giving driller problems.
18	-17.9	1	SPT	7 6 5 (11)		1.75							Silty Clay
			HSA										
19	-18.9												Torvane = 1.75 tsf
20	-19.9			3									

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: MS-04
Sheet No.: 2 of 4
Job No.: 4070029

Date Started: 4/21/04	Date Completed: 4/21/04	Logged By: J. Jobst	Checked By:
Total Depth (ft): 62.0	Depth to Water (ft): n/a	Northing: 1872157	
Drilling Contr.: Patrick Drilling	Driller: T. Zwolinski	Easting: 1189688	
Drill Rig: CME-75 ATV	Hammer: Automatic	Ground Elev.: 0.1	

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
20	-19.9									Continuation:			
21	-20.9	2	SPT / HSA	4 7 (11)		1.75							
22	-21.9									Hard gray silty CLAY, trace fine to coarse sand, trace fine gravel, dry to moist (CL). (21.0)			
23	-22.9	3	SPT / HSA	3 6 8 (14)		4.5+							
24	-23.9												
25	-24.9	4	SPT / HSA	5 11 14 (25)		4.5+							
26	-25.9												
27	-26.9												
28	-27.9	5	SPT / HSA	7 12 16 (28)		4.5+							
29	-28.9												
30	-29.9	6	SPT / HSA	6 10 20 (30)		4.5+							
31	-30.9												
32	-31.9	7	SPT	78/6"						Rock chips in spoon.			Potential cobbles/ boulders
33	-32.9		HSA										
34	-33.9												
35	-34.9	8	SPT / HSA	12 26 31 (57)		4.5+				Moist to wet.			
36	-35.9												
37	-36.9												
38	-37.9	9	SPT / HSA	21 25 32 (57)		4.5+							
39	-38.9												
40	-39.9			12									Glacial Till

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: MS-04
Sheet No.: 3 of 4
Job No.: 4070029

Date Started: 4/21/04	Date Completed: 4/21/04	Logged By: J. Jobst	Checked By:
Total Depth (ft): 62.0	Depth to Water (ft): n/a	Northing: 1872157	
Drilling Contr.: Patrick Drilling	Driller: T. Zwolinski	Easting: 1189688	
Drill Rig: CME-75 ATV	Hammer: Automatic	Ground Elev.: 0.1	

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
40	-39.9									Continuation:			
41	-40.9	10	SPT / HSA	23 29 (52)		4.5+							
42	-41.9												Switch to 5' centers.
43	-42.9	11	SPT	15 24 36 (60)		4.5+							
44	-43.9												
45	-44.9		HSA										
46	-45.9												
47	-46.9												
48	-47.9	12	SPT	17 30 77 (107)		4.5+							
49	-48.9												
50	-49.9		HSA										
51	-50.9												
52	-51.9	13	SPT	50/0"						Refusal at 52.0'. (52.0)			
53	-52.9									DOLOMITE: light olive gray-greenish, fine grained, thinly bedded, fresh, hard, dense. Joint at 52.0' (1" by 1") solution cavity at 54.0'. RUN 1: 52.0'-62.0'. REC: 120"/120" (100%) RQD: 120"/120" (100%)			Fresh dolomite chips in spoon of SPT 13. Rock cored with double-tube NX- size core barrel.
54	-53.9												
55	-54.9												
56	-55.9												
57	-56.9												Bedrock
58	-57.9												
59	-58.9												
60	-59.9												

SOIL BORING LOG

MWH MONTGOMERY WATSON HARZA

Project: Chicago Shoreline Protection Project
Feature: 45th Street to 51st Street

Boring: MS-04
Sheet No.: 4 of 4
Job No.: 4070029

Date Started: 4/21/04	Date Completed: 4/21/04	Logged By: J. Jobst	Checked By:
Total Depth (ft): 62.0	Depth to Water (ft): n/a	Northing: 1872157	
Drilling Contr.: Patrick Drilling	Driller: T. Zwolinski	Easting: 1189688	
Drill Rig: CME-75 ATV	Hammer: Automatic	Ground Elev.: 0.1	

Depth (ft)	Elevation (ft)	Sample No.	Sampler Type	Sample Interval Recovery	Blows/6 in.	SPT N (bpf)	Qp (tsf)	Wc (%)	PID (~ ppm)	Soil Descriptions	Profile	Well Schematic	Notes and Observations
60	-59.9									Continuation:			
61	-60.9												
62	-61.9									End of boring at 62.0'. Borehole abandoned upon completion. (62.0)			
63	-62.9												
64	-63.9												
65	-64.9												
66	-65.9												
67	-66.9												
68	-67.9												
69	-68.9												
70	-69.9												
71	-70.9												
72	-71.9												
73	-72.9												
74	-73.9												
75	-74.9												
76	-75.9												
77	-76.9												
78	-77.9												
79	-78.9												
80	-79.9												

DRILLING LOG

Hole No. CB-4-4-94

DIVISION: NORTH CENTRAL	INSTALLATION: CHICAGO DISTRICT	SHEET 1 OF 1 SHEETS	
1. PROJECT: CHICAGO SHORELINE EROSION – REACH 4	10. SIZE AND TYPE OF BIT: 3-7/8" DRAG BIT		
2. LOCATION (Coordinates or Station): 703779 E 1874691 N (feet)	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): LOW WATER DATUM (LWD)		
3. DRILLING AGENCY: FUGRO-McCLELLAND	12. MANUFACTURER'S DESIGNATION OF DRILL: FAILING 250 (TRUCK-MOUNTED)		
4. HOLE NO. (As shown on drawing title and file number): CB-4-4-94	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: 6; UNDISTURBED: 1		
5. NAME OF DRILLER: DAVID FENDLEY	14. TOTAL NUMBER CORE BOXES: N/A		
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED, DEG. FROM VERT.	15. ELEVATION GROUND WATER: 2.6 LWD (LAKE LEVEL)		
7. THICKNESS OF OVERBURDEN: 17.5 FT	16. DATE HOLE: STARTED: 20 MAY 94; COMPLETED: 20 MAY 94		
8. DEPTH DRILLED INTO ROCK: 0.0 FT	17. ELEVATION TOP OF HOLE: -19.4 LWD (22' WATER DEPTH)		
9. TOTAL DEPTH OF HOLE: 17.5 FT	18. TOTAL CORE RECOVERY FOR BORING: N/A %		
	19. SIGNATURE OF INSPECTOR: [signature]		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	DRILLING TIME, WATER LOSS, DEPTH OF WEATHERING, ETC., IF SIGNIFICANT g
-19.4' LWD	1		(CL) CLAY, Gray, Firm to Very Stiff -with a few gravel and sand pockets w = 25% @ 1'	12/18	1	Std. Penetration Test (Blows/6 in.) NS = No Sample
					NS	3 5 5
	2				NS	
	3		w = 25% @ 4' -with a few claystone fragments below 5'	18/18	2	5 7 11
					NS	
	4			24/24	3	3" Ø Thin-Walled Tube Sample PUSH
	5		O = 1.3 ksf, DD = 112 pcf @ 6.7' w = 15%, LL = 32%, PL = 16% @ 7' Tor = 2.2 ksf @ 7' PP = 2.3 ksf, 2.4 ksf @ 7' w = 20% @ 8'		3A	
					NS	
	6			6/18	4	7 9 10
					NS	
	7				NS	
	8		w = 20%, -200 = 83% @ 11.3'	16/18	5	8 11
					NS	
	9		(CL) CLAY, Dark Gray, Hard -with many gravel and claystone fragments w = 12%, LL = 27%, PL = 15% @ 13.1' (14.0')		NS	
	10			7/9	6	23 50-3"
					NS	
-33.4' LWD	11		GRAVEL AND/OR WEATHERED LIMESTONE FRAGMENTS w = 3% @ 15.2' (16.0')		NS	
-35.4' LWD	12		LIMESTONE, White, Moderately strong (17.5')	2/3	7	50-3" -used 3 7/8" Tricone Rockbit 15.2'-17.5'
-36.9' LWD	13		Completion Depth = 17.5 ft			

ABBREVIATIONS

w = Water Content
DD = Dry Density
PL = Plastic Limit
LL = Liquid Limit
G_s = Specific Gravity
Q = Unconsolidated-Undrained
cp = Confining Pressure
Unc = Unconfined Compression
Tor = Torvane
PP = Pocket Penetrometer

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (modified by GCA 1/94) PROJECT: Chicago Shoreline Reach 4 - 5235.LD-CB4-2897 HOLE NO. CB4-2897

PLATE B-2g

DRILLING LOG

Hole No. CB4-2897

DIVISION: North Central	INSTALLATION: Chicago District	SHEET 1 OF 3 SHEETS	
1. PROJECT: Chicago Shoreline Reach 4 - 5235.LD	10. SIZE AND TYPE OF BIT: 3 1/4" I.D. HSA		
2. LOCATION (Coordinates or Station): N 1874724 E 1187632	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): LWD		
3. DRILLING AGENCY: Patrick Drilling Inc.	12. MANUFACTURER'S DESIGNATION OF DRILL: CME-55		
4. HOLE NO. (As shown on drawing title and file number): CB4-2897	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED: 13; UNDISTURBED: 4		
5. NAME OF DRILLER: Ted Zwolinski	14. TOTAL NUMBER CORE BOXES: 0		
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED 0.0 DEG. FROM VERT.	15. ELEVATION GROUND WATER:		
7. THICKNESS OF OVERBURDEN: 47.5	16. DATE HOLE: STARTED: OCT 15 97; COMPLETED: OCT 15 97		
8. DEPTH DRILLED INTO ROCK: 0.0	17. ELEVATION TOP OF HOLE: 8.5		
9. TOTAL DEPTH OF HOLE: 47.5	18. TOTAL CORE RECOVERY FOR BORING: N/A %		
	19. SIGNATURE OF INSPECTOR: [signature]		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	DRILLING TIME, WATER LOSS, DEPTH OF WEATHERING, ETC., IF SIGNIFICANT g
			Dark brown to black SAND and SILT, some organics, little loose gravel, little brick fragments, moist to dry -FILL- SM		AU-1 0.0 1.0	Sample not taken. Auger grinding.
			Medium dense, moist SS-2: Gravel=45.4% Fines=44.6% Gravel=10.0%	18/18"	SS-2 3.6 5.0	10/8/6
2.0	6.5		Medium dense gray silty SAND, trace fine gravel, little clay, saturated SM	18/18"	SS-3 5.0 7.5	Auger refused on possible boulder. Hole moved 47.0' WSW and sampling resumed. New hole elevation approximately 1.0' higher than surveyed location. 19/10/8
-0.3	8.8		Medium stiff dark gray silty CLAY, trace coarse to fine gravel, trace coarse sand, medium plasticity, wet CL SS-4B: WC=28.2%	18/18"	SS-4AB 6.5 10.0	5/3/5 SS-4B: $qu^* = 1.0$tsf
			3T-5: WC=21.1% at 12.1' $qu=0.7$tsf at 15% strain DD=107.0pcf WC=22.1%	14/24"	3T-5 11.0 13.0	Pushed 3" diameter thin-walled tube $qu^* = 0.7$tsf Torvane shear strength=0.5tsf
			SS-6: WC=29.0% LL=32 PL=20	18/18"	SS-6 13.5 15.0	1/2/2 $qu^* = 0.75$tsf
			SS-7: WC=24.0%	18/18"	SS-7 15.0 17.5	3/3/5 $qu^* = 1.0$tsf
			3T-8: WC=23.0% at 19.6'	13/24"	3T-8 18.5 20.5	Pushed 3" diameter thin-walled tube $qu^* = 0.5$tsf Torvane shear strength=0.3tsf

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (modified by GCA 1/94) PROJECT: Chicago Shoreline Reach 4 - 5235.LD-CB4-2897 HOLE NO. CB4-2897

NOT FOR CONSTRUCTION

CDOT

CHICAGO PARK DISTRICT

PBC

CHICAGO SHORELINE PROTECTION PROJECT

MORGAN SHOAL REVETMENT RECONSTRUCTION
45TH STREET TO 51ST STREET
CHICAGO, IL 60653

CHICAGO PARK DISTRICT
CITY OF CHICAGO, MAYOR LORI E. LIGHTFOOT

Architect of Record:
SMITHGROUP
ADDRESS: 35 EAST WACKER SUITE 900 CHICAGO, ILLINOIS 60601
PHONE: 312.641.0770
WEB: www.smithgroup.com

Stantec Consulting Services, Inc.
Chicago, IL
Structural Engineers of Record

Infrastructure Engineering, Inc.
Chicago, IL
Civil Engineers of Record

Latent Design Corporation
Chicago, IL
Architects

Wang Engineering, Inc.
Lombard, IL
Geotechnical Consultant

Living Habitats, LLC
Chicago, IL
Ecological Consultant

American Surveying & Engineering
Chicago, IL
Surveying Consultant

CCJM Engineers
Chicago, IL
MEP Consultant

Thornton Tomasetti
Chicago, IL
Structural Consultant

Issuance

Mark	Description	Date
1	Schematic Design	05/2022
2	60% Detailed Design	01/2023
3	90% Final Engineering	10/2023

PBC Project Name: Chicago Shoreline Protection Project
PBC Contract No.: 22703
Project No.: 13578

Title: HISTORICAL BORING LOGS SHEET 4 OF 5

Sheet: B-107

Hole No. CB4-2897

DRILLING LOG | DIVISION North Central | INSTALLATION Chicago District | SHEET 2 OF 3 SHEETS

1. PROJECT: Chicago Shoreline Reach 4 - 5235.LO
2. LOCATION (Coordinates or Station): N 1874724 E 1187632
3. DRILLING AGENCY: Patrick Drilling Inc.
4. HOLE NO. (As shown on drawing title and file number): CB4-2897
5. NAME OF DRILLER: Ted Zwolinski
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED 0.0 DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 47.5
8. DEPTH DRILLED INTO ROCK: 0.0
9. TOTAL DEPTH OF HOLE: 47.5
10. SIZE AND TYPE OF BIT: 3 1/4" I.D. HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): LWD
12. MANUFACTURER'S DESIGNATION OF DRILL: CME-55
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 4 | UNDISTURBED 4
14. TOTAL NUMBER CORE BOXES: 0
15. ELEVATION GROUND WATER:
16. DATE HOLE: STARTED OCT 15 97 | COMPLETED OCT 15 97
17. ELEVATION TOP OF HOLE: 8.5
18. TOTAL CORE RECOVERY FOR BORING: N/A %
19. SIGNATURE OF INSPECTOR: Fred Ulch

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Medium stiff dark grey silty CLAY, trace coarse to fine gravel, trace coarse sand, medium plasticity, moist CL			
			Stiff, little coarse to fine sand, wet	14/18"	SS-9 21.0 22.6	2/7/11 qu* = 1.76tsf
			SS-10; WC = 26.0%	18/18"	SS-10 23.5 25.0	2/3/6 qu* = 1.25tsf
			Medium stiff, trace coarse to fine sand, wet ST-11; WC = 28.2% at 27.9'	24/24"	ST-11 26.0 28.0	Pushed 3" diameter thin-walled tube qu* = 0.6tsf Torvane shear strength = 0.3tsf
			SS-12; WC = 23.1%	18/18"	SS-12 28.5 30.0	WOR/WOR/4 qu* = 0.5tsf
			SS-13; WC = 24.5%	18/18"	SS-13 31.0 32.5	2/5/6 qu* = 0.76tsf
			ST-14; WC = 23.4% at 36.4'	24/24"	ST-14 33.5 35.5	Pushed 3" diameter thin-walled tube qu* = 1.0tsf Torvane shear strength = 0.5tsf
			Wet	18/18"	SS-15 36.0 37.5	3/3/4 qu* = 0.75tsf
			SS-16; WC = 24.1% LL = 38 PL = 23 DD = 102pcf	18/18"	SS-16 38.5 40.0	3/4/6 qu* = 1.0tsf

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (modified by GLA 1249) | PROJECT: Chicago Shoreline Reach 4 - 5235.LO | HOLE NO. CB4-2897

Hole No. CB4-2897

DRILLING LOG | DIVISION North Central | INSTALLATION Chicago District | SHEET 3 OF 3 SHEETS

1. PROJECT: Chicago Shoreline Reach 4 - 5235.LO
2. LOCATION (Coordinates or Station): N 1874724 E 1187632
3. DRILLING AGENCY: Patrick Drilling Inc.
4. HOLE NO. (As shown on drawing title and file number): CB4-2897
5. NAME OF DRILLER: Ted Zwolinski
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED 0.0 DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 47.5
8. DEPTH DRILLED INTO ROCK: 0.0
9. TOTAL DEPTH OF HOLE: 47.5
10. SIZE AND TYPE OF BIT: 3 1/4" I.D. HSA
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): LWD
12. MANUFACTURER'S DESIGNATION OF DRILL: CME-55
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 13 | UNDISTURBED 4
14. TOTAL NUMBER CORE BOXES: 0
15. ELEVATION GROUND WATER:
16. DATE HOLE: STARTED OCT 15 97 | COMPLETED OCT 15 97
17. ELEVATION TOP OF HOLE: 8.5
18. TOTAL CORE RECOVERY FOR BORING: N/A %
19. SIGNATURE OF INSPECTOR: Fred Ulch

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth weathering, etc., if significant) g
			Medium stiff dark grey silty CLAY, trace coarse to fine gravel, trace coarse sand, medium plasticity, moist CL			
			Hard ST-17; WC = 17.9% at 41.8' qu = 1.6tsf at 15% strain DD = 112.3pcf WC = 19.0%	12/20"	ST-17 41.0 42.7	Pushed 3" diameter thin-walled tube 20.0" to refusal qu* > 4.5tsf Torvane shear strength = 1.1tsf
			Trace coarse to fine gravel (shale), low plasticity, moist to dry SS-18; WC = 13.8%	14/18"	SS-18 43.5 44.8	11/38/50 blows for 4" qu* > 4.5tsf
-37.5	46.0		Extremely dense grey coarse to fine GRAVEL, some silty clay, moist to dry GC	/10"	SS-19 46.0 46.8	Auger grinding 45.0'-46.0'
-38.0	47.5		End of Boring at 47.5'.			Auger refusal at 47.5'

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (modified by GLA 1249) | PROJECT: Chicago Shoreline Reach 4 - 5235.LO | HOLE NO. CB4-2897

NOT FOR CONSTRUCTION

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CHICAGO SHORELINE PROTECTION PROJECT

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CITY OF CHICAGO, MAYOR LORI E. LIGHTFOOT

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Thornton Tomasetti
Chicago, IL
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Issuance

Mark	Description	Date
1	Schematic Design	05/2022
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3	90% Final Engineering	10/2023

PBC Project Name: Chicago Shoreline Protection Project
PBC Contract No.: 22703
Project No.: 13578

Title: HISTORICAL BORING LOGS SHEET 5 OF 5

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