Construction & Geotechnical Material Testing, Inc.

60 Martin Lane, Elk Grove Village, Illinois 60007
Telephone (630) 595-1111 ♦ Fax (630) 595-1110

June 29, 2023

CGMT Project No.: 23E0330

Mr. Wadee Rafati, P.E.
Gewalt Hamilton Associates, Inc.
625 Forest Edge Drive
Vernon Hills, Illinois 60061

RE: **Soils Laboratory Testing**
Willow Road Flood Control Project
Willow Road and Owen Court – Prospect Heights, Illinois 60070

Dear Mr. Rafati:

Construction & Geotechnical Material Testing, Inc. (CGMT) is pleased to provide you the test results for the limited environmental screening for on-site soil at the project site for contamination of soil with other clean construction or demolition debris (CCDD) in accordance with Section 22.51(f)(2)(B) of the Environmental Protection Act [415 ILCS 5/22.51(f)(2)(B)].

CGMT understands that the spoils from your proposed excavation activities during the construction at the above referenced project in Prospect Heights, Illinois will be hauled off site. To evaluate the soils, CGMT performed a limited soil sampling and testing analysis.

In general, the material sampled consisted of brown and/or gray silty clay loam soils. Due to the similar soils encountered to the approximate depth of 2 feet below ground surface, CGMT collected ten (10) independent grab samples. The attached location map depicts the approximate locations of the samples.

CGMT obtained the soil samples of on-site materials readily accessible to a hand auger. The soil samples were sealed in containers and returned to our laboratory subcontractor to perform laboratory testing. The samples were tested for the following parameters:

- pH

Based on the test results, in general, the soil samples exhibited an absence of detections for most target analytes and detect values below the threshold values for each of the items listed above when compared to Maximum Allowable Concentrations of Chemical Constituents in Uncontaminated Soil Used as Fill Material at Regular Fill Operations within a populated area and at pH range of 6.25 to 9.0. Based on review of the above mentioned target list, the soils appear acceptable for disposal.

It should be noted that CGMT acquired the samples from readily accessible areas. If, during construction, soils that are stained and/or exhibit odors are encountered, removal operations should be immediately suspended and additional sampling and testing should be performed prior to resuming removal operations. Please note that CCDD/UFSO facilities screen each load with a PID, which will determine the final acceptance of individual loads, regardless of the analytical results.

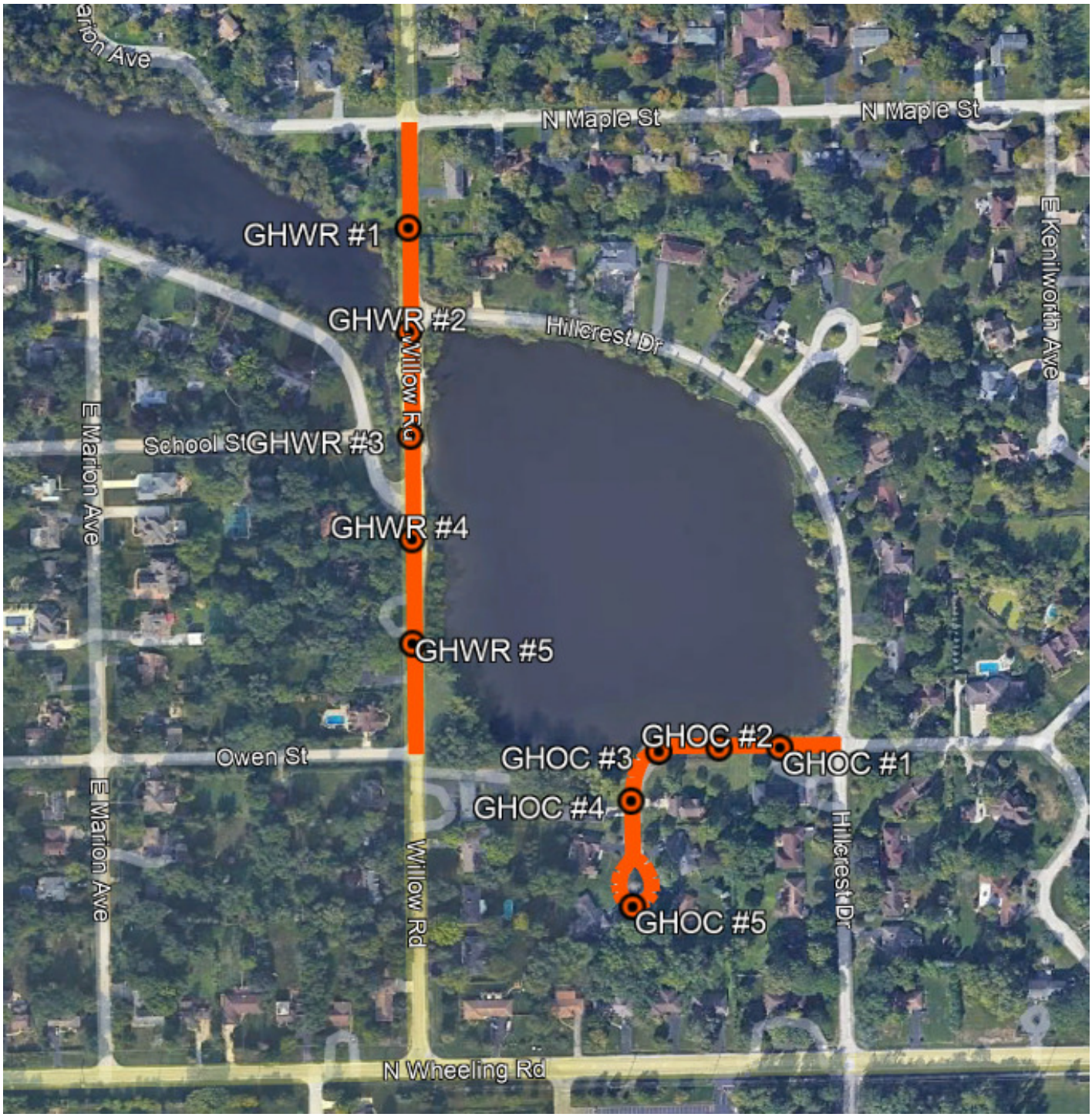
We look forward to our work with you on this project and future projects.

Respectfully Submitted,

CONSTRUCTION AND GEOTECHNICAL MATERIAL TESTING, INC.

Pratik K. Patel, P.E.
Vice President

Attachments: Location Map
IEPA Form LPC-662
Laboratory Test Results



GENERAL LOCATION PLAN

- Approximate Sample Location
- Acceptable CCDD Material

CGMT Project No. 23E0330
Willow Road Flood Control Project
Willow Road and Owen Court
Prospect Heights, Cook County, Illinois 60070

Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

Source Site Certification
by Owner or Operator
for Use of Uncontaminated Soil as Fill in a
CCDD or Uncontaminated Soil Fill Operation
LPC-662

Revised in accordance with 35 Ill. Adm. Code 1100, as amended by PCB R2012-009 (eff. Aug. 27, 2012)

This certification form is to be used by source site owners and operators to certify, pursuant to 35 Ill. Adm. Code 1100.205(a)(1)(A), that soil (i) was removed from a site that is not potentially impacted property and is presumed to be uncontaminated soil and (ii) is within a pH range of 6.25 to 9.0. If you have questions about this form, please telephone the Bureau of Land Permit Section at 217/524-3300.

This form may be completed online, saved locally, printed and signed, and submitted to prospective clean construction or demolition debris fill operations or uncontaminated soil fill operations.

I. Source Location Information

(Describe the location of the source of the uncontaminated soil)

Project Name: Willow Road Flood Control Project Office Phone Number, if available: _____

Physical Site Location (Street, Road): Willow Road and Owen Court

City: Prospect Heights State: IL Zip Code: 60070 County: Will

Township: Wheeling

Lat/Long of approximate center of site in decimal degrees (DD.ddddd) to five decimal places (e.g., 40.67890, -90.12345):

Latitude: 42.10251 (Decimal Degrees) Longitude: - 87.93193 (-Decimal Degrees)

Identify how the lat/long data were determined:

◯ GPS ⊘ Map Interpolation ◯ Photo Interpolation ◯ Survey ◯ Other

Google Earth

IEPA Site Number(s), if assigned: BOL: _____ BOW: _____ BOA: _____

Approximate Start Date (mm/dd/yyyy): _____ Approximate End Date (mm/dd/yyyy): _____

Estimated Volume of debris (cu. Yd.): _____

II. Owner/Operator Information for Source Site

Site Owner

Name: City of Prospect Heights
Street Address: 8 N. Elmhurst Road
PO Box: _____
City: Prospect Heights State: IL
Zip Code: 60070 Phone: _____
Contact: _____
Email, if available: _____

Site Operator

Name: _____
Street Address: _____
PO Box: _____
City: _____ State: _____
Zip Code: _____ Phone: _____
Contact: _____
Email, if available: _____

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed $50,000 for the violation and an additional civil penalty of not to exceed $10,000 for each day during which the violation continues (415 ILCS 5/42). This form has been approved by the Forms Management Center.

Project Name: Willow Road Flood Control Project Latitude: 42.10251 Longitude: -87.93193

Source Site Certification

III. Descriptions of Current and Past Uses of Source Site

Describe the current and past uses of the site and nearby properties.* Attach additional information as needed. The description must take into account, at a minimum, the following for the source site and for nearby property: (1) use of the properties for commercial or industrial purposes; (2) the use, storage or disposal of chemical or petroleum products in individual containers greater than 5 gallons or collectively more than 50 gallons; (3) the current or past presence of any storage tanks (above ground or underground); (4) any waste storage, treatment or disposal at the properties; (5) any reported releases or any environmental cleanup or removal of contaminants; (6) any environmental liens or governmental notification of environmental violations; (7) any contamination in a well that exceeds the Board's groundwater quality standards; (8) the use, storage, or disposal of transformers or capacitors manufactured before 1979; and (9) any fill dirt brought to the properties from an unknown source or site.

Number of pages attached: 0

A site investigation concluded the site was historically farmland with low probabilities of being environmental concerns. Based on the low probability of environmental concerns, the determination was made that non impacted pH sampling of the project site was necessary.

*The description must be sufficient to demonstrate that the source site is not potentially impacted property, thereby allowing the source site owner or operator to provide this certification.

IV. Soil pH Testing Results

Describe the results of soil pH testing showing that the soil pH is within the range of 6.25 to 9.0 and attach any supporting documentation.

Number of pages attached: 6

Ten (10) samples were collected and tested for pH. The pH results of the samples ranged from 8.06 to 8.87 which are within the accepted pH range of 6.25 to 9.0 for CCDD or USFO disposal.

V. Source Site Owner, Operator or Authorized Representative's Certification Statement and Signature

In accordance with the Illinois Environmental Protection Act [415 ILCS 5/22.51 or 22.51a] and 35 Ill. Adm. Code 1100.205(a), I Wadee Rafati, P.E. (owner, operator or authorized representataive of source site) certify that this site is not a potentially impacted property and the soil is presumed to be uncontaminated soil. I also certify that the soil pH is within the range of 6.25 to 9.0. I further certify that the soil has not been removed from the site as part of a cleanup or removal of contaminants. Additionally, I certify that I am either the site owner or operator or a duly authorized representative of the site owner or site operator and am authorized to sign this form. Furthermore, I certify that all information submitted, including but not limited to, all attachments and other information, is to the best of my knowledge and belief, true, accurate and complete.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

◯ Owner
◯ Operator
☑ Owner's Duly Authorized Representative
◯ Operator's Duly Authorized Representative

Wadee Rafati, P.E.
Printed Name

Jun 29, 2023
Date

Signature

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

June 29, 2023

Mr. Blake Sloan
CGMT, INC.
60 Martin Lane
Elk Grove Village, IL 60007

Project ID: 23E0330, Gewalt Hamilton Associates, Inc
First Environmental File ID: 23-5367
Date Received: June 23, 2023

Dear Mr. Blake Sloan:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number:

1002922023-10: effective 03/07/2023 through 02/28/2024.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Neal Cleghorn
Project Manager

First
Environmental
Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Case Narrative

CGMT, INC.

Lab File ID: **23-5367**

Project ID: **23E0330, Gewalt Hamilton Associates, Inc**

Date Received: **June 23, 2023**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The results in this report apply to the samples in the following table:

Laboratory Sample ID	Client Sample Identifier	Date/Time Collected	
23-5367-001	GHWR #1	06/22/23	10:15
23-5367-002	GHWR #2	06/22/23	10:30
23-5367-003	GHWR #3	06/22/23	10:45
23-5367-004	GHWR #4	06/22/23	11:00
23-5367-005	GHWR #5	06/22/23	11:15
23-5367-006	GHOC #1	06/22/23	11:30
23-5367-007	GHOC #2	06/22/23	11:45
23-5367-008	GHOC #3	06/22/23	12:00
23-5367-009	GHOC #4	06/22/23	12:15
23-5367-010	GHOC #5	06/22/23	12:30

Sample Batch Comments:

Sample acceptance criteria were met.

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Case Narrative

CGMT, INC.

Lab File ID: **23-5367**

Project ID: **23E0330, Gewalt Hamilton Associates, Inc**

Date Received: **June 23, 2023**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The following is a definition of flags that may be used in this report:

Flag	Description	Flag	Description
A	Method holding time is 15 minutes from collection. Lab analysis was performed as soon as possible.		
B	Analyte was found in the method blank.	L	LCS recovery outside control limits.
<	Analyte not detected at or above the reporting limit.	M	MS recovery outside control limits; LCS acceptable.
C	Sample received in an improper container for this test.	P	Chemical preservation pH adjusted in lab.
D	Surrogates diluted out; recovery not available.	Q	Result was determined by a GC/MS database search.
E	Estimated result; concentration exceeds calibration range.	S	Analysis was subcontracted to another laboratory.
G	Surrogate recovery outside control limits.	T	Result is less than three times the MDL value.
H	Analysis or extraction holding time exceeded.	W	Reporting limit elevated due to sample matrix.
I	ICVS % rec outside 95-105% but within 90-110%		
J	Estimated result; concentration is less than routine RL but greater than MDL.	N	Analyte is not part of our NELAC accreditation or accreditation may not be available for this parameter.
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Analytical Report

Client: CGMT, INC.
Project ID: 23E0330, Gewalt Hamilton Associates, Inc

Date Received: 06/23/23
Date Reported: 06/29/23

Results are reported on an "as received" basis.

Lab No:	Sample ID:	Analyte	Result	R.L.	Units	Flags
pH @ 25°C, 1:2		**Method: 9045D**				
23-5367-001	GHWR #1	Date Collected: 06/22/23	Time Collected: 10:15			
Analysis Date:	06/29/23 10:48 AM	**pH @ 25°C, 1:2**	**8.26**		**Units**	
23-5367-002	GHWR #2	Date Collected: 06/22/23	Time Collected: 10:30			
Analysis Date:	06/29/23 10:48 AM	**pH @ 25°C, 1:2**	**8.30**		**Units**	
23-5367-003	GHWR #3	Date Collected: 06/22/23	Time Collected: 10:45			
Analysis Date:	06/29/23 10:48 AM	**pH @ 25°C, 1:2**	**8.29**		**Units**	
23-5367-004	GHWR #4	Date Collected: 06/22/23	Time Collected: 11:00			
Analysis Date:	06/29/23 10:48 AM	**pH @ 25°C, 1:2**	**8.06**		**Units**	
23-5367-005	GHWR #5	Date Collected: 06/22/23	Time Collected: 11:15			
Analysis Date:	06/29/23 10:48 AM	**pH @ 25°C, 1:2**	**8.74**		**Units**	
23-5367-006	GHOC #1	Date Collected: 06/22/23	Time Collected: 11:30			
Analysis Date:	06/29/23 10:48 AM	**pH @ 25°C, 1:2**	**8.86**		**Units**	
23-5367-007	GHOC #2	Date Collected: 06/22/23	Time Collected: 11:45			
Analysis Date:	06/29/23 10:48 AM	**pH @ 25°C, 1:2**	**8.33**		**Units**	
23-5367-008	GHOC #3	Date Collected: 06/22/23	Time Collected: 12:00			
Analysis Date:	06/29/23 10:48 AM	**pH @ 25°C, 1:2**	**8.86**		**Units**	
23-5367-009	GHOC #4	Date Collected: 06/22/23	Time Collected: 12:15			
Analysis Date:	06/29/23 10:48 AM	**pH @ 25°C, 1:2**	**8.87**		**Units**	
23-5367-010	GHOC #5	Date Collected: 06/22/23	Time Collected: 12:30			
Analysis Date:	06/29/23 10:48 AM	**pH @ 25°C, 1:2**	**8.25**		**Units**	

CHAIN OF CUSTODY RECORD

Page___ of ___ pgs

First Environmental Laboratories, Inc.

First Environmental Laboratories
1600 Shore Road, Suite D
Naperville, Illinois 60563
Phone: (630) 778-1200 • Fax: (630) 778-1233
E-mail: firstinfo@firstenv.com • www.firstenv.com
IEPA Certification #100292

Company Name: CEMT, INC.
Street Address: 60 MARTIN LANE
City: ELK GROVE VILLAGE State: IL Zip: 60007
Phone: (630) 595-1111 e-mail:
Send Report To: BLAKE SLOAN / PRATIK PATEL / LENNY HAKER
Sampled By: RS

GEMAT HAMILTON ASSOCIATES, INC.
Project I.D.: PROSPECT HEIGHTS, ILLINOIS
P.O. #: 23E0330

Date/Time Taken	Sample Description	Matrix*	Parameter(s): PH	Hold – Do Not Analyze	Comments	Lab I.D.
6/22/23 @ 10:15 am	GMWR #1	S	X			23-5367-001
6/22/23 @ 10:30 am	GMWR #2	S	X			-002
6/22/23 @ 10:45 am	GMWR #3	S	X			-003
6/22/23 @ 11:00 am	GMWR #4	S	X			-004
6/22/23 @ 11:15 am	GMWR #5	S	X			-005
6/22/23 @ 11:30 am	GMOC #1	S	X			-006

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6ºC Yes__ No.__ _____ºC
Received within 6 hrs. of collection:_____
Ice Present: Yes__ No__

LAB COURIER USE ONLY:

Sample Refrigerated: Yes No
Refrigerator Temperature: 4 ºC

Program: ☐ TACO/SRP ☐ CCDD ☐ NPDES ☐ LUST ☐ SDWA

***Matrix Code Key:** **S**-Soil **SL**-Sludge **DW**-Drinking Water **WW**-Wastewater **GW**-Groundwater **WIPE**-Wipe **O**-Other

Notes and Special Instructions: * (5 DAYS) *

Relinquished By: Lenny Haker Date/Time 6/23/23 0913 Received By: Ben Gonzalez Date/Time 6/23/23 0913

Relinquished By: _____ Date/Time _____ Received By: _____ Date/Time _____

Rev. 6/19

CHAIN OF CUSTODY RECORD

Page___ of ___ pgs

First Environmental Laboratories, Inc.

First Environmental Laboratories
1600 Shore Road, Suite D
Naperville, Illinois 60563
Phone: (630) 778-1200 • Fax: (630) 778-1233
E-mail: firstinfo@firstenv.com • www.firstenv.com
IEPA Certification #100292

Company Name: CGMT, INC.
Street Address: 60 MARTIN LANE
City: ELK GROVE VILLAGE State: IL Zip: 60007
Phone: 630 595-1111 e-mail:
Send Report To: BLAKE SLOAN | PRATIK PATEL | LENNY MAKER
Sampled By: BS

GEWALT HAMILTON ASSOCIATES, INC.
Project I.D.: PROSPECT HEIGHTS, ILLINOIS
P.O. #: 23E0330

Date/Time Taken	Sample Description	Matrix	Parameter(s): PM									Hold – Do Not Analyze	Comments	Lab I.D.
6/22/23 @ 11:45 AM	GMW #2	S	X											23-5367-007
6/22/23 @ 12:00 PM	GMW #3	S	X											-008
6/22/23 @ 12:15 PM	GMW #4	S	X											-009
6/22/23 @ 12:30 PM	GMW #5	S	X											-010

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6ºC Yes__ No.__ _____ºC
Received within 6 hrs. of collection:_____
Ice Present: Yes__ No__

LAB COURIER USE ONLY:

Sample Refrigerated: Yes~~S~~ No__
Refrigerator Temperature: 4 ºC

Program: ☐ TACO/SRP ☐ CCDD ☐ NPDES ☐ LUST ☐ SDWA

***Matrix Code Key:** **S**-Soil **SL**-Sludge **DW**-Drinking Water **WW**-Wastewater **GW**-Groundwater **WIPE**-Wipe **O**-Other

Notes and Special Instructions: * (5 DAYS) *

Relinquished By: Lenny Maker Date/Time 6/23/23 0915 Received By: Ken Eckenrode Date/Time 6/23/23 0915
Relinquished By: _____ Date/Time _____ Received By: _____ Date/Time _____

Rev. 6/19

Construction & Geotechnical Material Testing, Inc.

60 Martin Lane, Elk Grove Village, Illinois 60007
Telephone (630) 595-1111 ♦ Fax (630) 595-1110

July 14, 2023

CGMT Project No.: 23E0330

Mr. Wadee Rafati, P.E.
Gewalt Hamilton Associates, Inc.
625 Forest Edge Drive
Vernon Hills, Illinois 60061

RE: Limited Environmental Screening and Soil Laboratory Testing
Willow Road Flood Control Project
W. Palatine Road – Prospect Heights, Illinois 60070

Dear Mr. Rafati:

Construction & Geotechnical Material Testing, Inc. (CGMT) is pleased to provide you the test results for the limited environmental screening for on-site soil at the project site for contamination of soil with other clean construction or demolition debris (CCDD) in accordance with Section 22.51(f)(2)(B) of the Environmental Protection Act [415 ILCS 5/22.51(f)(2)(B)].

CGMT understands that the spoils from your proposed excavation activities during the construction at the above referenced project in Prospect Heights, Illinois will be hauled off site. To evaluate the soils, CGMT performed a limited soil sampling and testing analysis.

In general, the material sampled consisted of brown and/or gray silty clay loam soils. Due to the similar soils encountered to the approximate depth of 5 feet below ground surface, CGMT collected three (3) independent grab samples. The attached location map depicts the approximate locations of the samples.

CGMT obtained the soil samples of on-site materials readily accessible to a hand auger. The soil samples were sealed in containers and returned to our laboratory subcontractor to perform laboratory testing. The samples were tested for the following parameters:

- VOCs
- SVOCs
- PCB's
- Pesticides
- RCRA Metals
- TCLP Chromium
- Cyanide; and
- pH

Based on the test results, in general, the soil samples exhibited an absence of detections for most target analytes and detect values below the threshold values for each of the items listed above when compared to Maximum Allowable Concentrations of Chemical Constituents in Uncontaminated Soil Used as Fill Material at Regular Fill Operations within a populated area and at pH range of 6.25 to 9.0. Based on review of the above mentioned target list, the soils appear acceptable for disposal.

It should be noted that CGMT acquired the samples from readily accessible areas. If, during construction, soils that are stained and/or exhibit odors are encountered, removal operations should be immediately suspended and additional sampling and testing should be performed prior to resuming removal operations. Please note that CCDD/UFSO facilities screen each load with a PID, which will determine the final acceptance of individual loads, regardless of the analytical results.

We look forward to our work with you on this project and future projects.

Respectfully Submitted,

CONSTRUCTION AND GEOTECHNICAL MATERIAL TESTING, INC.

Pratik K. Patel, P.E.
Vice President

Attachments: Location Maps
IEPA Form LPC-663
Laboratory Test Results

GENERAL LOCATION PLAN

- Approximate Sample Location
- Acceptable CCDD Material

N

CGMT Project No. 22E0330
Willow Road Flood Control Project
W. Palatine Road,
Prospect Heights, Cook County, Illinois 60070

Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

Uncontaminated Soil Certification by Licensed Professional Engineer or Licensed Professional Geologist for Use of Uncontaminated Soil as Fill in a CCDD or Uncontaminated Soil Fill Operation LPC-663

Revised in accordance with 35 Ill. Adm. Code 1100, as amended by PCB R2012-009 (eff. Aug. 27, 2012)

This certification form is to be used by professional engineers and professional geologists to certify, pursuant to 35 Ill. Adm. Code 1100.205(a)(1)(B), that soil (i) is uncontaminated soil and (ii) is within a pH range of 6.26 to 9.0. If you have questions about this form, please telephone the Bureau of Land Permit Section at 217/524-3300.

This form may be completed online, saved locally, printed and signed, and submitted to prospective clean construction or demolition debris (CCDD) fill operations or uncontaminated soil fill operations.

I. Source Location Information

(Describe the location of the source of the uncontaminated soil)

Project Name: Willow Road Flood Control Project Office Phone Number, if available: _____

Physical Site Location (address, including number and street):

W. Palatine Road

City: Prospect Heights State: IL Zip Code: 60070

County: Cook Township: Wheeling

Lat/Long of approximate center of site in decimal degrees (DD.ddddd) to five decimal places (e.g., 40.67890, -90.12345):

Latitude: 42.11066 (Decimal Degrees) Longitude: -87.94344 (-Decimal Degrees)

Identify how the lat/long data were determined:

○ GPS ⊘ Map Interpolation ○ Photo Interpolation ○ Survey ○ Other

Google Earth

IEPA Site Number(s), if assigned: BOL: _____ BOW: _____ BOA: _____

Approximate Start Date (mm/dd/yyyy): _____ Approximate End Date (mm/dd/yyyy): _____

Estimated Volume of debris (cu. Yd.): _____

II. Owner/Operator Information for Source Site

Site Owner

Name: City of Prospect Heights

Street Address: 8 N. Elmhurst Road

PO Box: _____

City: Prospect Heights State: IL

Zip Code: 60070 Phone: _____

Contact: _____

Email, if available: _____

Site Operator

Name: _____

Street Address: _____

PO Box: _____

City: _____ State: _____

Zip Code: _____ Phone: _____

Contact: _____

Email, if available: _____

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed $50,000 for the violation and an additional civil penalty of not to exceed $10,000 for each day during which the violation continues (415 ILCS 5/42). This form has been approved by the Forms Management Center.

Project Name: Willow Road Flood Control Project Latitude: 42.11066 Longitude: - 87.94344

Uncontaminated Soil Certification

III. Basis for Certification and Attachments

For each item listed below, reference the attachments to this form that provide the required information.

a. A Description of the soil sample points and how they were determined to be sufficient in number and appropriately located 35 Ill. Adm. Code 1100.610(a)]:

CGMT performed a limited exploration to evaluate on-site condition and potential PIPs. Due to the similar soils, brown and/or gray silty clay loam and anticipated quantity of excavation, three (3) soil samples were collected for the indicator contaminants associated with the identified PIPs. An attached location map indicates the approximate locations of the samples.

b. Analytical soil testing results to show that soil chemical constituents comply with the maximum allowable concentrations established pursuant to 35 Ill. Adm. Code Part 1100, Subpart F and that the soil pH is within the range of 6.25 to 9.0,including the documentation of chain of custody control, a copy of the lab analysis; the accreditation status of the laboratory performing the analysis; and certification by an authorized agent of the laboratory that the analysis has been performed in accordance with the Agency's rules for the accreditation of environmental and the scope of the accreditation [35 Ill. Adm. Code 1100.201 (g), 1100.205(a), 1100.610]:

See attached cover sheet for testing and analysis process.

IV. Certification Statement, Signature and Seal of Licensed Professional Engineer or Licensed Professional Geologist

I, Pratik K. Patel, P.E. (name of licensed professional engineer or geologist) certify under penalty of law that the information submitted, including but not limited to, all attachments and other information, is to the best of my knowledge and belief, true, accurate and complete. In accordance with the Environmental Protection Act [415 ILCS 5/22.51 or 22.51a] and 35 Ill. Adm. Code 1100.205(a), I certify that the soil from this site is uncontaminated soil. I also certify that the soil pH is within the range of 6.25 to 9.0. In addition, I certify that the soil has not been removed from the site as part of a cleanup or removal of contaminants. All necessary documentation is attached.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Company Name:	Construction & Geotechnical Material Testing, Inc.
Street Address:	60 Martin Lane
City:	Elk Grove Village State: IL Zip Code: 60007
Phone:	630.595.1111

Pratik K. Patel, P.E.
Printed Name:

Licensed Professional Engineer or
Licensed Professional Geologist Signature:

7-14-23
Date:

PRATIK K. PATEL
062-
LICENSED
PROFESSIONAL
ENGINEER
STATE OF ILLINOIS
4/30/25

P.E or L.P.G. Seal:

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

July 06, 2023

Mr. Blake Sloan
CGMT, INC.
60 Martin Lane
Elk Grove Village, IL 60007

Project ID: 23E0331, Gewalt Hamilton Associates, Inc
First Environmental File ID: 23-5368
Date Received: June 23, 2023

Dear Mr. Blake Sloan:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number:

1002922023-10: effective 03/07/2023 through 02/28/2024.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Ryan Gerrick
Project Manager

First Environmental Laboratories, Inc.
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Case Narrative

CGMT, INC.

Lab File ID: **23-5368**

Project ID: **23E0331, Gewalt Hamilton Associates, Inc**

Date Received: **June 23, 2023**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The results in this report apply to the samples in the following table:

Laboratory Sample ID	Client Sample Identifier	Date/Time Collected
23-5368-001	GHAW #1	6/22/2023 8:00
23-5368-002	GHAW #2	6/22/2023 9:00
23-5368-003	GHAW #3	6/22/2023 10:00

Sample Batch Comments:

Sample acceptance criteria were met.

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Case Narrative

CGMT, INC.

Lab File ID: **23-5368**

Project ID: **23E0331, Gewalt Hamilton Associates, Inc**

Date Received: **June 23, 2023**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The following is a definition of flags that may be used in this report:

Flag	Description	Flag	Description
A	Method holding time is 15 minutes from collection. Lab analysis was performed as soon as possible.		
B	Analyte was found in the method blank.	L	LCS recovery outside control limits.
<	Analyte not detected at or above the reporting limit.	M	MS recovery outside control limits; LCS acceptable.
C	Sample received in an improper container for this test.	P	Chemical preservation pH adjusted in lab.
D	Surrogates diluted out; recovery not available.	Q	Result was determined by a GC/MS database search.
E	Estimated result; concentration exceeds calibration range.	S	Analysis was subcontracted to another laboratory.
G	Surrogate recovery outside control limits.	T	Result is less than three times the MDL value.
H	Analysis or extraction holding time exceeded.	W	Reporting limit elevated due to sample matrix.
I	ICVS % rec outside 95-105% but within 90-110%		
J	Estimated result; concentration is less than routine RL but greater than MDL.	N	Analyte is not part of our NELAC accreditation or accreditation may not be available for this parameter.
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.

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Analytical Report

Client: CGMT, INC.
Project ID: 23E0331, Gewalt Hamilton Associates, Inc
Sample ID: GHAW #1
Sample No: 23-5368-001

Date Collected: 06/22/23
Time Collected: 8:00
Date Received: 06/23/23
Date Reported: 07/06/23

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total	**Method: 2540G 2011**			
Analysis Date: 06/29/23				
Total Solids	86.03		%	
Volatile Organic Compounds	**Method: 5035A/8260B**			
Analysis Date: 07/02/23				
Acetone	< 200	200	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	6.7	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
trans-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: CGMT, INC.
Project ID: 23E0331, Gewalt Hamilton Associates, Inc
Sample ID: GHAW #1
Sample No: 23-5368-001

Date Collected: 06/22/23
Time Collected: 8:00
Date Received: 06/23/23
Date Reported: 07/06/23

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 07/02/23				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/30/23		Preparation Date: 06/28/23		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	

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Analytical Report

Client: CGMT, INC.
Project ID: 23E0331, Gewalt Hamilton Associates, Inc
Sample ID: GHAW #1
Sample No: 23-5368-001

Date Collected: 06/22/23
Time Collected: 8:00
Date Received: 06/23/23
Date Reported: 07/06/23

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 06/30/23		**Preparation Method 3540C** Preparation Date: 06/28/23		
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 90	90	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: CGMT, INC.
Project ID: 23E0331, Gewalt Hamilton Associates, Inc
Sample ID: GHAW #1
Sample No: 23-5368-001

Date Collected: 06/22/23
Time Collected: 8:00
Date Received: 06/23/23
Date Reported: 07/06/23

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** **Preparation Method 3540C**				
Analysis Date: 06/30/23 Preparation Date: 06/28/23				
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs **Method: 8081A/8082** **Preparation Method 3540C**				
Analysis Date: 06/30/23 Preparation Date: 06/28/23				
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	
Total Metals **Method: 6010C** **Preparation Method 3050B**				
Analysis Date: 06/30/23 Preparation Date: 06/27/23				
Arsenic	9.8	1.0	mg/kg	

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Analytical Report

Client: CGMT, INC.
Project ID: 23E0331, Gewalt Hamilton Associates, Inc
Sample ID: GHAW #1
Sample No: 23-5368-001

Date Collected: 06/22/23
Time Collected: 8:00
Date Received: 06/23/23
Date Reported: 07/06/23

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Total Metals **Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 06/30/23		Preparation Date: 06/27/23		
Barium	89.6	0.5	mg/kg	
Cadmium	< 0.5	0.5	mg/kg	
Chromium	19.6	0.5	mg/kg	
Lead	21.5	0.5	mg/kg	
Selenium	< 1.0	1.0	mg/kg	
Silver	< 0.2	0.2	mg/kg	
Total Mercury **Method: 7471B**				
Analysis Date: 06/29/23				
Mercury	< 0.05	0.05	mg/kg	
pH @ 25°C, 1:2 **Method: 9045D**				
Analysis Date: 06/29/23 10:48				
pH @ 25°C, 1:2	7.65		Units	
Cyanide, Total **Method: 9010B/9014**				
Analysis Date: 06/30/23				
Cyanide, Total	0.14	0.10	mg/kg	

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Analytical Report

Client: CGMT, INC.
Project ID: 23E0331, Gewalt Hamilton Associates, Inc
Sample ID: GHAW #2
Sample No: 23-5368-002

Date Collected: 06/22/23
Time Collected: 9:00
Date Received: 06/23/23
Date Reported: 07/06/23

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total	**Method: 2540G 2011**			
Analysis Date: 06/29/23				
Total Solids	87.08		%	
Volatile Organic Compounds	**Method: 5035A/8260B**			
Analysis Date: 07/02/23				
Acetone	< 200	200	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
trans-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: CGMT, INC.
Project ID: 23E0331, Gewalt Hamilton Associates, Inc
Sample ID: GHAW #2
Sample No: 23-5368-002

Date Collected: 06/22/23
Time Collected: 9:00
Date Received: 06/23/23
Date Reported: 07/06/23

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 07/02/23				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 06/30/23		Preparation Date: 06/28/23		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	

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Analytical Report

Client: CGMT, INC.
Project ID: 23E0331, Gewalt Hamilton Associates, Inc
Sample ID: GHAW #2
Sample No: 23-5368-002

Date Collected: 06/22/23
Time Collected: 9:00
Date Received: 06/23/23
Date Reported: 07/06/23

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 06/30/23		**Preparation Method 3540C** Preparation Date: 06/28/23		
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 90	90	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: CGMT, INC.
Project ID: 23E0331, Gewalt Hamilton Associates, Inc
Sample ID: GHAW #2
Sample No: 23-5368-002

Date Collected: 06/22/23
Time Collected: 9:00
Date Received: 06/23/23
Date Reported: 07/06/23

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** **Preparation Method 3540C**				
Analysis Date: 06/30/23 Preparation Date: 06/28/23				
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs **Method: 8081A/8082** **Preparation Method 3540C**				
Analysis Date: 06/30/23 Preparation Date: 06/28/23				
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	
Total Metals **Method: 6010C** **Preparation Method 3050B**				
Analysis Date: 06/30/23 Preparation Date: 06/27/23				
Arsenic	6.4	1.0	mg/kg	

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Analytical Report

Client: CGMT, INC.
Project ID: 23E0331, Gewalt Hamilton Associates, Inc
Sample ID: GHAW #2
Sample No: 23-5368-002

Date Collected: 06/22/23
Time Collected: 9:00
Date Received: 06/23/23
Date Reported: 07/06/23

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Total Metals **Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 06/30/23		Preparation Date: 06/27/23		
Barium	52.2	0.5	mg/kg	
Cadmium	< 0.5	0.5	mg/kg	
Chromium	18.5	0.5	mg/kg	
Lead	12.8	0.5	mg/kg	
Selenium	< 1.0	1.0	mg/kg	
Silver	< 0.2	0.2	mg/kg	
Total Mercury **Method: 7471B**				
Analysis Date: 06/29/23				
Mercury	< 0.05	0.05	mg/kg	
pH @ 25°C, 1:2 **Method: 9045D**				
Analysis Date: 06/29/23 10:48				
pH @ 25°C, 1:2	8.45		Units	
Cyanide, Total **Method: 9010B/9014**				
Analysis Date: 06/30/23				
Cyanide, Total	< 0.10	0.10	mg/kg	

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Analytical Report

Client: CGMT, INC.
Project ID: 23E0331, Gewalt Hamilton Associates, Inc
Sample ID: GHAW #3
Sample No: 23-5368-003

Date Collected: 06/22/23
Time Collected: 10:00
Date Received: 06/23/23
Date Reported: 07/06/23

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540G 2011**				
Analysis Date: 06/29/23				
Total Solids	86.61		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 07/02/23				
Acetone	< 200	200	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
trans-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: CGMT, INC.
Project ID: 23E0331, Gewalt Hamilton Associates, Inc
Sample ID: GHAW #3
Sample No: 23-5368-003

Date Collected: 06/22/23
Time Collected: 10:00
Date Received: 06/23/23
Date Reported: 07/06/23

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds	**Method: 5035A/8260B**			
Analysis Date: 07/02/23				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 06/30/23		Preparation Date: 06/28/23		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	

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Analytical Report

Client: CGMT, INC.
Project ID: 23E0331, Gewalt Hamilton Associates, Inc
Sample ID: GHAW #3
Sample No: 23-5368-003

Date Collected: 06/22/23
Time Collected: 10:00
Date Received: 06/23/23
Date Reported: 07/06/23

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 06/30/23		**Preparation Method 3540C** Preparation Date: 06/28/23		
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 90	90	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	

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Analytical Report

Client: CGMT, INC.
Project ID: 23E0331, Gewalt Hamilton Associates, Inc
Sample ID: GHAW #3
Sample No: 23-5368-003

Date Collected: 06/22/23
Time Collected: 10:00
Date Received: 06/23/23
Date Reported: 07/06/23

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds	**Method: 8270C**	**Preparation Method 3540C**		
Analysis Date: 06/30/23		Preparation Date: 06/28/23		
2,4,5-Trichlorophenol	< 330	330	ug/kg	
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs	**Method: 8081A/8082**	**Preparation Method 3540C**		
Analysis Date: 06/30/23		Preparation Date: 06/28/23		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	
Total Metals	**Method: 6010C**	**Preparation Method 3050B**		
Analysis Date: 06/30/23		Preparation Date: 06/27/23		
Arsenic	8.0	1.0	mg/kg	

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Analytical Report

Client: CGMT, INC.
Project ID: 23E0331, Gewalt Hamilton Associates, Inc
Sample ID: GHAW #3
Sample No: 23-5368-003

Date Collected: 06/22/23
Time Collected: 10:00
Date Received: 06/23/23
Date Reported: 07/06/23

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Total Metals **Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 06/30/23		Preparation Date: 06/27/23		
Barium	97.3	0.5	mg/kg	
Cadmium	< 0.5	0.5	mg/kg	
Chromium	24.9	0.5	mg/kg	
Lead	14.5	0.5	mg/kg	
Selenium	< 1.0	1.0	mg/kg	
Silver	< 0.2	0.2	mg/kg	
Total Mercury **Method: 7471B**				
Analysis Date: 06/29/23				
Mercury	< 0.05	0.05	mg/kg	
pH @ 25°C, 1:2 **Method: 9045D**				
Analysis Date: 06/29/23 10:48				
pH @ 25°C, 1:2	8.14		Units	
Cyanide, Total **Method: 9010B/9014**				
Analysis Date: 06/30/23				
Cyanide, Total	< 0.10	0.10	mg/kg	

CHAIN OF CUSTODY RECORD

Page___ of ___ pgs

First Environmental Laboratories, Inc.

First Environmental Laboratories
1600 Shore Road, Suite D
Naperville, Illinois 60563
Phone: (630) 778-1200 • Fax: (630) 778-1233
E-mail: firstinfo@firstenv.com • www.firstenv.com
IEPA Certification #100292

Company Name: CGMTT, INC.
Street Address: 60 MARTIN LANE
City: ELK GROVE VILLAGE State: IL Zip: 60007
Phone: 630 595-1111 e-mail:
Send Report To: BLAKE SLOAN / PRATIK PATEL / LENNY HAKEN
Sampled By: RJS

GEWALT HAMILTON ASSOCIATES, INC.
Project I.D.: WHEELING, ILLINOIS
P.O. #: 23E0331

Date/Time Taken	Sample Description	Matrix	Parameter(s): VOCs	SVOCs	PESTICIDES	CYANIDE	PCBs	RCRA METALS	pH		Hold – Do Not Analyze	Comments	Lab I.D.
6/22/23 @ 8:00 am	GHAW #1	S	X	X	X	X	X	X	X				23-5368-001
6/22/23 @ 9:00 am	GHAW #2	S	X	X	X	X	X	X	X				-002
6/22/23 @ 10:00 am	GHAW #3	S	X	X	X	X	X	X	X				-003

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6ºC Yes__ No.__ _____ºC
Received within 6 hrs. of collection:_____
Ice Present: Yes__ No__

LAB COURIER USE ONLY:

Sample Refrigerated: Yes~~X~~ No__
Refrigerator Temperature:_____ºC

Program: ☐ TACO/SRP ☐ CCDD ☐ NPDES ☐ LUST ☐ SDWA

***Matrix Code Key:** **S**-Soil **SL**-Sludge **DW**-Drinking Water **WW**-Wastewater **GW**-Groundwater **WIPE**-Wipe **O**-Other

Notes and Special Instructions: * (5 DAYS) *

Relinquished By: Lenny Haken Date/Time 6/23/23 0913 Received By: [signature] Date/Time 6/23/23 0913

Relinquished By: _____ Date/Time _____ Received By: _____ Date/Time _____

Rev. 6/19

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July 14, 2023

Mr. Blake Sloan
CGMT, INC.
60 Martin Lane
Elk Grove Village, IL 60007

Project ID: 23E0331, Gewalt Hamilton Associates, Inc
First Environmental File ID: 23-5698
Date Received: June 23, 2023

Dear Mr. Blake Sloan:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number:

1002922023-10: effective 03/07/2023 through 02/28/2024.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Neal Cleghorn
Project Manager

First Environmental Laboratories, Inc.
IL ELAP / NELAC Accreditation # 100292
1600 Shore Road • Naperville, Illinois 60563 • Phone (630) 778-1200 • Fax (630) 778-1233

Case Narrative

CGMT, INC.

Lab File ID: **23-5698**

Project ID: **23E0331, Gewalt Hamilton Associates, Inc**

Date Received: **June 23, 2023**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The results in this report apply to the samples in the following table:

Laboratory Sample ID	Client Sample Identifier	Date/Time Collected
23-5698-001	GHAW #3	06/22/23 10:00

Sample Batch Comments:

Sample acceptance criteria were met.

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Case Narrative

CGMT, INC.

Lab File ID: **23-5698**

Project ID: **23E0331, Gewalt Hamilton Associates, Inc**

Date Received: **June 23, 2023**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The following is a definition of flags that may be used in this report:

Flag	Description	Flag	Description
A	Method holding time is 15 minutes from collection. Lab analysis was performed as soon as possible.		
B	Analyte was found in the method blank.	L	LCS recovery outside control limits.
<	Analyte not detected at or above the reporting limit.	M	MS recovery outside control limits; LCS acceptable.
C	Sample received in an improper container for this test.	P	Chemical preservation pH adjusted in lab.
D	Surrogates diluted out; recovery not available.	Q	Result was determined by a GC/MS database search.
E	Estimated result; concentration exceeds calibration range.	S	Analysis was subcontracted to another laboratory.
G	Surrogate recovery outside control limits.	T	Result is less than three times the MDL value.
H	Analysis or extraction holding time exceeded.	W	Reporting limit elevated due to sample matrix.
I	ICVS % rec outside 95-105% but within 90-110%		
J	Estimated result; concentration is less than routine RL but greater than MDL.	N	Analyte is not part of our NELAC accreditation or accreditation may not be available for this parameter.
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.

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Analytical Report

Client: CGMT, INC.
Project ID: 23E0331, Gewalt Hamilton Associates, Inc
Sample ID: GHAW #3
Sample No: 23-5698-001

Date Collected: 06/22/23
Time Collected: 10:00
Date Received: 06/23/23
Date Reported: 07/14/23

Analyte		Result	R.L.	Units	Flags
TCLP Extraction	**Method: 1311**				
Analysis Date: 07/12/23					
TCLP Extraction		Complete			
TCLP Metals Method 1311	**Method: 6010C**		**Preparation Method 3010A**		
Analysis Date: 07/14/23			Preparation Date: 07/13/23		
Chromium		< 0.005	0.005	mg/L	

CHAIN OF CUSTODY RECORD

Page ___ of ___ pgs

First Environmental Laboratories, Inc.

First Environmental Laboratories
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Naperville, Illinois 60563
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E-mail: firstinfo@firstenv.com • www.firstenv.com
IEPA Certification #100292

Company Name: CGMT, INC.
Street Address: 60 MARTIN LANE
City: ELK GROVE VILLAGE State: IL Zip: 60007
Phone: 595-1111 e-mail:
Send Report To: BLAKE SLOAN / PRATIK PATEL / JENNY HAKEN
Sampled By: RS

GEWALT HAMILTON ASSOCIATES, INC.
Project I.D.: WHEELING, ILLINOIS
P.O. #: 23E0331

Date/Time Taken	Sample Description	Matrix	Parameter(s) VOCs	SVOCs	PEST/HERBICIDES	CYANIDE	PCBs	RCRA METALS	pH	TCLP Cr per Blake 7/6 Hold - Do Not Analyze	Comments	Lab I.D.
6/22/23 @ 8:00 AM	GHAW #1	S	X	X	X	X	X	X	X			23-5368-001
6/22/23 @ 9:00 AM	GHAW #2	S	X	X	X	X	X	X	X			-002
6/22/23 @ 10:00 AM	GHAW #3	S	X	X	X	X	X	X	X	(X)	23-5698-001	-003

FOR LAB USE ONLY:

Cooler Temperature: 0.1-6°C Yes__ No.__ _____°C
Received within 6 hrs. of collection:_____
Ice Present: Yes__ No__

LAB COURIER USE ONLY:

Sample Refrigerated: Yes No__
Refrigerator Temperature: 4 °C

Program: ☐ TACO/SRP ☐ CCDD ☐ NPDES ☐ LUST ☐ SDWA

***Matrix Code Key:** **S**-Soil **SL**-Sludge **DW**-Drinking Water **WW**-Wastewater **GW**-Groundwater **WIPE**-Wipe **O**-Other

Notes and Special Instructions: * (5 DAYS) *

Relinquished By: Jenny Haken Date/Time 6/23/23 0913 Received By: [signature] Date/Time 6/23/23 0913
Relinquished By: _____ Date/Time _____ Received By: _____ Date/Time _____

Rev. 6/19

December 19, 2022

O'BRIEN & ASSOCIATES, INC.

Gewalt Hamilton Associates, Inc.
625 Forest Edge Drive
Vernon Hills, IL 60061

Attn: Mr. Dan Strahan, P.E.

Job No. 22044

Re: MWRD Compensatory Storage Investigation, north of Palatine Road and east of Schoenbeck Road, Prospect Heights, Illinois

Dear Mr. Strahan:

The following report presents the results of the geotechnical investigation performed for the above project. The information in this report is based on four (4) soil borings (B-1 to B-4) completed at the site. The results of the borings, along with a location diagram and general notes, are included in this report. The boring locations were located in the field by O'Brien & Associates, Inc. personnel without the aid of sophisticated surveying techniques and as such are considered to be approximate.

The purpose of this report is to describe the subsurface conditions encountered in the borings, to analyze and evaluate the data obtained, and to evaluate the subsurface conditions for use as compensatory stormwater storage areas. It is our understanding that the compensatory storage area will consist of two (2) connected storage ponds in an open field area that will require excavating approximately 4,400 cubic yards of soil. It is also our understanding that the excavated soils from this site are to be used as an engineered fill at a different location.

The soil borings were performed on November 23, 2022, with a track mounted drilling rig and were advanced by means of hollow stem augers. Representative samples were obtained employing split spoon sampling procedures in accordance with ASTM Specification D-1586. Samples obtained in the field were returned to our laboratory for further examination and testing. Split spoon sampling involves driving a 2.0 inch outside diameter split-barrel sampler into the soil with a 140-pound weight falling freely through a distance of 30 inches. The number of blows required to advance the sampler the last 12 inches is termed the Standard Penetration Resistance (N) and is included on the boring logs. The N value is an indication of the relative density and strength of the soil.

The soil testing program consisted of performing water content, dry density and unconfined compressive strength (Rimac) or calibrated hand penetrometer tests on the cohesive samples recovered. Water content tests were performed on the surficial topsoil samples recovered. These tests were performed upon representative portions of the samples obtained in the field. In addition, composite samples were recovered depths of 3.5' to 10.0' from borings B-1 and B-2 and from borings B-3 and B-4 to be tested for Laboratory Compaction Characteristics Using a Mechanical Compactor with Standard Effort (Standard Proctor, ASTM D-698). The results of the soil tests, along with a visual classification of the material based upon both a textural analysis and the Unified Soil Classification System, are indicated on the boring logs.

Specific soil conditions encountered in the borings are indicated on the soil boring logs. As indicated on the logs, a thin surficial topsoil that was generally wet (moisture content = 24% to 30%) was encountered at all of the borings. At boring B-1 to B-3, the topsoil was underlain by stiff to hard clay soils that extended to the maximum depth of the borings, 10.0' below ground surface. At borings B-1 and B-2, the clay soils underwent a color change from brown and gray to gray at depths of 4.0' and 8.5' respectively and at boring B-3, the clay soils were noted to be brown and gray to the full depth of the boring. At boring B-4, the topsoil was underlain by a 2.0' layer of stiff, brown, gray and black clay that appeared to be fill that was underlain by a 2.5' layer of very stiff to hard brown and gray clay that was underlain by a stiff to hard gray clay that extended to the maximum depth of the boring, 10.0'. The stratification lines shown on the boring logs represent the approximate boundary between soil types, and the actual transition may be gradual.

Water level readings were taken during drilling and after the completion of the borings. Groundwater was encountered at a depth of 9.0' below ground surface during drilling at boring B-1 and no water was encountered during drilling at any of the other borings. These readings are shown on the boring logs and, along with local hydrogeologic information and the color change from brown and gray to gray, indicate that the phreatic surface is at or below a depth of approximately 4.0' to 6.0' below ground surface. Fluctuations in the amount of water accumulated and in the hydrostatic water table can be anticipated depending upon variations in precipitation and surface runoff. The water level observations provide an approximate indication of the groundwater levels at the time the borings were drilled. Longer term observations using piezometers would be necessary to more accurately establish groundwater conditions at the site.

The results of the borings indicate the presence of clay soils below a relatively thin surficial topsoil layer. After topsoil stripping, the excavated material will consist of a lean clay that will be suitable for use as an engineered fill. The in-situ moisture content is slightly higher than the optimum moisture contents for the Proctors and some discing and aeration may be required during placement to reduce the moisture contents of the excavated clay.

The clay soils are relatively impermeable and are not free draining soils. The storage area will need to be provided with an outlet to allow the stored water to drain. Side slopes of 3 horizontal to 1 vertical or flatter constructed in the clay soils will be stable. Steeper side slopes will require further evaluation.

As of July 30, 2010, Illinois Public Act 096-1416 set forth disposal requirements for "clean" soil that require sampling/analysis and a professional engineer certification if soils are to be disposed of offsite. An investigation should be performed to determine if the excavated soil is to suitable for off-site disposal.

The information in this report does not reflect any variations which may occur away from the borings or across the sites. In addition, the soil samples cannot be relied on to accurately reflect the strata variations that usually exist between sampling locations. The nature and extent of such variations may not become evident until construction. If variations appear evident, it will be necessary to reevaluate the recommendations of the report.

The information in this report does not reflect any variations which may occur away from the borings or across the site. In addition, the soil samples cannot be relied on to accurately reflect

the strata variations that usually exist between sampling locations. The nature and extent of such variations may not become evident until construction. If variations appear evident, it will be necessary to reevaluate the recommendations of the report.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No other warranties, either expressed or implied, are intended or made. Also note that O'Brien & Associates, Inc. is not responsible for any claims, damages, or liability associated with any other party's interpretation of this report's subsurface data or reuse of the report's subsurface data or engineering analyses without the express written authorization of O'Brien & Associates, Inc.

If there are any questions with regard to the information submitted in this preliminary report, or if we can be of further assistance to you in any way, please do not hesitate to contact us.

Very truly yours,

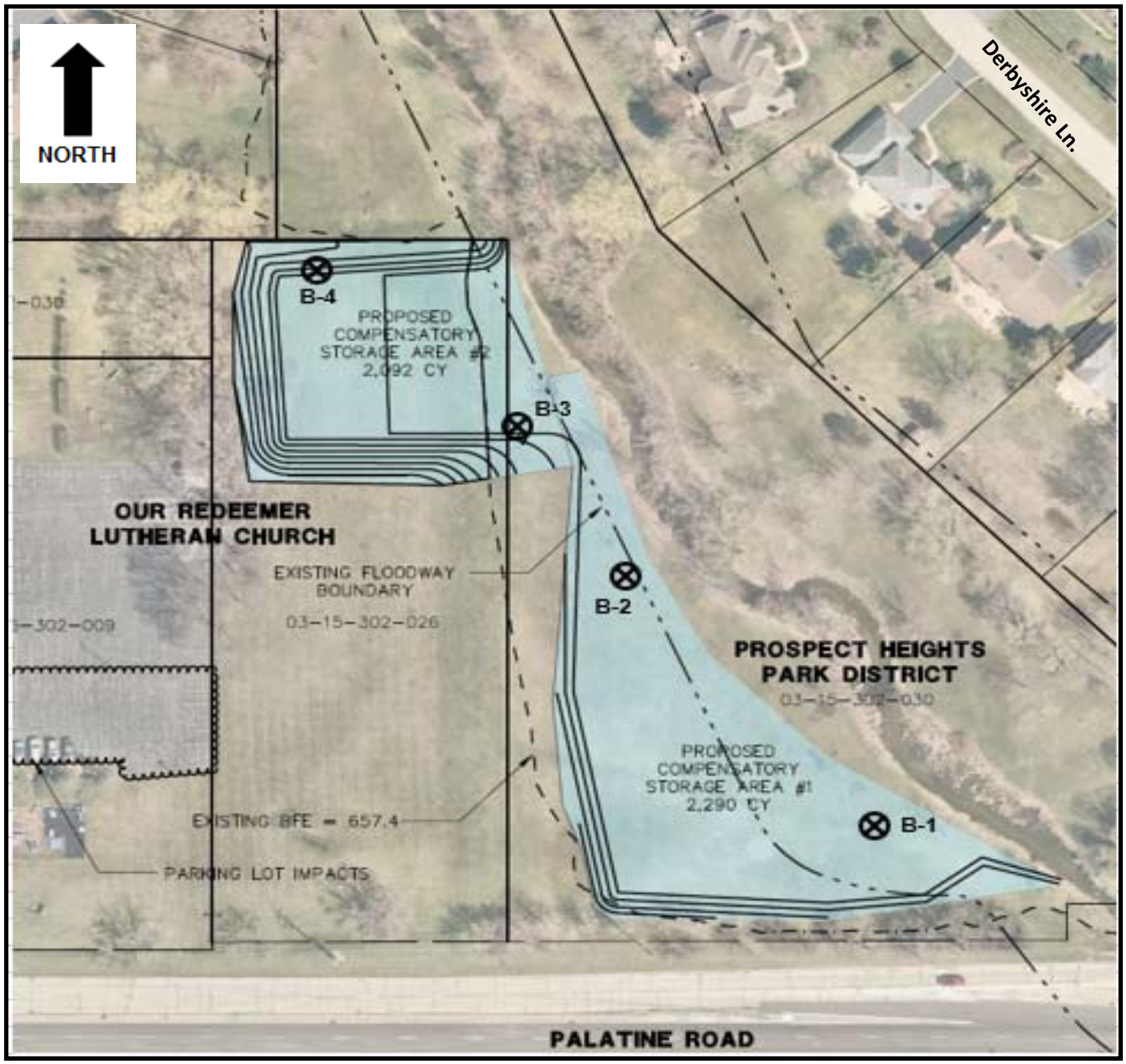
O'BRIEN & ASSOCIATES, INC.

Dixon O'Brien, P.E.
Vice President

DOB/jw/vb

enc.

EXP. 11/30/2023



SOIL BORING LOCATION DIAGRAM

Proposed MWRD Storm Water Compensatory Storage Areas Palatine & Schoenbeck Rds Prospect Heights, Illinois	O'BRIEN & ASSOCIATES, INC. CONSULTING ENGINEERS 766 W. ALGONQUIN ROAD ARLINGTON HEIGHTS, ILLINOIS 60005 (847) 398-1441 • (847) 398-2376	PREPARED BY	VPB
		APPROVED BY	DOB
		DATE	11/29/2022
		JOB NO.	22044

NOT TO SCALE

LOG OF BORING NO. B–1

CLIENT Gewalt Hamilton Associates, Inc.	BORING LOCATION See Boring Location Diagram
PROJECT LOCATION Palatine & Schoenbeck Roads, Prospect Heights, IL	PROJECT DESCRIPTION MWRD Compensatory Storage

DEPTH (ft.) BELOW GROUND SURFACE	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	DESCRIPTION OF MATERIAL	STANDARD PENETRATION "N"	Qp (tsf)	Qu (tsf)	MOISTURE CONTENT (%)	UNIT DRY WEIGHT (pcf)	REMARKS
				GROUND SURFACE ELEVATION						
	1	AS		6" TOPSOIL wet				30		
	2	SS		LEAN CLAY–brown & gray– very stiff (CL)	9	2.5	2.8	19	109	
5.0	3	SS		LEAN CLAY–gray– very stiff to hard (CL)	13	4.25	3.5	17	112	
	4	SS			20	4.5	4.2	17	109	
10.0	5	SS			15	3.0	2.7	17	117	
				END OF BORING						

WATER LEVEL OBSERVATIONS	
Water Level While Drilling –9.0'	▼
Water Level After Boring –9.0'	▽
	▽▼

OBA
O'BRIEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
766 W. ALGONQUIN RD./ARLINGTON HTS., IL 60005
(847)398–1441 * FAX(847) 398–2376

BORING STARTED	November 23, 2022		
BORING COMPLETED	November 23, 2022		
RIG	GeoP	FOREMAN	SRN
DRAWN	VPB	APPROVED	DOB
OBA JOB No.	22044	SHEET	1 OF 1

LOG OF BORING NO. B–2

CLIENT	BORING LOCATION
Gewalt Hamilton Associates, Inc.	See Boring Location Diagram
PROJECT LOCATION	**PROJECT DESCRIPTION**
Palatine & Schoenbeck Roads, Prospect Heights, IL	MWRD Compensatory Storage

DEPTH (ft.) BELOW GROUND SURFACE	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	DESCRIPTION OF MATERIAL	STANDARD PENETRATION "N"	Qp (tsf)	Qu (tsf)	MOISTURE CONTENT (%)	UNIT DRY WEIGHT (pcf)	REMARKS
				GROUND SURFACE ELEVATION						
	1	AS		6" TOPSOIL wet				34		
	2	SS		SILTY CLAY–brown & gray– stiff to very stiff (CL/ML)	4	2.0	1.0S @9%	19	112	
5.0	3	SS			13	1.75	1.8	15	120	
	4	SS			19	3.5	3.7	14	123	
10.0	5	SS		LEAN CLAY–gray– very stiff (CL)	11	3.0	2.1	18	112	
				END OF BORING						

WATER LEVEL OBSERVATIONS		BORING STARTED	November 23, 2022
Water Level While Drilling Dry	▼	BORING COMPLETED	November 23, 2022
Water Level After Boring Dry	▽	RIG GeoP	FOREMAN SRN
	▽	DRAWN VPB	APPROVED DOB
		OBA JOB No. 22044	SHEET 1 OF 1

O'BRIEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
766 W. ALGONQUIN RD./ARLINGTON HTS., IL 60005
(847)398–1441 * FAX(847) 398–2376

LOG OF BORING NO. B–3

CLIENT Gewalt Hamilton Associates, Inc.	BORING LOCATION See Boring Location Diagram
PROJECT LOCATION Palatine & Schoenbeck Roads, Prospect Heights, IL	PROJECT DESCRIPTION MWRD Compensatory Storage

DEPTH (ft.) BELOW GROUND SURFACE	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	DESCRIPTION OF MATERIAL		STANDARD PENETRATION "N"	Qp (tsf)	Qu (tsf)	MOISTURE CONTENT (%)	UNIT DRY WEIGHT (pcf)	REMARKS
				GROUND SURFACE ELEVATION							
	1	AS		TOPSOIL					24		
	2	SS		LEAN CLAY–brown & gray– stiff to hard (CL)	wet	7	2.5	2.5	25	95	
5.0	3	SS				4	1.0	1.1	23	104	
	4	SS				8	1.75	1.0	21	106	
10.0	5	SS				15	4.5	4.2	17	106	
				END OF BORING							

WATER LEVEL OBSERVATIONS	
Water Level While Drilling	Dry
Water Level After Boring	Dry

O'BRIEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
766 W. ALGONQUIN RD./ARLINGTON HTS., IL 60005
(847)398–1441 * FAX(847) 398–2376

BORING STARTED	November 23, 2022		
BORING COMPLETED	November 23, 2022		
RIG	GeoP	FOREMAN	SRN
DRAWN	VPB	APPROVED	DOB
OBA JOB No.	22044	SHEET	1 OF 1

LOG OF BORING NO. B–4

CLIENT Gewalt Hamilton Associates, Inc.	BORING LOCATION See Boring Location Diagram
PROJECT LOCATION Palatine & Schoenbeck Roads, Prospect Heights, IL	PROJECT DESCRIPTION MWRD Compensatory Storage

DEPTH (ft.) BELOW GROUND SURFACE	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	DESCRIPTION OF MATERIAL	STANDARD PENETRATION "N"	Qp (tsf)	Qu (tsf)	MOISTURE CONTENT (%)	UNIT DRY WEIGHT (pcf)	REMARKS
				GROUND SURFACE ELEVATION						
	1	AS		TOPSOIL FILL wet				25		
	2	SS		LEAN CLAY–brown, gray & black– stiff (CL) FILL	10	1.75	1.9	21	107	
5.0	3	SS		LEAN CLAY–brown & gray– very stiff to hard (CL)	10	3.75	4.4	16	108	
	4	SS		LEAN CLAY–gray– stiff to hard (CL)	17	4.25	4.2	20	105	
10.0	5	SS			9	1.5	1.1	22	105	
				END OF BORING						

WATER LEVEL OBSERVATIONS	
Water Level While Drilling	Dry
Water Level After Boring	Dry

O'BRIEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
766 W. ALGONQUIN RD./ARLINGTON HTS., IL 60005
(847)398–1441 * FAX(847) 398–2376

BORING STARTED	November 23, 2022		
BORING COMPLETED	November 23, 2022		
RIG	GeoP	FOREMAN	SRN
DRAWN	VPB	APPROVED	DOB
OBA JOB No.	22044	SHEET	1 OF 1

GENERAL NOTES

CLASSIFICATION

Chicago Building Code Textural Soil Classifications and Unified Soil Classifications are used.

Cohesionless Soils

Relative Density	No. of Blows per foot N
Very Loose	0 to 4
Loose	4 to 10
Medium	10 to 30
Dense	30 to 50
Very Dense	Over 50

Cohesive Soils

Consistency	Unconfined Compressive Strength - qu (tsf)
Very Soft	Less than 0.25
Soft	0.25 - 0.5
Medium	0.5 - 1.0
Stiff	1.0 - 2.0
Very Stiff	2.0 - 4.0
Hard	Over 4.0

TERMINOLOGY

Streaks are considered to be paper thick. **Lenses** are considered to be less than 2 inches thick. **Layers** are considered to be 6 inches or less thick. **Stratum** are considered to be greater than 6 inches thick.

DRILLING AND SAMPLING SYMBOLS

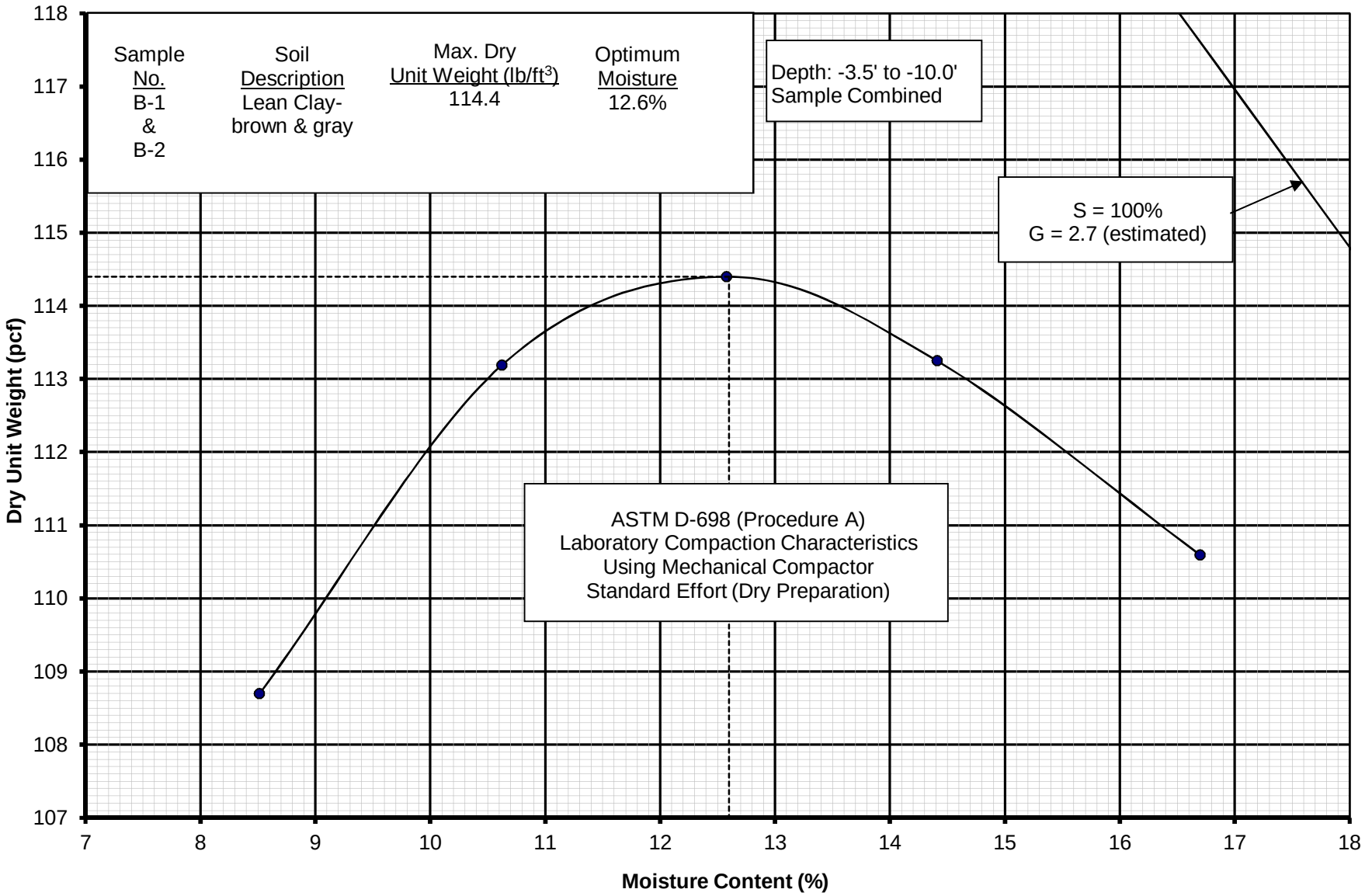
SS:	Split Spoon 1-3/8" I.D., 2" O.D.	HS:	Housel Sampler
ST:	Shelby Tube 2" O.D., except where noted	WS:	Wash Sample
AS:	Auger Sample	FT:	Fish Tail
DB:	Diamond Bit - NX: BX: AX	RB:	Rock Bit
CB:	Carboloy Bit - NX: BX: AX	WO:	Wash Out
OS:	Osterberg Sampler		

Standard "N" Penetration: Blows per foot of a 140 lb. hammer falling 30" on a 2" O.D. Split Spoon

WATER LEVEL MEASUREMENT SYMBOLS

WL:	Water	WD:	While Drilling
WCI:	Wet Cave In	BCR:	Before Casing Removal
DCI:	Dry Cave In	ACR:	After Casing Removal
WS :	While sampling	AB:	After Boring

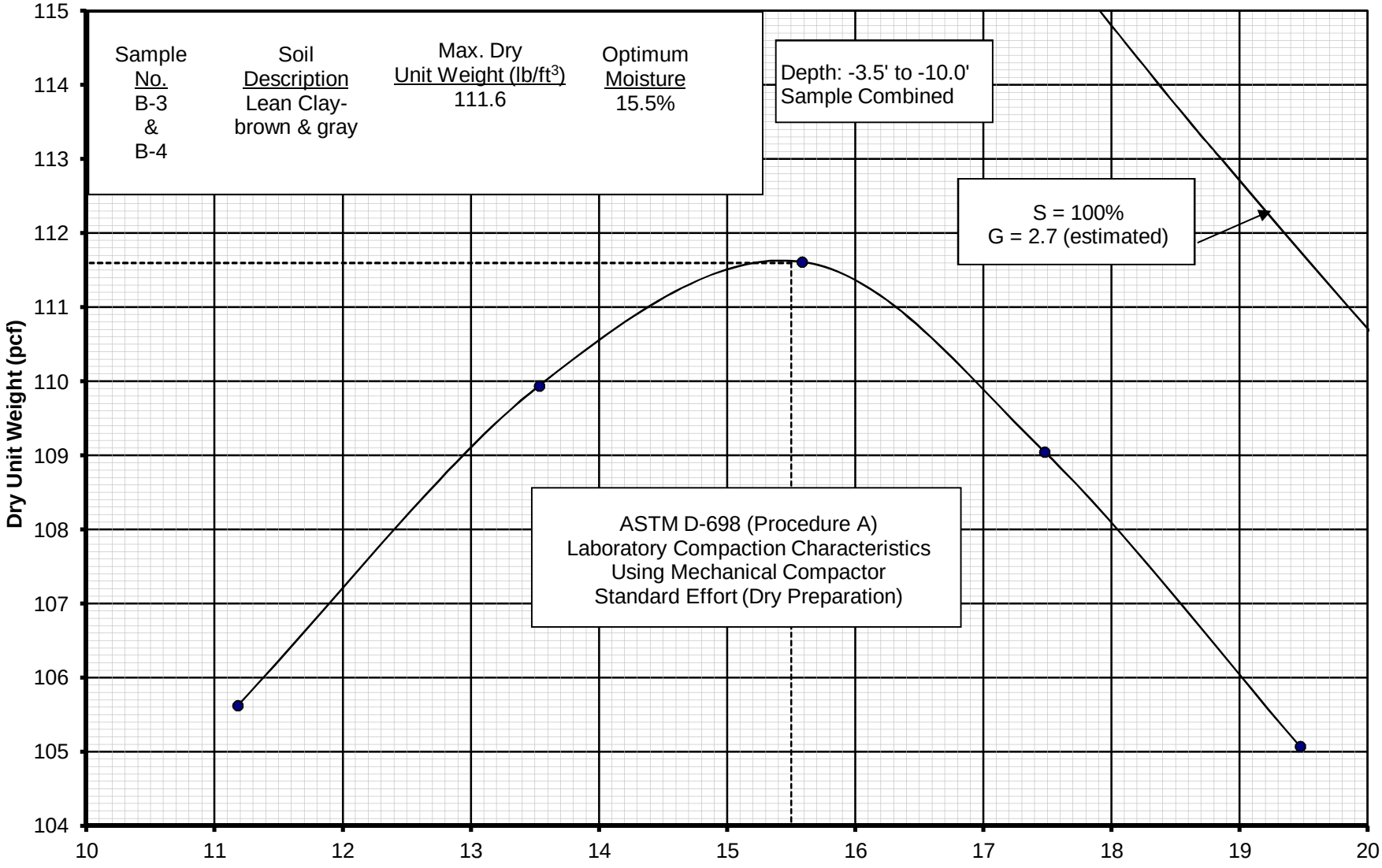
Water levels indicated on the boring logs are the levels measured in the boring at the times indicated. In pervious soils, the indicated elevations are considered reliable ground water levels. In impervious soils, the accurate determination of ground water elevations is not possible in even several day's observation, and additional evidence on ground water elevations must be sought.



MOISTURE DENSITY CURVE
MWRD
Compensatory Storage
Palatine & Schoenbeck Roads
Prospect Heights, Illinois

O'BRIEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
766 WEST ALGONQUIN ROAD
ARLINGTON HEIGHTS, ILLINOIS
(847) 398-1441

TESTED BY	AT
DRAWN BY	JE
APPROVED BY	DOB
DATE ISSUED	12/2/22
JOB NO.	22044



MOISTURE DENSITY CURVE
MWRD
Compensatory Storage
Palatine & Schoenbeck Roads
Prospect Heights, Illinois

O'BRIEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
766 WEST ALGONQUIN ROAD
ARLINGTON HEIGHTS, ILLINOIS
(847) 398-1441

TESTED BY	AT
DRAWN BY	JE
APPROVED BY	DOB
DATE ISSUED	12/2/22
JOB NO.	22044

GEOTECHNICAL INVESTIGATION
for the
MWRDGC Flood Control Project
Willow Road, Hillcrest Drive and Owen Court
Roadway Improvements at McDonald Creek Tributary A
Prospect Heights, Illinois

O'BRIEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
1235 E. DAVIS ST./ARLINGTON HTS., IL 60005
(847)398-1441 * FAX(847) 398-2376

April 3, 2015

Globetrotters Engineering Corporation
300 S. Wacker Drive, Suite 400
Chicago, IL 60606

Attention: Mr. Dave Handwerk, P.E.

OBA Job No. 14652

Re: MWRDGC Flood Control Project, Willow Road, Hillcrest Drive and Owen Court Roadway Improvements at McDonald Creek Tributary A, Prospect Heights, Illinois

Dear Mr. Handwerk:

Please find enclosed the results of the geotechnical investigation for the proposed improvements. This report has been based upon information regarding plans for the proposed improvements and subsurface information obtained in six (6) borings.

If there are any questions with regard to the information submitted in this report, or if we can be of further assistance to you in any way, please do not hesitate to contact us.

Very truly yours,

O'BRIEN & ASSOCIATES, INC.

Dixon O'Brien, P.E.
Vice President

DOB/vpb
enc.

DIXON O'BRIEN
#062-042196
LICENSED
PROFESSIONAL
ENGINEER
OF
ILLINOIS

11/30/15

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INTRODUCTION

We have completed the geotechnical investigation for the proposed Willow Road, Hillcrest Drive and Owen Court Roadway Improvements at McDonald Creek Tributary A, Prospect Heights, Cook County, Illinois. The investigation is based on the results of six (6) borings (P-1 through P-6) performed along the project limits. Borings P-1 and P-2 were performed on Willow Road, borings P-2 through P-5 were performed on Hillcrest Drive and boring P-6 was performed on Owen Court. In addition, previous borings performed by Patrick Engineering (Project No. 20708.025) and Layne-Western Co. (Contract C-715N) were also reviewed and used to develop our recommendations.

The Patrick borings were performed on the north side of Willow Road in 2008 for the Cook County Highway Department and the Layne-Western borings were also performed on the north side of Willow Road in 1968 for the existing MWRDGC O'Hare Intercepting Sewer. The MWRDGC intercepting sewer is a 42" diameter sewer located just north of the existing road with an invert elevation of approximately 638.5.

The soil boring program was developed by Globetrotters, Inc. based on discussions with O'Brien & Associates. The boring locations were field located by O'Brien & Associates, Inc. personnel at the proposed locations using topographic drawings and hand measuring equipment. The boring elevations, stations and offsets were obtained from topographic and plan and profile drawings provided by Globetrotters. As required, the proposed boring locations were slightly adjusted in the field to meet site conditions by OBA personnel. The project location is shown on the project location map included in Appendix A and the boring locations are shown on the location diagram included in Appendix B.

This report includes recommendations pertaining to the pavement design, pavement subgrade, a description of soil and water table conditions, and general construction considerations as appropriate to the site, copies of the boring logs and laboratory test results.

EXISTING CONDITIONS/PROPOSED IMPROVEMENTS

The existing roads are two-lane bituminous roadways with open drainage. A visual observation of the pavement showed primarily climatic related longitudinal and transverse cracking with some joint raveling. There were no significant potholes (load-related distress), and the pavement appeared to be in good to very good condition.

The current plan is to raise the roadway grades and reconstruct the roadways. The roadway improvements are part of the McDonald Creek Tributary A Flood Control Improvements and involve raising the roadway grades approximately 2 to 4 feet to approximately elevation 653 to alleviate flooding conditions. Normal water level of the adjacent ponds on either side of Willow Road is at 647.5. New culverts will also be installed under Willow Road, with the invert elevations of the new culverts at approximately 645.0.

The Willow Road design pavement section consists of 7.75 inches full depth HMA and 10.0 inches Type A aggregate. The Hillcrest Drive and Owen Court design pavement section consists of 3.0 inches of HMA and 8.0 inches Type A aggregate.]

GEOLOGY

According to the 1971 ISGS Circular #460: Summary of the Geology of the Chicago Area/ISGS Geologic Materials to a Depth of 20' - North Cook County, the project site is located in an area where the surficial soils are generally categorized as Cahokia Alluvium deposits overlying soils belonging to the Wadsworth Till Member of the Wedron Formation. Cahokia Alluvium soils generally consist of recent flood plain deposits of silt, sand and gravel which can be organic. Wadsworth Till soils were deposited during Woodfordian Substage of the Wisconsinan glaciation between 12,500 to 22,000 years ago and generally consist of gray clayey and silty clay tills.

The ISGS Circular C542 15 Meter Stack Map confirms that surficial soils in the vicinity of the project corridor are as noted above and that bedrock is in excess of 50.0-ft below ground surface. A review of ISGS well records reviewed on-line confirms that bedrock is encountered in excess of 100' below ground in the vicinity of the project.

According to the 1984 ISGS Berg Circular #532: “Potential for Contamination of Shallow Aquifers in Illinois, the project site is located in an area which is primarily an AX Zone and the areas around the site are categorized as an E Zone. AX Zones are defined as an area with alluvium stream deposits of gravel, sand, silt and clay which are variable in composition and thickness. E Zones are defined as an area with in excess of 50-ft of relatively impermeable silty or clayey tills with no evidence of interbedded granular layers.

The Wetland Inventory database reviewed on-line at the US Fish & Wildlife Service website indicates that Willow Road bisects two (2) wetlands including an approximately 13.6 acre excavated area to the north and an approximately 6.3 acre excavated wetland located at

the southtern terminus of Hillcrest Drive and Willow Road. Hillcrest Drive and Owen Court are located immediately adjacent to the northern boundary of the northern wetland area. Each of the wetland areas are noted to be Palustine System-Unconsolidated Bottom Class wetlands and the Water Regime is noted to be Intermittently Exposed.

The USDA Natural Resources Conservation Service Soil Survey database indicates that surficial soils in the vicinity of the project site consist of Markham-Ashkum-Beecher complex soils. The general soil horizon associated with this classification includes thin deposits of silt loams overlying silty clay loams. These soils are not overly organic and potential frost action is rated as high. No areas of organic soils were noted on the soil survey maps.

CLIMATIC CONDITIONS

The climate within the area of this project site falls within the temperate humid, continental range and is characterized by cold conditions in the winter and warm conditions in the summer. The winter average daily temperature is 25^{o} F and the average daily minimum temperature is 17^{o} F. The summer average temperature is 71^{o} F and the summer average daily maximum temperature is 81^{o} F. The total annual precipitation for this area is 35.8" with approximately 63% falling between April and September. The average seasonal snowfall for this area is 38.7".

Local Climatatological Data, as measured at O'Hare International Airport (ORD), for the three (3) month period prior to and during drilling, including total precipitation, average temperature and snowfall are summarized below:

MONTH-Yr	ppt (in)		Temp (°F)		Snow (in)	
	Total	Departure From Norm	Average Temp.	Departure From Norm	Total	Monthly Norm
Sept-15	2.71	-0.5	63.9	-0.7	0.0	0.0
Oct-15	2.48	-0.67	52.0	-0.5	0.1	0.3
Nov-15	1.41	-1.74	33.6	-6.7	2.8	1.9
Dec-15	0.79	-1.46	32.0	4.3	Trace	8.8
Jan-15	1.41	-0.32	22.3	-1.5	13.9	8.8
Feb-15	1.45	-0.34	14.6	-13.1	26.8	8.3
borings P-1 and P-2 performed on 12/9/14 and P-3 to P-6 performed on 2/20/15						

Total precipitation during the three months prior to each drilling event was below normal; however, total snowfall was higher than normal. Temperatures were also generally below normal; however, during the month of December, 2014 temperatures were above normal. The climatic conditions encountered prior to and during drilling suggest that the soils should be drier than normal moisture levels.

SUBSURFACE INVESTIGATION PROCEDURES

Borings P-1 and P-2 were performed on December 9, 2014, with a CME-55 truck mounted drill rig and borings P-3 through P-6 were performed on February 20, 2015 using a Mobile B-57 drilling rig. The borings were advanced by means of hollow stem augers. Representative soil samples were obtained in the borings employing split spoon sampling procedures in accordance with AASHTO T-206. Samples obtained in the field were returned to our laboratory for further examination and testing.

TESTING PROGRAM

The test procedures were performed in accordance with test procedures discussed in the IDOT Geotechnical Manual. All split-spoon samples obtained from the drilling operation were visually classified in the field.

The general soil testing program for the borings consisted of performing water content, density and calibrated penetrometer tests on the cohesive samples recovered. Water content tests were performed on the non-cohesive samples. In addition to the above testing, laboratory torvane shear tests were performed on representative samples of the softer clay and organic soils. These tests were performed upon representative portions of the samples obtained in the field. The results of the above testing, along with a visual classification of the material based upon both the Illinois textural classification and the American Association of State Highway Transportation Officials (AASHTO), are indicated on the boring logs in Appendix C.

In addition to the above general soil testing, Particle Size Analysis (AASHTO T-88) and Liquid Limit, Plastic Limit and Plasticity Index of Soils (AASHTO T89/T90) tests were performed on representative soil samples obtained from the borings. Organic content tests (AASHTO T267) were performed on representative portions of the organic soils recovered. The results of these additional tests are presented in Appendix D.

SUBSURFACE CONDITIONS

Specific conditions encountered in the borings are indicated on the boring logs included in

Appendix B. Copies of the previous borings performed by Patrick Engineering (Project No. 20708.025) and Layne-Western Co. (Contract C-715N) are included in Appendix E. As indicated on the logs, fill materials were encountered below the pavement in all of the borings except boring P-4 and extended to a depth of 4.0' to 11.0' below ground surface. The fill materials consisted primarily of clay soils with varying percentages of sand, gravel, brick, broken concrete and topsoil. In boring P-4, a brown, hard clay was encountered below the pavement and extended to a depth of 3.5' below ground surface. The brown clay was underlain by a loose sandy loam extending to a depth of 6.0', which was underlain by a gray clay that extended to the maximum depth of boring P-4.

The fill materials in borings P-1 to P-3, P-5 and P-6 were typically underlain by high moisture content peat and organic clay soils that extended to depths of 8.5' to 28.5' below ground surface. The moisture content of these organic soils varied from 39% to 219% and the organic content ranged from 7% to 28%. The organic soils were generally underlain by stiff to very stiff clay soils that extended to the maximum depth of the borings. In boring P-2, a medium dense sand was encountered from 16.0' to 28.5' below ground surface. The stratification lines shown on the boring logs represent the approximate boundary between soil types, and the actual transition may be gradual or vary between sampling depths.

Water level readings were taken during and immediately following the drilling operations and P-5 was noted to be dry. Water was noted in the remaining borings at depths of 3.5' to 12.0' below ground surface. These readings are shown on the boring logs and, along with the proximity to the adjacent ponds, it is expected that ground water will be present at or near the water elevation of the ponds. Fluctuations in the amount of water accumulated

and in the level of the hydrostatic water table can be anticipated depending upon variations in precipitation and surface runoff. The water level observations provide an approximate indication of the groundwater levels at the time the borings were drilled. Longer term observations using piezometers would be necessary to more accurately establish groundwater conditions at the site.

ANALYSIS AND RECOMMENDATIONS

Materials encountered at the anticipated subgrade elevations along the pavement improvements consist of hard clay soils or miscellaneous fill materials that should generally be suitable for support of the proposed pavement. However, the results of the borings and a review of previous boring data indicate that the majority of the existing roadways were constructed over thick, compressible organic deposits. The organic deposits were variable in nature and with the thickness of the layers found to vary from 4.5' in boring P-5 to 20.0' in borings P-3 and P-6. Based on the addition of 2' to 4' feet of new fill on the roadway, settlement on the order of 8" to 12" is possible depending upon the thickness and character of the organic deposit below the roadway, and amount of fill placed as part of the roadway improvements. Because the organic layer was variable in both thickness and depth, variable settlement is expected to occur over the roadway, although any differential movement is expected to be gradual and noticeable only over large distances. In addition, a significant portion of settlement in organic soils is secondary settlement that occurs over relatively long periods of time.

Willow Road is a low volume, secondary road and given the depth of the organic soils and elevation of the water table, removal and replacement of the organic soils is not considered to be an economical alternative. Ground improvement (aggregate columns) can be considered but is not expected to be economical because of the depth of ground improvement that will be required.

Lightweight fill (lightweight slag or lightweight cellular concrete) can also be considered to reduce the settlement. An evaluation was performed to determine if the existing fill could be removed and replaced with lightweight fill and balance the new embankment/roadway loads with existing loads. The evaluation was performed assuming that the long term water table or flood condition was at the top of the new pavement (elevation 653). To prevent bouyancy issues, removal and replacement on the order of 6.0' to 7.0' would be required to balance the new loads with the existing loads and this alternative is not considered to be economically feasible.

The removal and replacement alternative is not recommended for several reasons. First, for excavations below an elevation of 647.5 (NWL) groundwater infiltration will be an issue and sheeting will be needed for excavations below the NWL elevation. Also, in most areas there is only 5' to 6' of fill present over the peat, which is not enough normal weight fill to allow the loads to balance (given the new pavement design). Finally, it would be difficult to place the lightweight fill directly on the peat/organic clay without installing a stabilization layer.

Lightweight fill could be used for the new fill required for construction of the roadway, reducing the loads on the underlying organic deposits an settlement. The required unit

weight of the lightweight fill will vary depending upon the fill thickness. For a factor of safety (FS) of 1.25 for bouyancy, the lightweight fill should have a minimum unit weight of 60 pcf for a 4' fill section (3' of lightweight fill and 12" pavement section). Settlement using a lightweight fill is expected to be approximately ½ the settlement of normal weight fill (4" to 6" maximum settlement).

The new roadway grades should be designed to allow some settlement to occur (8" to 12" in the areas with the deeper peat/organic deposits). A bituminous pavement section is recommended rather than a PCC or section because of the ability of bituminous pavements to better handle deflections without significant distress occurring to the pavement. Provisions should be made for additional repairs and/or resurfacing to re-adjust grades after the roadway has settled. In the area of the new culverts, the additional loads from the new roadway will be less because of the soil excavated for the culverts, with less settlement occurring in this area.

For construction of the roadway, consideration can be give to leaving the existing pavement in place and placing the fill on existing pavement. The existing asphalt surface can be removed or broken into smaller pieces before placement of additional fill.

In areas where the existing pavement grades are at or near proposed grades, it is possible that areas of softer soils may be encountered during construction. Any soft or unsuitable soils should be removed and undercut areas should be backfilled with PGE,s (IDOT Special Provision for Aggregate Subgrade Improvement).

A plan note should be added that the actual need for remedial treatment should be determined in the field at the time of construction by the geotechnical engineer. Undercutting should be performed in such a manner as to minimize disturbances to the undercut subgrade. Heavy equipment traffic directly on the undercut subgrade should be minimized. Evaluation of soils in the field should be performed based on the criteria presented in the IDOT Subgrade Stability Manual.

Care should be taken in the design and construction of paved areas to provide rapid drainage of surface water and to develop surface drainage patterns that will divert water away from the pavement edges. When water is allowed to pond on or adjacent to the pavement, the subgrade may become saturated and accelerate pavement deterioration.

The fill materials placed below the pavement should be placed and compacted in lifts not exceeding 8 inches in loose thickness. Each fill lift should be compacted to a minimum of 95% of the material's maximum dry density as determined by AASHTO test method T-99 or 70% relative density (ASTM D-4253 and D-4254).

Fill materials (if lightweight fill is not used) should be in accordance with section 6.2 of the IDOT Geotechnical Manual. In particular, soils shall be tested and conform to the required testing and permissible limits as defined in table Table 6-1 in the IDOT Geotechnical Manual. Low plasticity cohesive soil should have a liquid limit of 50% or less and a plasticity index 12% or greater, and the moisture content of the fill should not vary by more than -3 to +3 percent of the optimum moisture content.

Regarding the new culverts, it may be possible to install the culverts without dewatering by overexcavating 12" to 18" below the invert of the culvert, placing a stabilization stone such as IDOT CA-1 and then installing a precast concrete, HDPE or corrugated metal culvert. Some differential settlement is expected below the culverts and the culverts should be designed to accommodate some movement. If the culvert cannot be installed without dewatering and the ponds cannot be lowered sufficiently, it may be necessary to install temporary sheeting to construct the culverts.

Construction of the new roadway will require that the new embankment extend out into the existing ponds. Where the embankment extends into the ponds, the near shore sediment should be excavated 12" to 18" and a stabilization stone placed (CA-1) in the water. The stabilization stone should be placed to the high water line to minimize embankment erosion concerns.

GENERAL QUALIFICATIONS

The analysis and recommendations presented in this report are based upon the data obtained from the soil borings performed at the indicated locations and from any other information discussed in this report. This report does not reflect any variations which may occur between borings or across the site. In addition, the soil samples cannot be relied on to accurately reflect the strata variations that usually exist between sampling locations. The nature and extent of such variations may not become evident until construction. If variations appear evident, it will be necessary to reevaluate the recommendations of the report.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No other warranties, either expressed or implied, are intended or made. The scope of service provided by O'Brien & Associates, Inc. specifically excludes the investigatory and engineering activities required to form opinions about the presence or absence of hazardous or toxic materials in the site's soil, surface water ground water, or air. Also note that O'Brien & Associates, Inc. is not responsible for any claims, damages, or liability associated with any other party's interpretation of this report's subsurface data or reuse of the report's' subsurface data or engineering analyses without the express written authorization of O'Brien & Associates, Inc.

APPENDIX A

Location Map

PLANS FOR PROPOSED

MWRDGC Flood Control Project, Willow Road, Hillcrest Drive and Owen Court Roadway Improvements at McDonald Creek Tributary A, Prospect Heights, Illinois

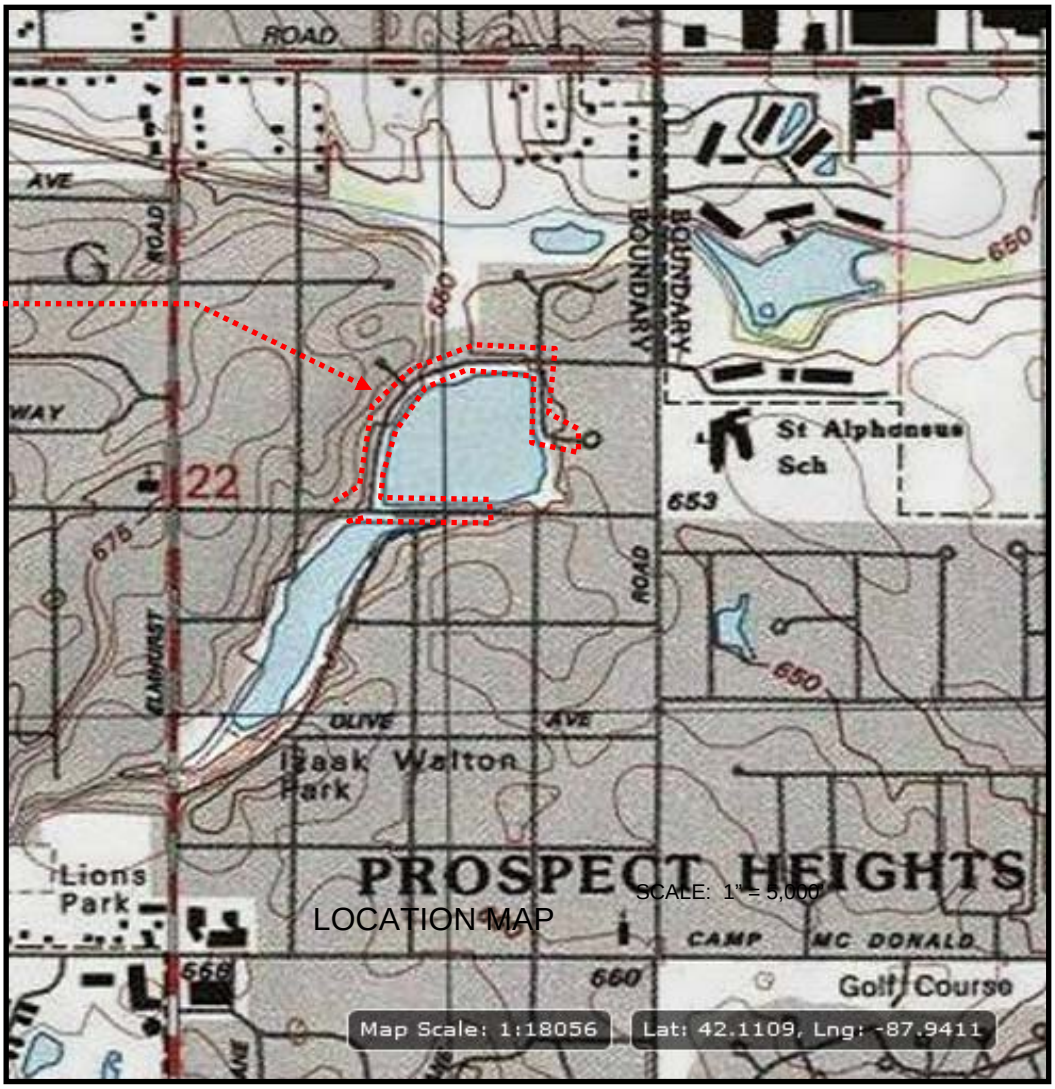
COOK COUNTY

OBA JOB NO.: 14652

R11E

PROJECT LOCATION

T42N



LOCATION MAP

SCALE: 1" = 5,000'

APPENDIX B

Boring Location Diagram

BORING LOCATION DIAGRAM								Drawn By		ck
MWRDGC Flood Control Project, Willow Road, Hillcrest Drive and Own Court, Roadway Improvements at McDonald Creek Tributary A, Prospect Heights, IL	**O'BRIEN & ASSOCIATES, INC. - CONSULTING ENGINEERS** **1235 E. Davis St., Arlington Heights, IL 60005**							Approved By		dob
								Date		4/1/2015
								Job No.		14652
								Scale		As Shown

APPENDIX C

Boring Logs and General Notes

LOG OF BORING NO. P–1

CLIENT Globetrotters	BORING LOCATION: Willow Road Station: 104+60 Offset: none
PROJECT LOCATION TASK 11: Willow Road, Prospect Heights, IL	PROJECT DESCRIPTION Prelimiinary Engineering for a Flood Control Project–McDonald Creek Tributary, MWRDGC, Prospect Heights, Il

GROUND SURFACE ELEVATION 650.0

DEPTH (ft.) BELOW GROUND SURFACE	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	DESCRIPTION OF MATERIAL	STANDARD PENETRATION "N"	Qp (tsf)	Qu (tsf)	MOISTURE CONTENT (%)	UNIT DRY WEIGHT (pcf)	REMARKS
	1	AS		5.0" ASPHALT, 5.0" CRUSHED STONE FILL						
	2	SS		MISC. CLAY FILL w/SAND, GRAVEL, trace brick, broken concrete and topsoil– loose to dense	9	2.25	1.8	21	107	XX
5.0	3	SS			38			14		
	4	SS			24			21		
10.0	5	SS		wet ▽	5			31		
	6	SS		SEDIMENTARY PEAT	2	0.75		144		
15.0	7	SS			0	1.0		168		
	8	SS			2	0.25		105		
20.0	9	SS		ORGANIC CLAY–gray– soft wet	2	0.5		62		
	10	SS			2	0.5		66		
25.0	11	SS		SANDY CLAY LOAM–gray– medium stiff wet	4	0.75		26		
	12	SS		SILTY LOAM–gray– medium dense	10			20		
30.0	13	SS		CLAY–gray– very stiff	11	2.25		22		

END OF BORING

WATER LEVEL OBSERVATIONS	
Water Level While Drilling	Dry ▼
Water Level After Boring	–9.0' ▽
	▽

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BORING STARTED	December 9, 2014		
BORING COMPLETED	December 9, 2014		
RIG	CME–55	FOREMAN	NW
DRAWN	VPB	APPROVED	DOB
OBA JOB No. 14652		SHEET	1 OF 1

LOG OF BORING NO. P–2

CLIENT Globetrotters	BORING LOCATION: Willow Road Station: 106+50 Offset: none
PROJECT LOCATION TASK 11: Willow Road, Prospect Heights, IL	PROJECT DESCRIPTION Prelimiinary Engineering for a Flood Control Project–McDonald Creek Tributary, MWRDGC, Prospect Heights, Il

GROUND SURFACE ELEVATION 650.4

DEPTH (ft.) BELOW GROUND SURFACE	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	DESCRIPTION OF MATERIAL	STANDARD PENETRATION "N"	Qp (tsf)	Qu (tsf)	MOISTURE CONTENT (%)	UNIT DRY WEIGHT (pcf)	REMARKS
	1	AS		5.0" ASPHALT, 5.0" CRUSHED STONE FILL						
	2	SS		MISC. CLAY FILL w/SAND, GRAVEL–loose to dense	28			6		XX
5.0	3	SS			7	2.25		23		
	4	SS		PEAT	2			88		
10.0	5	SS		with shells ▽	2			101		
	6	SS		CLAY–gray–stiff	7	1.25		21		
15.0	7	SS			9	1.25	1.3	20	109	
	8	SS		SANDY LOAM–gray–medium dense	14			20		
20.0	9	SS			11			20		
	10	SS			10			18		
25.0	11	SS			14			21		
	12	SS			12			17		
30.0	13	SS		SILTY LOAM–gray–medium dense	29			14		

END OF BORING

WATER LEVEL OBSERVATIONS		
Water Level While Drilling	Dry	▼
Water Level After Boring	–9.0'	▽
		▽

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BORING STARTED	December 9, 2014		
BORING COMPLETED	December 9, 2014		
RIG	CME–55	FOREMAN	NW
DRAWN	VPB	APPROVED	DOB
OBA JOB No. 14652		SHEET	1 OF 1

LOG OF BORING NO. P–3

CLIENT Globetrotters	BORING LOCATION: Hillcrest Drive Station: 200+40 Offset: 14.0' Right
PROJECT LOCATION TASK 11: Willow Road, Prospect Heights, IL	PROJECT DESCRIPTION Supplemental Investigation for Flood Control Project–McDonald Creek Tributary, MWRDGC, Prospect Heights, Il

DEPTH (ft.) BELOW GROUND SURFACE	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	DESCRIPTION OF MATERIAL	STANDARD PENETRATION "N"	Qp (tsf)	Qu (tsf)	MOISTURE CONTENT (%)	UNIT DRY WEIGHT (pcf)	REMARKS
				GROUND SURFACE ELEVATION 650.5						
	1	AS		8.0" ASPHALT						
	2	SS		CRUSHED STONE/GRAVEL FILL	5			8		
	3	SS		CLAY–dark brown– very stiff Fill	41	2.0		20		
5.0				CRUSHED CONCRETE FILL–dense						
	4	SS		CLAY–dark brown– soft wet	4	0.5		26		
	5	SS		PEAT to ORGANIC CLAY w/shells in places– soft to very soft (PT)	2	0.5		219		
10.0	6	SS		▽	0	<0.25		145	34	
	7	SS			1	<0.25		143		
15.0	8	SS			0	<0.25		115	40	
	9	SS			2	<0.25	0.4	72	57	
20.0	10	SS			0	<0.25	0.4	64	62	
	11	SS			0	<0.25	0.3	78	54	
25.0	12	SS			0	<0.25	0.3	39	82	
	13	SS		SILTY CLAY–gray– very stiff	9	2.75		17		
30.0				END OF BORING						

WATER LEVEL OBSERVATIONS			
Water Level While Drilling Dry	▼	BORING STARTED	February 20, 2015
Water Level After Boring –12.0'	▽	BORING COMPLETED	February 20, 2015
	▽	RIG B–57	FOREMAN TZ
		DRAWN VPB	APPROVED DOB
		OBA JOB No. 14652	SHEET 1 OF 1

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LOG OF BORING NO. P–4

CLIENT Globetrotters	BORING LOCATION: Hillcrest Drive Station: 204+00 Offset: 7.0' Right
PROJECT LOCATION TASK 11: Willow Road, Prospect Heights, IL	PROJECT DESCRIPTION Supplemental Investigation for Flood Control Project–McDonald Creek Tributary, MWRDGC, Prospect Heights, Il

DEPTH (ft.) BELOW GROUND SURFACE	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	DESCRIPTION OF MATERIAL	STANDARD PENETRATION "N"	Qp (tsf)	Qu (tsf)	MOISTURE CONTENT (%)	UNIT DRY WEIGHT (pcf)	REMARKS
				GROUND SURFACE ELEVATION 650.6						
	1	AS		6.0" ASPHALT, 3.0" CRUSHED STONE FILL						
	2	SS		CLAY–brown– hard A–6 limits/grain size pending	11	4.5		18		
5.0	3	SS		SANDY LOAM–brown– loose ▽	7			22		
	4	SS		CLAY–gray– very stiff	6	2.0		12		
10.0	5	SS			8	2.5		14		

END OF BORING

WATER LEVEL OBSERVATIONS	
Water Level While Drilling	Dry ▽
Water Level After Boring	–6.0' ▽
	▽

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BORING STARTED	February 20, 2015		
BORING COMPLETED	February 20, 2015		
RIG	B–57	FOREMAN	TZ
DRAWN	VPB	APPROVED	DOB
OBA JOB No.	14652	SHEET	1 OF 1

LOG OF BORING NO. P–5

CLIENT Globetrotters	BORING LOCATION: Hillcrest Drive Station: 213+50 Offset: 7.0' Right
PROJECT LOCATION TASK 11: Willow Road, Prospect Heights, IL	PROJECT DESCRIPTION Supplemental Investigation for Flood Control Project–McDonald Creek Tributary, MWRDGC, Prospect Heights, Il

DEPTH (ft.) BELOW GROUND SURFACE	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	DESCRIPTION OF MATERIAL GROUND SURFACE ELEVATION 650.6	STANDARD PENETRATION "N"	Qp (tsf)	Qu (tsf)	MOISTURE CONTENT (%)	UNIT DRY WEIGHT (pcf)	REMARKS
	1	AS		6.0" ASPHALT, 3.0" CRUSHED STONE FILL						
	2	SS		CLAY–brown– hard A–6 wet	17	4.5+		27		
5.0	3	SS		PEAT to ORGANIC CLAY w/shells– very soft	4	<0.25	0.2	56	67	
	4	SS		*Torvane @ –7.0'* *Shear Strength = 400psf*	0	<0.25	0.3	52	70	
10.0	5	SS		CLAY–gray– soft to medium stiff wet	4	1.0	0.4	29	95	
				END OF BORING						

WATER LEVEL OBSERVATIONS	
Water Level While Drilling	Dry
Water Level After Boring	Dry

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BORING STARTED	February 20, 2015		
BORING COMPLETED	February 20, 2015		
RIG	B–57	FOREMAN	TZ
DRAWN	VPB	APPROVED	DOB
OBA JOB No.	14652	SHEET	1 OF 1

LOG OF BORING NO. P–6

CLIENT Globetrotters	BORING LOCATION: Owen Court Station: 303+60 Offset: 6.0' Right
PROJECT LOCATION TASK 11: Willow Road, Prospect Heights, IL	PROJECT DESCRIPTION Supplemental Investigation for Flood Control Project–McDonald Creek Tributary, MWRDGC, Prospect Heights, Il

GROUND SURFACE ELEVATION 648.7

DEPTH (ft.) BELOW GROUND SURFACE	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	DESCRIPTION OF MATERIAL	STANDARD PENETRATION "N"	Qp (tsf)	Qu (tsf)	MOISTURE CONTENT (%)	UNIT DRY WEIGHT (pcf)	REMARKS
	1	AS		4.0" ASPHALT, 18" CRUSHED STONE FILL						
	2	SS		SILTY CLAY LOAM–brown & gray– hard A–4 Fill	22	4.0		17		
5.0	3	SS		CRUSHED STONE FILL–medium dense ▼ ▽	15			7		
	4	SS		*Torvane @ –7.0'* *Shear Strength = 810psf*	4	0.5	0.5	24	102	
				ORGANIC CLAY–brown & gray, spotted black– medium stiff						
10.0	5	SS		*Torvane @ –9.0'* *Shear Strength = 1,120psf* wet	4	1.0	0.7	27	98	
	6	SS		*Torvane @ –12.0'* *Shear Strength = 400psf*	2	<0.25	0.3	320	16	
15.0	7	SS		*Torvane @ –14.0'* *Shear Strength = 300psf*	0	<0.25	0.2	210	23	
				PEAT to ORGANIC CLAY w/shells in places– soft to very soft (PT)						
	8	SS			0	<0.25	0.4	240	22	
20.0	9	SS		*Torvane @ –20.0'* *Shear Strength = 400psf*	0	<0.25		190		
	10	SS		*Torvane @ –22.0'* *Shear Strength = 300psf*	1	<0.25		60		
25.0	11	SS		*Torvane @ –24.0'* *Shear Strength = 360psf*	1	<0.25	0.3	56	66	
	12	SS		CLAY–gray– medium stiff to stiff	5	1.0	0.7	22	106	
30.0	13	SS			7	1.5		20		

END OF BORING

WATER LEVEL OBSERVATIONS		BORING STARTED	February 20, 2015	
Water Level While Drilling –3.5' ▼		BORING COMPLETED	February 20, 2015	
Water Level After Boring –5.0' ▽		RIG B–57	FOREMAN TZ	
▽		DRAWN VPB	APPROVED DOB	
		OBA JOB No. 14652	SHEET 1 OF 1	

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GENERAL NOTES

CLASSIFICATION

Chicago Building Code Textural Soil Classifications and Unified Soil Classifications are used.

Cohesionless Soils

Relative Density	No. of Blows per foot N
Very Loose	0 to 4
Loose	4 to 10
Medium	10 to 30
Dense	30 to 50
Very Dense	Over 50

Cohesive Soils

Consistency	Unconfined Compressive Strength - qu (tsf)
Very Soft	Less than 0.25
Soft	0.25 - 0.5
Medium	0.5 - 1.0
Stiff	1.0 - 2.0
Very Stiff	2.0 - 4.0
Hard	Over 4.0

TERMINOLOGY

Streaks are considered to be paper thick. **Lenses** are considered to be less than 2 inches thick. **Layers** are considered to be 6 inches or less thick. **Stratum** are considered to be greater than 6 inches thick.

DRILLING AND SAMPLING SYMBOLS

SS:	Split Spoon 1-3/8" I.D., 2" O.D.	HS:	Housel Sampler
ST:	Shelby Tube 2" O.D., except where noted	WS:	Wash Sample
AS:	Auger Sample	FT:	Fish Tail
DB:	Diamond Bit - NX: BX: AX	RB:	Rock Bit
CB:	Carboloy Bit - NX: BX: AX	WO:	Wash Out
OS:	Osterberg Sampler		

Standard "N" Penetration: Blows per foot of a 140 lb. hammer falling 30" on a 2" O.D. Split Spoon

WATER LEVEL MEASUREMENT SYMBOLS

WL:	Water	WD:	While Drilling
WCI:	Wet Cave In	BCR:	Before Casing Removal
DCI:	Dry Cave In	ACR:	After Casing Removal
WS :	While sampling	AB:	After Boring

Water levels indicated on the boring logs are the levels measured in the boring at the times indicated. In pervious soils, the indicated elevations are considered reliable ground water levels. In impervious soils, the accurate determination of ground water elevations is not possible in even several day's observation, and additional evidence on ground water elevations must be sought.

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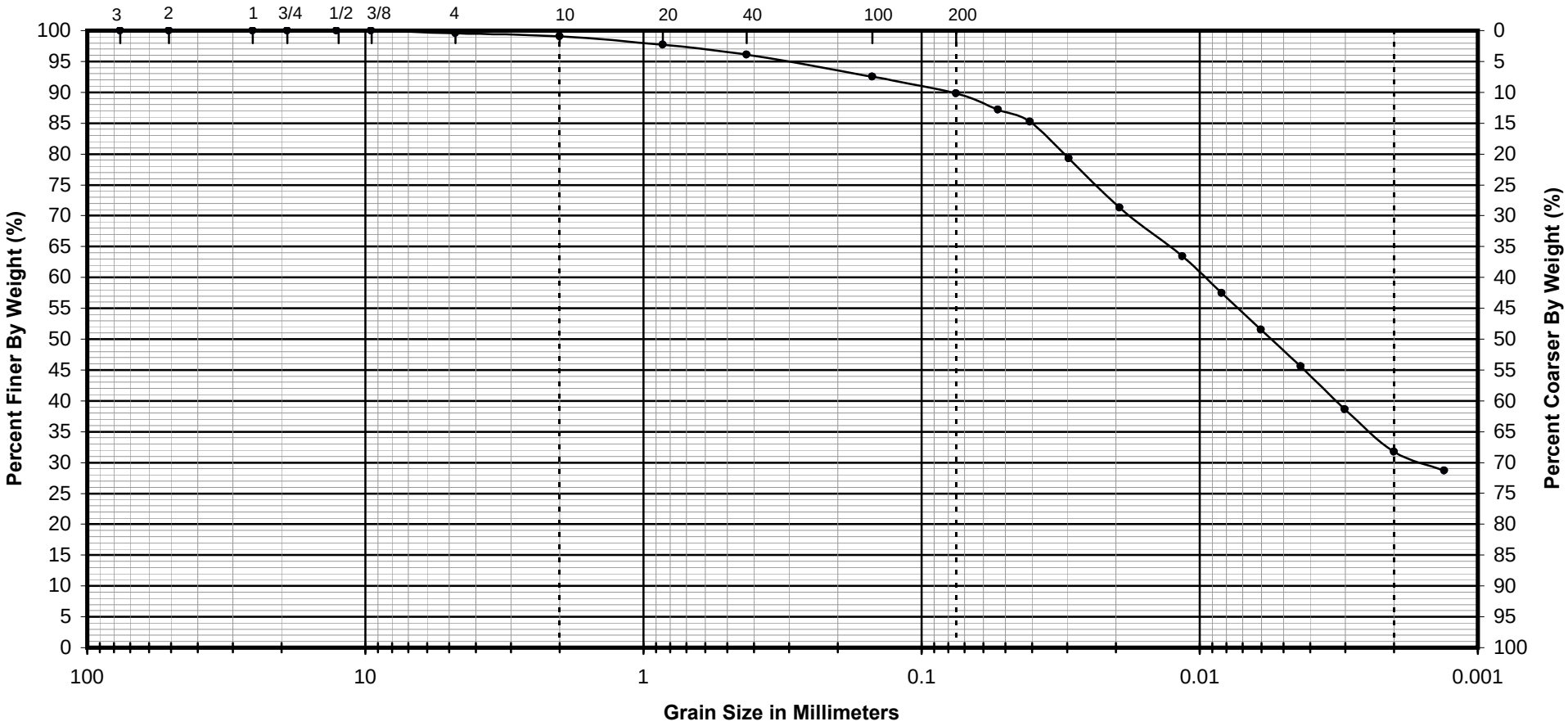
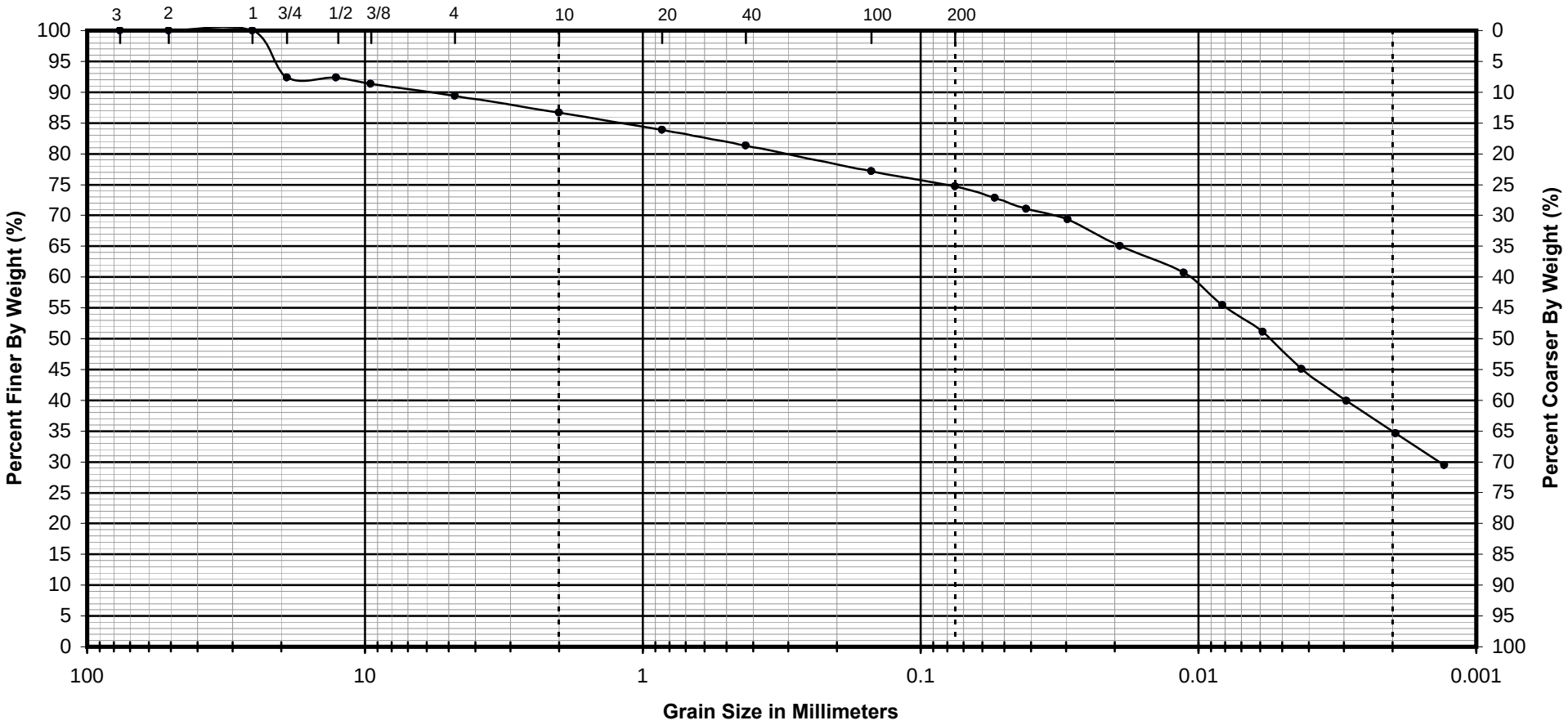
APPENDIX D

Laboratory Test Results



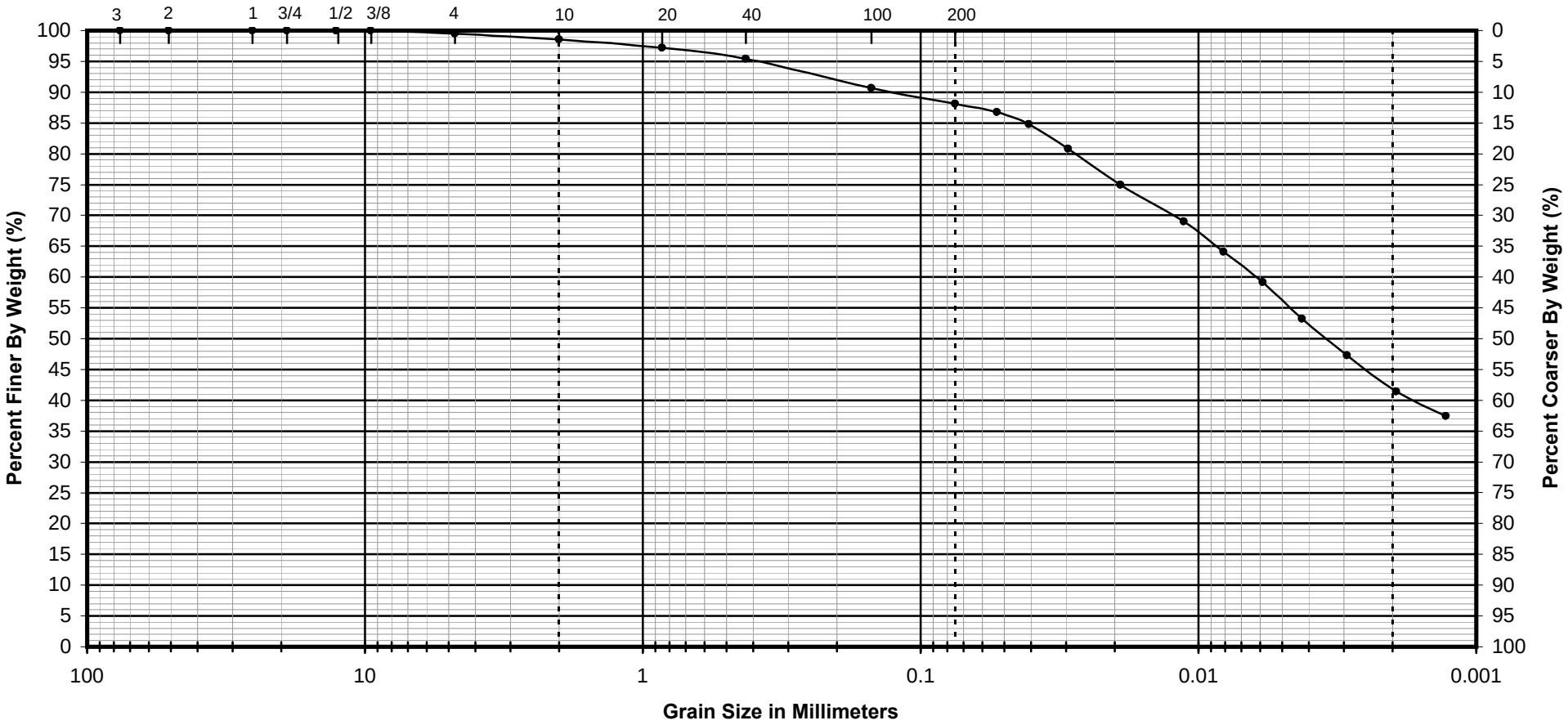
GRAVEL	SAND		SILT	CLAY
	COARSE	FINE		

Boring No.	P-1	CLASSIFICATION		PARTICLE SIZE ANALYSIS-AASHTO T88
Sample No.	2			
Depth	1.0'-2.5'	SILTY CLAY		MWRDGC Flood Control Project
Liquid Limit	36	A-6		Willow Road at McDonald Creek
Plastic Limit	20	brown		Prospect Heights, Illinois
Plasticity Index	16	Group Index	14	
Test By	JE	% Gravel	0.9	O'BRIEN & ASSOCIATES, INC.
Date	4/1/15	% Sand	9.3	1235 East Davis Street
Reviewed By	DOB	% Silt	58.1	Arlington Heights, IL 60005
Job No	14652	% Clay	31.7	Phone 847-398-1441 • Fax 847-398-2376



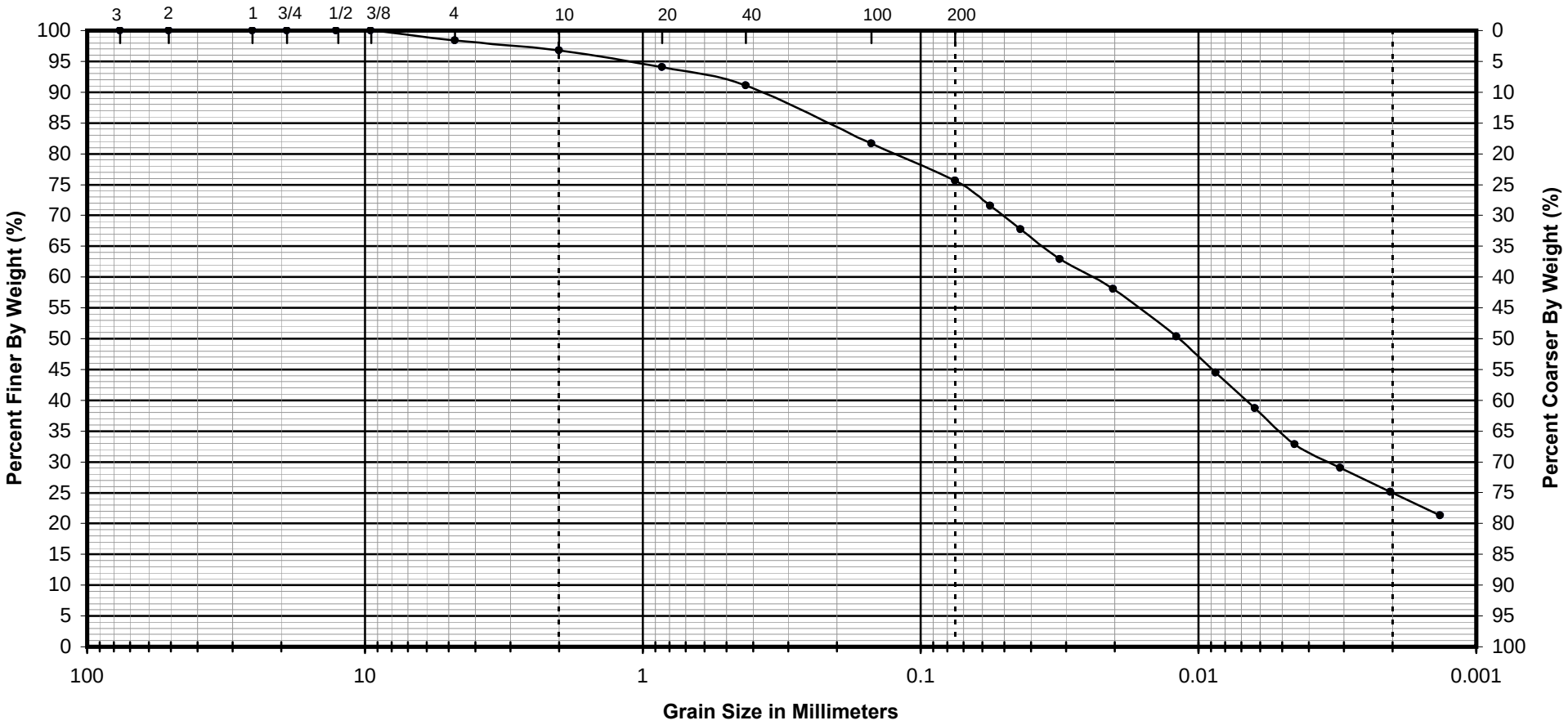
GRAVEL	SAND		SILT	CLAY
	COARSE	FINE		

Boring No.	P-4	CLASSIFICATION		PARTICLE SIZE ANALYSIS-AASHTO T88
Sample No.	2			
Depth	1.0'-2.5'	CLAY		MWRDGC Flood Control Project
Liquid Limit	33	A-6		Willow Road at McDonald Creek
Plastic Limit	16	brown		Prospect Heights, Illinois
Plasticity Index	17	Group Index	11	
Test By	JE	% Gravel	13.3	O'BRIEN & ASSOCIATES, INC.
Date	4/1/15	% Sand	12.0	1235 East Davis Street
Reviewed By	DOB	% Silt	40.0	Arlington Heights, IL 60005
Job No	14652	% Clay	34.7	Phone 847-398-1441 • Fax 847-398-2376



GRAVEL	SAND		SILT	CLAY
	COARSE	FINE		

Boring No.	P-5	CLASSIFICATION		PARTICLE SIZE ANALYSIS-AASHTO T88
Sample No.	2			
Depth	1.0'-2.5'	CLAY		MWRDGC Flood Control Project
Liquid Limit	40	A-6		Willow Road at McDonald Creek
Plastic Limit	22	brown		Prospect Heights, Illinois
Plasticity Index	18	Group Index	16	
Test By	JE	% Gravel	1.4	O'BRIEN & ASSOCIATES, INC.
Date	4/1/15	% Sand	10.4	1235 East Davis Street
Reviewed By	DOB	% Silt	46.7	Arlington Heights, IL 60005
Job No	14652	% Clay	41.4	Phone 847-398-1441 • Fax 847-398-2376



GRAVEL	SAND		SILT	CLAY
	COARSE	FINE		

Boring No.	P-6	CLASSIFICATION		PARTICLE SIZE ANALYSIS-AASHTO T88
Sample No.	2			
Depth	1.0'-2.5'	SILTY CLAY LOAM		MWRDGC Flood Control Project
Liquid Limit	27	A-4		Willow Road at McDonald Creek
Plastic Limit	18	brown		Prospect Heights, Illinois
Plasticity Index	9	Group Index	5	
Test By	JE	% Gravel	3.3	O'BRIEN & ASSOCIATES, INC.
Date	4/1/15	% Sand	21.1	1235 East Davis Street
Reviewed By	DOB	% Silt	50.5	Arlington Heights, IL 60005
Job No	14652	% Clay	25.2	Phone 847-398-1441 • Fax 847-398-2376

O'BRIEN & ASSOCIATES. INC.
CONSULTING ENGINEERS
1235 E. DAVIS STREET
ARLINGTON HEIGHTS, ILLINOIS 60005
(847) 398-1441 FAX (847) 398-2376

Liquid Limit, Plastic Limit, and Plasticity Index of Soils

AASHTO T89/T90

Project Name: MWRDGC Flood Control Project at McDonald Creek Job No: 14652

Location: Willow Road, Prospect Heights, Illinois Date: 4/1/15

Client: Globetrotters

Boring No./Sample No.	P-1/S-2	P-4/S-2	P-5/S-2	P-6/S-2				
Depth	1.0'-2.5'	1.0'-2.5'	1.0'-2.5'	1.0'-2.5'				
LIQUID LIMIT (LL)	36	33	40	27				
PLASTIC LIMIT (PL)	20	16	22	18				
PLASTICITY INDEX (PI)	16	17	18	9				

Tested by: TOB

O'BRIEN & ASSOCIATES, INC.
1235 E. DAVIS STREET
ARLINGTON HEIGHTS, IL 60005
(847) 398-1441 FAXES (847) 398-2376

DETERMINATION of ORGANIC CONTENT in SOILS by LOSS on IGNITION
AASHTO T267

Project Name MWRDGC Flood Control Project Willow Road at McDonald Creek **Date** 4/2/15

Location Prospect Heights, Illinois **Job No** 14652

Boring No	P-1	P-2	P-3	P-3	P-5	P-6	P-6
Sample No.	7	4	6	9	4	7	10
Depth	13.5'-15.0'	6.0'-7.5'	11.0'-12.5'	18.5'-20.0'	6.0'-7.5'	13.5'-15.0'	21.0'-22.5'
Sample Description	Peat	Peat	Peat	Peat to Organic Clay	Peat to Organic Clay	Peat	Peat to Organic Clay
% Organic Content	14.7	11.3	13.1	7.3	6.9	28.7	6.6

Tested By JE

APPENDIX E

Patrick Engineering and Layne-Western Co. Boring Logs

PATRICK ENGINEERING INC.

BORING NUMBER **B-1** SHEET **1** OF **2**
CLIENT **Cook County Highway Department**
PROJECT & NO. **20708.025**
LOCATION **S. Side of Willow Rd, Prospect Heights, IL**

LOGGED BY **AFG**
GROUND ELEVATION **648.8**

ELEV.	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL 10 20 30 40 LL 50 / Unconfined Compressive Strength (TSF) * 1 2 3 4 5	NOTES & TEST RESULTS
648.8	0.0		Grayish brown silty clay, trace fine to coarse sand, low plasticity, stiff, moist CL	SS-1 1.0-2.5 R=10"	3 4 4	16	qu=2.0tsf*
644.5	4.3		Black silty clay, some fine to coarse sand, wood fragments, wet CL	SS-2 3.5-5.0 R=14"	4 3 3	17	
642.8	6.0		Light gray silty clay with organics, little fine sand, trace shell fragments, soft, wet CL/OL	SS-3 6.0-7.5 R-18"	1 1 1		qu=0.5tsf* WC=124%
				SS-4 8.5-10.0 R=16"	1 1 1		qu=0.75tsf* WC=78%
638.3	10.5		Gray / brown silty clay, trace coarse sand, medium plasticity, stiff, moist CL	SS-5 11.0-12.5 R=15"	2 3 3	21	qu=1.75tsf*
			2" fine sand seam	SS-6 13.5-15.0 R=18"	3 5 6	22	qu=2.0tsf*
			Multiple fine sand seams, saturated	SS-7 18.5-20.0 R=17"	3 3 3	19	qu=1.75tsf*

DRILLING CONTRACTOR **GTC**
DRILLING METHOD **2.25" HSA**
DRILLING EQUIPMENT **CME ATV**
DRILLING STARTED **1/18/08** ENDED **1/18/08**

REMARKS
Boring backfilled with soil cuttings

WATER LEVEL (ft.)
▽ **N/A**
▼ **N/A**

PATRICK ENGINEERING INC.

BORING NUMBER B-1 SHEET 2 OF 2
CLIENT Cook County Highway Department
PROJECT & NO. 20708.025
LOCATION S. Side of Willow Rd, Prospect Heights, IL

LOGGED BY AFG
GROUND ELEVATION 648.8

ELEV.	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL 10 20 30 40 LL 50 / Unconfined Compressive Strength (TSF) * 1 2 3 4 5	NOTES & TEST RESULTS
628.8	20.0		Gray / brown silty clay, trace coarse sand, medium plasticity, stiff, moist CL				
627.3	21.5		Gray / brown silty fine sand, saturated				
624.5	24.3		Gray / brown silty clay, very stiff, low plasticity CL	SS-8 23.5-25.0 R=18"	8 10 13	20	qu=3.5tsf*
621.8	27.0		Gray / brown silty fine sand, trace coarse gravel, saturated				
619.8	29.0		Gray / brown silty clay, trace coarse sand, medium plasticity, very stiff, moist CL	SS-9 28.5-30.0 R=18"	4 4 6	14	qu=2.5tsf*
616.8	32.0		Gray / brown silty fine sand, saturated				
614.8	34.0		Gray / brown silty clay, trace coarse sand, medium plasticity, moist CL	SS-10 33.5-35.0 R=6"	3 5 12	22	
611.8	37.0		Light gray / tan fine sand, medium dense				
608.8	40.0		End of Boring at 40.0'	SS-11 38.5-40.0 R=18"	7 9 12		

DRILLING CONTRACTOR GTC
DRILLING METHOD 2.25" HSA
DRILLING EQUIPMENT CME ATV
DRILLING STARTED 1/18/08 ENDED 1/18/08

REMARKS
Boring backfilled with soil cuttings

WATER LEVEL (ft.)
▽ N/A
▽ N/A
▽

PATRICK ENGINEERING INC.

BORING NUMBER B-2 SHEET 1 OF 2
CLIENT Cook County Highway Department
PROJECT & NO. 20708.025
LOCATION N. Side of Willow Rd, Prospect Heights, IL

LOGGED BY AFG
GROUND ELEVATION 649.7

ELEV.	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL LL / Unconfined Compressive Strength (TSF) *	NOTES & TEST RESULTS
649.7	0.0		8" CA-6				
649.0	0.7		Dark gray and black silty clay, some fine to coarse sand, trace coarse gravel, medium plasticity, very stiff, moist CL	SS-1 1.0-2.5 R=16"	5 6 7	24	qu=3.0tsf
							qu=2.5tsf
645.5	4.3		Trace roots	SS-2 3.5-5.0 R=12"	7 21 22	18	
644.7	5.0		Rock fragments				
			Brown / gray silty clay, some fine to coarse sand, moist to wet CL				
643.5	6.3		Fine to coarse sand and gravel, trace black clay, wet to saturated SP	SS-3 6.0-7.5 R=8"	12 13 12	20	
641.7	8.0		Black / dark brown peat, soft, wet PT	SS-4 8.5-10.0 R=8"	2 1 2		WC-288%
638.7	11.0		Gray silty clay with organics, some roots and shell fragments, very soft, moist to wet CL/OL	SS-5 11.0-12.5 R=18"	W O H		qu=0.25tsf WC=99%
				SS-6 13.5-15.0 R=18"	W O H		qu=0.25tsf WC=163%
632.7	17.0		Black silty clay with organics, very soft, moist CL/OL				
				SS-7 18.5-20.0	W O H		qu=0.25tsf WC=66%
629.7	20.0						

DRILLING CONTRACTOR GTC
DRILLING METHOD 2.25" HSA
DRILLING EQUIPMENT CME ATV
DRILLING STARTED 1/18/08 ENDED 1/18/08

REMARKS
Boring backfilled with soil cuttings

WATER LEVEL (ft.)
▽ N/A
▼ N/A

PATRICK ENGINEERING INC.

BORING NUMBER B-2 SHEET 2 OF 2
CLIENT Cook County Highway Department
PROJECT & NO. 20708.025
LOCATION N. Side of Willow Rd, Prospect Heights, IL

LOGGED BY AFG
GROUND ELEVATION 649.7

ELEV.	DEPTH (FT)	STRATA	SOIL/ROCK DESCRIPTION	SAMPLE TYPE & NO. DEPTH (FT) RECOVERY(IN)	BLOW COUNTS	Water Content PL LL / Unconfined Compressive Strength (TSF)	NOTES & TEST RESULTS
629.7	20.0		Black silty clay with organics, very soft, moist CL/OL				
			4" seam silty fine sand	SS-8 23.5-25.0 R=18"	W O H		qu=0.25tsf WC=82%
622.7	27.0		Gray silty clay, little coarse sand, very soft, medium plasticity, moist to wet CL	SS-9 28.5-30.0 R=18"	0 0 3	16	qu=0.25tsf
617.7	32.0		Brown / gray silty clay, trace coarse sand, medium plasticity, very stiff, moist CL	SS-10 33.5-35.0 R=16"	4 6 7	17	qu=2.5tsf
612.7	37.0		Gray / brown silty fine sand, medium dense, saturated SM	SS-11 38.5-40.0 R=18"	3 7 6	19	
609.7	40.0		End of Boring at 40.0'				

DRILLING CONTRACTOR GTC
DRILLING METHOD 2.25" HSA
DRILLING EQUIPMENT CME ATV
DRILLING STARTED 1/18/08 ENDED 1/18/08

REMARKS
Boring backfilled with soil cuttings

WATER LEVEL (ft.)
▽ N/A
▽ N/A
▼

N

0 15' 30'

GRAPHIC SCALE
1"=30'

B-1
40 FT.

BORING NUMBER

DEPTH

AERIAL PHOTO SOURCE:
Google Earth™ mapping service

Date: APRIL 2008	FIGURE 1 BORING LOCATION PLAN
Proj No.: 20708.025	COOK COUNTY DEPT. OF HIGHWAYS PROSPECT HEIGHTS, IL
App. By: DE	

PATRICK ENGINEERING INC.
4970 Varsity Drive
Lisle, Illinois 60532-4101
TEL. (630) 795-7200
FAX (630) 724-1681
PROFESSIONAL DESIGN FIRM LICENSE NO. 184-000409

O'Hare Intercepting Sewer U.D. 14A Ext. D

RECORD OF SUBSURFACE EXPLORATION

BORING 45 CONTRACT C-980M

FOREMAN Foglemen LOGGED BY Louis Hooper DATE STARTED 7-16-69 DATE COMPLETED 7-16-69
LOCATION Per location sketch (Soil Engineer) BORING METHOD Hollow auger CASING

NOTES	D	MC	TYPE	NO.	Qu	Qp	BLOWS	ELEV.	DESCRIPTION	DEPTH
								74.4	SURFACE	0.0
								71.9	CLAY, SAND AND GRAVEL. (Fill)	2.5
	109	23.4	2T	1	0.7	1.0			Medium, brown and gray SILTY SANDY CLAY, trace of gravel.	
	119	15.5	2T	2	0.9	1.2		63.4		11.0
	107	23.3	2T	3	2.4	2.0			Very stiff, gray CLAYEY SILT, trace of sand and gravel.	
			SS	4			3/4/4	55.9		18.5
			SS	5			5/7/8	48.4	Loose to medium dense, gray SAND, trace of silt.	26.0
									Bottom of boring @ 26.0	

GROUND WATER DEPTH AT COMPLETION BAR 19.0' • AFTER 24 HRS 8.0' • AFTER HRS
SCALE 1" = 5' AAR 12.0'

LAYNE-WESTERN CO.

O'Hare Intercepting Sewer 14A Ext. D

RECORD OF SUBSURFACE EXPLORATION

BORING 19 CONTRACT C-715M

FOREMAN Buckingham LOGGED BY Louis Hooper DATE STARTED 11-19-68 DATE COMPLETED 11-19-68
LOCATION Per location sketch (Soil Engineer) BORING METHOD Hollow auger CASING

NOTES	D	MC	TYPE	NO.	Qu	Qp	BLOWS	ELEV.	DESCRIPTION	DEPTH
								71.5	SURFACE	0.0
								68.0	CLAY, SAND and GRAVEL. (Fill)	3.5
		71.8	2T	1		0.7		63.5	Very loose, black ORGANIC SILT.	8.0
	41	119.3	2T	2	0.3	0.2			Very loose, gray ORGANIC SILT, trace of shells.	
	77	39.6	2T	3	0.4	0.5		53.5		18.0
	112	20.0	2T	4	3.0	2.5			Hard to very stiff, gray CLAYEY SILT, trace of sand and gravel.	
	111	20.2	2T	5	2.1	2.0		43.5		28.0
			SS	6			3/5/6		Medium dense, gray fine SAND.	
			SS	7			4/5/9	35.5	Bottom of boring @ 36.0'	36.0

GROUND WATER DEPTH AT COMPLETION BAR 11.9' • AFTER 24 HRS 3.0' • AFTER HRS
SCALE 1" = 5' AAR 4.8'

LAYNE-WESTERN CO.

O'Hare Intercepting Sewer U.D. 14A Ext. D

RECORD OF SUBSURFACE EXPLORATION

BORING 44 CONTRACT C-980M

FOREMAN Foglemen LOGGED BY Louis Hooper DATE STARTED 7-16-69 DATE COMPLETED 7-16-69
LOCATION Per location sketch (Soil Engineer) BORING METHOD Hollow auger CASING

NOTES	D	MC	TYPE	NO.	Qu	Qp	BLOWS	ELEV.	DESCRIPTION	DEPTH
								70.0	SURFACE	0.0
								66.0	CONCRETE & ROCK. (Fill)	4.0
		12.9	SS	1			6/3/3	63.5	Stiff, gray CLAYEY SANDY SILT.	6.5
		161.0	SS	2		0.2	1/1/1		Gray, ORGANIC SILT, some shells.	
		108.0	SS	3	0.4U	0.2	1/1/1			
		17.4	SS	4			1/1/3	49.5	Medium dense, gray SILT, trace of clay.	20.5
		19.7	SS	5	2.1U	2.0	1/2/2	46.0	Very stiff, gray CLAYEY SILT, trace of sand and gravel.	24.0
			SS	6			3/4/6	43.0	Medium dense, brown and gray fine SILTY SAND, trace of clay.	27.0
								39.0	Bottom of boring @ 31.0'	31.0

GROUND WATER DEPTH AT COMPLETION BAR 8.0' • AFTER 24 HRS 2.5' • AFTER HRS
SCALE 1" = 5' AAR 5.0'

LAYNE-WESTERN CO.

O'Hare Intercepting Sewer 14A Ext. D

RECORD OF SUBSURFACE EXPLORATION

BORING 40 CONTRACT C-715M

FOREMAN Buckingham LOGGED BY Louis Hooper DATE STARTED 12-2-68 DATE COMPLETED 12-2-68
LOCATION Per location sketch (Soil Engineer) BORING METHOD Hollow auger CASING

NOTES	D	MC	TYPE	NO.	Qu	Qp	BLOWS	ELEV.	DESCRIPTION	DEPTH
								71.4	SURFACE	0.0
								66.9	CLAY, SAND AND GRAVEL. (Fill)	4.5
			SS	1			1/1/1	61.9	Very loose, brown fine SAND, some silt.	9.5
		116	21.2	2T	2	1.5		57.4	Loose to medium dense, brown and gray SILT.	14.0
		115	17.5	2T	3	2.1	2.2	51.9	Very stiff, gray CLAYEY SILT, trace of sand and gravel.	19.5
				2T	4			50.4	Loose to medium dense, gray fine SAND, (Clay *	21.0
									Bottom of boring @ 21.0'	

*Seams) 21.0':Gray clay.

GROUND WATER DEPTH AT COMPLETION BAR 17.6' • AFTER 25 HRS 1.5' • AFTER HRS
SCALE 1" = 5' AAR 6.3'

LAYNE-WESTERN CO.

O'Hare Intercepting Sewer U.D. 14A Ext. D

RECORD OF SUBSURFACE EXPLORATION

BORING 43 CONTRACT C-980M

FOREMAN Foglemen LOGGED BY Louis Hooper DATE STARTED 7-16-69 DATE COMPLETED 7-16-69
LOCATION Per location sketch (Soil Engineer) BORING METHOD Hollow auger CASING

NOTES	D	MC	TYPE	NO.	Qu	Qp	BLOWS	ELEV.	DESCRIPTION	DEPTH
								69.8	SURFACE	0.0
								67.8	CLAY, SAND & GRAVEL. (Fill)	2.0
	103	21.9	2T	1	0.5	0.7			Medium, brown and black SILTY CLAY, trace of sand and gravel and organics.	
								61.8		8.0
	34	217.0	2T	2	0.2	0.3			Brown and gray ORGANIC SILT, trace to some shells.	
		273.0	SS	3	0.2U	0.2	1/1/1	51.8		18.0
		96.5	SS	4		0.2	1/0/1		Gray, ORGANIC SILT, and CLAY, trace to some shells, trace of sand.	
		48.6	SS	5		0.2	1/0/0	39.8		30.0
		20.2	SS	6	0.8U	0.4	1/2/2		Stiff, gray CLAYEY SILT trace of sand and gravel and organics.	
		20.8	SS	7	0.5U	0.5		34.8		35.0
								33.8	Stiff, gray CLAYEY SILT, trace of sand and gravel. Bottom of boring @ 36.0'	36.0

GROUND WATER DEPTH AT COMPLETION BAR 6.0' • AFTER 24 HRS 0.2' • AFTER HRS
SCALE 1" = 5' AAR 2.0'

LAYNE-WESTERN CO.

O'Hare Intercepting Sewer 14A Ext. D

RECORD OF SUBSURFACE EXPLORATION

BORING 18 CONTRACT C-715M

FOREMAN Buckingham LOGGED BY Louis Hooper DATE STARTED 11-18-68 DATE COMPLETED 11-18-68
LOCATION Per location sketch (Soil Engineer) BORING METHOD Hollow auger CASING

NOTES	D	MC	TYPE	NO.	Qu	Qp	BLOWS	ELEV.	DESCRIPTION	DEPTH
								70.7	SURFACE	0.0
								65.7	CLAY, SAND and GRAVEL. (Fill)	5.0
		185.0	2T	1		0.1		63.7	Very loose, black ORGANIC SILT.	7.0
	43	186.0	2T	2	0.2	0.5			Very loose, gray ORGANIC SILT, trace of shells.	
	47	124.0	2T	3	0.2	0.2		51.2		19.5
	106	25.0	2T	4	0.9	2.0			Medium to stiff, gray CLAYEY SILT, trace of sand and gravel.	
		22.7	SS	5	1.9U	1.2	2/4/7			
		20.7	SS	6	2.1U	1.7	3/3/6	39.7	Bottom of boring @ 31.0'	31.0

GROUND WATER DEPTH AT COMPLETION BAR 21.8' • AFTER 48 HRS 1.8' • AFTER HRS
SCALE 1" = 5' AAR 23.0'

LAYNE-WESTERN CO.

O'Hare Intercepting Sewer U.D. 14A Ext. C

RECORD OF SUBSURFACE EXPLORATION

BORING 42 CONTRACT C-980M

FOREMAN Foglemen LOGGED BY Louis Hooper DATE STARTED 7-15-69 DATE COMPLETED 7-16-69
LOCATION Per location sketch (Soil Engineer) BORING METHOD Hollow auger CASING

NOTES	D	MC	TYPE	NO.	Qu	Qp	BLOWS	ELEV.	DESCRIPTION	DEPTH
								71.9	SURFACE	0.0
								69.4	CLAY, SAND & GRAVEL. (Fill)	2.5
	89	34.3	2T	1	0.5	0.6			Medium, dark gray SILTY CLAY, trace to some sand and gravel, trace of organics.	
		18.0	SS	2	1.1U	0.5	1/1/3	63.9		8.0
		25.1	SS	3	1.3U	2.4	3/4/4	58.9	Stiff, gray CLAYEY SILT, trace of sand and gravel.	13.0
		14.4	SS	4	3.5U	4.2	5/7/10	53.9	Loose, brown and gray SILT, trace of clay.	18.0
			SS	5			2/4/5	48.9	Very stiff, gray SILTY CLAY, trace of sand and gravel.	23.0
								45.9	Loose, gray fine SAND, trace of silt. Bottom of boring @ 26.0'	26.0

GROUND WATER DEPTH AT COMPLETION BAR 7.0' • AFTER 24 HRS 2.2' • AFTER HRS
SCALE 1" = 5' AAR 3.0'

LAYNE-WESTERN CO.

BUILT AS SHOWN EXCEPT AS NOTED

Contractor

M.S.D. Resident Engineer

REVISIONS		
NO.	DATE	BY

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

O'HARE INTERCEPTING SEWER
U.D. 14-A EXT. D
CONTRACT NO. 68-304-2S

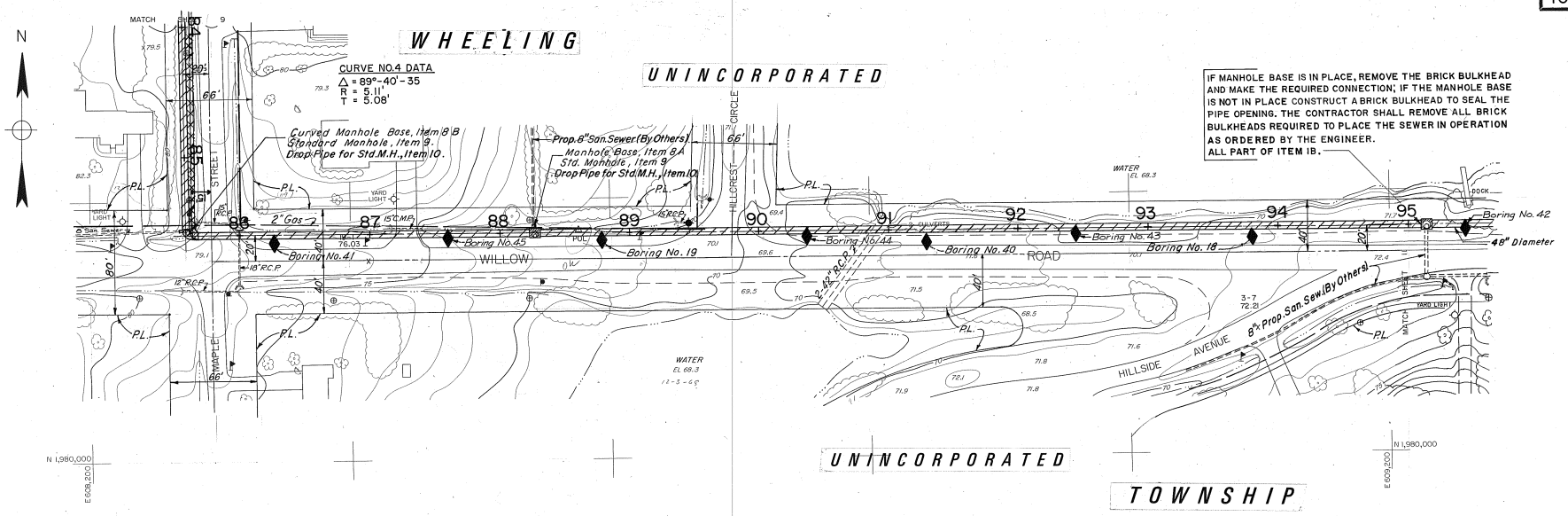
SOIL BORINGS

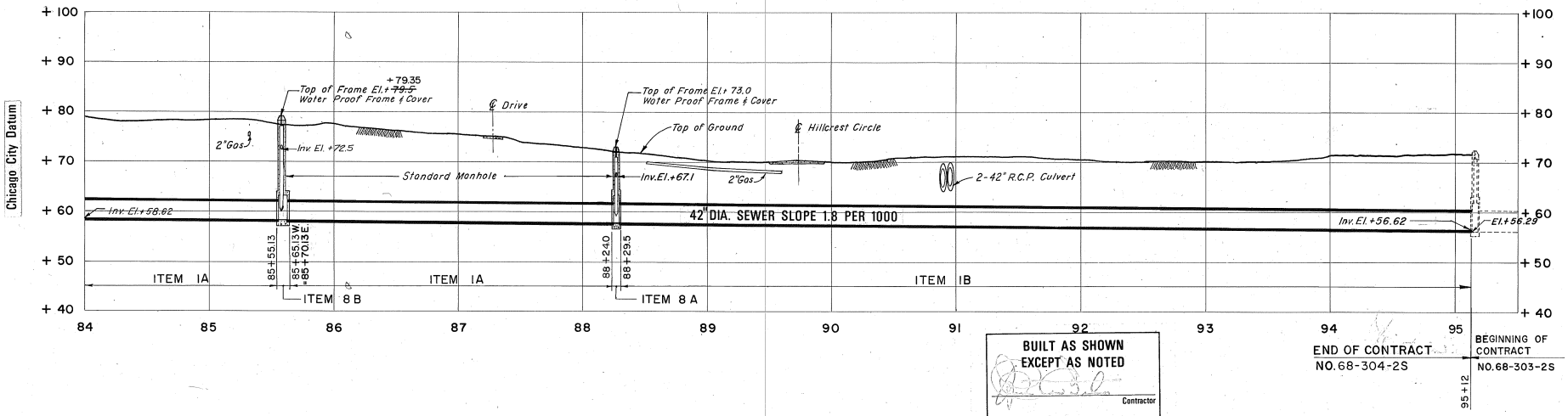
Correct [signature]
Approved H. E. Dalton, Assistant Chief Engineer
Approved As To Operations [signature], Acting Chief Engineer
Approved [signature], Acting Chief Engineer

SCALES SHOWN ARE SCALES OF TRACINGS

Drawn | Traced | Checked J. Lions | DATE OCT. 1969 | SHEET NO. 16

MP 11-7-24





BUILT AS SHOWN EXCEPT AS NOTED

Contractor

M.S.D. Resident Engineer

Horizontal Scale of Tracing 1"= 40'-0"
50 40 30 20 10 0 50 100

Vertical Scale of Tracing 1"= 10'-0"
0 10 20 30 40

Note "A" on sheet No.21 applies to this sheet.

REVISIONS		
NO.	DATE	BY
As Built	10/7/71	P.J.L.

THE METROPOLITAN SANITARY DISTRICT OF GREATER CHICAGO

O'HARE INTERCEPTING SEWER
U.D. 14-A EXT. D
CONTRACT NO. 68-304-2S
PLAN AND PROFILE
STA. 84+00 TO STA. 95+12

Correct R.D. Pickard
Approved T. E. Dalton, Assistant Chief Engineer
Approved As To Operations Ben Horwitz, Acting Chief Bl M. & O.
Approved Ernest E. Noble, Acting Chief Engineer

SCALES SHOWN ARE SCALES OF TRACINGS

Drawn F.G. | Traced A.G.Benell | Checked J. Arms | DATE OCT. 1969 | SHEET NO. 10