

# Structure Geotechnical Report for Proposed 62N91 Overhead Sign Structures along IL 53 (FAP 342)

IDOT Contract Number 62N91  
IDOT Job Number D-91-144-21  
Section 2018-100-BR  
County Cook  
Route IL 53 (FAP 342)

Illinois Department of Transportation  
District 1  
Region 1

Gonzalez Project Number 23-1003

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## Prepared for:

Strand Associates, Inc.  
1170 South Houbolt Road  
Joliet, IL 60431

## Prepared by:

Gonzalez Companies, LLC  
525 West Main Street, Suite 125  
Belleville, IL 62220  
www.gonzalezcos.com

Eric J. Glazier, P.E.  
eglazier@gonzalezcos.com  
618-222-2221



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# 1. PROJECT DESCRIPTION AND SCOPE

## 1.1 Project Description

Gonzalez Companies, LLC (Gonzalez) performed a geotechnical investigation for the removal and relocation of three overhead sign structures along the IL 53 corridor between Algonquin Road interchange and the West Nichols Road interchange. The project site is within Cook County, Illinois, and lies within the limits of the Third Principal Meridian (SE ¼, Section 12, T42N, R10E and SW¼, Section 7, T42N, R11E). The project location is shown on the Project Location Map in **Appendix A**. This report presents the depth and characteristics of the soils along the proposed improvement and geotechnical recommendations for the proposed project.

## 1.2 Proposed Improvements

The proposed improvements include three overhead sign structures (OHSS) will be removed and replaced along the IL 53 corridor. The proposed boring depths of between 30 and 45 feet have been selected based on the anticipated span length, the standard drilled shaft foundation design tables in the IDOT Sign Structure Manual (2012), and the existing topography. Table 1 is a summary of the proposed OHSS for the project.

**Table 1 Proposed Improvements to Overhead Sign Structures**

Structure Number	Station	OHSS Type	Span Length (ft)
1S016S053R000.0-007	1159+25	Aluminum Span – Type I-A	54
1S016S053L000.0-006	1397+10	Aluminum Span – Type I-A	84
1S016S053L000.0-007	1433+18	Aluminum Span – Type II-A	116
1S016S053L000.0-008	1488+07	Aluminum Span – Type III-A	104
1S016S053L000.0-009	1498+06	Aluminum Span – Type III-A	110
1S016SI29R000.0-000	1130+30	Aluminum Span – Type III-A	82
1S016S053L000.0-000	1135+55	Aluminum Span – Type I-A	82
1C016S053R000.0-000	97+20	Cantilever – Type III C-A	40
1C016S053L000.0-003	91+54	Cantilever – Type III C-A	40

# 2. GENERAL GEOLOGY

The project area is located in northeastern Illinois about 10 miles northwest of Chicago O’Hare International Airport within the Wheaton Morainal Country within the Great Lake section of the Central Lowland Province. Based on historical borings and publications, the subsurface profile includes interbedded glacial deposits (medium stiff to stiff) which is underlain by bedrock. Bedrock within the project is expected around El. 560 (Stumpf, 2006), which is over 150 feet below the existing ground surface.

### 3. FIELD EXPLORATION

#### 3.1 Subsurface Exploration and Testing

##### 3.1.1 Field Investigation

Between May 2, 2023 and June 2, 2024, Gonzalez drilled and logged 6 conventional soil borings near the proposed overhead sign locations. The boring locations are shown on the Boring Plan in **Appendix A** and coordinates are provided in **Table 1**. Ground surface elevations at the boring locations were determined in the field by GPS survey equipment (Virtual Reference Station (VRS) utilizing a Trimble R8 receiver). Gonzalez subcontracted the conventional soil borings to Rubino Engineering, Inc. A Gonzalez geotechnical specialist observed and coordinated the field investigation.

**Table 2 Boring Locations and Elevations**

Boring ID	Date Drilled	Boring Depth (ft)	Surface Elevation (ft)	Station (ft)	Offset (ft)	OHSS Structure Number
GC-05	May 2, 2023	30	721.4	2397+13	29 RT	1S016S053L000.0-006
GC-07	May 2, 2023	30	721.5	2397+06	29 LT	
GC-23	May 9, 2023	30	719.6	3159+31	30 LT	1S016S053R000.0-007
GC-24	May 10, 2023	30	719.1	3159+31	64 LT	
GC-28	May 11, 2023	30	723.4	2433+14	49 RT	1S016S053L000.0-007
GC-30	May 11, 2023	30	723.7	2433+05	17 LT	
GC-71	May 23, 2024	35	731.5	2488+80	37 LT	1S016S053L000.0-008
GC-72	May 24, 2024	35	734.0	2488+76	32 RT	
GC-73	May 23, 2024	45	736.4	2498+71	33 LT	1S016S053L000.0-009
GC-74	June 3, 2024	30	738.0	2498+46	33 RT	
GC-75	June 3, 2024	45	756.1	91+24	85 RT	1C016S053L000.0-003
GC-76	May 23, 2024	30	761.7	96+90	36 LT	1C016S053R000.0-000
GC-79	June 2, 2024	35	743.4	3130+66	88 LT	1S016I290R000.0-000
GC-80	June 3, 2024	35	744.1	3130+66	30 LT	
GC-81	June 3, 2024	35	742.0	2135+65	31 RT	1S016S053L000.0-000
GC-82	June 2, 2024	35	741.3	2135+65	90 RT	

The borings were advanced with a Geoprobe 7822DT drill rig using hollow stem augers to completion depths ranging from 30 to 45 feet below existing ground surface. Borings were terminated at planned termination depths. Soil samples were obtained under the direction of a Gonzalez engineer using a 2-inch outer diameter split spoon sampler driven with an automatic hammer in accordance with the standard penetration test (AASHTO T 206). The samples were logged for soil type and the unconfined compressive strength was determined with a Rimac or pocket penetrometer, as appropriate. Upon completion, each



boring was backfilled with auger cuttings and capped with pavement patch. The boring locations are included as **Appendix A** as a graphical record of the subsurface explorations, and the Soil Boring Logs are included as **Appendix B**.

### 3.1.2 Laboratory Testing

Soil samples were taken to the laboratory of Gonzalez subcontractor Rubino to determine the moisture content (ASTM T265) in general accordance with the referenced AASHTO Standards. The results of the laboratory testing are summarized on the boring logs at the corresponding sample depths.

## 3.2 Subsurface Conditions

This section provides a brief description of the soils encountered in the borings performed in the vicinity of the proposed overhead sign structures. Variations in the general subsurface soil profile were noted during the drilling activities. Detailed descriptions of the subsurface soils are provided in the Soil Boring Logs (**Appendix B**). The soil boring logs provide specific conditions encountered at each boring location, including soil descriptions, stratifications, penetration resistance, elevations, location of the samples, water levels (when encountered), and laboratory test data. Variations in the general subsurface soil profile were noted during the drilling activities. The stratifications shown on the boring logs represent the conditions only at the actual boring locations and represent the approximate boundary between subsurface materials; however, the actual transition may be gradual.

The near-surface materials in the project area generally consist of glacial materials overlain by fill placed during construction of IL 53. Fill material may vary in depth across the project site as a result of previous construction activities. In general, the observed subsurface material consists predominately of cohesive soil (clay) that was medium stiff to stiff, brown, moist, low plastic with some seams and layers of coarse grained granular material (Sand with gravel and clayey sand with gravel). Bedrock was not encountered during the field investigation. The deepest boring was advanced to 45 feet below existing ground surface. The following provide additional details regarding the soils encountered at each proposed OHSS location.

### 3.2.1 Borings GC-05 and GC-07 (OHSS 1S016S053L000.0-006, Station 1397+10)

The observed subsurface material consists predominately of clay that was brown, dry to moist, low plastic with trace sand and gravel. Isolated layers of loose layers of granular materials (sand/gravel) and soft clay were encountered. Average unconfined compressive strength was measured to be 1.3tsf in GC-05 and 1.9tsf in GC-07. SPT N-values in the fill materials ranged between 5 and 30 blows per foot (bpf) with an average near 10 bpf, indicating medium stiff to stiff cohesive deposits.

### 3.2.2 Borings GC-23 and GC-24 (1S016S053R000.0-007, Station 1159+25)

The observed subsurface material consists predominately of clay that was brown, dry to moist, low plastic with trace sand and gravel. Average unconfined compressive strength was measured to be 3.5tsf in GC-23 and 1.8tsf in GC-24. SPT N-values in the fill materials ranged between 2 and 20 blows per foot (bpf) with an average near 7 bpf, indicating medium stiff to stiff cohesive deposits.

### 3.2.3 Borings GC-28 and GC-30 (1S016S053L000.0-007, 1433+18)

The observed subsurface material consists predominately of clay that was brown, dry to moist, low plastic with trace sand and gravel. Isolated layers of loose layers of granular materials (sand/gravel) and soft clay were encountered. Average unconfined compressive strength was measured to be 1.4tsf in GC-28 and 2.2tsf in GC-30. SPT N-values in the fill materials ranged between 4 and 45 blows per foot (bpf) with an average near 6 bpf, indicating medium stiff to stiff cohesive deposits.

### **3.2.4 Borings GC-71 and GC-72 (1S016S053L000.0-008, Station 1488+07)**

The observed subsurface material consists predominately of clay that was brown, dry to moist, low plastic with trace sand and gravel. Average unconfined compressive strength was measured to be 1.6tsf in GC-71 and 1.5tsf in GC-72. SPT N-values in the fill materials ranged between 3 and 95 blows per foot (bpf) with an average near 13 bpf, indicating medium stiff to stiff cohesive deposits.

### **3.2.5 Borings GC-73 and GC-74 (1S016S053L000.0-009, Station 1498+06)**

The observed subsurface material consists predominately of clay that was brown, dry to moist, low plastic with trace sand and gravel. Isolated layers of loose layers of granular materials (sand/gravel) and soft clay were encountered. Average unconfined compressive strength was measured to be 2.4tsf in GC-73 and 2.0tsf in GC-74. SPT N-values in the fill materials ranged between 6 and 26 blows per foot (bpf) with an average near 11 bpf, indicating medium stiff to stiff cohesive deposits.

### **3.2.6 Borings GC-75 (OHSS 1C016S053L000.0-003, Station 91+54.00)**

The observed subsurface material consists predominately of clay that was brown, dry to moist, low plastic with trace sand and gravel. Average unconfined compressive strength was measured to be 2.2tsf in GC-75. SPT N-values in the fill materials ranged between 6 and 16 blows per foot (bpf) with an average near 11 bpf, indicating medium stiff to stiff cohesive deposits.

### **3.2.7 Borings GC-76 (OHSS 1C016S053R000.0-000, Station 97+20)**

The observed subsurface material consists predominately of clay that was brown, dry to moist, low plastic with trace sand and gravel. Average unconfined compressive strength was measured to be 2.4tsf in GC-76. SPT N-values in the fill materials ranged between 7 and 13 blows per foot (bpf) with an average near 10 bpf, indicating medium stiff to stiff cohesive deposits.

### **3.2.8 Borings GC-79 and GC-80 (OHSS 1S016I290R000.0-000, Station 1130+30)**

The observed subsurface material consists predominately of clay that was brown, dry to moist, low plastic with trace sand and gravel. Average unconfined compressive strength was measured to be 3.2tsf in GC-79 and 3.7tsf in GC-80. SPT N-values in the fill materials ranged between 5 and 67 blows per foot (bpf) with an average near 8 bpf, indicating medium stiff to stiff cohesive deposits.

### **3.2.9 Borings GC-81 and GC-82 (OHSS 1S016S053L000.0-000, Station 1135+55)**

The observed subsurface material consists predominately of clay that was brown, dry to moist, low plastic with trace sand and gravel. Average unconfined compressive strength was measured to be 4.2tsf in GC-81 and 3.5tsf in GC-82. SPT N-values in the fill materials ranged between 7 and 17 blows per foot (bpf) with an average near 7 bpf, indicating medium stiff to stiff cohesive deposits.

## **3.3 Groundwater**

Groundwater levels were checked in each boring to determine the general groundwater conditions present at the site and were measured while drilling and after each boring was completed. Groundwater was encountered in the following borings at the time of field exploration at depths/elevations shown in **Table 3**.

**Table 3 Groundwater Observations**

Boring ID	During Drilling		After Drilling	
	Groundwater Depth (ft)	Groundwater Elevation (ft)	Groundwater Depth (ft)	Groundwater Elevation (ft)
GC-05	Dry	-	12	709.4
GC-07	Dry	-	18	703.5
GC-23	Dry	-	Dry	-
GC-24	Dry	-	20	699.1
GC-28	Dry	-	Dry	-
GC-30	Dry	-	Dry	-
GC-71	Dry	-	Dry	-
GC-72	Dry	-	Dry	-
GC-73	Dry	-	Dry	-
GC-74	Dry	-	Dry	-
GC-75	Dry	-	Dry	-
GC-76	Dry	-	Dry	-
GC-79	Dry	722.4	Dry	-
GC-80	Dry	-	Dry	-
GC-81	Dry	-	Dry	-
GC-82	Dry	-	Dry	-

Delayed groundwater levels were not measured, because the borings were backfilled upon completion due to safety reasons. The values in **Table 3** may not represent the long-term groundwater levels. Groundwater level readings were made in the boreholes at times and under conditions shown on the boring logs and stated in the text of this report. However, it should be noted that fluctuations in groundwater level may occur due to variations in rainfall, other climatic conditions.

## 4. GEOTECHNICAL RECOMMENDATIONS

This section provides geotechnical recommendations for the design of the proposed overhead sign structures based on the results of the field exploration and laboratory testing. It is anticipated that the sign structures will be designed in accordance with the IDOT Sign Structures Manual.

### 4.1 Overhead Sign Structure Foundations

According to the IDOT Sign Structures Manual, span type sign structures, cantilever sign structures and monotube sign structures shall be selected and detailed in accordance with the latest Illinois Department of Transportation (IDOT) Standards.

It is recommended that the proposed overhead signs be supported on deep foundations that consist of drilled shafts with no bell (straight shaft) meeting the requirements of the details in the IDOT Sign Structures Manual. The IDOT Standard design is applicable to soil profiles that are predominantly fine-grained (clay/silt) and have an average soil strength (Qu) of 1.25 tsf. Soil profiles that contain soft soils (Qu < 1.25tsf)

and or course-grained granular materials (sand/gravel) may require modification to the IDOT standard design.

**Table 4 OHSS Foundation Recommendations Summary**

OHSS Structure Number	Station	Boring ID	Soil Profile	Average Soil Strength (Qu, tsf)	Design
1S016S053L000.0-006	1397+10	GC-05	Med. Stiff to Stiff Clay with isolated layers of granular soil/soft clay	1.3	IDOT Standard with temporary case or wet construction method
		GC-07		1.9	
1S016S053R000.0-007	1159+25	GC-23	Med. Stiff to Stiff Clay	3.5	IDOT Standard
		GC-24		1.8	
1S016S053L000.0-007	1433+18	GC-28	Med. Stiff to Stiff Clay with isolated layers of soft clay	1.4	IDOT Standard with temporary case or wet construction method
		GC-30		2.2	
1S016S053L000.0-008	1488+07	GC-71	Med. Stiff to Stiff Clay	1.6	IDOT Standard
		GC-72		1.5	
1S016S053L000.0-009	1498+06	GC-73	Med. Stiff to Stiff Clay with isolated layers of granular soil	2.4	IDOT Standard with temporary case or wet construction method
		GC-74		2.0	
1S016I290R000.0-000	1130+30	GC-79	Med. Stiff to Stiff Clay	3.2	IDOT Standard
		GC-80		3.7	
1S016S053L000.0-000	1135+55	GC-81	Med. Stiff to Stiff Clay	4.2	IDOT Standard
		GC-82		3.5	
1C016S053L000.0-003	91+54	GC-75	Med. Stiff to Stiff Clay	2.2	IDOT Standard
1C016S053R000.0-000	97+20	GC-76	Med. Stiff to Stiff Clay	2.4	IDOT Standard

#### 4.1.1 OHSS 1S016S053L000.0-006 at Station 1397+10

The soils encountered in the borings (GC-05 and GC-07) for this OHSS structure consisted predominately of layers of medium stiff to stiff cohesive soils to the termination depths. In general, the cohesive soils generally had unconfined compressive strength values greater than 1.25 tons per square foot (tsf). Isolated layers of granular (sand/gravel) material and soft clay layers were encountered and have the potential to squeeze or slough into the shaft during construction. The standard foundation design parameters included on IDOT Standard Drawing should be suitable for use in the design of the median foundation for the proposed sign structure. The design of the shaft foundation, including the diameter and minimum length, should be in accordance with the requirements of the sign structures manual. Wet construction method (516.06b), full length temporary casing method (516.060c), or a combination of the two may need to be used to maintain the sidewalls of the drilled shaft while excavating to the design depth and placing concrete for the foundation.

#### 4.1.2 OHSS 1S016S053R000.0-007 at Station 1159+25

The soils encountered in the borings (GC-23 and GC-24) for this OHSS structure consisted predominately of layers of medium stiff to stiff cohesive soils to the termination depths. The cohesive soils generally had unconfined compressive strength values greater than 1.25 tons per square foot (tsf). The standard foundation design parameters included on IDOT Standard Drawing should be suitable for use in the design of the median foundation for the proposed sign structure. The design of the shaft foundation, including the diameter and minimum length, should be in accordance with the requirements of the sign structures manual.

#### **4.1.3 OHSS 1S016S053L000.0-007 at Station 1433+18**

The soils encountered in the borings (GC-28 and GC-30) for this OHSS structure consisted predominately of layers of medium stiff to stiff cohesive soils to the termination depths. The cohesive soils generally had unconfined compressive strength values greater than 1.25 tons per square foot (tsf). Isolated layers of granular (sand/gravel) material and soft clay layers were encountered and have the potential to squeeze or slough into the shaft during construction. The standard foundation design parameters included on IDOT Standard Drawing should be suitable for use in the design of the median foundation for the proposed sign structure. The design of the shaft foundation, including the diameter and minimum length, should be in accordance with the requirements of the sign structures manual. Wet construction method (516.06b), full length temporary casing method (516.060c), or a combination of the two may need to be used to maintain the sidewalls of the drilled shaft while excavating to the design depth and placing concrete for the foundation.

#### **4.1.4 OHSS 1S016S053L000.0-008 at Station 1488+07**

The soils encountered in the borings (GC-71 and GC-72) for this OHSS structure consisted predominately of layers of medium stiff to stiff cohesive soils to the termination depths. The cohesive soils generally had unconfined compressive strength values greater than 1.25 tons per square foot (tsf). The standard foundation design parameters included on IDOT Standard Drawing should be suitable for use in the design of the median foundation for the proposed sign structure. The design of the shaft foundation, including the diameter and minimum length, should be in accordance with the requirements of the sign structures manual.

#### **4.1.5 OHSS 1S016S053L000.0-009 at Station 1498+06**

The soils encountered in the borings (GC-73 and GC-74) for this OHSS structure consisted predominately of layers of medium stiff to stiff cohesive soils to the termination depths. The cohesive soils generally had unconfined compressive strength values greater than 1.25 tons per square foot (tsf). Isolated layers of granular (sand/gravel) material and soft clay layers were encountered and have the potential to squeeze or slough into the shaft during construction. The standard foundation design parameters included on IDOT Standard Drawing should be suitable for use in the design of the median foundation for the proposed sign structure. The design of the shaft foundation, including the diameter and minimum length, should be in accordance with the requirements of the sign structures manual. Wet construction method (516.06b), full length temporary casing method (516.060c), or a combination of the two may need to be used to maintain the sidewalls of the drilled shaft while excavating to the design depth and placing concrete for the foundation.

#### **4.1.6 OHSS 1C016S053L000.0-003 at Station 91+54**

The soils encountered in the borings (GC-75) for this OHSS structure consisted predominately of layers of medium stiff to stiff cohesive soils to the termination depths. The cohesive soils generally had unconfined compressive strength values greater than 1.25 tons per square foot (tsf). The standard foundation design parameters included on IDOT Standard Drawing should be suitable for use in the design of the median foundation for the proposed sign structure. The design of the shaft foundation, including the diameter and minimum length, should be in accordance with the requirements of the sign structures manual.

#### **4.1.7 OHSS 1C016S053R000.0-000 at Station 97+20**

The soils encountered in the borings (GC-76) for this OHSS structure consisted predominately of layers of medium stiff to stiff cohesive soils to the termination depths. The cohesive soils generally had unconfined compressive strength values greater than 1.25 tons per square foot (tsf). The standard foundation design parameters included on IDOT Standard Drawing should be suitable for use in the design of the median foundation for the proposed sign structure. The design of the shaft foundation, including the diameter and minimum length, should be in accordance with the requirements of the sign structures manual.

#### **4.1.8 OHSS 1S016I290R000.0-000 at Station 1130+30**

The soils encountered in the borings (GC-79 and GC-80) for this OHSS structure consisted predominately of layers of medium stiff to stiff cohesive soils to the termination depths. The cohesive soils generally had unconfined compressive strength values greater than 1.25 tons per square foot (tsf). The standard foundation design parameters included on IDOT Standard Drawing should be suitable for use in the design of the median foundation for the proposed sign structure. The design of the shaft foundation, including the diameter and minimum length, should be in accordance with the requirements of the sign structures manual.

#### **4.1.9 OHSS 1S016S053L000.0-000 at Station 1135+55**

The soils encountered in the borings (GC-81 and GC-82) for this OHSS structure consisted predominately of layers of medium stiff to stiff cohesive soils to the termination depths. The cohesive soils generally had unconfined compressive strength values greater than 1.25 tons per square foot (tsf). The standard foundation design parameters included on IDOT Standard Drawing should be suitable for use in the design of the median foundation for the proposed sign structure. The design of the shaft foundation, including the diameter and minimum length, should be in accordance with the requirements of the sign structures manual.

### **4.2 Drilled Shafts Construction**

The drilled shaft construction should be completed in accordance with Section 516, Drilled Shafts, in the IDOT Standard Specification for Road and Bridge Construction. The dry construction method should be applied where shallow groundwater is not present within the proposed shaft depth. Where shallow groundwater exists within the proposed drilled shaft depth, or significant granular layers were encountered in the borings, a temporary casing will likely be required to prevent caving or excessive deformation of the hole.

Construction of the sign foundation should anticipate the use of a temporary casing due when granular soil layers are observed in the boring(s). Drilled shaft construction with the use of a temporary casing should be completed in accordance with Article 516.06 (c) in the IDOT Standard Specification for Road and Bridge Construction. If wet conditions and water are present at the bottom of the drilled shaft, wet method construction (IDOT Standard Specifications for Road and Bridge Construction Section 516.06.b) may need to be considered.

When using the dry or temporary casing method, free water should be removed from the base of the drilled shaft base prior to placing any concrete. The placement method of concrete for the drilled shaft foundation should be based on the amount of water present at the base of the shaft just prior to placing the concrete. Concrete may be placed using the free fall method, provided less than 2 inches of water is present at the base of the shaft at the time the concrete is being placed. If more than 2 inches of water is present, a tremie should be used to displace the water to the surface for removal.

## **5. LIMITATIONS**

This report is based on Gonzalez Companies' understanding of the project as described and was prepared to provide recommendations for retaining wall construction. The boring logs depict subsurface conditions for the specific locations and dates. Depth to groundwater levels recorded on our boring logs are subject to many variables and may not be indicative of long-term equilibrium conditions. These variables include puncture of perched horizons and inadequate time for equilibration of groundwater pressure.

The analyses and recommendations submitted in this report are based in part upon the subsurface data collected and our experience with similar projects. The nature and extent of variations across the site may not become evident until construction. If variations then become apparent that could affect the proposed project, it may be necessary to re-evaluate some of the recommendations of this report. The recommendations and observations presented in the report assume that significant variations do not occur. Non-uniform conditions, however, often cannot be determined by the procedures described. Such

conditions may necessitate additional expenditures to obtain a properly constructed project. We recommend that a contingency fund be budgeted to accommodate such possible expenditures.

## 6. REFERENCES

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## **APPENDIX A Boring Location Map**



### BORING LOCATION LEGEND

- Overhead Sign Structure Boring



NOT TO SCALE

TITLE:	PROJECT NO.	SHEET
	23-1003	1
DATE:	OF 5	
01/26/2024		

### KEY MAP & LEGEND

DESIGNED BY:	GMK
DRAWN BY:	GMK
CHECKED BY:	NRK
DRAWING FILE:	Boring Locations C2 OHS 2024-07-26.dwg

TITLE:	PTB 203-021 62N91 - IL 53 FROM I-90 TO LAKE COOK RD
COOK COUNTY, IL	

REVISIONS:	#	Date	Description

**gonzalez**  
 GONZALEZ COMPANIES, LLC  
 525 WEST MAIN STREET, SUITE 125  
 BELLEVILLE, IL 62220  
 PHONE: (618)222-2221  
 WWW.GONZALEZCOS.COM

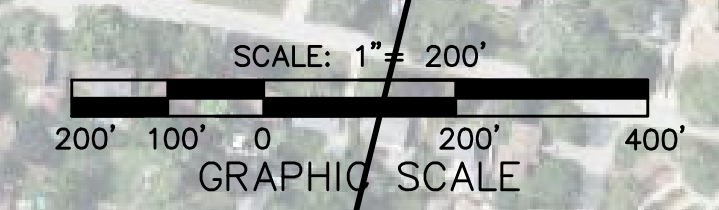


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 Plotted on: 7/26/2024 1:49 PM  
 Plotted By: Eric Szarler



MATCH LINE 1

MATCH LINE 2



**gonzalez**  
 GONZALEZ COMPANIES, LLC  
 525 WEST MAIN STREET, SUITE 125  
 BELLEVILLE, IL 62220  
 PHONE: (618)222-2221  
 WWW.GONZALEZCOS.COM

REVISIONS:	
#	Date

PTB 203-021  
 62N91 - IL 53  
 FROM I-90 TO LAKE COOK RD  
 COOK COUNTY, IL

DESIGNED BY: GMK  
 DRAWN BY: GMK  
 CHECKED BY: NPK  
 DRAWING FILE: Boring Locations C2 OHSS 2024-07-26.dwg

TITLE: BORING LOCATIONS 1  
 PROJECT NO: 23-1003  
 DATE: 01/26/2024  
 SHEET: 2 OF 5



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 Plotted on: 7/26/2024 1:50 PM  
 Plotted By: Eric Sotzner



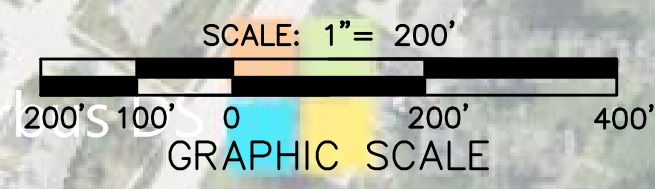
**gonzalez**  
 GONZALEZ COMPANIES, LLC  
 525 WEST MAIN STREET, SUITE 125  
 BELLEVILLE, IL 62220  
 PHONE: (618)222-2221  
 WWW.GONZALEZCOS.COM

REVISIONS:	#	Date	Description

PTB 203-021  
 62N91 - IL 53  
 FROM I-90 TO LAKE COOK RD  
 COOK COUNTY, IL

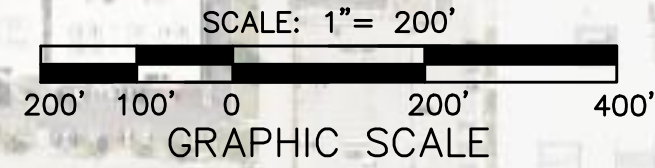
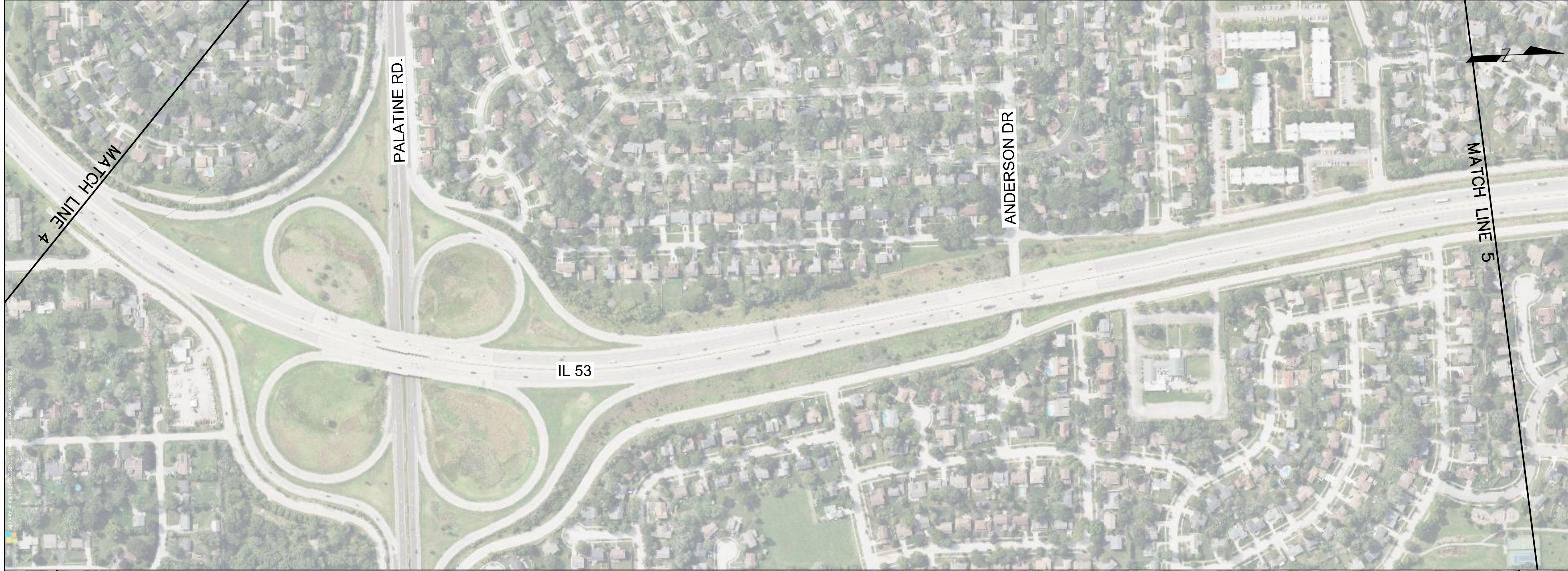
DESIGNED BY: GMK  
 DRAWN BY: GMK  
 CHECKED BY: NPK  
 DRAWING FILE: Boring Locations C2 OHSS 2024-07-26.dwg

TITLE: BORING LOCATIONS 2  
 PROJECT NO. 23-1003  
 DATE: 01/26/2024  
 SHEET 3 OF 5





I:\Projects\2023-1003.000 PTB 203-021 IL 53 Structures\20 Design\CADD\Boring Locations C2 OHSS 2024-07-26.dwg  
 Plotted on: 7/26/2024 1:50 PM  
 Plotted By: Eric Szazler



**gonzalez**  
 GONZALEZ COMPANIES, LLC  
 525 WEST MAIN STREET, SUITE 125  
 BELLEVILLE, IL 62220  
 PHONE: (618)222-2221  
 WWW.GONZALEZCOS.COM

REVISIONS:	
#	Date

PTB 203-021  
 62N91 - IL 53  
 FROM I-90 TO LAKE COOK RD  
 COOK COUNTY, IL

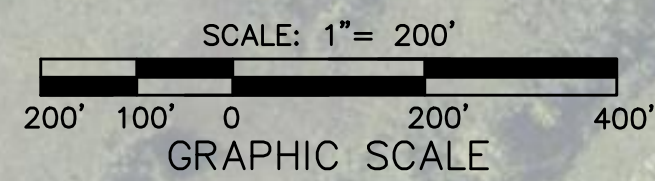
DESIGNED BY: GMK
DRAWN BY: GMK
CHECKED BY: NPK
DRAWING FILE: Boring Locations C2 OHSS 2024-07-26.dwg

**BORING LOCATIONS 3**

PROJECT NO. 23-1003	SHEET <b>4</b>
DATE: 01/26/2024	OF 5



I:\Projects\2023\23-1003.000 PTB 203-021 IL 53 Structures\20 Design\CADD\Boring Locations C2 OHSS 2024-07-26.dwg  
 Plotted on: 7/26/2024 1:50 PM  
 Plotted By: Eric Guzman



**gonzalez**  
 GONZALEZ COMPANIES, LLC  
 525 WEST MAIN STREET, SUITE 125  
 BELLEVILLE, IL 62220  
 PHONE: (618)222-2221  
 WWW.GONZALEZCOS.COM

#	Date	Description

DESIGNED BY: GMK  
 DRAWN BY: GMK  
 CHECKED BY: NPK  
 DRAWING FILE: Boring Locations C2 OHSS 2024-07-26.dwg

PTB 203-021  
 62N91 - IL 53  
 FROM I-90 TO LAKE COOK RD  
 COOK COUNTY, IL

**BORING LOCATIONS 4**

TITLE: PROJECT NO. 23-1003 SHEET 5 OF 5  
 DATE: 01/26/2024



## **APPENDIX B Soil Boring Logs**

ROUTE FAP 342 DESCRIPTION Sign Boring - Rand B LOGGED BY Gonzalez (NRK)

 SECTION 2018-100-BR LOCATION SW 1/4, SEC. 7, TWP. 42N, RNG. 11E, 3<sup>rd</sup> PM,  
Latitude 42.12497633, Longitude 88.00460463

 COUNTY Cook DRILLING METHOD Hollow Stem Auger (8" O.D., 3.25" I.D.) HAMMER TYPE Auto 140 lb HE 105

STRUCT. NO.	Station	DEPTH (ft)	BLOW (6")	UCS (tsf)	MOIST (%)	Surface Water Elev. (ft)	Stream Bed Elev. (ft)	Groundwater Elev.:	First Encounter (ft)	Upon Completion (ft)	After Hrs.	DEPTH (ft)	BLOW (6")	UCS (tsf)	MOIST (%)
1S016S053L000.0-006	1397+10.00														
BORING NO.	GC-05														
Station	2397+13														
Offset	29.0 ft RT														
Ground Surface Elev.	721.4	ft													
ASPHALT - 7"	720.8														
GRAVEL - 5"	720.4														
Stiff, Dark Brown, Moist, CLAY, Some Gravel, Trace Sand			3										2		
			4	3.7	14								4	1.1	17
			5	P									4	B	
			2										2		
	716.8		5	2.1	12								3	0.5	16
Loose, Brown, Dry, Course to Fine SAND		-5	25	B									4	B	
	715.7														
VOID - 36" Sewer													3		
													3	1.2	17
													5	B	
	712.7														
Medium Stiff to Stiff, Brown and Gray, Moist, CLAY, Trace Gravel, Trace Sand			9										5		
			3	1.4	16								11	1.7	17
		-10	3	B									8	B	
								691.4							
			6												
			5	3.2	20										
			6	B											
			3												
			4	0.8	15										
		-15	4	B											
			2												
			2	0.5	15										
			3	B											
	703.4														
Soft, Brown and Gray, Moist, CLAY, Trace Gravel, Trace Sand			WH												
			2	0.4	17										
			3	B											
	701.4	-20													

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, M-Modified SPT)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)



# SOIL BORING LOG

ROUTE FAP 342 DESCRIPTION Sign Boring - Rand A LOGGED BY Gonzalez (BR)

SECTION 2018-100-BR LOCATION SE 1/4, SEC. 12, TWP. 42N, RNG. 10E, 3<sup>rd</sup> PM,  
Latitude 42.12495843, Longitude 88.00481713

COUNTY Cook DRILLING METHOD Hollow Stem Auger (8" O.D., 3.25" I.D.) HAMMER TYPE Auto 140 lb HE 105

STRUCT. NO. 1S016S053L000.0-006  
 Station 1397+10.00

BORING NO. GC-07  
 Station 2397+06  
 Offset 28.6 ft LT  
 Ground Surface Elev. 721.5 ft

DEPTH H S T H	B L O W S	U C S Qu	M O I S T T	Surface Water Elev. _____ ft	Stream Bed Elev. _____ ft	DEPTH H S T H	B L O W S	U C S Qu	M O I S T T
(ft)	(/6")	(tsf)	(%)			(ft)	(/6")	(tsf)	(%)
720.5									
	6						3		
	8	9.9	13				3	1.3	16
	9	B					4	B	
	3						2		
	5	5.4	18				3	0.9	15
-5	7	B				-25	4	B	
	4						2		
	5	3.6	15				3	1.3	16
	6	B					5	B	
	3						3		
	4	1.3	19				3	0.8	16
-10	5	B				691.5	8	B	
710.5									
	2								
	2	0.7	16						
	3	B							
707.8									
	3								
	3	3.4	15						
-15	4	B				-35			
	2								
	2	0.6	15						
	3	B							
▽									
	1								
	2	0.5	18						
-20	3	B				-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, M-Modified SPT)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)



ROUTE FAP 342 DESCRIPTION Sign Boring - 62B LOGGED BY Gonzalez (BR)

 SECTION 2018-100-BR LOCATION SE 1/4, SEC. 35, TWP. 42N, RNG. 10E, 3<sup>rd</sup> PM,  
Latitude 42.06977007, Longitude 88.02793746

 COUNTY Cook DRILLING METHOD Hollow Stem Auger (8" O.D., 3.25" I.D.) HAMMER TYPE Auto 140 lb HE 105

STRUCT. NO.	Station		D	B	U	M	Surface Water Elev.	ft		D	B	U	M
BORING NO.	Station		E	L	C	O	Stream Bed Elev.	ft		E	L	C	O
Offset	Ground Surface Elev.		P	O	S	I	Groundwater Elev.:	ft		H	W	Q	S
Ground Surface Elev.	ft		T	S	Qu	T	First Encounter	ft		H	S	Qu	T
	ft		H	S	Qu	T	Upon Completion	ft		(ft)	(/6")	(tsf)	(%)
	ft		After	Hrs.		Filled		ft		(ft)	(/6")	(tsf)	(%)
ASPHALT - 14"	718.4						Stiff, Brown, Dry to Moist, CLAY, Trace Gravel ( <i>continued</i> )						
Asphalt Millings			18								4		
			4			4					6	2.8	19
			7								9	B	
	716.6												
Stiff, Brown, Dry to Moist, CLAY, Trace Gravel			4								3		
			6	5.7	15						4	3.4	24
			-5	6	B					-25	8	B	
			3								5		
			5	3.0	17						7	3.9	24
			7	B							1	B	
			3								4		
			5	3.1	19						5	3.4	24
			-10	6	B					689.6	-30	8	B
			3										
			4	3.3	19								
			6	B									
			4										
			7	4.6	20								
			-15	8	B						-35		
			3										
			4										
			5										
			-20	10	B						-40		
	703.6												
Stiff, Brown, Moist, GRAVELLY CLAY	703.1		50/3		17								
Stiff, Brown, Dry to Moist, CLAY, Trace Gravel													
			6										
			5	2.0	24								
			-20	10	B								

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, M-Modified SPT)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)



# SOIL BORING LOG

ROUTE FAP 342 DESCRIPTION Sign Boring - 62A LOGGED BY Gonzalez (BR)

SECTION 2018-100-BR LOCATION SE 1/4, SEC. 35, TWP. 42N, RNG. 10E, 3<sup>rd</sup> PM,  
Latitude 42.06977195, Longitude 88.02806347

COUNTY Cook DRILLING METHOD Hollow Stem Auger (8" O.D., 3.25" I.D.) HAMMER TYPE Auto 140 lb HE 105

STRUCT. NO. 1S016S053R000.0-007  
 Station 1159+25.00

BORING NO. GC-24  
 Station 3159+31  
 Offset 63.8 ft LT  
 Ground Surface Elev. 719.1 ft

DEPTH H S T H	B L O W S	U C S Qu	M O I S T T	Surface Water Elev. _____ ft	Stream Bed Elev. _____ ft	DEPTH H S T H	B L O W S	U C S Qu	M O I S T T
(ft)	(/6")	(tsf)	(%)			(ft)	(/6")	(tsf)	(%)
717.6	19						4		
	12		12				3	1.0	16
	8						5	B	
716.1									
	2						2		
	2	1.8	15				3	2.0	15
	4	B					5	B	
	2						4		
	3	1.9	17				6	0.4	19
	4	B					4	B	
	1								
	0	1.5	16				2		
	2	P					4	2.2	21
							6	B	
	2								
	1	1.6	17						
	3	B							
	5								
	6	3.7	17						
	7	B							
	8								
	3	1.5	16						
	5	B							
	4								
	5		19						
	7								

ASPHALT - 18"

Stiff, Brown, Dry, GRAVELLY CLAY

Medium Stiff to Stiff, Brown, Moist to Wet, CLAY, Trace Gravel

Medium Stiff to Stiff, Brown, Moist to Wet, CLAY, Trace Gravel  
*(continued)*

Silt Seam

Medium Stiff to Stiff, Brown, Wet, CLAY, Trace Sand, Trace Gravel

Boring terminated at 30 feet.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, M-Modified SPT)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)



# SOIL BORING LOG

ROUTE FAP 342 DESCRIPTION Sign Boring - Dundee B LOGGED BY Gonzalez (BR)

SECTION 2018-100-BR LOCATION NW 1/4, SEC. 7, TWP. 42N, RNG. 11E, 3<sup>rd</sup> PM,  
Latitude 42.13485476, Longitude 88.00445733

COUNTY Cook DRILLING METHOD Hollow Stem Auger (8" O.D., 3.25" I.D.) HAMMER TYPE Auto 140 lb HE 105

STRUCT. NO. 1S016S053L000.0-007  
 Station 1433+18.00

BORING NO. GC-28  
 Station 2433+14  
 Offset 49.4 ft RT  
 Ground Surface Elev. 723.4 ft

DEPTH H S T H	B L O W S	U C S Qu	M O I S T T	Surface Water Elev. _____ ft	Stream Bed Elev. _____ ft	DEPTH H S T H	B L O W S	U C S Qu	M O I S T T
(ft)	(/6")	(tsf)	(%)			(ft)	(/6")	(tsf)	(%)
722.5									
	3						3		
	3		25				4	1.6	15
	5						5	B	
	9						3		
	9		14				3	2.0	16
	8						5	B	
-5						-25			
717.9									
	2						4		
	2	0.5	26				5	1.6	16
	4	B					7	B	
715.4									
	4						5		
	5	0.3	17				8	1.4	15
	4	S					7	B	
-10						693.4	-30		
712.9									
	0								
	1	1.2	17						
	3	B							
	3								
	4	1.7	15						
	6	B							
-15						-35			
	3								
	4	1.6	15						
	5	B							
	3								
	3	1.6	15						
	4	B							
-20						-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, M-Modified SPT)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)



# SOIL BORING LOG

ROUTE FAP 342 DESCRIPTION Sign Boring - Dundee A LOGGED BY Gonzalez (BR)

SECTION 2018-100-BR LOCATION NE 1/4, SEC. 12, TWP. 42N, RNG. 10E, 3<sup>rd</sup> PM,  
Latitude 42.13483185, Longitude 88.0047017

COUNTY Cook DRILLING METHOD Hollow Stem Auger (8" O.D., 3.25" I.D.) HAMMER TYPE Auto 140 lb HE 105

STRUCT. NO. 1S016S053L000.0-007  
 Station 1433+18.00

BORING NO. GC-30  
 Station 2433+05  
 Offset 17 ft LT  
 Ground Surface Elev. 723.7 ft

DEPTH H S T H	B L O W S	U C S Qu	M O I S T T	Surface Water Elev. _____ ft	Stream Bed Elev. _____ ft	DEPTH H S T H	B L O W S	U C S Qu	M O I S T T
(ft)	(/6")	(tsf)	(%)			(ft)	(/6")	(tsf)	(%)
722.8									
	3						4		
	5	1.7	17				4	2.4	15
	6	B					5	B	
	4						4		
	21	5.3	16				4	2.1	15
	24	B					6	B	
718.2						-25			
	13						4		
	10						5	1.4	15
	3						6	B	
715.7									
	0						4		
	2	0.9	20				5	1.6	16
	2	B					7	B	
-10					693.7	-30			
	3								
	3	1.5	17						
	4	B							
	3								
	4	2.7	16						
	6	B							
-15						-35			
	3								
	3	2.4	15						
	5	B							
	3								
	4	2.1	15						
	5	B							
-20						-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, M-Modified SPT)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)



# SOIL BORING LOG

ROUTE FAP 342 DESCRIPTION Overhead Sign Boring LOGGED BY Gonzalez (OG)

SECTION 2018-100-BR LOCATION SEC. 1, TWP. 42N, RNG. 10E, 3<sup>rd</sup> PM,  
Latitude 42.14866572, Longitude -88.0117300

COUNTY Cook DRILLING METHOD Hollow Stem Auger (8" O.D., 3.25" I.D.) HAMMER TYPE Auto 140 lb HE 91

STRUCT. NO. 1S016S053L000.0-008  
Station 1488+07.00

BORING NO. GC-71  
Station 2488+80  
Offset 36.8 ft LT  
Ground Surface Elev. 731.5 ft

D E P T H  (ft)	B L O W S  (/6")	U C S  (tsf)	M O I S T  (%)
-----------------------------------	------------------------------------	--------------------------	----------------------------------

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft
Groundwater Elev.:
First Encounter _____ Dry ft
Upon Completion _____ Dry ft
After _____ Hrs. _____ Filled ft

D E P T H  (ft)	B L O W S  (/6")	U C S  (tsf)	M O I S T  (%)
-----------------------------------	------------------------------------	--------------------------	----------------------------------

Brown, Medium Stiff, CLAY, with sand and silt	Medium Dense, Brown, SAND, with gravel ( <i>continued</i> ) 710.5				
	2				
	3	1.0	11		
	5	S			
	2				
	3	2.2	12		
	-5	5	B		
	3				
	5	2.6	15		
	6	B			
	3				
Stiff, Brown, CLAY, trace gravel and sand					
3					
3	1.6	15			
-10	5	B			
3					
4	1.1	14			
5	B				
Loose, Brown, SANDY LOAM, some gravel and clay					
2					
1		19			
-15	2				
Very Stiff, Brown, CLAY, some sand and gravel					
6					
8	1.7	17			
11	B				
Medium Dense, Brown, SAND, with gravel					
3					
5					
-20	7				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, M-Modified SPT)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)



# SOIL BORING LOG

ROUTE FAP 342 DESCRIPTION Overhead Sign Boring LOGGED BY Gonzalez (OG)

SECTION 2018-100-BR LOCATION SEC. 1, TWP. 42N, RNG. 10E, 3<sup>rd</sup> PM,  
Latitude 42.14877562, Longitude -88.0115246

COUNTY Cook DRILLING METHOD Hollow Stem Auger (8" O.D., 3.25" I.D.) HAMMER TYPE Auto 140 lb HE 91

STRUCT. NO.	Station	BORING NO.	Station	Offset	Ground Surface Elev.	D E P T H  (ft)	B L O W S  (/6")	U C S  (tsf)	M O D I F I C A T I O N  (%)	Surface Water Elev.	Stream Bed Elev.	Groundwater Elev.:	First Encounter	Upon Completion	After	Hrs.	D E P T H  (ft)	B L O W S  (/6")	U C S  (tsf)	M O D I F I C A T I O N  (%)			
1S016S053L000.0-008	1488+07.00	GC-72	2488+76	31.7 ft RT	734.0																		
Asphalt - 12"						733.0				Medium Stiff to Stiff, Brown, CLAY, some silt ( <i>continued</i> )													
Stiff to Very Stiff, SAND and GRAVEL [No Sample Recovered]							19												2				
							45																3
							50												4	B			
							8													2			
							3																
							4													5	B		
							-5																
728.5																							
Medium Stiff to Stiff, Brown, CLAY, some sand, silt							3													3			
							3	2.5	17												4	1.7	20
							3	P															
							3														2		
							4	2.1	14														
							5	B												5	B		
							-10																
							4																
							4	2.5	15														
							5	P															
							3														4		
							3	1.6	15														
							4	B													7	B	
							-15																
718.0										Boring terminated at 35 feet.													
Medium Stiff to Stiff, Brown, CLAY, some silt							2																
							3	1.3	20														
							4	B															
							2																
							3	1.2	19														
							4	B															
							-20																

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, M-Modified SPT)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)



# SOIL BORING LOG

ROUTE FAP 342 DESCRIPTION Overhead Sign Boring LOGGED BY Gonzalez (OG)

SECTION 2018-100-BR LOCATION SEC. 1, TWP. 42N, RNG. 10E, 3<sup>rd</sup> PM,  
Latitude 42.15079630, Longitude -88.0140031

COUNTY Cook DRILLING METHOD Hollow Stem Auger (8" O.D., 3.25" I.D.) HAMMER TYPE Auto 140 lb HE 91

STRUCT. NO.	Station	BORING NO.	Station	Offset	Ground Surface Elev.	D E P T H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)	Surface Water Elev.	Stream Bed Elev.	Groundwater Elev.:	First Encounter	Upon Completion	After	Hrs.	D E P T H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)		
1S016S053L000.0-009	1498+06.00	GC-73	2498+71	33.3 ft LT	736.4																	
Concrete - 11.5"						735.5				Medium Stiff to Stiff, SANDY CLAY, some silt and gravel ( <i>continued</i> )												
Medium Stiff, Brown, SANDY CLAY, some gravel and silt							4											4				
							4	3.7	25									3	1.2	14		
							5	B/S										3	B			
							2											3				
							3	2.1	18									3	1.7	16		
							4	B										5	B			
							-5											-25				
Concrete and gravel [No Sample]						730.4																
							14											3				
							20		21									4	1.5	17		
							10											7	P			
Medium Dense, Brown, SAND, trace gravel						727.9																
							5											3				
							8											6	1.5	19		
							7											7	P			
							-10											-30				
Medium Stiff to Stiff, SANDY CLAY, some silt and gravel						725.9																
							7															
							5	3.5	17													
							8	B														
							7															
							5	2.3	14										2			
							7	P											5	3.6	18	
							-15												8	B		
							5															
							8	4.5	12													
							9	P														
							5															
							7	3.6	11										2			
							8	B											3	1.0	20	
							-20												4	B		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, M-Modified SPT)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)



# SOIL BORING LOG

ROUTE FAP 342 DESCRIPTION Overhead Sign Boring LOGGED BY Gonzalez (OG)

SECTION 2018-100-BR LOCATION SEC. 1, TWP. 42N, RNG. 10E, 3<sup>rd</sup> PM,  
Latitude 42.15079630, Longitude -88.0140031

COUNTY Cook DRILLING METHOD Hollow Stem Auger (8" O.D., 3.25" I.D.) HAMMER TYPE Auto 140 lb HE 91

STRUCT. NO. 1S016S053L000.0-009  
 Station 1498+06.00

BORING NO. GC-73  
 Station 2498+71  
 Offset 33.3 ft RT  
 Ground Surface Elev. 736.4 ft

DEPTH T H (ft)	BLOW W S (/6")	UCS Qu (tsf)	MOIST S T (%)
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Surface Water Elev. \_\_\_\_\_ ft  
 Stream Bed Elev. \_\_\_\_\_ ft  
 Groundwater Elev.:  
 First Encounter Dry ft  
 Upon Completion Dry ft  
 After \_\_\_\_\_ Hrs. Filled ft

Medium Stiff to Stiff, SANDY CLAY,  
 some silt and gravel (*continued*)

3			
4		1.5	22
6		B	

691.4 -45

Boring terminated at 45 feet.

-50

-55

-60

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, M-Modified SPT)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)





# SOIL BORING LOG

ROUTE FAP 342 DESCRIPTION Overhead Sign Boring LOGGED BY Gonzalez (OG)

SECTION 2018-100-BR LOCATION , SEC. 1, TWP. 42N, RNG. 10E, 3<sup>rd</sup> PM,  
Latitude 42.15085592, Longitude -88.0137539

COUNTY Cook DRILLING METHOD Hollow Stem Auger (8" O.D., 3.25" I.D.) HAMMER TYPE Auto 140 lb HE 91

STRUCT. NO. 1S016S053L000.0-009  
 Station 1498+06.00

BORING NO. GC-74  
 Station 2498+46  
 Offset 33.0 ft RT  
 Ground Surface Elev. 738.0 ft

DEPTH H S	BLOW W S	UCS Qu	MOIST S T	Surface Water Elev. _____ ft	DEPT H S	BLOW W S	UCS Qu	MOIST S T	Stream Bed Elev. _____ ft
(ft)	(/6")	(tsf)	(%)		(ft)	(/6")	(tsf)	(%)	
Asphalt - 17"									
736.6	2					8			
Aggregate Base - 8"						8	1.3	15	
735.9	3	2.8	19			7	B/S		
Soft to Stiff, Brown CLAY, some gravel and sand		B/S							
734.5	5								
Medium Stiff to Stiff, Wet, Brown, CLAY, some gravel and sand						3			
	3					3	2.7	21	
	3	2.6	35			5	B		
	-5	B/S			-25				
	9					3			
	21	0.5	24			3	1.6	20	
	5	B				4	B		
	2					3			
	2	1.8	18			4	1.7	19	
	3	B			708.0	5	B		
	-10				-30				
	5								
	4	2.7	15						
	6	B							
	4								
	4	2.7	13						
	-15	B			-35				
	3								
	4	1.9	13						
	6	B							
	4								
	3	2.8	15						
	-20	B			-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, M-Modified SPT)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

ROUTE FAP 342 DESCRIPTION Overhead Sign Boring LOGGED BY Gonzalez (OG)

 SECTION 2018-100-BR LOCATION SEC. 1, TWP. 42N, RNG. 10E, 3<sup>rd</sup> PM,

Latitude 42.15347470, Longitude -88.0204144

 COUNTY Cook DRILLING METHOD Hollow Stem Auger (8" O.D., 3.25" I.D.) HAMMER TYPE Auto 140 lb HE 91

 STRUCT. NO. 1C016S053L000.0-003  
 Station 91+54.00

 BORING NO. GC-75  
 Station 91+24  
 Offset 84.9 ft RT  
 Ground Surface Elev. 756.1 ft

DEPTH H S T H	B L O W S	U C S Qu	M O I S T	Surface Water Elev. _____ ft	Stream Bed Elev. _____ ft	DEPTH H S T H	B L O W S	U C S Qu	M O I S T
(ft)	(/6")	(tsf)	(%)			(ft)	(/6")	(tsf)	(%)
755.1									
	5						3		
	7	4.2	19				4	2.2	16
	9	B/S					4	B	
	4						3		
	6	1.9	22				4	2.7	16
	-5	7	B/S				-25	7	B/S
	3						4		
	4	1.9	14				5	1.9	21
	4	B/S					7	B	
748.1									
	8						3		
	6	2.6	24				4	2.4	18
	-10	6	B				-30	6	B
	2								
	4	2.2	15						
	5	B/S							
	3						4		
	4	1.8	13				6	1.5	20
	-15	5	B/S				-35	8	B
	3								
	3	1.2	13						
	6	B							
	2						3		
	3	1.0	22				4	2.2	19
	-20	3	B				-40	4	B

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, M-Modified SPT)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)





ROUTE FAP 342 DESCRIPTION Overhead Sign Boring LOGGED BY Gonzalez (OG)

 SECTION 2018-100-BR LOCATION SEC. 7, TWP. 41N, RNG. 11E, 3<sup>rd</sup> PM,  
 Latitude 42.06192152, Longitude -88.0286219

 COUNTY Cook DRILLING METHOD Hollow Stem Auger (8" O.D., 3.25" I.D.) HAMMER TYPE Auto 140 lb HE 91

 STRUCT. NO. 1S016I290R000.0-000  
 Station 1130+30.00

 BORING NO. GC-79  
 Station 3130+66  
 Offset 88.3 ft LT  
 Ground Surface Elev. 743.4 ft

DEPTH H S T H	B L O W S	U C S Qu	M O I S T	Surface Water Elev. _____ ft	Stream Bed Elev. _____ ft	DEPTH H S T H	B L O W S	U C S Qu	M O I S T
(ft)	(/6")	(tsf)	(%)			(ft)	(/6")	(tsf)	(%)
742.0	13					742.0	4		
741.3	3		18			741.3	7	3.6	19
	4						8	B	
	4						5		
	5	3.8	16				5	2.8	18
-5	5	B				-25	8	B	
	2						3		
	3	3.2	18				4		23
	3	B					3		
	6						2		
	8	7.4	12				2	1.6	16
-10	5	S				-30	5	B	
	4								
	6	2.2	13						
	11	S							
	4						3		
	5	3.2	17				7	1.7	23
-15	9	B				708.4	8	B	
	4								
	7	4.1	21						
	11	B/S							
	6								
	7	5.2	16						
-20	9	B/S				-40			

 Asphalt - 17"  
  
 Aggregate Base - 8"  
 Medium Stiff to Stiff, Brown, CLAY,  
 some gravel and sand

 Medium Stiff to Stiff, Brown, CLAY,  
 some gravel and sand (continued)

 becomes Soft to Medium Stiff, Wet,  
 Gray to Brown

Boring terminated at 35 feet.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, M-Modified SPT)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)



# SOIL BORING LOG

ROUTE FAP 342 DESCRIPTION Overhead Sign Boring LOGGED BY Gonzalez (OG)

SECTION 2018-100-BR LOCATION SEC. 7, TWP. 41N, RNG. 11E, 3<sup>rd</sup> PM,  
Latitude 42.06191409, Longitude -88.0284074

COUNTY Cook DRILLING METHOD Hollow Stem Auger (8" O.D., 3.25" I.D.) HAMMER TYPE Auto 140 lb HE 91

STRUCT. NO. 1S016I290R000.0-000  
 Station 1130+30.00

BORING NO. GC-80  
 Station 3130+66  
 Offset 30.0 ft LT  
 Ground Surface Elev. 744.1 ft

DEPTH (ft)	BLOW COUNT (blows/6")	UCS (tsf)	MOISTURE (%)	Surface Water Elev. ft	Stream Bed Elev. ft	DEPTH (ft)	BLOW COUNT (blows/6")	UCS (tsf)	MOISTURE (%)
743.6									
742.6	3						5		
741.6	2	5.8	15				6	4.1	16
	4	B/S					9	S	
	3						6		
	3	3.2	19				8	3.9	18
-5	3	B/S				-25	10	S	
	3				718.1		3		
	5	5.3	17				4	2.1	15
	7	B/S					4	B	
	2						1		
	3	2.5	16				2	0.1	21
-10	5	B/S				-30	3	B	
	3								
	6	4.3	14						
	7	B/S							
	3						2		
	3	2.8	15				4	3.8	17
-15	6	B/S				-35	6	B	
					709.1				
	6								
	15	3.1	16						
	52	B/S							
	7								
	10	6.9	15						
-20	12	B/S				-40			

Asphalt - 6" \_\_\_\_\_  
 Concrete - 12" \_\_\_\_\_  
 Aggregate base - 12" \_\_\_\_\_

Medium Stiff to Stiff, Brown, CLAY, some to trace gravel

Medium Stiff to Stiff, Brown, CLAY, some to trace gravel (continued)

Soft to stiff, Brown, CLAY, some gravel

some sand

Obstruction - hard drilling

Boring terminated at 35 feet.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, M-Modified SPT)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)



# SOIL BORING LOG

ROUTE FAP 342 DESCRIPTION Overhead Sign Boring LOGGED BY Gonzalez (OG)

SECTION 2018-100-BR LOCATION SEC. 7, TWP. 41N, RNG. 11E, 3<sup>rd</sup> PM,  
Latitude 42.06326640, Longitude -88.0278220

COUNTY Cook DRILLING METHOD Hollow Stem Auger (8" O.D., 3.25" I.D.) HAMMER TYPE Auto 140 lb HE 91

STRUCT. NO. 1S016S053L000.0-000  
 Station 1135+55.00

BORING NO. GC-81  
 Station 2135+65  
 Offset 30.9 ft RT  
 Ground Surface Elev. 742.0 ft

DEPTH H S T H	BLOW W S	UCS Qu	MOIST S T	Surface Water Elev. _____ ft	Stream Bed Elev. _____ ft	DEPTH H S T H	BLOW W S	UCS Qu	MOIST S T
(ft)	(/6")	(tsf)	(%)			(ft)	(/6")	(tsf)	(%)
Asphalt - 6"									
741.5									
Concrete - 12"									
740.5	3						4		
Aggregate Base - 12"			10				5	5.8	14
739.5	6						7	B/S	
Medium Stiff to Stiff, Brown, CLAY, trace to some gravel and sand									
	3						4		
	4	5.1	14				5	3.1	15
	-5	5	B/S			-25	6	B/S	
	3						7		
	5	3.0	13				8	3.1	26
	6	S					9	B/S	
	4						4		
	5	6.8	14				4	4.0	16
	-10	7	B/S			-30	5	B	
	3								
	6	5.0	14						
	7	B/S							
	4						2		
	5		16				4	2.2	18
	-15	5				707.0	7	B/S	
	4								
	5	4.8	17						
	7	B/S							
	5								
	5	3.1	13						
	-20	7	B/S			-40			

Medium Stiff to Stiff, Brown,  
CLAY, trace to some gravel and  
sand (continued)

organic, black/brown

Boring terminated at 35 feet.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, M-Modified SPT)  
 The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)



# SOIL BORING LOG

ROUTE FAP 342 DESCRIPTION Overhead Sign Boring LOGGED BY Gonzalez (OG)

SECTION 2018-100-BR LOCATION SEC. 7, TWP. 41N, RNG. 11E, 3<sup>rd</sup> PM,

Latitude 42.06325894, Longitude -88.0276051

COUNTY Cook DRILLING METHOD Hollow Stem Auger (8" O.D., 3.25" I.D.) HAMMER TYPE Auto 140 lb HE 91

STRUCT. NO. 1S016S053L000.0-000  
Station 1135+55.00

BORING NO. GC-82  
Station 2135+65  
Offset 90.1 ft RT  
Ground Surface Elev. 741.3 ft

DEPTH H S T H	B L O W S	U C S Qu	M O I S T	Surface Water Elev. _____ ft	Stream Bed Elev. _____ ft	DEPTH H S T H	B L O W S	U C S Qu	M O I S T
(ft)	(/6")	(tsf)	(%)			(ft)	(/6")	(tsf)	(%)
740.1	16						3		
739.1	4		16				6	4.0	15
	3						5	P	
738.3									
	2						3		
	5	4.8	16				5	3.3	16
-5	5	B				-25	6	B	
	2						4		
	4	3.5	16				4	2.9	23
	7	P					6	S	
	2						3		
	5	3.7	16				4	2.4	19
-10	6	B/S				-30	5	BS	
	3								
	3	3.4	14						
	6	B							
	3						4		
	6	1.7	24				6	5.5	21
-15	8	B/S				706.3	11	B	
	5								
	6	4.2	17						
	8	B/S							
	3								
	4	2.7	27						
-20	7	B/S				-40			

Medium Stiff to Stiff, Brown, CLAY, trace to some gravel and sand (continued)

Boring terminated at 35 feet.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer, M-Modified SPT)  
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)