



# Illinois Department of Transportation

## Memorandum

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To: Fawad Aqueel                      Attn: Veselin Velickov  
From: Stephen Jones                      By: Giancarlo Gierbolini  
Subject: Roadway Geotechnical Report\*  
Date: September 23, 2024

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\*Route: FAP 350 (Illinois Route 50 – IL 50)  
Location: from Governors Highway to Dralle Road  
Section: FAP 0350 22 II  
County: Will  
Contract: 62R51

Attached is the condensed Roadway Geotechnical Report prepared by the District One Geotechnical Section for the above referenced project. The report provides geotechnical soil information obtained during the field investigation, as well as recommendations for the proposed improvements.

Please note that this report contains information regarding the subgrade soil conditions, traffic signal foundations, and topsoil stripping depths.

If you have any questions regarding this report, please contact Robert Claussen, P.E. at (847)705-4735 or Giancarlo Gierbolini, P.E. at (847) 705-4003.

Cc: IDOT Soil Inspector

## **CONDENSED ROADWAY GEOTECHNICAL REPORT**

Date: September 23, 2024

Route: FAP 350 (Illinois Route 50 – IL 50)

Location: from Governors Highway to Dralle Road

Section: FAP 0350 22 II

County: Will

Contract: 62R51

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### **LOCATION OF IMPROVEMENT**

The proposed project will include roadway improvements on Illinois Route 50 (IL 50) between Dralle Road and Governors Highway. The project is located in the Village of University Park, in the eastern portion of Will County. A project location map has been attached at the end of this report for reference.

### **DESCRIPTION OF PROJECT**

The proposed roadway improvements will begin at the crossing of IL 50 and Dralle Road (Station 10+05) on the south side and the crossing of IL 50 and Governors Highway (station 104+00) on the north side, giving an overall improvement length of 3,400 feet. The improvements will consist of resurfacing, widening, and channelization of the existing roadway, reconstructing and widening the existing paved shoulders, and new traffic signal structures at the intersection of IL 50 and Dralle Road and at the intersection of IL 50 and Governors Highway.

### **PAVEMENT DESIGN**

Based on the design plans, the proposed improvements will consist of resurfacing the existing Hot Mix Asphalt (HMA) through lanes, widening the existing roadway, and paved shoulders. The proposed pavement areas will consist of the following sections:

Resurfacing pavement

- 1 ¾ inches of HMA surface course pavement
- ¾ inches of HMA binder course pavement.

#### Full depth pavement

- 1 ¾ inches of HMA surface course pavement
- ¾ inches of HMA binder course pavement
- 8 inches of base course HMA
- 12 inches of aggregate subgrade improvement

#### Paved shoulders

- 2 ½ inches of HMA surface course pavement
- 8 inches of HMA Base Course
- 12 inches of aggregate subgrade improvement

### **SURROUNDING LAND USE**

The existing land use within the vicinity of the project primarily consists of industrial properties and undeveloped lots. In general, the existing and proposed pavement grades are approximately equal to the surrounding land area. The profile of the existing roadways will remain essentially the same as the existing roadways. Only minor cuts and fills will be necessary to match the existing grading on the sides of the roadway. The existing and proposed storm water drainage within the project limits consists of open ditch drainage.

### **PEDOLOGICAL SETTING**

According to the U.S. Department of Agriculture Soil Survey, Natural Resources Conservation Service (Web Soil Survey <http://websoilsurvey.nrcs.usda.gov>) for Will County, the native, near surface pedological soil types within the project limits primarily consist of those listed below. The Pedological Map included at the end of this report shows the various soil types in relation to the project limits. It should be noted that the near surface water depths indicated for each soil type to not represent the long term water table.

Bryce silty clay loam, 0 to 2 percent slopes (235A) – This poorly drained material is found in till floored lake plains, glacial lakes, and ground moraines at the toe of slope. The parent material consists of clayey glaciolacustrine deposits over clayey till. The typical near surface soil profile consists of silty clay from 0 to 66 inches below existing ground. The near surface water may be encountered as high as 0 and 12 inches below the ground surface. Ponding is frequent; however, flooding does not typically occur. All areas are prime farmland if they are drained.

Frankfort silt loam, 0 to 2 percent slopes (320A) – This somewhat poorly drained material is found in end moraines and ground moraines at the summit and footslope. The parent material consists of a thin mantle of loess underlain by till. The typical near surface soil profile consists of layers of silt loam and silty clay loam from 0 to 60 inches below existing ground. The near surface water may be encountered as high as 6 to 24 inches below the ground surface. Ponding and flooding do not typically occur. All areas are prime farmland if they are drained.

## **GEOLOGICAL SETTING**

According to the map titled SURFICIAL GEOLOGY OF THE CHICAGO REGION by H.B. Willman and Jerry A. Lineback (1970), the project area is located geographically within the Carmi Member of the Equality Formation. The near surface geology for this area consists of quiet lake sediments, well bedded silt with thin beds of clay and local lenses of sand and sandy gravel. The soils encountered in the borings completed in the field at the project site and described in the boring logs included in this report, are in general agreement with this description. Soil descriptions specific to this site can be found in the Subsurface Conditions section of this report.

## **STORMWATER POLLUTION PREVENTION PLAN SITE DESCRIPTION**

We understand that this project may be subject to statewide general NPDES storm water permit for the construction site activities and that a Storm Water Pollution Prevention Plan (SWPPP) would be required. In order to complete the SWPPP (Form BDE 2342) a description of the project site must be provided, including the existing soil types and their erosion potential in addition to identifying the locations of any highly erodible soils. The erosion properties for the soil type present within the vicinity of the project limits are presented in Table 1 below. The erosion factors (K factors) are used to evaluate the erosion potential of the soils, with the soils being more susceptible to sheet and rill erosion as values increase. The K factor for the soils within the project limit ranged from **0.17 to 0.37**. The Erosion Hazard Rating of each soil type is based on soil erosion factor (K), slope of the ground surface, and content of rock fragments, and represents the potential for surface erosion. The soils within the project limits have soil erosion rating of **Slight**. The NRCS Soil Erosion Factor (K) Map included at the end of this report shows the soil areas and the applicable K factor in relation to the project limits.

**Table 1: Soil Erosion Properties**

Soil Name	Slope (%)	K Factor	Erosion Hazard Rating	Hydric Rating
Bryce silty clay (235A)	0 to 2	0.17	Slight	Yes
Frankfort silt loam (320A)	0 to 2	0.37	Slight	No

### **PAVEMENT CONDITION SURVEY**

The general condition of the pavement within the project limits was observed at the time the field exploration was completed. The existing roadway consists of HMA pavement with paved shoulders and open ditch drainage on both sides. The overall condition of the existing pavement within the project limits is fair to good. The pavement exhibited a moderate amount of longitudinal cracking and minimal transverse, and alligator cracking.

### **CLIMATOLOGICAL DATA**

The field investigation for this project was completed in August of 2023. The monthly temperature and precipitation data for the month of the investigation and the three months prior to the investigation are provided in the table below. The months prior to the investigation as well as the month during which the investigation was completed, experienced precipitation that was lower than average, with the exception of July, which experienced higher than average rainfall. Given the inconsistent rainfall, it is difficult to determine whether the localized water levels encountered in the borings and the moisture contents recorded for the near surface soils are normal for this area, however, based on the limited earthwork necessary for this project, it is not anticipated that these conditions will significantly impact the construction of this proposed improvements.

**Table 2: Climate Conditions**

Month	Precipitation (in.)		Temperature °F	
	Total	Departure from Normal	Average Temp.	Departure from Normal
May 2023	0.7	-3.8	62.4	1.8

Month	Precipitation (in.)		Temperature °F	
June 2023	2.4	-1.7	70.8	0.2
July 2023	7.7	4.0	75.7	0.3
August 2023	1.3	-3.0	74.3	0.5

The recording station for climatological data is located at O'Hare International Airport, which is approximately 40 miles north of the project site.

### **DRILLING AND SAMPLING**

The subsurface exploration was completed in August 2023 and consisted of 7 soil borings extended to depths of 11.5 feet below the existing ground surface for roadway borings and depths of 21.5 to 41.5 feet for traffic signal structure borings. The soil borings were completed using a truck mounted, Mobil B-57 drill rig with 3 ¼ inch I.D. hollow stem augers.

Soils were collected in the borings with the use of a split barrel sampler, in accordance with AASHTO 206-09 (2013) "Penetration Test and Split-Barrel Sampling of Soils." In the split barrel sampling procedure, a split spoon sampler having a 2-inch outside diameter, an inside diameter of 1<sup>3</sup>/<sub>8</sub> inches, and a length of 1.5 feet is driven into the soil. This sampler is advanced by driving it with a 140-pound weight, falling freely from a height of 30 inches with the Standard Penetration Resistance being recorded as a number of blows required to advance the sampling spoon a depth of 12 inches after an initial driving of 6 inches used to seat the sampler.

Soil samples were collected at 2.5 foot intervals to a depth of 30 feet below the existing ground surface, and 5 foot intervals thereafter. The soils encountered were inspected, visually classified and logged. The unconfined compressive strength of cohesive soil samples was tested in the field using a RIMAC compression tester and were verified using a calibrated hand penetrometer. Representative soil samples were collected from each sample interval and returned to the laboratory for further testing. The locations of the soil borings in relation to the existing and proposed conditions are shown in the Soil Boring Location Plan at the end of this report.

### **SUBSURFACE CONDITIONS**

The soil borings for the proposed roadway and shoulder improvements were drilled on the existing shoulders or in the grass area adjacent to the existing roadway. The near surface materials consisted of 10 to 11 inches of HMA pavement, 8 to 12 inches of crushed aggregate fill, or 12 inches of silty clay topsoil. The soil profile below the near surface materials

predominantly consisted of layers of stiff to hard clay, silty clay, and silt for the full depth of the soil borings, with two of the borings (SB-2 and SB-3) encountering thin layers of granular soil consisting of sand or sandy loam.

The Roadway Analysis and Recommendations section below provides information regarding the evaluation of the subgrade soils and determining if undercuts are warranted. Care should be taken when evaluating the exposed subgrade soils to determine the suitability of the soils present at this depth. The soil boring logs have been included at the end of this report and can be referenced for information at specific locations.

Water was encountered in two of the borings (SB-2 and SB-4) while drilling at depths of 8.5 to 10 feet below the ground surface and after the borings were completed at depths of 4.5 to 6 feet below the ground surface. Long term observations in cased borings or piezometers would be necessary to more accurately evaluate groundwater conditions. In general, it should be noted that the groundwater level may fluctuate based on seasonal precipitation, evaporation, surface run-off and other factors.

## **ROADWAY GEOTECHNICAL ANALYSIS AND RECOMMENDATIONS**

### **Subgrade Support Rating and Illinois Bearing Ratio**

Mechanistic pavement design procedures require that the subgrade soils be assigned a Subgrade Support Rating (SSR) based on the particle size distribution as depicted on the SSR chart. The subgrade soils encountered during the field exploration were primarily cohesive and have an SSR of rating Fair to Poor. Based on this, we recommend that an **SSR of poor** be used for the design of the proposed pavement section when using mechanistic design procedures. AASHTO design procedures require that the subgrade soils be assigned an Illinois Bearing Ratio (IBR). This value can be determined by means of physical testing or by using an assumed value based on the soil type. Based on the soils encountered, we recommend using an assumed **IBR value of 3** for the design of the proposed pavement when using AASHTO design procedures.

### **Roadway Subgrade**

The proposed pavement section should be supported on 12 inches of improved subgrade consisting of AGGREGATE SUBGRADE IMPROVEMENT (SQ YD) in accordance with the Bureau of Design and Environment (BDE) Aggregate Subgrade Improvement Special Provision (April 1, 2022). The combination of the soils encountered at the proposed subgrade elevation and the 12 inch aggregate subgrade layer should provide suitable support for the proposed pavement structure.

Based on the soils encountered in the borings, no undercuts of the subgrade soils below the 12 inch aggregate layer are recommended at this time. The actual need for any undercuts should be determined in the field at the time of construction by the geotechnical engineer or soils inspector. We recommend including a plan quantity of AGGREGATE SUBGRADE IMPROVEMENT (CU YD) equal 25% of the planned full depth pavement area, assuming a thickness of 12 inches. All potentially unstable soils should be tested with a cone penetrometer and treated in accordance with Article 301.04 of the Standard Specifications for Road and Bridge Construction (SSRBC) adopted January 1, 2022 and the undercut guidelines in the IDOT Subgrade Stability Manual. If unsuitable soils are encountered in the field during construction, it is recommended that the soil be removed and replaced with material meeting the BDE Aggregate Subgrade Improvement Special Provision. Any Aggregate Subgrade Improvement material not needed for undercut replacement at the time of construction should be deleted from the contract with no extra compensation to the contractor.

Based on the above recommendation, there will be a need for two separate Aggregate Subgrade Improvement line items in the Schedule of Quantities (SOQ) included in the design plans:

- AGGREGATE SUBGRADE IMPROVEMENT 12" (SQ YD) – This will be used for the 12 inch aggregate subgrade improvement below new pavement sections and widening pavement sections.
- AGGREGATE SUBGRADE IMPROVEMENT (CU YD) – This will be used in locations where there are undercuts (below the 12 inch improved subgrade layer) where poor soils were removed.

Both of these line items reference back to the Bureau of Design and Environment (BDE) Aggregate Subgrade Improvement Special Provision (April 1, 2022).

We also recommend placing geotextile fabric at the base of all undercut areas where low strength subgrade soils are encountered. We recommend including a plan quantity of GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (SQ YD) equal to 25% of the proposed full depth pavement area. The 12 inches of improved subgrade is not considered an undercut, and we do not recommend using geotextile fabric at the base of the proposed 12 inch improved subgrade layer unless it is determined to be necessary to achieve stability by the Geotechnical Engineer or soils inspector at the time of construction. Geotextile Fabric should meet the requirements of Article 210, Fabric for Ground Stabilization, of the SSRBC. Any material not needed at time of construction should be deleted from the contract with no extra compensation to the contractor.



### **Settlement Potential**

Based on the proposed plans, it appears that the proposed grades will be close to the existing grades. Based on the limited grade change and the material encountered in the soil borings, settlement of the soils underlying is estimated to be less than one inch.

### **Underdrains**

To provide drainage for the proposed pavement in widening areas, we recommend installing longitudinal pipe underdrains below the pavement for the roadways. Underdrains should also be installed in low areas and at the base of any undercuts. The underdrains should tie into the storm water drainage system and should be installed per Article 601 in the IDOT Standard Specifications and consist of Type 2 underdrains (Adopted January 1, 2022).

## **STRUCTURES – GEOTECHNICAL ANALYSIS AND RECOMMENDATIONS**

### **Traffic Signal Foundations**

Based on the information provided by the Bureau of Design, the proposed improvements will include the construction of new cantilever mast arm traffic signals at the crossing of IL 50 and Dralle Road and at the crossing of IL 50 and Governors Highway. In general, the traffic signals consist of a cantilever mast arm of variable design length, supported on a pole, which is in turn supported on a drilled shaft foundation. The diameter and depth of the drilled shaft is determined by the overall dimensions of the pole and mast arm.

The District One Standard Traffic Signal Design Details (TS-05) or Standard 878001-10 provide a chart with the dimensions for the drilled shaft foundation supporting single mast arm traffic signals. The standard foundation details require that the soils present along the foundation shaft be mostly cohesive in nature with unconfined compressive strengths of 1.0 ton per square foot (tsf) or greater. The soils encountered during the exploration meet the requirements to use the standard details for the design of the foundations.

The drilled shaft construction should be completed in accordance with Section 516, Drilled Shafts, in the IDOT Standard Specifications for Road and Bridge Construction (adopted January 1, 2022). The contractor should review the attached boring logs, evaluate the soil conditions and depths, and determine the means and methods necessary for construction. The contractor should also be prepared to use wet-method drilling, temporary casing, or a combination to facilitate shaft construction based on soils encountered at the time of construction.

## **CONSTRUCTION CONSIDERATIONS**

This section provides the recommendations pertaining to the construction of the proposed improvements. It is recommended that work meet the requirements set forth in the IDOT Standard Specifications for Road and Bridge Construction (SSRBC) adopted January 1, 2022.

### **Site Preparation and Earthwork**

All topsoil and any vegetation shall be removed from areas of proposed widening. In areas where topsoil will be removed to facilitate construction, we recommend using a topsoil stripping depth of 12 inches to determine contract quantities. Topsoil that is stripped should be stockpiled and reused once all roadway construction is completed. The pay item for this is TOPSOIL EXCAVATION AND PLACEMENT (CU YD). All earthwork shall be in accordance with Sections 204 and 205 of the IDOT SSRBC (Adopted January 1, 2022). District One currently uses a shrinkage factor of 15 percent.

### **Excavation Adjacent to Existing Embankment**

All of the excavation and trenching operations should meet the requirements of IDOT and OSHA. The need for trench boxes, temporary earth retention, or bracing needed to install the proposed utility improvements should be evaluated prior to commencing earth work should be coordinated with the resident engineer.

### **Groundwater Management**

Water was encountered in two of the soil borings during the field exploration. Based on plans provided by the design team, it is not anticipated that groundwater related issues will be encountered during construction of the near surface roadway improvements; however, the contractor should anticipate that the water may be perched (trapped) in fill materials and any granular deposits encountered. Water should not be permitted to collect in excavations during or after construction and any water encountered should be removed to maintain dry, stable excavations. Water that is permitted to collect in excavations can soften the subgrade and bearing soils, which may result in the need to over excavate.

IL 50 from Governors Highway to Dralle Road  
September 23, 2024  
Page 10

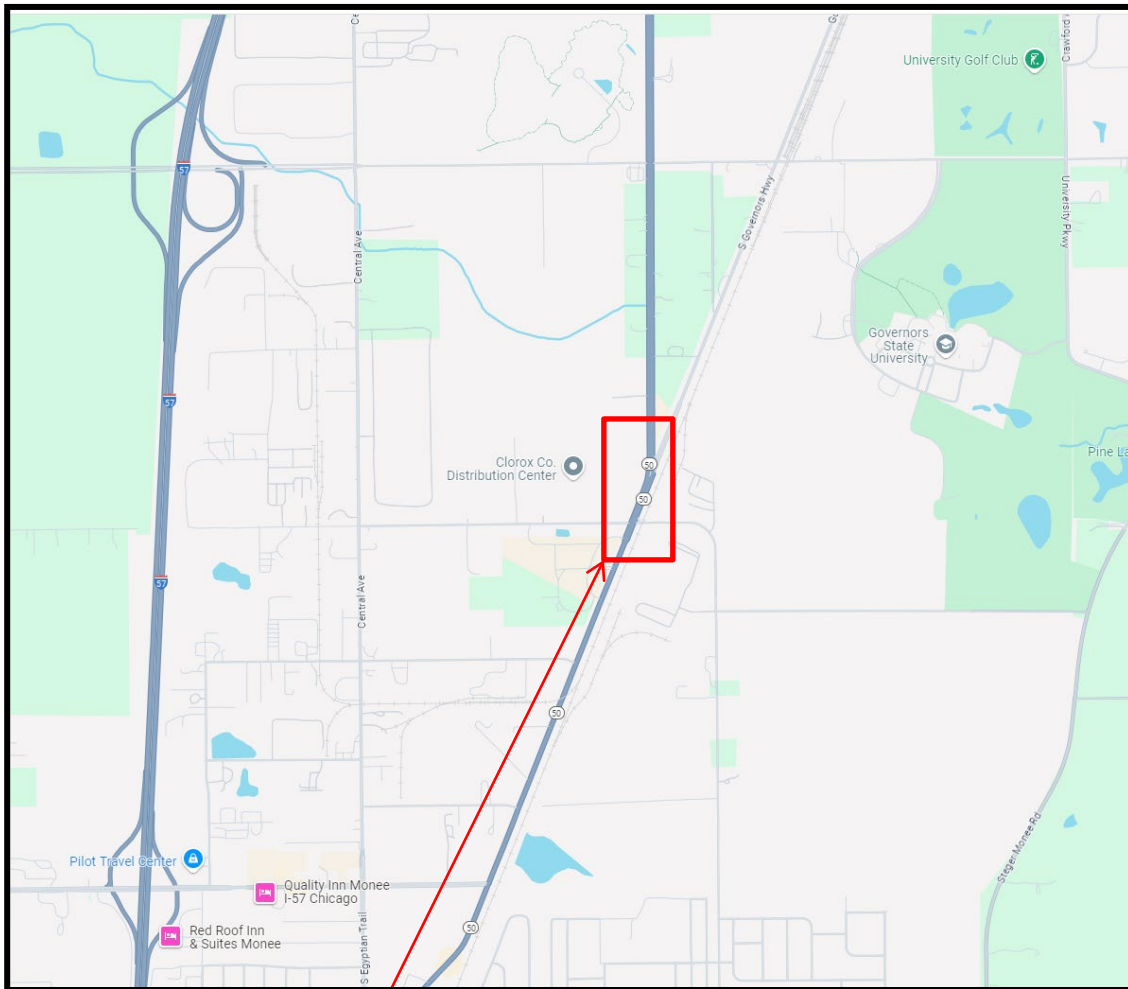
If you have any questions regarding this report, please contact either Robert J. Claussen, P.E. at (847) 705-4735 or Giancarlo Gierbolini, P.E. at (847) 705-4003.

Prepared by:  
Robert J. Claussen, P.E.  
Geotechnical Engineer

Attachments:

Project Location Map  
NRCS Pedology Map  
NRCS Soil Erosion Factor (K) Map  
Soil Boring Location Plan  
Soil Boring Logs

## PROJECT LOCATION MAP



**PROJECT LOCATION**



**Exhibit 1 – Project Location Map**

**Route: FAP 350 (Illinois Route 50 – IL 50)**

**Location: from Governors Highway to Dralle Road**

**Section: FAP 0350 22 II**

**County: Will**

**Contract: 62R51**

## NRCS PEDOLOGY MAP



Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
235A	Bryce silty clay, 0 to 2 percent slopes	1.1	7.3%
320A	Frankfort silt loam, 0 to 2 percent slopes	13.5	92.7%
Totals for Area of Interest		14.5	100.0%

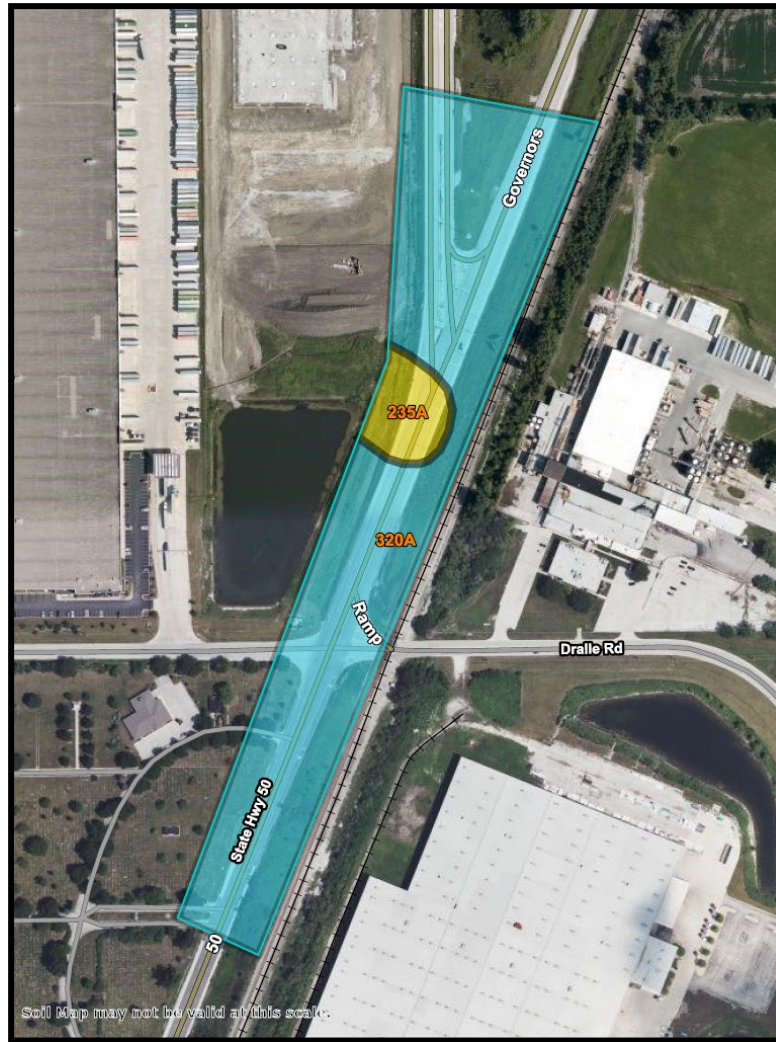
**Exhibit 2 – NRCS Pedology Map**  
**Route: FAP 350 (Illinois Route 50 – IL 50)**  
**Location: from Governors Highway to Dralle Road**  
**Section: FAP 0350 22 II**  
**County: Will**  
**Contract: 62R51**



## NRCS SOIL EROSION FACTOR (K) MAP



# Soil Rating Points



Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
235A	Bryce silty clay, 0 to 2 percent slopes	.17	1.1	7.3%
320A	Frankfort silt loam, 0 to 2 percent slopes	.37	13.5	92.7%
Totals for Area of Interest			14.5	100.0%

**Exhibit 3 – NRCS Soil Erosion Factor (K) Map**  
**Route: FAP 350 (Illinois Route 50 – IL 50)**  
**Location: from Governors Highway to Dralle Road**  
**Section: FAP 0350 22 II**  
**County: Will**  
**Contract: 62R51**



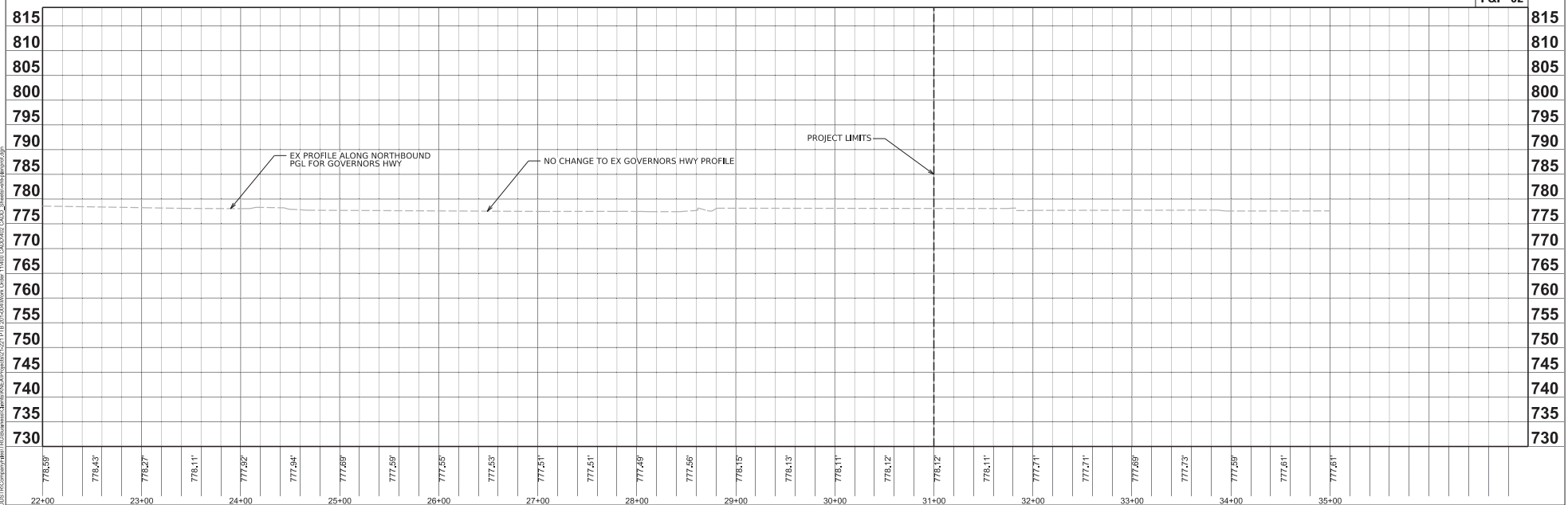
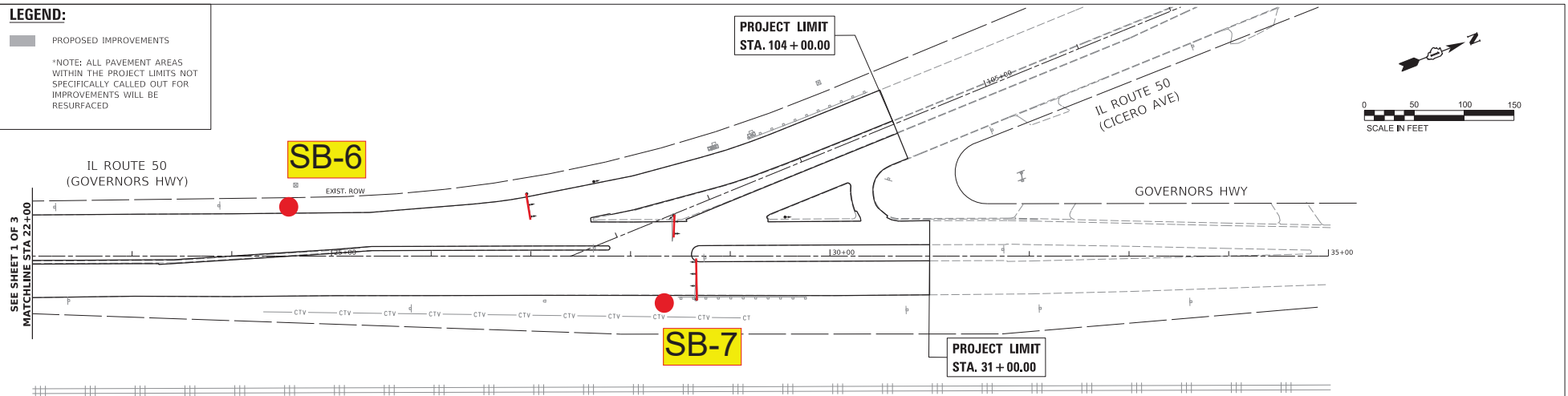
## SOIL BORING LOCATION PLAN



PROPOSED IMPROVEMENTS

\*NOTE: ALL PAVEMENT AREAS WITHIN THE PROJECT LIMITS NOT SPECIFICALLY CALLED OUT FOR IMPROVEMENTS WILL BE RESURFACED

815  
810  
805  
800  
795  
790  
785  
780  
775  
770  
765  
760  
755  
750  
745  
740  
735  
730



MODEL: GOVHWY\_E-1 - Plan 2 [Sheet]



1500 W CARROLL AVE  
SUITE 300  
CHICAGO, IL 60607  
ardmoreeroderick.com

USER NAME	= rjeywhite
PLOT SCALE	= 0.0833331
PLOT DATE	= 2/17/2023

7' / in.

DESIGNED	-
DRAWN	-
CHECKED	-
DATE	02/10/2023

	REVISED	-
	REVISED	-
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	REVISED	-

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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

## IL ROUTE 50 (CICERO AVE) AT GOVERNORS HWY AND AT DRALLE RD

SCALE: 1"=50'	SHEET 2	OF 3	SHEETS	STA.	TO STA.
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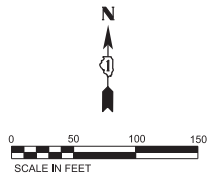
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
350	FAP 0350 22 II	WILL	86	19
		CONTRACT NO. 62R51		
		ELNOR SED. AND PROJECT		

PROPOSED IMPROVEMENTS

\*NOTE: ALL PAVEMENT AREAS WITHIN THE PROJECT LIMITS NOT SPECIFICALLY CALLED OUT FOR IMPROVEMENTS WILL BE RESURFACED

PROPOSED IMPROVEMENTS

\*NOTE: ALL PAVEMENT AREAS WITHIN THE PROJECT LIMITS NOT SPECIFICALLY CALLED OUT FOR IMPROVEMENTS WILL BE RESURFACED



**PLAN & PROFILE**  
**IL. ROUTE 50 (CICERO AVE) AT GOVERNORS HWY AND AT DRALLE RD**

SCALE: 1"=50'	SHEET 3	OF 3	SHEETS	STA.	TO STA.
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F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
350	FAP 0350 22 II	WILL	86	20
		CONTRACT NO. 62R51		
		ILLINOIS	FED. AID PROJECT	

MODEL: DRALLE\_E - Plan 3 [Sheet]  
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1500 W CARROLL AVE  
SUITE 300  
CHICAGO, IL 60607  
[ardmorederick.com](http://ardmorederick.com)

USER NAME	= rbywhite
PLOT SCALE	= 0.083333
PLOT DATE	= 20130223

17" / in.

DESIGNED	-
DRAWN	-
CHECKED	-
DATE	02/01/2018

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	REVISED	-
	REVISED	-
	REVISED	-

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STATE  
DEPARTMENT

STATE OF ILLINOIS  
COUNTY OF CHICAGO

NOIS  
TRANSPORTATION

ON

**IL. ROUTE 5**  
SCALE: 1"=50'

0 (CICERO AV)

PLAN & P  
(E) AT GOVER

PROFILE	
MINORS HWY A	
STATION	STA

AND AT DRA

LLE RD	F.A.P. RTE.
	350

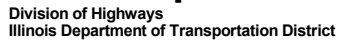
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	FAP 0350

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COUNTY	TOTAL SHEETS	S
WILL	86	
CONTRACT NO. 62R5		

SHEET NO.
20
51

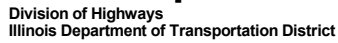
# SOIL BORING LOGS



**Date** 8/16/23

BBS, form 137 (Rev. 8-99)

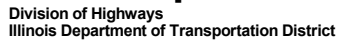
SOIL BORING IL 50 FROM GOVERNORS TO DRALLE.GPJ IL\_DOT.GDT 9/23/24



**Date** 8/8/23

BBS, form 137 (Rev. 8-99)





**Date** 8/9/23

COUNTY Will DRILLING METHOD HSA HAMMER TYPE Auto

Surface Water Elev.	-	ft
Stream Bed Elev.	-	ft
Groundwater Elev.:		
First Encounter	none	ft
Upon Completion	none	ft
After - Hrs.	-	ft

BBS, form 137 (Rev. 8-99)



# Illinois Department of Transportation

Division of Highways  
Illinois Department of Transportation District

## SOIL BORING LOG

Page 1 of 2

Date 8/8/23

ROUTE FAP 350 DESCRIPTION IL 50 from Governors Hwy. to Dralle Rd. LOGGED BY ME

SECTION FAP 0350 LOCATION Southeast Corner of, SEC. 9, TWP. 34N, RNG. 13E, 3<sup>rd</sup> PM,  
Latitude 41°26'30.0696", Longitude -87°43'59.1168"

COUNTY Will DRILLING METHOD HSA HAMMER TYPE Auto

STRUCT. NO. -  
Station -

BORING NO. SB-4  
Station 214+18  
Offset 30.0 ft LT  
Ground Surface Elev. 779.62 ft

D E P T H  (ft)	B L O W S  (/6")	U C S  (tsf)	M O I S T  (%)
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Surface Water Elev.	-	ft
Stream Bed Elev.	-	ft
Groundwater Elev.:		
First Encounter	770.1	ft ▽
Upon Completion	740.6	ft ▽
After 24 Hrs.	774.0	ft ▽

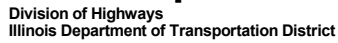
D E P T H  (ft)	B L O W S  (/6")	U C S  (tsf)	M O I S T  (%)
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12 inch Brown, moist, Silty Clay (TOPSOIL)	778.62			10	Stiff to Hard, Brown, moist, SILTY CLAY (continued)	3		
						4	2.9	16
Hard, Brown and Gray mottled, moist, CLAY						7	B	
		3						
		3	6.5	19		3		
		7	S at			5	1.6	16
			14%			8	B	
775.12								
Very Stiff to Hard, Brown and Gray mottled, moist, SILTY CLAY	-5					-25		
	▽	2					6	
		5	3.7	20			9	1.3
		6	S at				11	P
			15%					
					752.62			
		3			Very Stiff to Hard, Gray, moist, SILTY CLAY		2	
771.12		4	5.8	19			4	3.6
		5	S at				7	B
Hard, Brown, very moist, SILT	770.12 ▽		13%					
	-10					-30		
Stiff to Hard, Brown, moist, SILTY CLAY		3					3	
		7	8.3	15			5	3.9
		10	B				9	B
		4						
		4	7.0	17				
		9	B					
	-15					-35		
		3					4	
		5	3.8	17			9	5.5
		8	B				13	B
					742.62			
		3			Stiff, Gray, moist, SILT			
		5	2.9	16				
		8	B					
						▽		
	-20					-40		

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

BBS, form 137 (Rev. 8-99)

SOIL BORING IL 50 FROM GOVERNORS TO DRALLE.GPJ IL\_DOT.GDT 9/23/24



**Date** 8/8/23

BBS, form 137 (Rev. 8-99)



# Illinois Department of Transportation

Division of Highways  
Illinois Department of Transportation District

## SOIL BORING LOG

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Date 8/9/23

ROUTE FAP 350 DESCRIPTION IL 50 from Governors Hwy. to Dralle Rd. LOGGED BY ME

SECTION FAP 0350 LOCATION Southeast Corner of, SEC. 9, TWP. 34N, RNG. 13E, 3<sup>rd</sup> PM,  
Latitude 41°26'30.0696", Longitude -87°43'59.1168"

COUNTY Will DRILLING METHOD HSA HAMMER TYPE Auto

STRUCT. NO. <u>-</u>	D	B	U	M	Surface Water Elev. <u>-</u> ft	D	B	U	M
Station <u>-</u>	E	L	C	O	Stream Bed Elev. <u>-</u> ft	E	L	C	O
BORING NO. <u>SB-5</u>	P	W	S	I	Groundwater Elev.: <u>-</u>	T	S	Qu	S
Station <u>21+85</u>	H	S	Qu	T	First Encounter <u>none</u> ft	H	S	Qu	T
Offset <u>37.0 ft RT</u>	(ft)	(/6")	(tsf)	(%)	Upon Completion <u>none</u> ft	(ft)	(/6")	(tsf)	(%)
Ground Surface Elev. <u>779.62</u> ft					After <u>-</u> Hrs. <u>-</u> ft				
11 inches Hot Mix Asphalt Pavement 778.62					Stiff to Very Stiff, Gray, moist, SILTY CLAY (continued)		1		
12 inch Black, moist, Silty Clay (TOPSOIL) 777.62							2	1.1	16
							3	B	
Stiff, Black and Gray mottled, very moist, SILTY CLAY 775.12	0						1		
	2	1.4	31				4	3.3	16
	2	B					6	B	
Stiff, Gray, very moist, CLAY 772.62	-5					-25			
	0						3		
	2	1.0	32				4	3.1	15
	2	B					6	B	
Very Stiff, Brown and Gray mottled, moist, SILTY CLAY 767.62									
	2						3		
	3	3.9	24				4	3.0	14
	3	B					7	B	
	-10					-30			
	3						3		
	2	4.0	22				5	1.7	16
	5	B					7	B	
Hard, Brown, moist, SILTY CLAY 762.62									
	3								
	3	4.1	20						
	6	B							
	-15					-35			
	2						5		
	4	4.2	18				3	1.7	16
	7	B					5	B	
Stiff to Very Stiff, Gray, moist, SILTY CLAY									
	2								
	2	2.0	17						
	4	B							
	-20					-40			

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

BBS, form 137 (Rev. 8-99)

SOIL BORING IL 50 FROM GOVERNORS TO DRALLE.GPJ IL\_DOT.GDT 9/23/24



# Illinois Department of Transportation

Division of Highways  
Illinois Department of Transportation District

## SOIL BORING LOG

Page 2 of 2

Date 8/9/23

ROUTE FAP 350 DESCRIPTION IL 50 from Governors Hwy. to Dralle Rd. LOGGED BY ME

SECTION FAP 0350 LOCATION Southeast Corner of, SEC. 9, TWP. 34N, RNG. 13E, 3<sup>rd</sup> PM,  
Latitude 41°26'30.0696", Longitude -87°43'59.1168"

COUNTY Will DRILLING METHOD HSA HAMMER TYPE Auto

STRUCT. NO. -  
Station -

BORING NO. SB-5  
Station 21+85  
Offset 37.0 ft RT  
Ground Surface Elev. 779.62 ft

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

Surface Water Elev. - ft  
Stream Bed Elev. - ft  
Groundwater Elev.:  
First Encounter none ft  
Upon Completion none ft  
After - Hrs. - ft

Stiff to Very Stiff,  
Gray, moist,  
SILTY CLAY (*continued*) 738.12

End of Boring

	3		
	6	1.8	20
	7	P	
-45			
-50			
-55			
-60			

SOIL BORING IL 50 FROM GOVERNORS TO DRALLE.GPJ IL\_DOT.GDT 9/23/24

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

BBS, form 137 (Rev. 8-99)



# Illinois Department of Transportation

Division of Highways  
Illinois Department of Transportation District

## SOIL BORING LOG

Page 1 of 1

Date 8/15/23

ROUTE FAP 350 DESCRIPTION IL 50 from Governors Hwy. to Dralle Rd. LOGGED BY ME

SECTION FAP 0350 LOCATION Southeast Corner of, SEC. 9, TWP. 34N, RNG. 13E, 3<sup>rd</sup> PM,  
Latitude 41°26'30.0696", Longitude -87°43'59.1168"

COUNTY Will DRILLING METHOD HSA HAMMER TYPE Auto

STRUCT. NO. -  
Station -

BORING NO. SB-6  
Station 24+50  
Offset 50.0 ft LT  
Ground Surface Elev. 779.62 ft

D E P T H (ft)	B L O W S (/6")	U C S Qu (tsf)	M O I S T (%)
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Surface Water Elev. <u>-</u> ft	Stream Bed Elev. <u>-</u> ft	Groundwater Elev.: First Encounter <u>none</u> ft Upon Completion <u>none</u> ft After <u>-</u> Hrs. <u>-</u> ft
---------------------------------	------------------------------	---

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

10 inches Hot Mix Asphalt Pavement	778.62				Very Stiff to Hard, Brown and Gray, moist, SILTY CLAY (continued)	758.12	3		
Stiff, Gray, moist to very moist, CLAY					End of Boring		6	3.4	14
		2					8	B	
		3	1.4	28					
		3	S at 11%						
	-5					-25			
		0							
		3	1.9	24					
		2	S at 15%						
	772.62								
Hard, Brown, moist, SILTY CLAY		3							
		4	4.6	17					
		8	B						
	770.12								
Very Stiff to Hard, Brown and Gray, moist, SILTY CLAY	-10	4				-30			
		7	4.5	15					
		8	B						
		3							
		4	2.7	15					
		6	B						
grades to clay	-15					-35			
		3							
		4	2.6	16					
		6	B						
grades to silty clay									
		3							
		4	3.3	17					
		8	B						
	-20					-40			

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

BBS, form 137 (Rev. 8-99)

SOIL BORING IL 50 FROM GOVERNORS TO DRALLE.GPJ IL\_DOT.GDT 9/23/24



# Illinois Department of Transportation

Division of Highways  
Illinois Department of Transportation District

## SOIL BORING LOG

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Date 8/15/23

ROUTE FAP 350 DESCRIPTION IL 50 from Governors Hwy. to Dralle Rd. LOGGED BY ME

SECTION FAP 0350 LOCATION Southeast Corner of, SEC. 9, TWP. 34N, RNG. 13E, 3<sup>rd</sup> PM,  
Latitude 41°26'30.0696", Longitude -87°43'59.1168"

COUNTY Will DRILLING METHOD HSA HAMMER TYPE Auto

STRUCT. NO. -  
Station -

BORING NO. SB-7  
Station 28+29  
Offset 35.0 ft RT  
Ground Surface Elev. 779.62 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 none ft  
Upon Completion none ft  
After - Hrs. - ft

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

10 inches Hot Mix Asphalt Pavement	778.62				SILTY CLAY	2	B	
Gray, moist, CLAY	777.62				Very Stiff, Gray mottled, moist, SILTY CLAY (continued)	3	2.9	15
Very Stiff, Brown and Gray mottled, moist, SILTY CLAY		3				5	B	
		3	3.7	20		2		
		3	B			4	3.0	15
						6	B	
		-5						
		2				-25	1	
		4	2.6	22			3	2.6
		5	B				6	B
	772.62							
Very Stiff to Hard, Brown, moist, SILTY CLAY		4					3	
		7	6.6	16	No recovery. Encountered cobble.		10	
		10	B				6	
		-10						
		3				-30	4	
		4	5.7	16			3	2.6
		6	B				7	B
						748.12		16
					End of Boring			
		5						
		5	2.8	15				
		8	P					
		-15						
		2				-35		
		3	4.3	18				
		7	B					
	762.12							
Medium Stiff, Gray, moist, SILT	761.12	1						
		1	0.7	14				
		3	S at					
Very Stiff, Gray mottled, moist,			15%					
			2.8			-40		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)  
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SOIL BORING IL 50 FROM GOVERNORS TO DRALLE.GPJ IL\_DOT.GDT 9/23/24