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TECHNICAL MEMORANDUM

TO: Mr. David Skaleski, P.E.
WSP

FROM: Dawn Edgell, P.E.

DATE: August 31, 2021

RE: PTB 198-003
Contract No. D-91-204-19
I-80 at Center Street and Chicago Street
Roadway Geotechnical Report – Preliminary Underdrain Recommendations

This Technical Memorandum provides a summary of the field investigation and the Subgrade Stability Borings (SSB) completed along the proposed alignment of I-80, and provides geotechnical recommendations for the pavement underdrains and embankment construction of I-80 interchange ramps at Center Street and Chicago Street.

1.0 Project Information

As part of the I-80 realignment and reconstruction of the interchanges with Center Street and Chicago Street, new embankments will be constructed for the I-80 mainline as well as the new alignment of each roadway. For the new embankments and roadways, subgrade (SGB) and slope stability (SSB) borings have been completed at various locations within the project corridor. It is anticipated that for the mainline realignment west of the Des Plaines River, that new embankments of up to 20 to 25 feet will be required above the existing grade. This will include the ramps towards the Des Plaines River Bridge and the Center Street interchange. For the Chicago Street interchange, and ramps east of the Des Plaines River, some embankments will be constructed as part of the retaining walls and new interchange. These embankments are anticipated to be less than 15 feet maximum fill heights.

2.0 Site Investigation Summary

A total of forty-two (42) borings have been completed on the existing IDOT right of way along the mainline and for new ramp construction at the new interchanges. Additional borings will be completed as necessary for the new ramp construction at a future date.

2.1 Subsurface Conditions

Generally, the subsurface conditions along the corridor consisted of a mixture of sandy loam, silty clay loam and silty clay soils. Some existing fill material was noted in areas along the mainline alignment and near existing interchanges that consisted of silty clay materials. For the western section of the alignment, near Center Street, bedrock was encountered in most of the borings at depths ranging from 3 to 15 feet below existing grade. The borings that were completed east of the Des Plaines River typically extended to depths of 20 feet and bedrock was not encountered within that depth.

Groundwater was not encountered in most of the borings while drilling. Groundwater was encountered in SSB-42 while drilling, at a depth of about 13.5 feet (el. 533.5 feet), within a confined granular layer, but not after drilling was completed. Based on the proximity of the Des Plaines River, the long term groundwater level is likely near that elevation or along the bedrock interface.

3.0 Geotechnical Analysis and Recommendations

3.1 Drainage Characteristics

The drainage characteristics of the site were evaluated per the IDOT Geotechnical Manual (2020), Section 6.3.4.1, based on the subgrade soil type and moisture condition, depth of water table, project topography, the anticipated profile grade line, and depth and grade of drainage ditch along the roadways. Based on the proposed profile, the mainline embankment and ramp embankments will predominantly be supported on subgrade soils consisting of newly compacted fill materials. These soils are anticipated to consist of silty clay or silty clay loam materials, with more than 40% of fine material, similar to the near surface materials encountered in the borings, in accordance with IDOT Standard Specifications for Road and Bridge Construction (SSRBC) 2022.

Based on the preliminary plans and existing conditions, GSG anticipates that the proposed drainage will consist of an enclosed drainage system with curb and gutter and shallow ditches with slopes greater than 0.5%. GSG utilized Table 6.3.4.1-1, Drainage Classification in the IDOT Geotechnical Manual, to assign the drainage classes for the site. The drainage class should be taken as Poor to Fair.

The drainage classification of Poor to Fair should be used for the project design. The overall groundwater depth is assumed deeper than the anticipated frost depth of 45 to 60 inches for the northern Illinois region, and near the bedrock interface, below the proposed new pavement elevations. However, pavement systems could become saturated following periods of precipitation. The proposed subgrade and pavement should have proper surface grading to prevent water from accumulating and ponding. GSG recommends installing lateral and longitudinal underdrain systems as recommended in Section 6.3.4.2 and 6.3.4.3 of the IDOT Geotechnical Manual to maintain the subgrade from deteriorating. These underdrains should be installed at undercut areas and low points in the roadway profile, and along the edge of pavement throughout the roadway improvement.

The installation of new pavement underdrains with the new pavement structure will improve the overall site drainage and the subgrade soils. The new underdrains should be a minimum of 6-inches in diameter, with adequate slope requirements to provide drainage to outlet pipes along the roadway corridor.

4.0 Construction Recommendations

All work performed for the proposed project should conform to the requirements in the IDOT Standard Specifications for Road and Bridge Construction (SSRBC) 2022. Particular attention should be paid to Section 202, “Earth and Rock Excavation”, Section 205, “Embankment” and Section 301, “Subgrade Preparation” of the IDOT SSRBC.

Attachments: Draft Subgrade Stability Boring Logs

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SOIL BORING LOG

Date 7/1/22

ROUTE I-80 **DESCRIPTION** Embankment - Mainline - Sta 21+00 WB **LOGGED BY** AJ

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** , **TWP.** , **RNG.** ,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO. _____
Station _____

BORING NO. SSB-01
Station _____
Offset _____
Ground Surface Elev. _____ **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After _____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				8 inches of Asphalt 4 inches of Aggregate Subbase
	9			Dense Light Brown, Moist SANDY LOAM, with gravel (SM)
	17 16		7	
	9			
	17 24		7	
-5				Auger refusal at 5.5 feet End of Boring
-10				
-15				
-20				

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)

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Division of Highways
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SOIL BORING LOG

Date 7/1/22

ROUTE I-80 **DESCRIPTION** Embankment - Mainline - Sta 21+00 WB **LOGGED BY** AJ

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** , **TWP.** , **RNG.** ,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO. _____
Station _____

BORING NO. SSB-02
Station _____
Offset _____
Ground Surface Elev. _____ **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After _____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
8 inches of Asphalt				
Very Dense Light Brown, Dry SANDY LOAM, with gravel (SM)	50/5"		5	
Auger refusal at 1 foot 5 inches End of Boring				

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)

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SOIL BORING LOG

Date 7/1/22

ROUTE I-80 **DESCRIPTION** Embankment - Mainline - Sta 22+00 EB **LOGGED BY** AJ

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** , **TWP.** , **RNG.** ,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO. _____
Station _____

BORING NO. SSB-03
Station _____
Offset _____
Ground Surface Elev. _____ **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After _____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
8 inches of Asphalt 4 inches of Aggregate Subbase				
Very Dense Light Brown, Dry SANDY LOAM, with gravel (SM)	9 27 29		4	
Auger refusal at 3 feet End of Boring				
-5				
-10				
-15				
-20				

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)

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SOIL BORING LOG

Date 7/1/22

ROUTE I-80 **DESCRIPTION** Embankment - Mainline - Sta 22+00 EB **LOGGED BY** AJ

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** , **TWP.** , **RNG.** ,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO. _____
Station _____

BORING NO. SSB-04
Station _____
Offset _____
Ground Surface Elev. _____ **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After _____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				8 inches of Asphalt 4 inches of Aggregate Subbase
	50/5"			Very Dense Light Brown, Moist SANDY LOAM, with gravel (SM)
			5	
				Auger refusal at 1 foot 5 inches End of Boring
-5				
-10				
-15				
-20				

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)

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SOIL BORING LOG

Date 6/30/22

ROUTE I-80 **DESCRIPTION** Embankment - Mainline - Sta 23+50 EB (overpass) to 35+00 **LOGGED BY** AJ

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-06
Station
Offset
Ground Surface Elev. 599.42 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After _____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				12 inches of Topsoil
598.42				
	5			Hard
	7	4.0	18	Brown, Moist
	10	P		SILTY CLAY (CL/ML)
	4			
	10	4.6	18	Silt seam at 4 feet
594.92	16	B		Medium Dense
-5				Brown, Wet
				SANDY LOAM, with gravel (SM)
593.42				
				Auger refusal at 6 feet
				End of Boring
-10				
-15				
-20				

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)

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SOIL BORING LOG

Date 6/30/22

ROUTE I-80 **DESCRIPTION** Embankment - Mainline - Sta 23+50 EB (overpass) to 35+00 **LOGGED BY** AJ

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-08
Station
Offset
Ground Surface Elev. ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion N/A ft
After Hrs. N/A ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
12 inches of Topsoil				
Hard Brown, Moist SILTY CLAY LOAM, with sand (CL/ML)		6 12 11 10	4.5 P	13
Auger refusal at 4 feet End of Boring	-5	50/3"		13
	-10			
	-15			
	-20			

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)

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SOIL BORING LOG

Date 6/29/22

ROUTE I-80 **DESCRIPTION** Embankment - Mainline - Sta 23+50 EB (overpass) to 35+00 **LOGGED BY** JEB

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-10
Station
Offset
Ground Surface Elev. 586.65 **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After ____ **Hrs.** N/A **ft**

12 inches of Topsoil
585.65
Auger refusal at 1 foot
End of Boring

-5
-10
-15
-20

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)

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SOIL BORING LOG

Date 6/29/22

ROUTE I-80 **DESCRIPTION** Embankment - Mainline - Sta 23+50 EB (overpass) to 35+00 **LOGGED BY** JEB

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-11
Station
Offset
Ground Surface Elev. 586.08 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After _____ **Hrs.** N/A **ft**

		DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
6 inches of Topsoil	585.58				
Medium Stiff to Stiff Brown, Moist to Very Moist SILTY CLAY, trace gravel (CL/ML)			1 7 4	0.6 B	20
			3		
	581.58		13	1.0	31
Very Dense Brown, Wet GRAVEL, with sand (GPS)	581.08	-5	50/2"	B	
End of Boring					
		-10			
		-15			
		-20			

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)

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SOIL BORING LOG

Date 6/29/22

ROUTE I-80 **DESCRIPTION** Embankment - Mainline - Sta 23+50 EB (overpass) to 35+00 **LOGGED BY** JEB

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-12
Station
Offset
Ground Surface Elev. 587.39 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion N/A ft
After Hrs. N/A ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
6 inches of Topsoil 586.89				
Soft to Very Stiff Brown, Moist SILTY CLAY, trace gravel (CL/ML)		3 6 9	3.1 B	16
		1 2 2	0.4 B	16
	-5			
580.39		3 3 27	0.6 B	19
Very Dense Brown, Wet GRAVEL, with sand (GPS) 578.89				
Gray, Dry 578.39 WEATHERED LIMESTONE		50/5"		4
Auger refusal at 9 feet End of Boring	-10			
	-15			
	-20			

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)

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SOIL BORING LOG

Date 6/29/22

ROUTE I-80 **DESCRIPTION** Embankment - Mainline - Sta 23+50 EB (overpass) to 35+00 **LOGGED BY** JEB

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-13
Station
Offset
Ground Surface Elev. 579.96 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion N/A ft
After Hrs. N/A ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
579.46 6 inches of Topsoil				
Stiff Brown, Moist SILTY CLAY, trace gravel (CL/ML)	7			
	6 5		12	
	3			
	4 5	1.5 B	22	
-5				
	12			
572.96	50/3"	1.0 B	19	
572.46 Brown, Wet WEATHERED LIMESTONE				
Auger refusal at 7.5 feet End of Boring				
-10				
-15				
-20				

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)

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Division of Highways
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SOIL BORING LOG

Date 7/1/22

ROUTE I-80 **DESCRIPTION** Embankment - Mainline - Sta 23+50 EB (overpass) to 35+00 **LOGGED BY** AJ

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** , **TWP.** , **RNG.** , **Latitude** , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO. _____
Station _____

BORING NO. SSB-14
Station _____
Offset _____
Ground Surface Elev. 580.01 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After _____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
8 inches of Asphalt				
4 inches of Aggregate Subbase 579.35 / 579.01				
Brown, Moist	4			
FILL: SILTY CLAY, trace sand and gravel	5 5	2.9 B	15	
	1			
	3 2	2.1 B	23	
-5				
574.01				
Brown and Black, Moist	2			
FILL: SILTY CLAY, trace sand and gravel	3 5	2.1 B	20	
571.51				
Dark Brown and Brown, Moist to Very Moist	4			
FILL: SILTY CLAY, with sand and gravel	8 8		11	
-10				
Cobbles at 8.5 feet				
569.01				
Auger refusal at 11 feet	50/0.5"			
End of Boring			27	
-15				
-20				

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)

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SOIL BORING LOG

Date 7/1/22

ROUTE I-80 **DESCRIPTION** Embankment - Mainline - Sta 23+50 EB (overpass) to 35+00 **LOGGED BY** AJ

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** , **TWP.** , **RNG.** , **Latitude** , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO. _____
Station _____

BORING NO. SSB-15
Station _____
Offset _____
Ground Surface Elev. 576.66 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After _____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description	Elevation
				8 inches of Asphalt	
				4 inches of Aggregate Subbase	575.99
	2			Brown and Gray, Moist	575.66
	1 7	2.5 B	17	FILL: SILTY CLAY, trace gravel	
	5				
-5	7 9	1.5 P	15		
	4 7	3.0 P	15		
	50/2"				569.16
				Black, Moist	568.66
				FILL: SILTY CLAY, trace sand and gravel	
				Auger refusal at 8 feet	
				End of Boring	
-10					
-15					
-20					

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)

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SOIL BORING LOG

Date 6/29/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp B **LOGGED BY** JEB

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-17
Station
Offset
Ground Surface Elev. 596.87 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After ____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
6 inches of Topsoil 596.37				
Hard Brown, Very Moist SILTY CLAY, trace gravel	11 13 13	4.2 B	27	
593.37				
Medium Dense Brown, Moist to Wet GRAVEL, with sand (GPS)	6 5 15		12	
-5				
	17			
589.87	50/1"		27	
Auger refusal at 7 feet End of Boring				
-10				
-15				
-20				

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)

Illinois Department of Transportation
Division of Highways
GSG

SOIL BORING LOG

Date 6/29/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp B **LOGGED BY** JEB

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-18
Station
Offset
Ground Surface Elev. 598.27 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After _____ **Hrs.** N/A **ft**

		DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
6 inches of Topsoil	597.77				
Hard Brown, Moist to Very Moist SILTY CLAY, trace gravel			3 6 10	4.2 B	30
			50/2"		
	593.77				6
Very Dense Brown, Moist GRAVEL, with sand (GPS)	593.27	-5			
Auger refusal at 5 feet End of Boring					
		-10			
		-15			
		-20			

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)

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Division of Highways
GSG

SOIL BORING LOG

Date 6/29/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp B **LOGGED BY** JEB

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-19
Station
Offset
Ground Surface Elev. 599.77 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After _____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
6 inches of Topsoil 599.27				
Stiff to Very Stiff Brown, Moist SILTY CLAY, trace gravel	8			
	14 12	4.0 B	8	
	3			
	4 9	2.9 B	23	
-5				
593.52	9			
593.27 Very Dense Brown, Wet GRAVEL, with sand (GPS)	50/1"	1.5 P	20	
Auger refusal at 6.5 feet End of Boring				
-10				
-15				
-20				

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)

Illinois Department of Transportation
Division of Highways
GSG

SOIL BORING LOG

Date 6/30/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp B **LOGGED BY** AJ

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-20
Station
Offset
Ground Surface Elev. 600.67 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After ____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
12 inches of Topsoil				
599.67				
Stiff to Very Stiff	4			
Dark Brown and Gray, Moist	4	3.5	24	
SILTY CLAY (CL/ML)	8	P		
	3			
	6	1.3	13	
-5	9	P		
	4			
594.17				
Medium Dense	15	2.8	13	
Light Brown, Moist	13	P		
SANDY LOAM, with gravel (SM)				
	4			
591.47				
Medium Stiff	21	0.8	23	
-10 Brown, Moist	24	P		
SILTY CLAY, with sand (CL/ML)				
589.67				
Auger refusal at 11 feet				
End of Boring				
-15				
-20				

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)

Illinois Department of Transportation
Division of Highways
GSG

SOIL BORING LOG

Date 5/10/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp AA **LOGGED BY** KA

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-38
Station 12+77.3479
Offset 20.92ft LT
Ground Surface Elev. 547.76 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion N/A ft
After Hrs. N/A ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
8 inches of Topsoil 547.09				
Stiff to Very Stiff Brown, Moist SILTY CLAY (CL/ML)	2			
	3 5	1.3 B	15	
Cobbles at 3.5 feet	3			
	7 6	2.5 P	17	
-5				
	2			
	4 6	1.0 B	19	
	2			
	2 4	1.7 B	18	
-10				
	2			
	4 7	1.9 B	16	
534.76				
Very Stiff Dark Gray, Moist SILTY CLAY (CL/ML) Cobbles at 13.5 feet	7			
	8 9	2.0 P	16	
-15				
532.26				
Stiff Brown and Dark Gray, Moist SILTY CLAY, trace gravel (CL/ML)	10			
	7 10	1.5 P	17	
Cobbles at 16.5 feet 530.26				
Dense Light Brown, Moist SAND, with gravel (SPG)	22			
Cobbles at 17.5 feet	24 33		6	
527.76 -20				

End of Boring

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
GSG

SOIL BORING LOG

Date 5/10/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp AA **LOGGED BY** KA

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-39
Station 13+67.0534'
Offset 6.89ft LT
Ground Surface Elev. 549.31 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion N/A ft
After ____ **Hrs.** N/A ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
8 inches of Topsoil				
548.64				
Brown, Moist FILL: SILTY CLAY, trace gravel		1		
		1 2	1.3 B	21
546.31				
Stiff Brown, Moist SILTY CLAY (CL/ML)		1		
		3 3	1.0 B	21
	-5			
		3		
Cobbles at 6.5 feet		5 11	1.0 B	24
No recovery at 8.5 feet		2		
		5 6		NR
	-10			
		3		
Cobbles at 11.5 feet		4 8	1.5 P	18
Low recovery at 13.5 feet		3		
		4 7		20
	-15			
533.81				
Medium Dense to Extremely Dense Light Brown, Dry to Moist SAND, with gravel (SPG)		9		
		14 13		6
Cobbles at 18.5 feet		20		
		32 50/5.5"		4
529.31	-20			

End of Boring

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
GSG

SOIL BORING LOG

Date 5/10/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp AA **LOGGED BY** KA

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-40
Station 14+62.0491'
Offset 18.89ft LT
Ground Surface Elev. 554.82 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion N/A ft
After ____ **Hrs.** N/A ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
12 inches of Topsoil				
553.82				
Stiff to Very Stiff Brown, Moist to Very Moist SILTY CLAY, trace gravel (CL/ML)		4 12 16	3.5 P	27
		3 5 7	2.5 P	16
	-5			
		1 3 5	2.5 P	20
		3 5 7	1.0 B	16
544.82	-10			
Stiff Gray, Moist SILTY CLAY (CL/ML)		3 4 15	1.0 B	15
541.82				
Medium Dense Gray, Moist SILT (ML) Cobbles at 13.5 feet		4 9 12		16
	-15			
538.82				
Stiff to Very Stiff Gray, Moist SILTY CLAY LOAM (ML/CL) Cobbles at 16.5 feet		4 8 15	1.0 B	22
		9 11 16	3.5 P	14
534.82	-20			

End of Boring

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)

Illinois Department of Transportation
Division of Highways
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SOIL BORING LOG

Date 5/5/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp BB **LOGGED BY** JEB

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-41
Station
Offset
Ground Surface Elev. 552.29 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After ____ **Hrs.** N/A **ft**

		DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
3 inches of Asphalt	552.04				
8 inches of Concrete	551.37				
Brown, Moist FILL: SILTY CLAY, trace sand and gravel			3		
			3 3	1.1 B	18
	548.79				
Stiff to Hard Brown, Moist SILTY CLAY, trace gravel (CL/ML)			1		
			2 2	1.7 B	23
		-5			
			4		
			7 7	3.1 B	22
			2		
			3 7	1.3 B	21
		-10			
			4		
			8 15	5.2 B	19
	538.79				
Medium Dense to Dense Brown, Moist to Wet GRAVEL, with sand, trace clay (GPS)			10		
			19 8		15
		-15			
			12		
			12 18		16
			10		
			19 22		10
	532.29	-20			

End of Boring

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)

Illinois Department of Transportation
Division of Highways
GSG

SOIL BORING LOG

Date 5/5/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp BB **LOGGED BY** JEB

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-42
Station
Offset
Ground Surface Elev. 546.98 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft

Groundwater Elev.:
First Encounter 533.5 ft ▼
Upon Completion N/A ft
After ____ **Hrs.** N/A ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
6 inches of Topsoil 546.48				(GC)			
Brown, Moist				Brick fragments at 19 feet			
FILL: SILTY CLAY, trace gravel 545.98	3			End of Boring			
Stiff to Very Stiff	2	1.9	19				
Brown, Moist	3	B					
SILTY CLAY, trace gravel							
	2						
	3	2.3	19				
-5	4	B		-25			
Cobbles at 6 feet	1						
	4		17				
	5						
	1						
	2	1.5	18				
-10	3	P		-30			
535.98							
Soft	1						
Brown and Gray, Moist	1	0.4	22				
SILTY CLAY, trace gravel	2	B					
(CL/ML)							
533.48 ▼							
Medium Dense to Dense	1						
Gray, Wet	1		17				
CLAYEY GRAVEL, trace sand	1						
-15 (GC)				-35			
530.98							
Very Stiff	5						
Gray and Dark Gray, Moist	8	2.5	14				
SILTY CLAY, trace gravel	10	B					
(CL/ML)							
528.48							
Medium Dense to Dense	22						
Gray and Dark Gray, Moist	21		10				
CLAYEY GRAVEL, with sand	10						
526.98 -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)

Illinois Department of Transportation
Division of Highways
GSG

SOIL BORING LOG

Date 5/5/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp BB **LOGGED BY** JEB

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-43
Station
Offset
Ground Surface Elev. 545.69 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After ____ **Hrs.** N/A **ft**

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
6 inches of Topsoil 545.19				
Brown, Moist FILL: SILTY CLAY, trace gravel		3		
		3 3	0.8 B	21
542.19				
Stiff to Very Stiff Brown, Moist SILTY CLAY, trace gravel (CL/ML)		2		
		2 4	1.3 B	19
	-5			
		3		
		4 9	1.9 B	21
		3		
		8 9	4.0 P	19
	-10			
		2		
		4 8	2.9 B	22
		5		
		6 7	2.8 B	21
	-15			
529.69				
Medium Dense to Very Dense Brown, Wet GRAVEL, with sand, trace clay (GPS)		14		
		6 18		15
		50/5"		
				17
525.69	-20			

End of Boring

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)

Illinois Department of Transportation
Division of Highways
GSG

SOIL BORING LOG

Date 5/5/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp BB **LOGGED BY** JEB

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-44
Station
Offset
Ground Surface Elev. 546.46 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion N/A ft
After ____ **Hrs.** N/A ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
6 inches of Topsoil 545.96				
Brown, Moist FILL: SILTY CLAY, trace gravel 545.46		3		
Medium Stiff to Hard Brown, Moist SILTY CLAY, trace gravel (CL/ML)		4 4	1.7 B	18
		2		
	-5	2 5	3.3 B	21
		4 8 10	4.2 B	19
		2		
	-10	4 6	2.7 B	20
		3		
		6 7	0.6 B	24
		9		
	-15	9 9		18
		2		
		3 4	2.7 B	21
527.46		3		
Dense Brown, Wet	-20	14 16	1.9 B	18
526.46				

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
GRAVEL, with sand (GPS)				
End of Boring	-25			
	-30			
	-35			
	-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)

Illinois Department of Transportation
Division of Highways
GSG

SOIL BORING LOG

Date 5/5/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp BB **LOGGED BY** JEB

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-45
Station
Offset
Ground Surface Elev. 548.78 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion N/A ft
After ____ **Hrs.** N/A ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
6 inches of Topsoil 548.28				
Brown, Moist FILL: SILTY CLAY, trace gravel		3		
		4 5	1.5 B	18
		3		
		5 9	1.5 B	23
543.78	-5			
Stiff to Very Stiff Brown and Gray, Moist SILTY CLAY, trace gravel (CL/ML)		3		
		4 6	2.5 B	19
		2		
		2 3	2.0 P	20
	-10			
		3		
		4 7	3.3 B	20
535.28				
Medium Stiff to Very Stiff Gray, Moist SILTY CLAY, trace gravel (CL/ML)		3		
		4 7	3.6 B	21
	-15			
		6		
		8 9	0.8 B	25
530.28				
Dense Brown, Wet GRAVEL, with sand, clay (GPS)		17		
		18 22		18
528.78	-20			

End of Boring

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)

Illinois Department of Transportation
Division of Highways
GSG

SOIL BORING LOG

Date 5/9/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp BB **LOGGED BY** EH

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-46
Station
Offset
Ground Surface Elev. 545.37 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After ____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
545.28 1 inch of Topsoil			
Brown and Gray, Moist FILL: SILTY CLAY, trace gravel	3		
	4 5	3.5 P	13
542.87 Very Stiff Brown, Moist SILTY CLAY, trace gravel (CL/ML)	2		
	5 10	3.5 P	23
540.37 -5 Very Stiff Brown and Gray, Moist SILTY CLAY LOAM, with gravel (ML/CL)	6		
	11 11		23
536.87 Very Stiff to Hard Gray, Moist SILTY CLAY LOAM, with gravel (ML/CL)	6		
	11 12	4.5 P	13
-10	13		
	21 22		18
	3		
	3 8	3.5 P	15
-15			
529.37 Medium Dense Brown and Gray, Dry to Wet SAND, with gravel (SPG)	12		
	18 11		19
	6		
	2 15		3
525.37 -20			

End of Boring

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)

Illinois Department of Transportation
Division of Highways
GSG

SOIL BORING LOG

Date 5/9/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp BB **LOGGED BY** EH

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-47
Station
Offset
Ground Surface Elev. 544.65 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After ____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
544.57 1 inch of Topsoil			
Hard Brown and Gray, Moist SILTY CLAY, trace gravel (CL/ML)	4		
	6 7	4.0 P	20
541.15			
Very Stiff to Hard Gray, Moist SILTY CLAY LOAM, with gravel (ML/CL)	7		
	17 12		14
-5			
	8		
	10 12	4.5 P	13
	3		
	9 13		11
-10			
	6		
	9 15	3.5 P	14
	5		
	6 7		13
-15			
528.65			
Medium Dense Light Brown and Gray, Dry to Moist SAND, with gravel (SPG)	8		
	12 8		13
	10		
	10 14		4
524.65 -20			

End of Boring

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
GSG

SOIL BORING LOG

Date 5/24/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp C (Chicago Street) **LOGGED BY** KA

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-48
Station 3+99.3396
Offset 0.32ft LT
Ground Surface Elev. 537.93 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After ____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
2 inches of Topsoil 537.77			
Very Stiff Brown and Dark Brown, Moist SILTY CLAY LOAM, trace sand (ML/CL)	5		
	6 9	3.1 B	16
535.43			
Medium Dense to Dense Light Brown, Dry to Moist SAND, with gravel (SPG)	17		
	16 11		6
-5			
Cobbles at 6 feet	1		
	15 7		4
	3		
	5 7		6
-10			
Cobbles at 11 feet	9		
	12 14		5
Cobbles at 13.5 feet	12		
	14 21		5
-15			
	6		
	14 18		6
	13		
	16 14		9
517.93 -20			

End of Boring

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
GSG

SOIL BORING LOG

Date 5/24/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp C (Chicago Street) **LOGGED BY** KA

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-49
Station 5+4.8154
Offset 0.73ft LT
Ground Surface Elev. 544.02 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion N/A ft
After Hrs. N/A ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
2 inches of Topsoil 543.85				
Very Stiff Brown and Black, Moist SILTY CLAY, with gravel (CL/ML)		4		
541.52		5 6	2.0 P	14
Stiff Brown, Moist SILTY CLAY (CL/ML)		1		
		2 4	1.5 B	21
	-5			
Cobbles at 6 feet		2		
536.52		10 27	1.5 P	16
Medium Dense Brown and Black, Moist GRAVEL, trace sand, clay and wooden fragments (GP)		11		
534.02	-10	9 4		12
Dense Brown and Black, Moist SAND, with gravel (SPG) Cobbles at 11 feet		10		
531.52		8 28		11
Dense to Very Dense Light Brown, Dry SAND, with gravel (SPG) Cobbles at 13.5 feet		15		
		26 29		5
	-15			
		19		
		13 25		5
		13		
		17 30		4
524.02	-20			

End of Boring

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)

Illinois Department of Transportation
Division of Highways
GSG

SOIL BORING LOG

Date 5/24/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp C (Chicago Street) **LOGGED BY** KA

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-50
Station 6+1.5870
Offset 3.03ft RT
Ground Surface Elev. 539.06 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion N/A ft
After ____ **Hrs.** N/A ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
2 inches of Topsoil 538.89				
Soft to Hard Brown and Gray, Moist SILTY CLAY, trace gravel (CL/ML)		3 8 7	2.5 P	16
		3		
	-5	9 5	6.3 B	17
		2		
		3 5	2.5 P	16
531.06				
Soft (check) to Hard Brown, Moist SILTY CLAY, trace gravel (CL/ML)		1		
	-10	1 3	1.5 P	23
Cobbles at 11 feet		6		
		9 9	0.3 P	25
526.06				
Loose Brown, Moist SILT, trace gravel (ML) Cobbles at 13.5 feet		4		
	-15	4 4		11
523.06				
Loose Black, Very Moist SILT, trace gravel (ML) Cobbles at 16 feet 521.56		3 2 5		40
Medium Dense Black and Light Brown, Moist SAND, with gravel (SPG)		4		
		10 12		9
519.06	-20			

End of Boring

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)

Illinois Department of Transportation
Division of Highways
GSG

SOIL BORING LOG

Date 5/24/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp C (Chicago Street) **LOGGED BY** KA

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-51
Station 6+99.3412
Offset 1.54ft RT
Ground Surface Elev. 546.11 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After Hrs. N/A **ft**

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
2 inches of Topsoil 545.94				
Stiff Brown, Moist SILTY CLAY LOAM (ML/CL)		3		
		4 5		16
		1		
		2 3	1.0 P	17
	-5			
		1		
		1 1	1.0 B	16
538.61				
Stiff Brown, Moist SILTY CLAY (CL/ML)		1		
		2 3	1.0 B	23
	-10			
Cobbles at 11 feet		2		
		4 16	1.3 B	25
533.61				
Loose to Medium Dense Gray and Black, Moist to Wet SAND, with gravel (SPG) Cobbles at 13.5 feet		13		
		9 12		8
	-15			
Brick fragments at 16 feet		1		
		2 2		17
528.61				
Medium Dense Black, Wet SAND, trace gravel (SP) Cobbles at 18.5 feet		4		
		5 12		35
526.11	-20			

End of Boring

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)

Illinois Department of Transportation
Division of Highways
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SOIL BORING LOG

Date 5/18/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp C (Chicago Street) **LOGGED BY** DM

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-52
Station 7+97.0377
Offset 1.02ft RT
Ground Surface Elev. 544.00 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After Hrs. N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
4 inches of Asphalt 543.66				
Stiff to Hard Brown, Moist SILTY CLAY, trace sand and gravel (CL/ML)	1			
	3 5	5.4 B	16	
	3			
	4 5	4.0 B	19	
-5				
	1			
	2 3	1.5 B	22	
	2			
	5 7	4.5 P	20	
-10				
	3			
	5 8	4.4 B	21	
	3			
529.50	9 15	3.0 P	18	
Medium Dense to Dense Brown, Moist SAND, with gravel (SPG) -15				
	8			
	8 7		9	
	8			
	24 13		9	
524.00 -20				

End of Boring

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)

Illinois Department of Transportation
Division of Highways
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SOIL BORING LOG

Date 6/29/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp A (Center Street) **LOGGED BY** JEB

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-56
Station
Offset
Ground Surface Elev. 596.07 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After _____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
6 inches of Topsoil 595.57			
Stiff Brown, Moist SILTY CLAY, trace gravel	3		
	4 5	1.7 B	17
	3		
	4 9	1.7 B	16
-5			
590.07			
Auger refusal at 6 feet End of Boring			
-10			
-15			
-20			

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)

Illinois Department of Transportation
Division of Highways
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SOIL BORING LOG

Date 6/29/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp A (Center Street) **LOGGED BY** JEB

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-57
Station
Offset
Ground Surface Elev. 588.91 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After ____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
8 inches of Asphalt 588.24				
Medium Stiff Brown, Moist SILTY CLAY, with sand and gravel (CL/ML)	4			
	8 12	0.8 B	16	
585.41				
Auger refusal at 3.5 feet End of Boring	50/1"			
			11	
-5				
-10				
-15				
-20				

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)

Illinois Department of Transportation
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SOIL BORING LOG

Date 6/29/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp A (Center Street) **LOGGED BY** JEB

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-58
Station
Offset
Ground Surface Elev. 588.36 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After ____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
8 inches of Asphalt				
587.69				
Medium Stiff Brown, Moist	12			
SILTY CLAY, trace gravel (CL/ML)	8 6	0.8 B	19	
585.36				
Auger refusal at 3 feet End of Boring				
-5				
-10				
-15				
-20				

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)

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SOIL BORING LOG

Date 6/30/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp D **LOGGED BY** AJ

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-59
Station
Offset
Ground Surface Elev. 605.68 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After ____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				12 inches Topsoil
				604.68
	4			Hard
	6	4.5	21	Brown, Moist
	7	P		SILTY CLAY LOAM, trace sand
				(CL/ML)
				602.18
	4			Hard
	13	4.5	16	Brown and Gray, Moist
-5	14	P		SILTY CLAY, trace sand and gravel (CL/ML)
	6			
	10	4.2	23	
	17	B		
	5			
	8	4.6	22	
-10	15	B		
	7			594.43
	17	4.5	15	Dense
	21	P		Brown, Moist
				SAND, with silt and gravel (SPG)
				592.18
	50/6"			Very Dense 591.68
			NR	Brown, Moist
-15				SANDY LOAM, trace gravel (SM)
				Auger refusal at 14 feet
				End of Boring
-20				

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)

Illinois Department of Transportation
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SOIL BORING LOG

Date 6/30/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp D **LOGGED BY** AJ

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-60
Station
Offset
Ground Surface Elev. 606.30 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After ____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
12 inches of Topsoil			
605.30			
Hard	6		
Brown, Moist	7	6.0	15
SILTY CLAY, trace sand (CL/ML)	8	B	
602.80			
Hard	6		
Brown, Moist	13	4.5	16
SILTY CLAY LOAM (CL/ML)	16	P	
-5			
600.30			
Hard to Very Hard	6		
Brown, Moist	17	5.6	18
SILTY CLAY, trace sand and gravel (CL/ML)	17	B	
	5		
	10	8.3	21
-10	13	B	
	4		
	8	4.5	20
	15	P	
592.80			
Auger refusal at 13.5 feet	50/2"		
End of Boring			NR
-15			
-20			

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)

Illinois Department of Transportation
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SOIL BORING LOG

Date 6/29/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp D **LOGGED BY** JEB

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-61
Station
Offset
Ground Surface Elev. 606.65 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After ____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
6 inches of Topsoil 606.15			
Hard Brown, Moist SILTY CLAY, trace gravel (CL/ML)	7		
	8 11	4.6 B	15
	5		
	7 11	5.4 B	21
-5			
	5		
	5 11	4.2 B	19
	5		
	11 14	5.0 B	19
-10			
	3		
594.65	9 24	4.6 B	20
Hard Brown, Moist SILTY CLAY LOAM (CL/ML)			
592.65	50/4"		
Auger refusal at 14 feet End of Boring		4.6 B	20
-15			
-20			

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)

Illinois Department of Transportation
Division of Highways
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SOIL BORING LOG

Date 6/30/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp D **LOGGED BY** AJ

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-62
Station
Offset
Ground Surface Elev. 596.24 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After ____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				12 inches of Topsoil
595.24				
	7			Very Dense
	50/1"		11	Brown, Moist
				SAND, with gravel (SPG)
593.74				
				Auger refusal at 13.5 feet
				End of Boring
-5				
-10				
-15				
-20				

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)

Illinois Department of Transportation
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SOIL BORING LOG

Date 6/30/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp D **LOGGED BY** AJ

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-63
Station
Offset
Ground Surface Elev. 596.16 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After ____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description	Elevation
				12 inches of Topsoil	595.16
	6			Very Dense	
	50/4"		15	Brown, Moist SANDY LOAM, with gravel (SM)	594.16
				Gray WEATHERED LIMESTONE	593.66
				Auger refusal at 2.5 feet End of Boring	
-5					
-10					
-15					
-20					

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)

Illinois Department of Transportation
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SOIL BORING LOG

Date 6/24/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp D **LOGGED BY** DD

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-64
Station
Offset
Ground Surface Elev. 600.88 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After ____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				12 inches of Asphalt
599.88				
	7			Dark Brown, Dry
	3		3	FILL: SAND, trace gravel
	3			
	8			
596.88				
596.38	19		20	Dense
-5	22			Light Brown, Moist
				SILT (ML)
				Dense to Very Dense
				Light Brown, Moist
	22			SANDY LOAM, with gravel (SM)
593.88	50/1"		8	
				Auger refusal at 7 feet
-10				
-15				
-20				

End of Boring

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)

Illinois Department of Transportation
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SOIL BORING LOG

Date 6/24/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp D **LOGGED BY** DD

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-65
Station
Offset
Ground Surface Elev. 602.67 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter Dry **ft**
Upon Completion N/A **ft**
After ____ **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				12 inches of Asphalt
				601.67
	6			Dark Brown, Wet
	4	3.0	20	FILL: SAND
	5	P		600.67
				Very Stiff
				Gray, Moist
				SILTY CLAY (CL/ML)
	5			
	6	4.0	20	
-5	10	B		
				596.67
	50/4"			Very Dense
			3	Light Brown, Dry
				595.67
				SAND, with gravel (SPG)
				Auger refusal at 7 feet
-10				
-15				
-20				

End of Boring

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)

Illinois Department of Transportation
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SOIL BORING LOG

Date 6/24/22

ROUTE I-80 **DESCRIPTION** Embankment - Ramp D **LOGGED BY** DD

SECTION I-80 over Des Plaines River **LOCATION** , **SEC.** 16, **TWP.** 35 N, **RNG.** 10 E,
Latitude , **Longitude**

COUNTY Will **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO.
Station

BORING NO. SSB-66
Station
Offset
Ground Surface Elev. 605.04 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion N/A ft
After ____ **Hrs.** N/A ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
14 inches of Asphalt				
603.88	5			
Dark Brown, Moist FILL: SAND, trace gravel 603.54	6	2.0	15	
Stiff to Very Stiff	6	P		
Brown, Moist SILTY CLAY, trace gravel (CL/ML)				
601.04	3			
Loose 600.54	4	1.0	21	
Light Brown, Very Moist SILT (ML) -5	6	P		
Stiff to Hard	5			
Brown, Moist SILTY CLAY, trace gravel (CL/ML)	7	4.2	20	
	11	B		
597.04				
Auger refusal at 8 feet				
-10				
-15				
-20				

End of Boring

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)