

**ROADWAY GEOTECHNICAL REPORT
SECTION 2025-2011-RS
SHOULDER ADDITION AND PAVEMENT RESURFACING
ARCHER AVENUE BETWEEN 123RD STREET & BELL ROAD
CONTRACT 80B30
COOK COUNTY, ILLINOIS**

01/23/2026

Prepared for:

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1.0 INTRODUCTION

Interra, Inc. (INTERRA) was tasked by Terra Engineering Ltd. (TERRA), to conduct a subsurface soil investigation and to prepare the Roadway Geotechnical Report (RGR) for improvements on Archer Avenue between 123rd Street (McCarthy Road) and Bell Road, in Cook County, Illinois. The proposed improvements on IL 171 will consist of resurfacing and widening of the existing roadway to include full depth paved shoulders.

This RGR presents the findings of INTERRA's subsurface soil exploration, groundwater conditions, results of laboratory testing, geotechnical evaluations performed, recommendations and construction considerations for the roadway.

Project Description

The project site is identified as Archer Avenue (IL 171) between 123rd Street and Bell Road. The project area extends between Village of Lemont and Village of Palos Park. Village of Lemont is a community of about 17,500. Village of Palos Park is a community of about 5,000. The project area is located south-west of Chicago. The project area station limits extend between Station 155+25 and Station 266+00 on Archer Avenue. The proposed work consists of approximately 11,000 feet of roadway reconstruction. The new shoulder addition is proposed for approximately 7,900 feet along the southbound outside shoulder and 6,700 feet along the northbound outside shoulder. A 5-foot widening is proposed along each side of the roadway.



2.0 PROJECT SCOPE

INTERRA's scope of work included locating and drilling eighteen (18) roadway geotechnical borings to a depth of 10.0 feet and collecting twelve (12) full depth pavement cores. The soil borings were drilled in the proposed reconstruction and widening areas. The scope also included evaluating the soil below subgrade elevation at the roadway reconstruction areas.

3.0 SITE DESCRIPTION

The site is in Lemont Township, defined as S23 T37N R11E of the Third Principal Meridian. The approximate coordinates at the south end of the project are 41.664687N and 87.961688W, and the approximate coordinates at the north end are 41.684882N and 87.932656W. The ground surface elevation varied approximately between 697 feet and 718 feet at the borehole locations.

4.0 FIELD INVESTIGATION

The locations of the borings are presented in the Borehole Location Plan in Appendix A. The boreholes were marked in the field by INTERRA. Prior to drilling, the drilling sub-contractor Geocon Professional Services (GEOCON) contacted the local one-call utility clearance service (JULIE) to clear underground utilities.

Boreholes were drilled on 11/19/2025 and 11/20/2025 with a Diedrich D-50 truck mounted drill rig. INTERRA's geologist was present during the drilling to collect and log the soil samples. The borings were drilled, and samples were collected in general accordance with the guidelines in the IDOT Geotechnical Manual. Soil sampling was performed per AASHTO T-206, "Penetration Test and Split Barrel Sampling of Soils". Soil sampling was performed at 2.5-foot intervals. The soil samples were taken in conjunction with the Standard Penetration Test where a driving resistance to a standard 2" split-spoon samples indicate relative density of granular materials and consistency of cohesive soils. Soil specimens from the borings were visually identified in accordance with the AASHTO and IDOT textural classification systems.



Unconfined compressive strength tests were performed on cohesive samples using an Illinois modified RIMAC tester. Cohesive samples that could not be tested with a RIMAC tester were tested with a pocket penetrometer to estimate the unconfined compressive strength. Water level readings were taken during drilling and immediately after completion of drilling.

All soil samples were placed in glass jars, labelled, and transported to INTERRA's laboratory for further testing. Field borehole logs as required are edited and presented in Appendix B.

5.0 LABORATORY TESTING

Laboratory testing included Moisture Content tests (AASHTO T 265) on all recovered split-spoon soil samples. Grainsize Analysis (AASHTO T 88), Atterberg Limits (AASHTO T 89, 90) and Organic Content tests (AASHTO T 194) were performed on selected samples based on their location, moisture content and visual observations. Laboratory test reports are presented in Appendix C.

6.0 SUMMARY OF CLIMATIC CONDITIONS

The geotechnical exploration was performed in November, 2025. Table 1 indicates the total precipitation in the preceding months of drilling along with historical average (normal) for the month for last 25 years. The observations were obtained from the National Weather Service website for Chicago O'Hare International Airport, IL.

Table 1: Precipitation Data

Month	Actual Precipitation (in.)	Normal Precipitation (in.)	Departure from Normal (+/-in.)
July, 2025	4.29	4.17	0.12
August, 2025	5.03	4.09	0.94
September, 2025	0.49	3.11	-2.62
October, 2025	2.67	3.24	-0.57



Actual monthly precipitation is observed to be close to the historical average during the preceding months of drilling. This shows that the moisture of the surface soils and the ground water levels noted during drilling are similar to the normal levels.

7.0 SUBSURFACE CONDITIONS

Table 2.0 summarizes the boring depth and groundwater depth encountered while drilling. The site mostly encountered stiff to hard clayey soils below the pavement/topsoil. Detailed description of soil stratification is provided in the boring logs (Appendix B).

Table 2 –Summary of Subsurface Conditions

Boring No.	Station	Surface Elevation (feet)	Depth (feet)	Groundwater Depth During Drilling (feet)	Groundwater Depth Immediately After Drilling (feet)
B-01	166+00	718.1	10.0	Dry	Dry
B-02	171+17	715.1	10.0	Dry	Dry
B-03	175+95	708.0	10.0	Dry	Dry
B-04	181+00	706.4	10.0	6.0	4.8
B-05	185+97	709.5	10.0	Dry	Dry
B-06	190+94	709.1	10.0	Dry	Dry
B-07	196+52	707.7	10.0	Dry	Dry
B-08	200+96	702.2	10.0	Dry	Dry
B-09	205+97	703.0	10.0	Dry	Dry
B-10	210+86	706.1	10.0	Dry	Dry
B-11	216+03	711.0	10.0	Dry	Dry
B-12	220+93	711.0	10.0	Dry	Dry
B-13	225+96	709.0	10.0	Dry	Dry
B-14	230+97	698.3	10.0	Dry	Dry
B-15	236+01	697.0	10.0	Dry	Dry
B-16	240+77	700.6	10.0	Dry	Dry
B-17	245+96	704.2	10.0	Dry	Dry
B-18	260+13	697.0	10.0	Dry	Dry

Groundwater Conditions

Groundwater levels were recorded during drilling, and immediately after completion of drilling. The measured water levels are given in Table 2. It should be noted that fluctuations in groundwater levels may occur due to seasonal variations, rainfall, or



other climatic conditions. Hence, the water levels reported may not represent the long-term groundwater levels. Typical long term groundwater levels are identified by the changes in the color of the soils from brown to gray. Based on the observed water levels in the boreholes, we expect that the long term water table is below the exploration depth of 10.0 feet.

Pavement Cores

A total of twelve (12) pavement cores were recovered to determine the existing pavement thickness and condition. The pavement thickness varied between 3.0 inches and 17.5 inches. Pavement core photo logs are presented in Appendix D of this report.

8.0 CONCLUSIONS AND RECOMMENDATIONS

8.1 Roadway

8.1.1 Subgrade Preparation for Intersection Improvements - General

Topsoil thickness was measured directly in boreholes advanced in unpaved areas. For boreholes completed through pavement, topsoil thickness was obtained from measurements taken in the adjacent parkway. The observed topsoil thickness ranged from 1 to 4 inches, with an average thickness of 2.6 inches. Based on the measured thickness, a topsoil stripping depth of 6 inches is recommended for estimating purposes. Topsoil should be completely stripped and removed from the proposed pavement areas. The actual need for topsoil removal should be determined in the field. We recommend that all the topsoil that is stripped be sorted and reused for the proposed landscaping improvements.

Subgrade preparation should be performed in accordance with Article 301 of the IDOT Standard Specifications for Road and Bridge Construction (SSRBC, 2022). All new pavements or complete reconstruction should be supported on 12 inches of improved subgrade, per the IDOT Bureau of Design and Environment (BDE) Aggregate Subgrade



Improvement Special Provision (April 1, 2022). The top eight (8) inches of the subgrade should be disked, air dried, and recompact to achieve the required density and stability. After compaction, the subgrade should have a minimum dry density of 95 percent of standard laboratory dry density and a minimum IBV 3.0 as the plans are expected include 12 inches of improved subgrade. The minimum IBV of 8.0 would have been required if the plans did not include 12 inches of improved subgrade.

8.1.2 Removal and Replacement of Unstable Soils

Based on the boreholes, below the pavement/topsoil, mostly stiff to hard clayey soils were encountered. Medium stiff clayey soils were encountered at borings B-01, B-09 and B-12. However, based on the proposed profile, there is enough cover as explained in Section 4.0 of the IDOT Subgrade Stability Manual. Soil samples with high moisture contents or indications of potentially expansive subgrade soil were observed in borings B-08 and B-12. It is recommended that the unstable soil in these locations be removed or treated with lime to reduce moisture and plasticity. For detailed information on areas of remediation, please refer to Table 3.

Table 3: Subgrade Treatment Recommendations

Boring Location	From Station	To Station	Lateral Limits	Vertical Extent of Treatment Depth ¹ (inches)	Reason for Treatment, Recommended Treatment Type
B-08	198+50	203+50	Full width of widening	12.0	High moisture, high plasticity, undercut/lime treatment ¹
B-12	218+50	223+50	Full width of widening	24.0	High moisture, undercut/lime treatment ¹

¹ Depth of undercut/lime treatment needs to be measured from the bottom of the 12-inch subgrade improvement layer.

Unsuitable or unstable soils should be removed and replaced with material meeting the requirements of the IDOT Bureau of Design and Environment (BDE) Aggregate Subgrade Improvement Special Provision (April 1, 2022). In addition to the undercuts



recommended in Table 3, it is recommend that a plan quantity of Aggregate Subgrade Improvement (CU YD) equal to 25% of the planned full depth pavement area assuming a thickness of 12 inches should be added for estimating purposes. This material should be used to replace any unsuitable soils below the bottom of the improved subgrade layer that are encountered in the field during construction. The actual need for removal and replacement with Aggregate Subgrade Improvement should be determined in the field at the time of construction by the Geotechnical Engineer or soils inspector. Proof rolling should be performed in accordance with Section 3.3 of IDOT Subgrade Stability Manual to identify unstable/unsuitable subgrade soils. All potentially unstable soils should be tested with a cone penetrometer and treated in accordance with Article 301.04 of the SSRBC and the undercut guidelines in the IDOT Subgrade Stability Manual.

We recommend placing geotextile fabric at the base of undercut areas where low strength subgrade soils are encountered. The 12 inches of improved subgrade is not considered an undercut, and we do not recommend using it below 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. Fabric should meet the requirements of Article 210, Fabric for Ground Stabilization, of the SSRBC. It is recommended to include a plan quantity of Geotechnical Fabric for Ground Stabilization (SQ YD) equal to at least 25% of the planned pavement area, in addition to the area listed in the undercut table.

8.1.3 Pavement Design

In the Pavement design, both Illinois Bearing Ratio (IBR) and Subgrade Support Rating (SSR) values should be taken into consideration. We recommend using an SSR of FAIR and an IBR value of 2 for the existing subgrade soils.

Underdrains

To provide drainage for the proposed pavement areas, we recommend installing



longitudinal pipe underdrains under the new pavements and under the edge of new pavement in widening areas. However, we understand that if the proposed widening areas at the intersections are narrow, and if the drainage structures are over 200 feet away, this may not be feasible at some locations. Drains 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 (Adopted January 1, 2022) and consist of Type 2 underdrains.

8.1.4 Slope Stability Analysis

No embankments greater than 15 feet are proposed to be constructed. Hence, slope stability analyses were not performed.

8.1.5 Earthwork Quantity Calculations

A shrinkage factor of 15% should be used in calculating borrowed and furnished quantities.

9.0 CONSTRUCTION CONSIDERATIONS

- We do not anticipate any open excavations greater than 4 feet. If any temporary excavations are needed, they should be sloped no greater than 1V:1.5H. Excavations steeper or deeper than 4 feet should be analyzed individually. Potential for ground movements due to excavation on open roadways and utilities should be considered. All excavations should be performed in accordance with local, state and federal regulations.
- Excavated materials free from debris can be reused upon approval by Engineer.
- If any water is accumulated during construction, it can be removed using sump pump method. To facilitate dewatering, surface runoff and ditches should be directed away from excavations.
- If the project will need to apply for a NPDES storm water permit for construction site activities, Soil erosion factors (K factors) and erosion hazard ratings for each of the soil types within the project limits were obtained from NRCS website and



presented in Appendix D.

10.0 CONSTRUCTION MONITORING

Construction monitoring shall be in accordance with IDOT Standard Specifications, Special Provisions and Contract Plans. Construction monitoring shall be performed by an experienced geotechnical engineer or soils technician to monitor earthwork operations, soils compaction, and suitability of subgrade soils, location and depths of undercuts and to advise Engineer of actual soil conditions that differ from those in the geotechnical investigation report.

11.0 CLOSURE

The analysis and recommendations submitted in this report are based upon the data obtained from the soil boreholes performed at the locations indicated on the location plan. This report does not reflect any variations that may occur between these boreholes. In performing subsurface explorations, specific information is obtained at specific locations at specific times. It is a well-known fact that variations in soil and rock conditions exist on most sites between borehole locations. Also, groundwater levels vary from time to time. The nature and extent of variations may not become evident until the course of construction. If variations then appear evident, it will be necessary for a re-evaluation of the recommendations of this report after performing on-site observations during construction period and noting the characteristics of any variations.



We appreciate the opportunity to be of service to you. Should you need additional information or clarifications, please call us at (630) 754-8700.

Yours truly,

INTERRA, INC.



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Project Engineer



Ashok Guntaka, EI
Project Manager



Sanjeev Bandi, Ph.D., PE
Principal Engineer



Sudhakar "Rao" Doppalapudi, P.E.
QC/QA Reviewer

REFERENCES

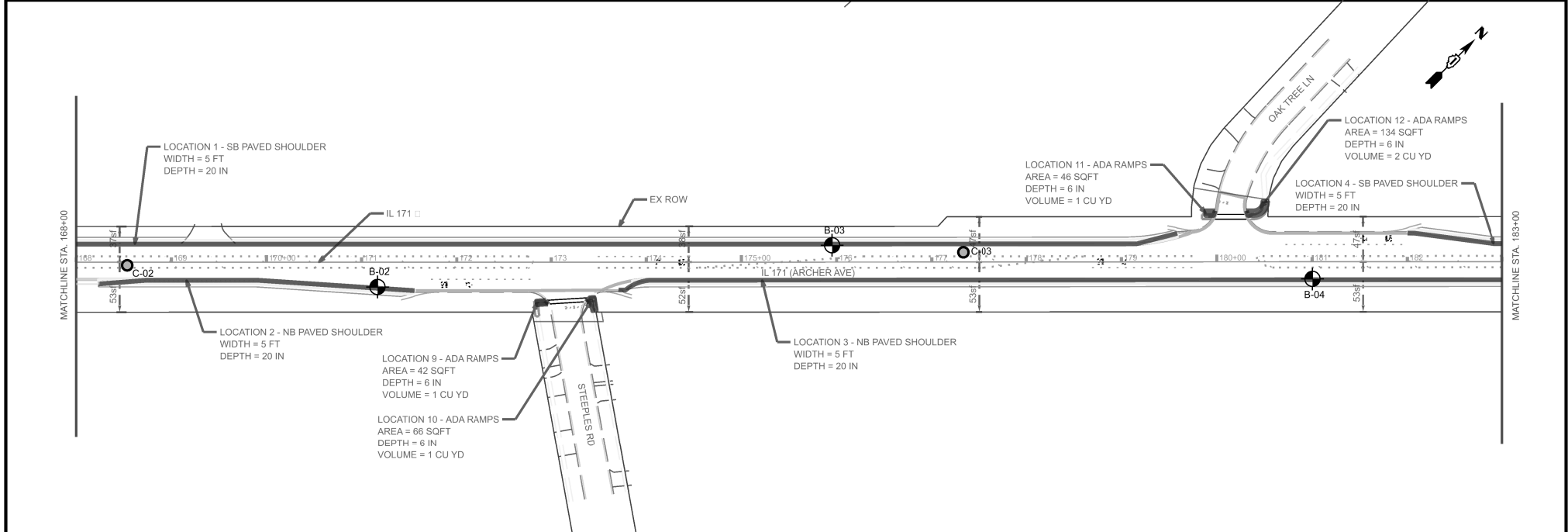
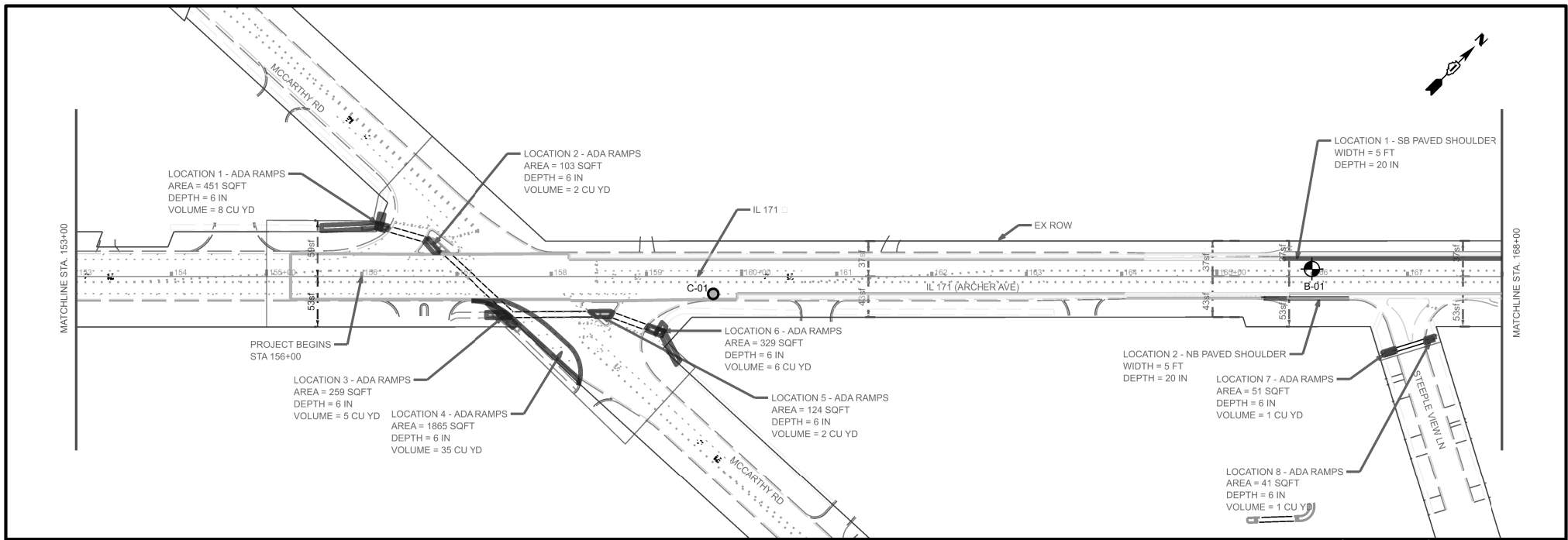
IDOT 2020. Geotechnical Manual, Illinois Department of Transportation.

IDOT 2022. Standard Specifications for Road and Bridge Construction. Illinois Department of Transportation.

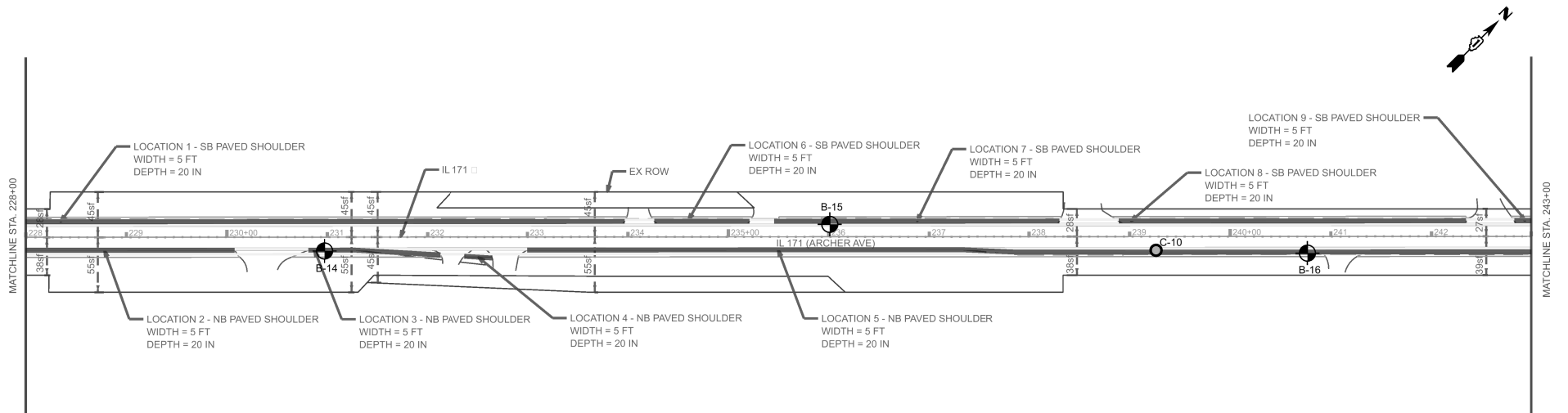
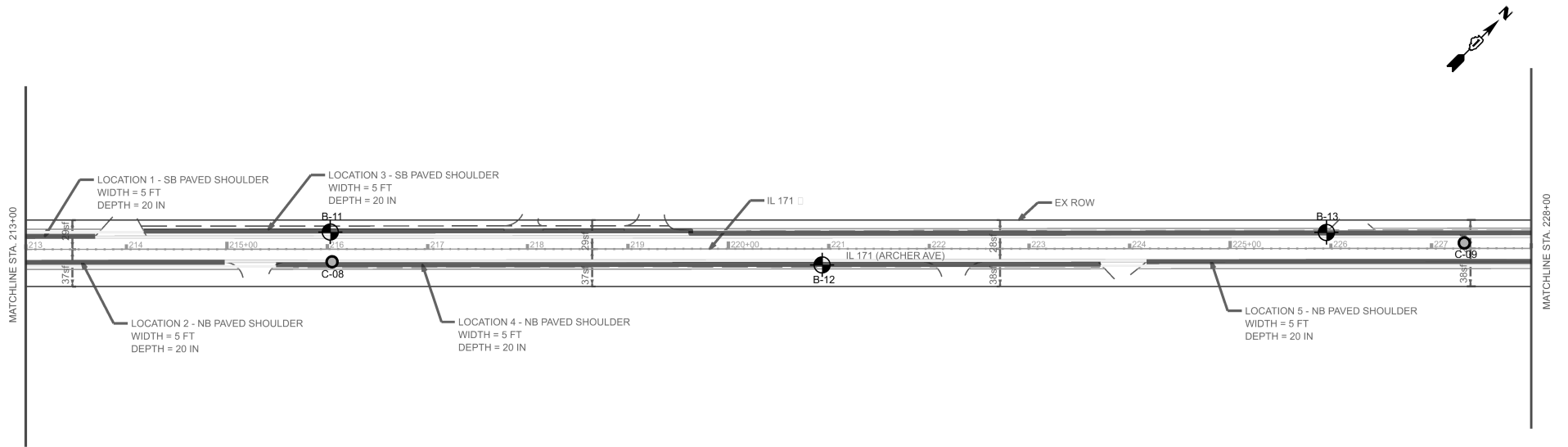


Appendix A

Borehole and Pavement Core Location Plan



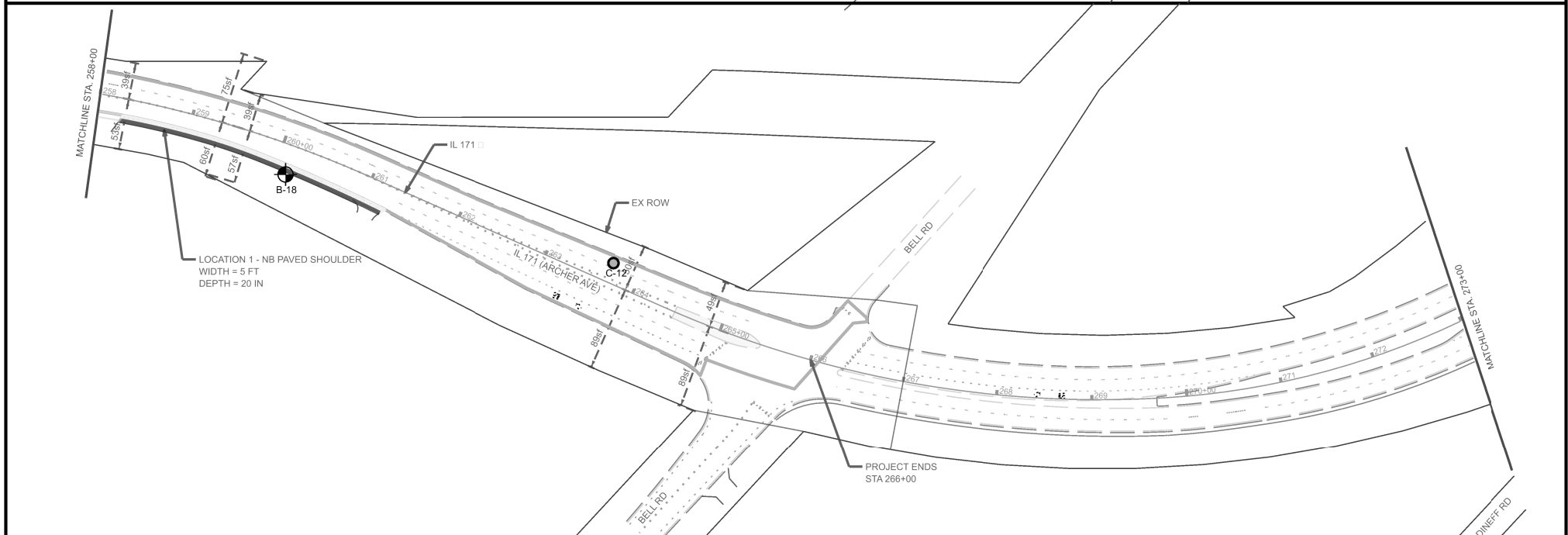
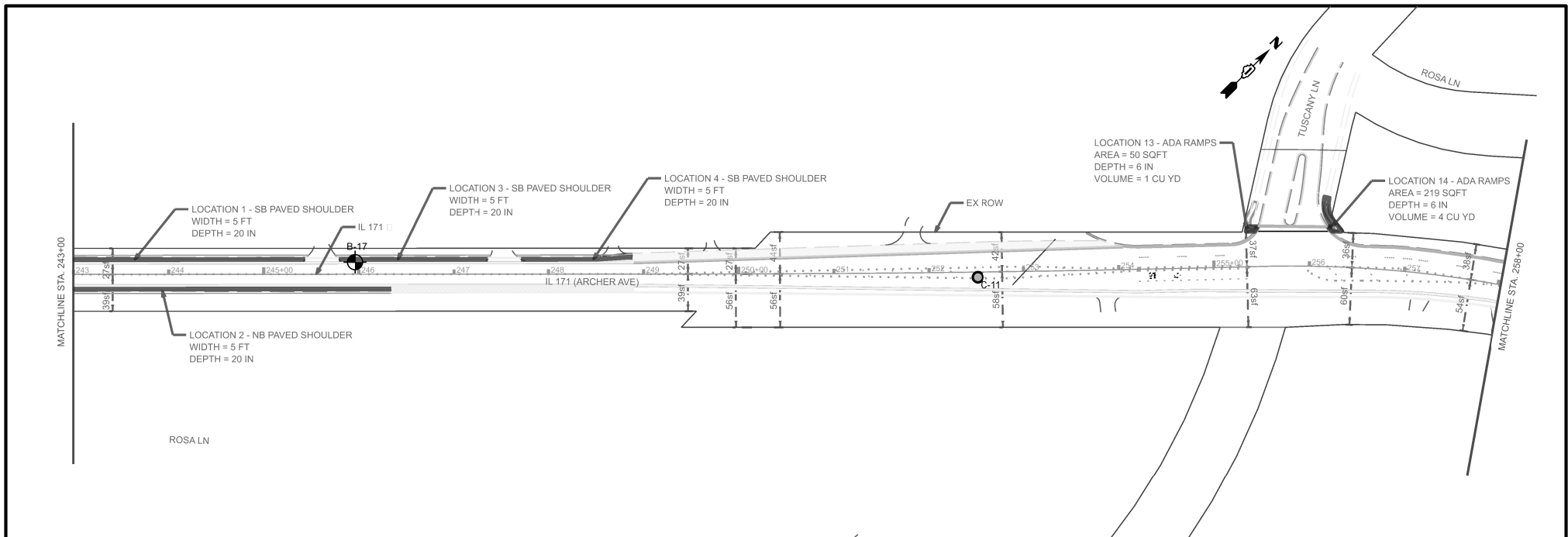
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	CHECKED BY	DATE	REVISED								
SHEET 1 OF 4 SHEETS				STA. 153+00 TO 183+00			CONTRACT NO.				
							ILLINOIS FED. AID PROJECT				



DRAWN BY	DATE	REVISED
CHECKED BY	DATE	REVISED

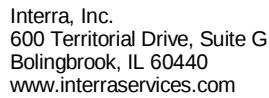
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SHEET	3 OF 4	SHEETS	STA. 213+00 TO 243+00

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CONTRACT NO.				
ILLINOIS FED. AID PROJECT				



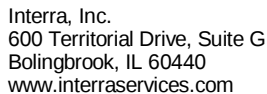
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	CHECKED BY	DATE	REVISED								
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								ILLINOIS	FED. AID PROJECT		

Appendix B
Soil Boring Logs



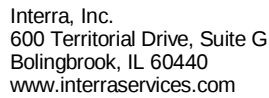
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SECTION	2025-2011-RS	LOCATION	E: 1086408.8; N: 1821231.6		
COUNTY	Cook County	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPED-50 (Auto 98.2% efficiency)	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



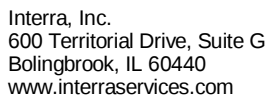
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SECTION	2025-2011-RS	LOCATION	E: 1086799.9; N: 1821571.3		
COUNTY	Cook County	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D-50 (Auto 98.2% efficiency)	

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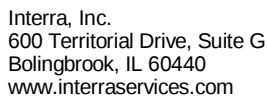
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COUNTY	Cook County	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPED-50 (Auto 98.2% efficiency)	

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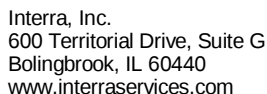
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COUNTY	Cook County	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D-50 (Auto 98.2% efficiency)	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



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COUNTY	Cook County	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D-50 (Auto 98.2% efficiency)	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



IL 171/Archer Avenue from 123rd to Bell Rd.		Geotechnical Boring		Date	11/10/20
ROUTE		DESCRIPTION		LOGGED BY	Sponaugle
SECTION	2025-2011-RS	LOCATION	E: 1088198.2; N: 1822970.1		
COUNTY	Cook County	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D-50 (Auto 98.2% efficiency)	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



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SOIL BORING LOG

Date 11/20/25

ROUTE IL 171/Archer Avenue
from 123rd to Bell Rd. DESCRIPTION Geotechnical Boring LOGGED BY Sponaugle

SECTION 2025-2011-RS LOCATION E: 1088559.9; N: 1823397.0

COUNTY Cook County DRILLING METHOD Hollow Stem Auger HAMMER TYPED 50 (Auto 98.2% efficiency)

STRUCT. NO. NA
Station NA

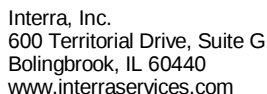
BORING NO. B-07
Station 196+52
Offset 31.10ft LT
Ground Surface Elev. 707.70 ft

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. NA ft
Stream Bed Elev. NA ft
Groundwater Elev.:
First Encounter Dry ft
Upon Completion Dry ft
After Filled Hrs. - ft

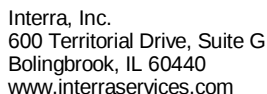
ASPHALT (7")	707.12			
CRUSHED AGGREGATE (4")	706.78			
Very stiff, yellowish Brown (10YR 5/4) with gray mottling SILTY CLAY, trace gravel, medium plasticity, moist	704.70	2 4 4	2.1 B	16.8
Medium stiff, reddish Brown (5YR 4/4) SANDY CLAY, medium plasticity, moist	702.20	2 3 5 -5	0.7 B	23.7
Very stiff, Brown (10YR 5/3) SILTY CLAY, trace gravel, medium plasticity, moist	699.70	5 7 8	3.0 S	14.7
Very stiff, Gray (10YR 5/1) SILTY CLAY, trace gravel, medium plasticity, moist	697.70	4 5 5 -10	3.4 B	12.8
End of boring at 10'. Boring was backfilled with soil cuttings and concrete.	-15			
	-20			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



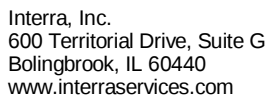
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COUNTY	Cook County	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D-50 (Auto 98.2% efficiency)	

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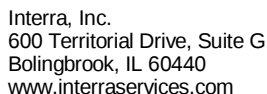
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COUNTY	Cook County	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D-50 (Auto 98.2% efficiency)	

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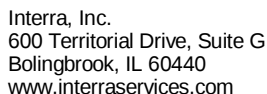
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COUNTY	Cook County	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D-50 (Auto 98.2% efficiency)	

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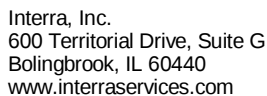
ROUTE	IL 171/Archer Avenue from 123rd to Bell Rd.	DESCRIPTION	Geotechnical Boring	LOGGED BY	Sponaugle
SECTION	2025-2011-RS	LOCATION	E: 1089955.1; N: 1824760.9		
COUNTY	Cook County	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D-50 (Auto 98.2% efficiency)	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



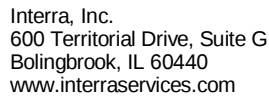
ROUTE	IL 171/Archer Avenue from 123rd to Bell Rd.	DESCRIPTION	Geotechnical Boring	LOGGED BY	Sponaugle
SECTION	2025-2011-RS	LOCATION	E: 1090326.5; N: 1825082.8		
COUNTY	Cook County	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D-50 (Auto 98.2% efficiency)	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



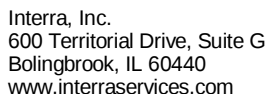
ROUTE	IL 171/Archer Avenue from 123rd to Bell Rd.	DESCRIPTION	Geotechnical Boring	LOGGED BY	Sponaugle
SECTION	2025-2011-RS	LOCATION	E: 1090660.7; N: 1825459.1		
COUNTY	Cook County	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D-50 (Auto 98.2% efficiency)	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



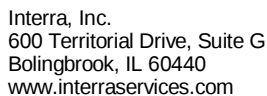
ROUTE	IL 171/Archer Avenue from 123rd to Bell Rd.	DESCRIPTION	Geotechnical Boring	LOGGED BY	Sponaugle
SECTION	2025-2011-RS	LOCATION	E: 1091037.8; N: 1825791.3		
COUNTY	Cook County	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE	D-50 (Auto 98.2% efficiency)

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



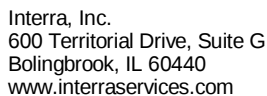
ROUTE	IL 171/Archer Avenue from 123rd to Bell Rd.	DESCRIPTION	Geotechnical Boring	LOGGED BY	Sponaugle
SECTION	2025-2011-RS	LOCATION	E: 1091377.0; N: 1826164.6		
COUNTY	Cook County	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D-50 (Auto 98.2% efficiency)	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



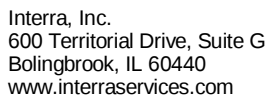
ROUTE	IL 171/Archer Avenue from 123rd to Bell Rd.	DESCRIPTION	Geotechnical Boring	LOGGED BY	Sponaugle
SECTION	2025-2011-RS	LOCATION	E: 1091735.2; N: 1826479.0		
COUNTY	Cook County	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D-50 (Auto 98.2% efficiency)	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



IL 171/Archer Avenue from 123rd to Bell Rd.		Geotechnical Boring		Date	11/20/2020
ROUTE		DESCRIPTION		LOGGED BY	Sponaugle
SECTION	2025-2011-RS	LOCATION	E: 1092083.3; N: 1826865.4		
COUNTY	Cook County	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D-50 (Auto 98.2% efficiency)	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)



ROUTE	IL 171/Archer Avenue from 123rd to Bell Rd.	DESCRIPTION	Geotechnical Boring	LOGGED BY	Sponaugle
SECTION	2025-2011-RS	LOCATION	E: 1093152.4; N: 1827772.2		
COUNTY	Cook County	DRILLING METHOD	Hollow Stem Auger	HAMMER TYPE D-50 (Auto 98.2% efficiency)	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)

Appendix C
Laboratory Test Reports



Interra File No.: 10094

SOIL TEST RESULTS SUMMARY FOR SUBGRADE SOILS

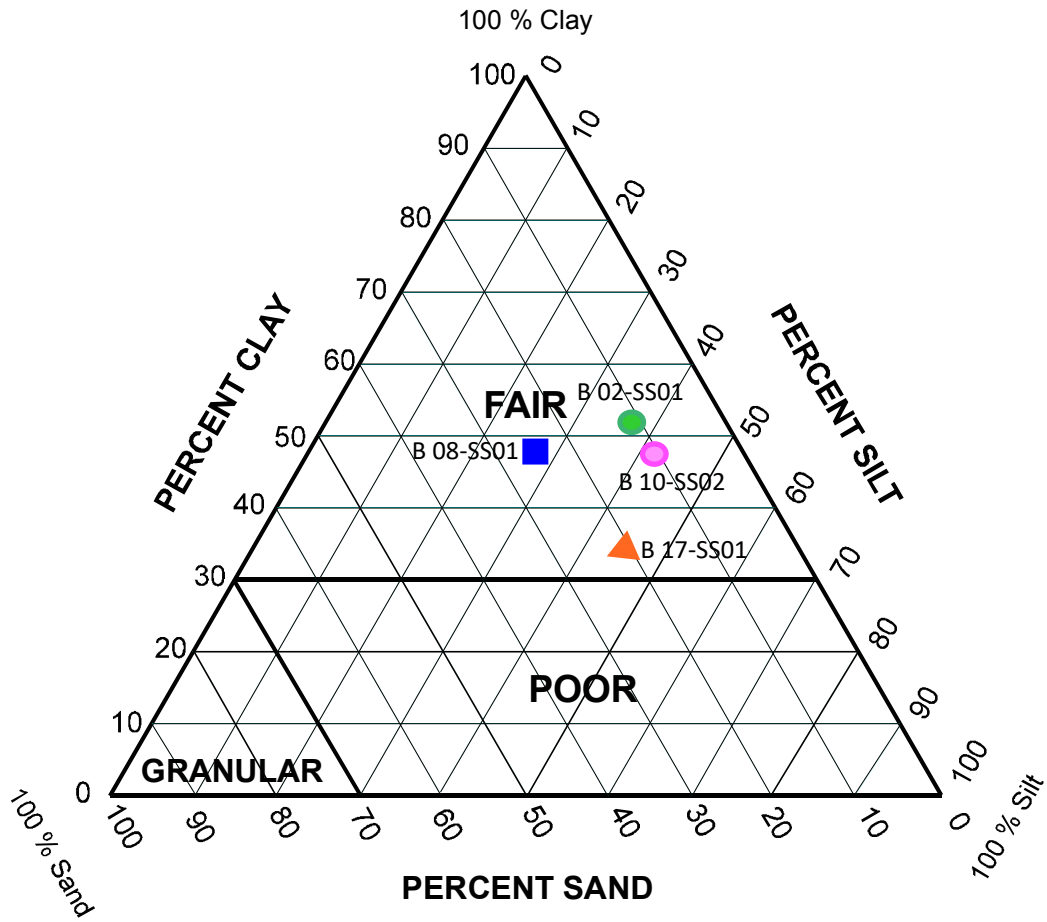
PROJECT: Geotechnical Investigation -Archer Avenue between 123rd St. and Bell Rd.

Route: IL 171 (Archer Avenue)

County: Cook, Illinois

SAMPLE	B 02-SS01	B 08-SS01	B 10-SS02	B 17-SS01
BORING LOCATION	B 02	B 08	B 10	B 17
DEPTH	1'-2.5'	1-2.5'	3.5-5'	1-2.5'
AASHTO CLASSIFICATION (AASHTO M 145)	A-7-5(26)	A-7-6(29)	A-7-6(41)	A-6(11)
ILLINOIS TEXTURAL CLASSIFICATION	Clay	Clay	Clay	Clay
GRADATION-PASSING 1" SIEVE %	100	100	100	100
" 3/4" " %	100	100	100	100
" 1/2" " %	100	100	100	100
" NO. 4 " %	100	99.8	100	99.8
" NO. 10 " %	99.8	97.7	99.7	97.9
" NO. 40 " %	96.7	89.8	97.7	92.5
" NO. 100 " %	91.7	82.2	92	86
" NO. 200 " %	88.6	78.2	90.4	79
GRAVEL (AASHTO T88) %	0.2	2.3	0.3	2.1
SAND (AASHTO T88) %	11.2	19.5	9.3	18.9
SILT (AASHTO T88) %	37.1	29.9	41.8	44.6
CLAY (AASHTO T88) %	51.5	48.3	48.6	34.4
SILT+FINE SAND (AASHTO T88) %	45.2	41.6	49.2	58.1
LIQUID LIMIT (AASHTO T89) %	47	58	62	31
PLASTICITY INDEX (AASHTO T90) %	27	36	41	15
IN SITU MOISTURE (AASHTO T 265)%	25.4	33.0	37.8	14.2
SUBGRADE SUPPORT RATING	FAIR	FAIR	FAIR	FAIR
ASSUMED IBR BASED ON SOIL CLASSIFICATION	2	2	2	3
REMARKS				

ARCHER AVENUE FROM 123RD STREET TO BELL ROAD
COOK COUNTY, IL
INTERRA PROJECT NO. 10094

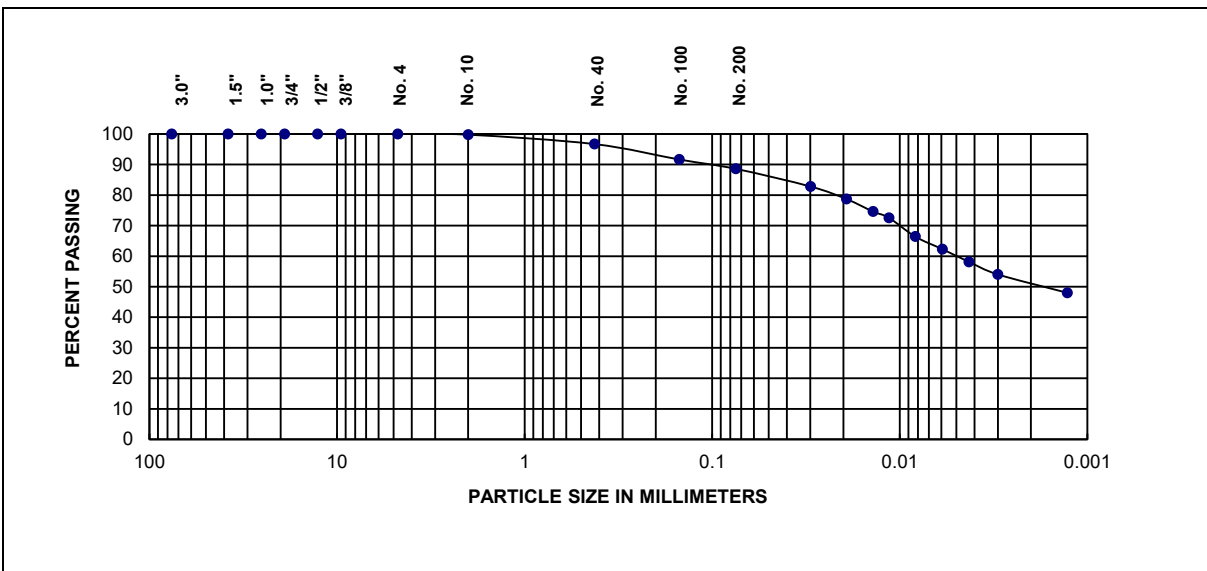


Subgrade Support Rating (SSR Chart)

	GRAIN SIZE ANALYSIS AASHTO T 88
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Project	PTB 215-007 WO No. 6 IL 171 from 123rd to Bell Rd Geotech						
Client	Terra Engineering, Ltd., 225 W. Ohio Street, 4th Floor, Chicago, IL 60654						
File No.	10094	Sample #	B 02 - SS-01	Date Tested	12/1/2025	Tested by	SV
						Qc by	AB

Date Sample Received:	11/19/2025
Sample Location	1-2.5'
Sample Description	Dark grayish brown (10YR 4/2) clay, trace gravel



% + 3"	% Gravel	% Sand	Fines	
			% Silt	% Clay
0.0	0.2	11.2	37.1	51.5

For coarse-grained soils with <12% Fines	D60(mm)	D30(mm)	D10(mm)	Cu	Cc

Sieve Size	Percent Passing	Liquid Limit, L _L	Plastic Limit, PL	Plasticity Index, PI	
3.0"	100.0	47	20	27	
1.5"	100.0				
1.0"	100.0				
3/4"	100.0	AASHTO Classification:			A-7-5(26)
1/2"	100.0				
3/8"	100.0	IDH Classification:			Clay
No. 4	100.0				
No. 10	99.8				
No. 40	96.7				
No. 100	91.7				
No. 200	88.6				

Remarks:	
Silt + Fine Sand (%) =	45.2

www.interraservices.com	Test ID	81393
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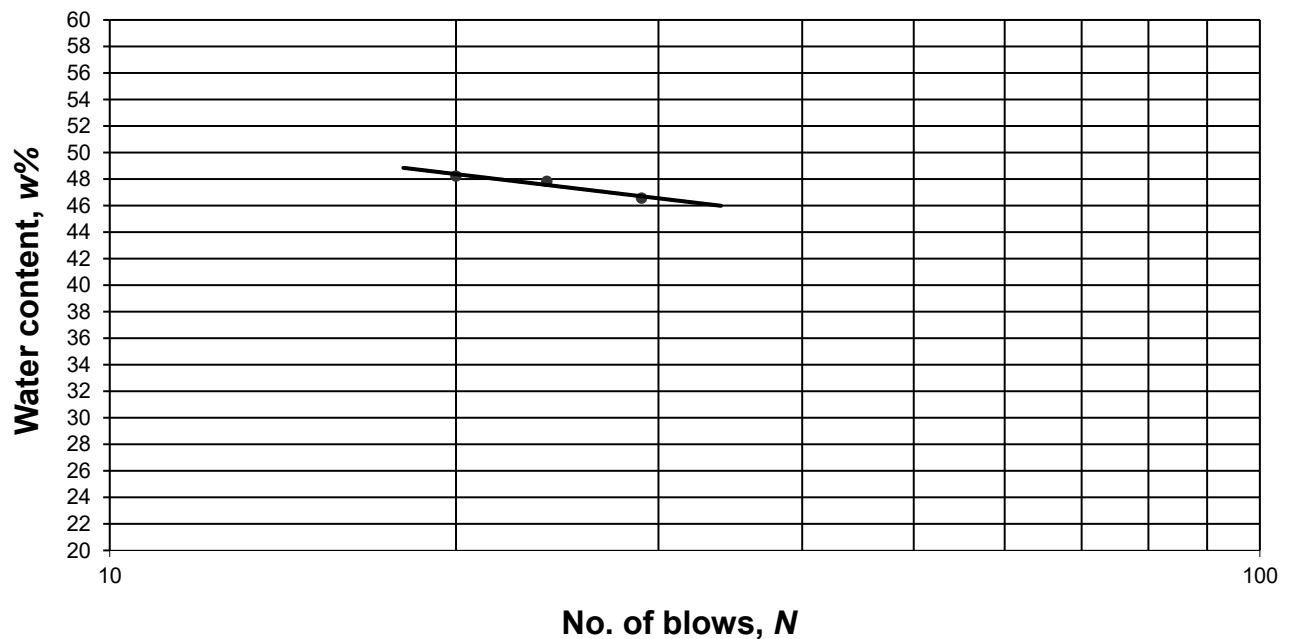
Atterberg Limits

AAASHTO T 89,90

Project	PTB 215-007 WO No. 6 IL 171 from 123rd to Bell Rd Geotech						
Client	Terra Engineering, Ltd., 225 W. Ohio Street, 4th Floor, Chicago, IL 60654						
File No.	10094	Sample #	B 02 - SS-01	Date Tested	12/2/2025	Tested By	BKP
						Qc By	AB

Date Sample Recd.	11/19/2025
Sample Location	1-2.5'
Sample Description	Dark grayish brown (10YR 4/2) clay, trace gravel

LIQUID LIMIT DETERMINATION



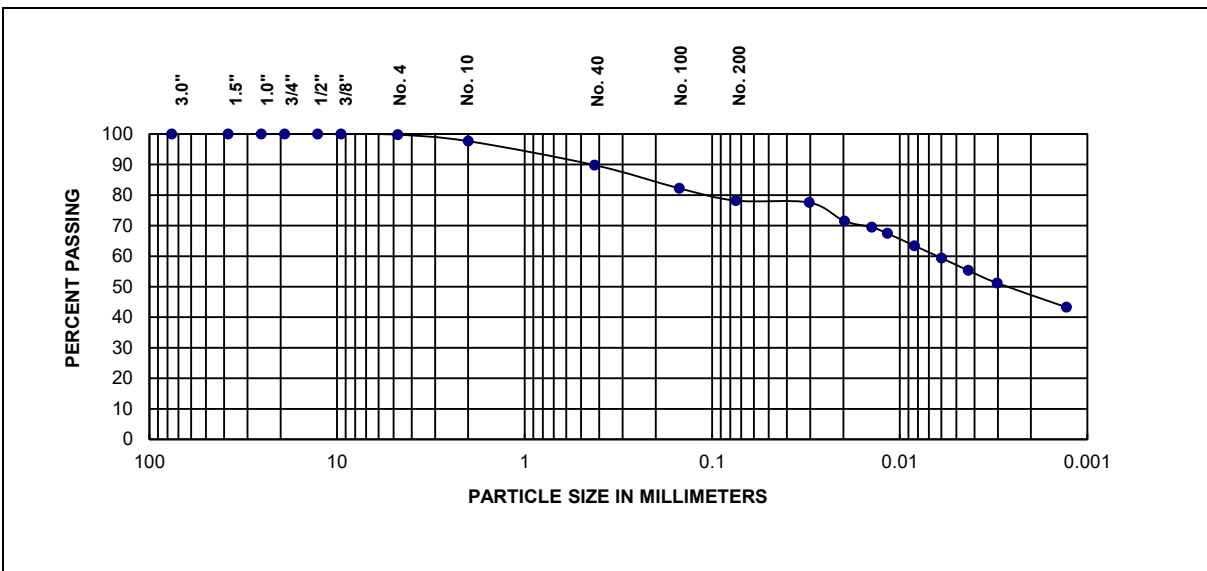
Results					
Liquid Limit, LL	47	Plastic Limit, PL	20	Plasticity Index, PI	27

Remarks					

	GRAIN SIZE ANALYSIS AASHTO T 88
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Project	PTB 215-007 WO No. 6 IL 171 from 123rd to Bell Rd Geotech						
Client	Terra Engineering, Ltd., 225 W. Ohio Street, 4th Floor, Chicago, IL 60654						
File No.	10094	Sample #	B 08 - SS-01	Date Tested	12/1/2025	Tested by	SV
						Qc by	AB

Date Sample Received:	11/19/2025
Sample Location	1-2.5'
Sample Description	Dark grayish brown (10YR 4/2) clay, trace gravel



% + 3"	% Gravel	% Sand	Fines	
			% Silt	% Clay
0.0	2.3	19.5	29.9	48.3

For coarse-grained soils with <12% Fines	D60(mm)	D30(mm)	D10(mm)	Cu	Cc

Sieve Size	Percent Passing	Liquid Limit, L _L	Plastic Limit, PL	Plasticity Index, PI
3.0"	100.0	58	22	36
1.5"	100.0			
1.0"	100.0			
3/4"	100.0	AASHTO Classification:		
1/2"	100.0			
3/8"	100.0	IDH Classification:		
No. 4	99.8			
No. 10	97.7			
No. 40	89.8			
No. 100	82.2			
No. 200	78.2			

Remarks:	
Silt + Fine Sand (%) =	41.6

www.interraservices.com	Test ID	81384
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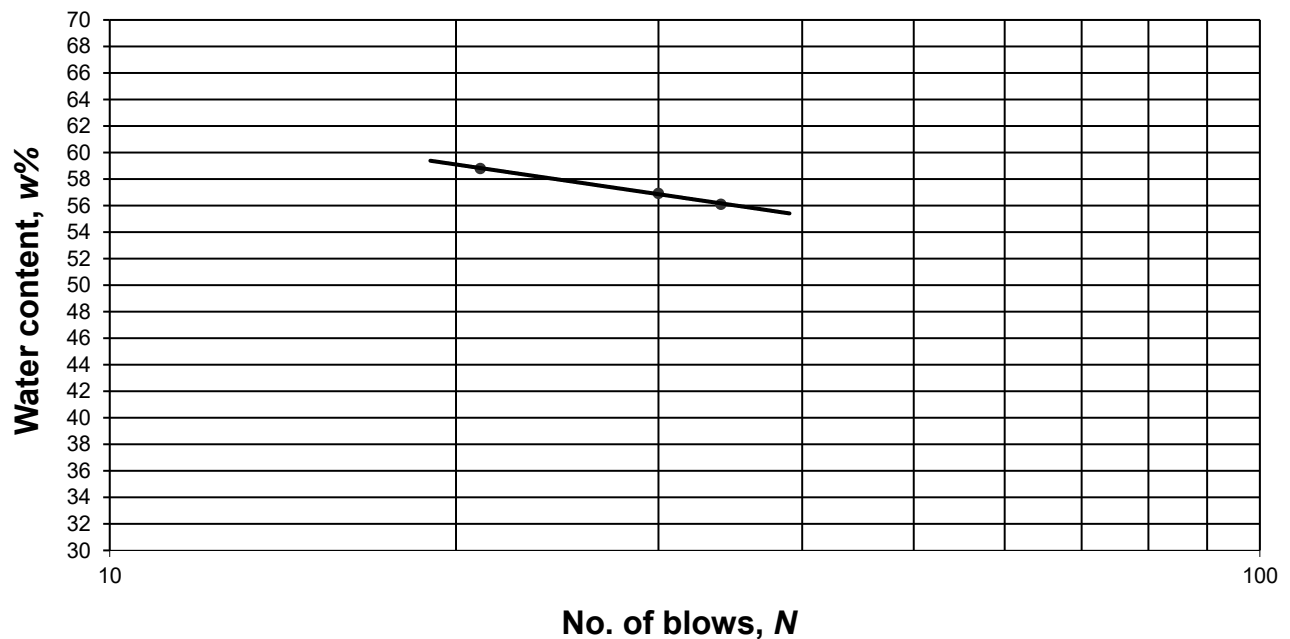


Atterberg Limits
AAASHTO T 89,90

Project	PTB 215-007 WO No. 6 IL 171 from 123rd to Bell Rd Geotech						
Client	Terra Engineering, Ltd., 225 W. Ohio Street, 4th Floor, Chicago, IL 60654						
File No.	10094	Sample #	B 08 - SS-01	Date Tested	12/2/2025	Tested By	BKP
						Qc By	AB

Date Sample Recd.	11/19/2025
Sample Location	1-2.5'
Sample Description	Dark grayish brown (10YR 4/2) clay, trace gravel

LIQUID LIMIT DETERMINATION



Results					
Liquid Limit, LL	58	Plastic Limit, PL	22	Plasticity Index, PI	36

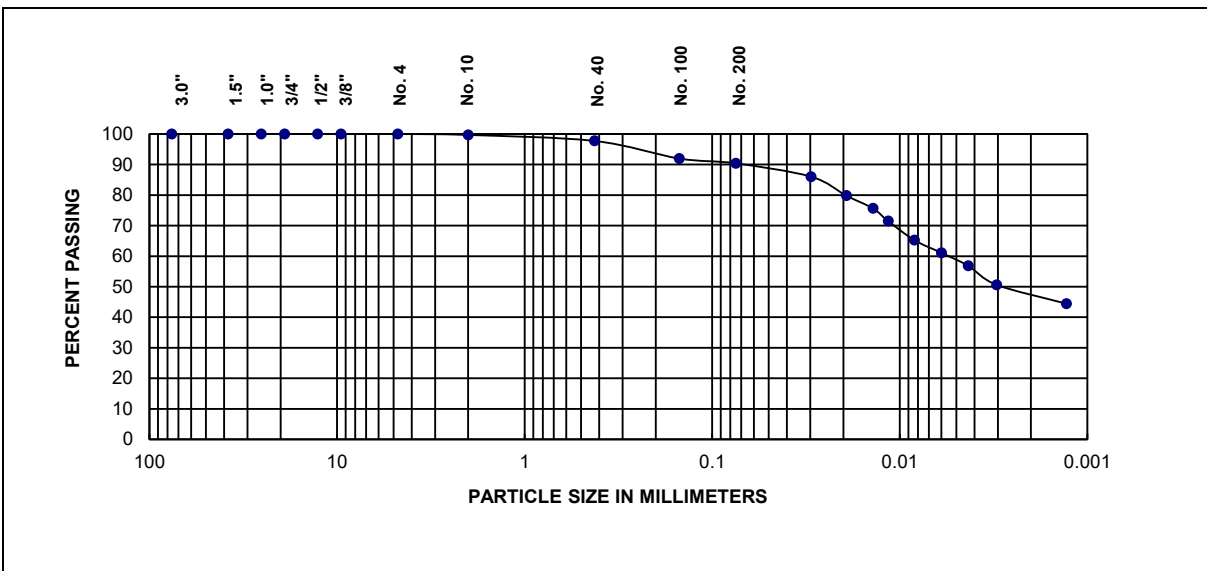
Remarks					

	GRAIN SIZE ANALYSIS AASHTO T 88
---	--

Project	PTB 215-007 WO No. 6 IL 171 from 123rd to Bell Rd Geotech					
Client	Terra Engineering, Ltd., 225 W. Ohio Street, 4th Floor, Chicago, IL 60654					
File No.	10094	Sample #	B 10 - SS-02	Date Tested	12/1/2025	Tested by SV
					Qc by	AB

Date Sample Received: 11/19/2025

Sample Location	3.5-5'
Sample Description	Grayish brown (10YR 5/2) clay, trace gravel



% + 3"	% Gravel	% Sand	Fines	
			% Silt	% Clay
0.0	0.3	9.3	41.8	48.6

For coarse-grained soils with <12% Fines	D60(mm)	D30(mm)	D10(mm)	Cu	Cc

Sieve Size	Percent Passing	Liquid Limit, L _L	Plastic Limit, PL	Plasticity Index, PI
3.0"	100.0	62	21	41
1.5"	100.0			
1.0"	100.0			
3/4"	100.0	AASHTO Classification:		
1/2"	100.0			
3/8"	100.0			
No. 4	100.0	IDH Classification:		
No. 10	99.7			
No. 40	97.7			
No. 100	92.0			
No. 200	90.4			

Remarks:	
Silt + Fine Sand (%) = 49.2	

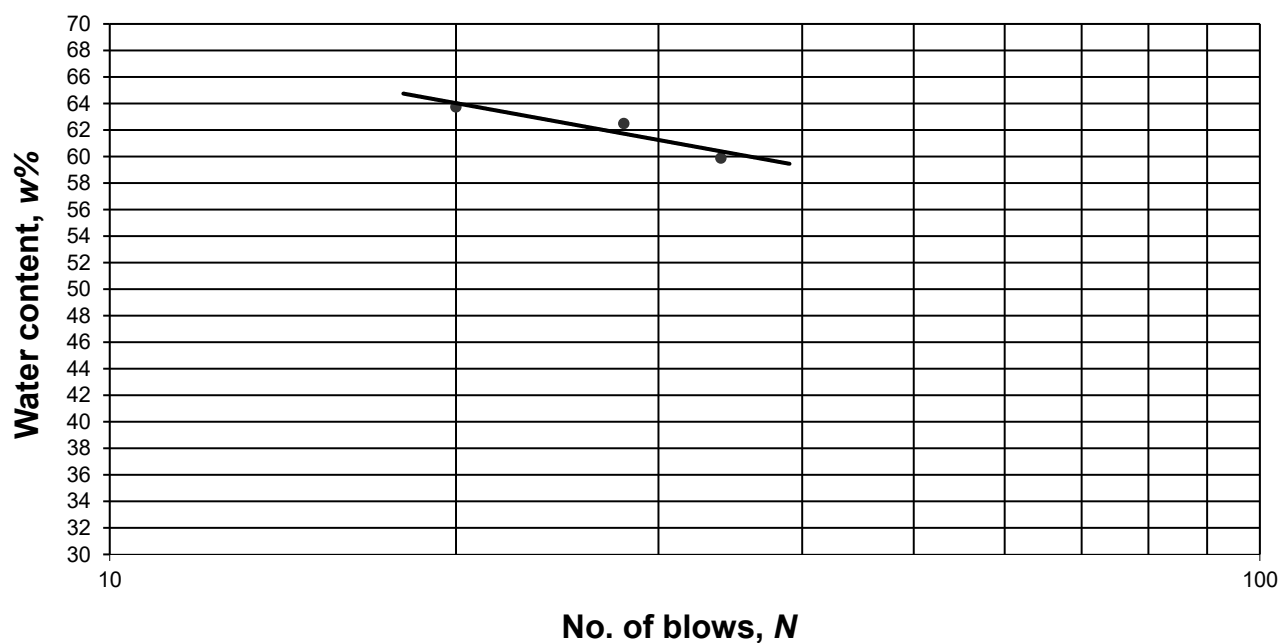


Atterberg Limits
AAASHTO T 89,90

Project	PTB 215-007 WO No. 6 IL 171 from 123rd to Bell Rd Geotech						
Client	Terra Engineering, Ltd., 225 W. Ohio Street, 4th Floor, Chicago, IL 60654						
File No.	10094	Sample #	B 10 - SS-02	Date Tested	12/2/2025	Tested By	BKP
						Qc By	AB

Date Sample Recd.	11/19/2025
Sample Location	3.5-5'
Sample Description	Grayish brown (10YR 5/2) clay, trace gravel

LIQUID LIMIT DETERMINATION



Results					
Liquid Limit, LL	62	Plastic Limit, PL	21	Plasticity Index, PI	41

Remarks					
				Test ID	81383



**Determination of Organic
Matter in Soils
by Wet Combustion
AASHTO T194-97**

Project	PTB 215-007 WO No. 6 IL 171 from 123rd to Bell Rd Geotech						
Client	Terra Engineering, Ltd., 225 W. Ohio Street, 4th Floor, Chicago, IL 60654						
File #	10094	Date Tested	12/3/2025	Tested by:	BKP	Checked by:	AB
Sample ID:	B 10 - SS-02		Location	3.5-5'			
Date Recd.	11/19/2025		Description	Grayish brown (10YR 5/2) clay, trace gravel			

Mass of the sample 0.763 g

Sample Titre 15.90 ml

Blank Titre 19.90 ml

Easily oxidised carbon, Percentage 0.83 %

Organic Matter, Percent 1.86 %

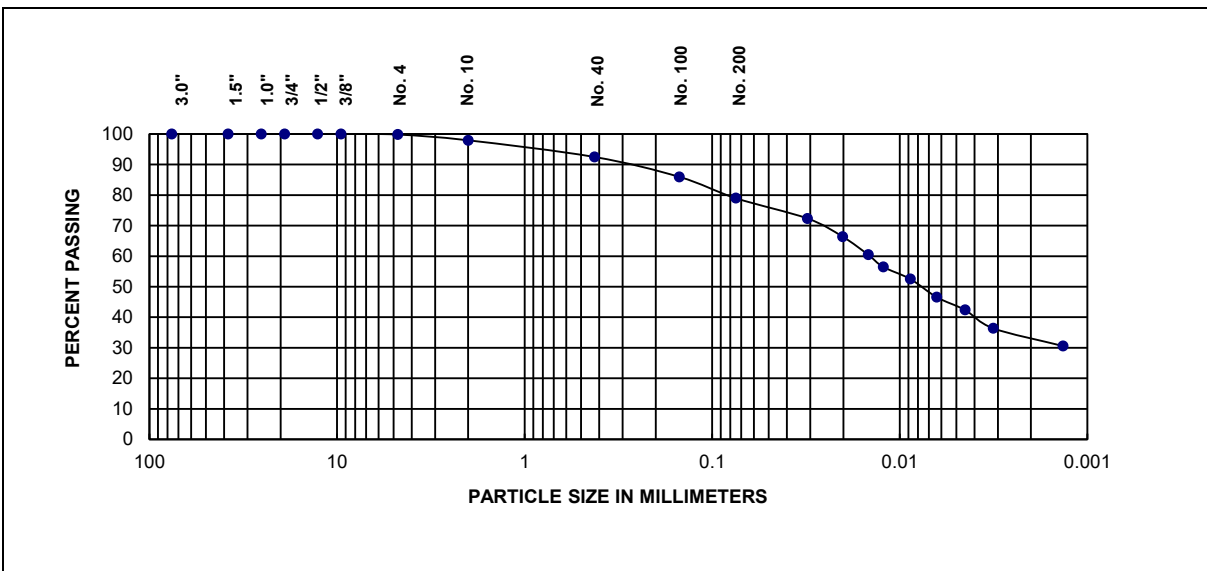
Remarks:

	GRAIN SIZE ANALYSIS AASHTO T 88
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Project	PTB 215-007 WO No. 6 IL 171 from 123rd to Bell Rd Geotech					
Client	Terra Engineering, Ltd., 225 W. Ohio Street, 4th Floor, Chicago, IL 60654					
File No.	10094	Sample #	B 17 - SS-01	Date Tested	12/1/2025	Tested by SV
					Qc by	AB

Date Sample Received: 11/20/2025

Sample Location	1-2.5'
Sample Description	Yellowish brown (10YR 5/4) clay, trace gravel



% + 3"	% Gravel	% Sand	Fines	
0.0	2.1	18.9	% Silt	% Clay
			44.6	34.4

For coarse-grained soils with <12% Fines	D60(mm)	D30(mm)	D10(mm)	Cu	Cc

Sieve Size	Percent Passing	Liquid Limit, L _L	Plastic Limit, PL	Plasticity Index, PI
3.0"	100.0	31	16	15
1.5"	100.0			
1.0"	100.0			
3/4"	100.0	AASHTO Classification: A-6(11)		
1/2"	100.0			
3/8"	100.0			
No. 4	99.8	IDH Classification: Clay		
No. 10	97.9			
No. 40	92.5			
No. 100	86.0			
No. 200	79.0			

Remarks:	
Silt + Fine Sand (%) = 58.1	

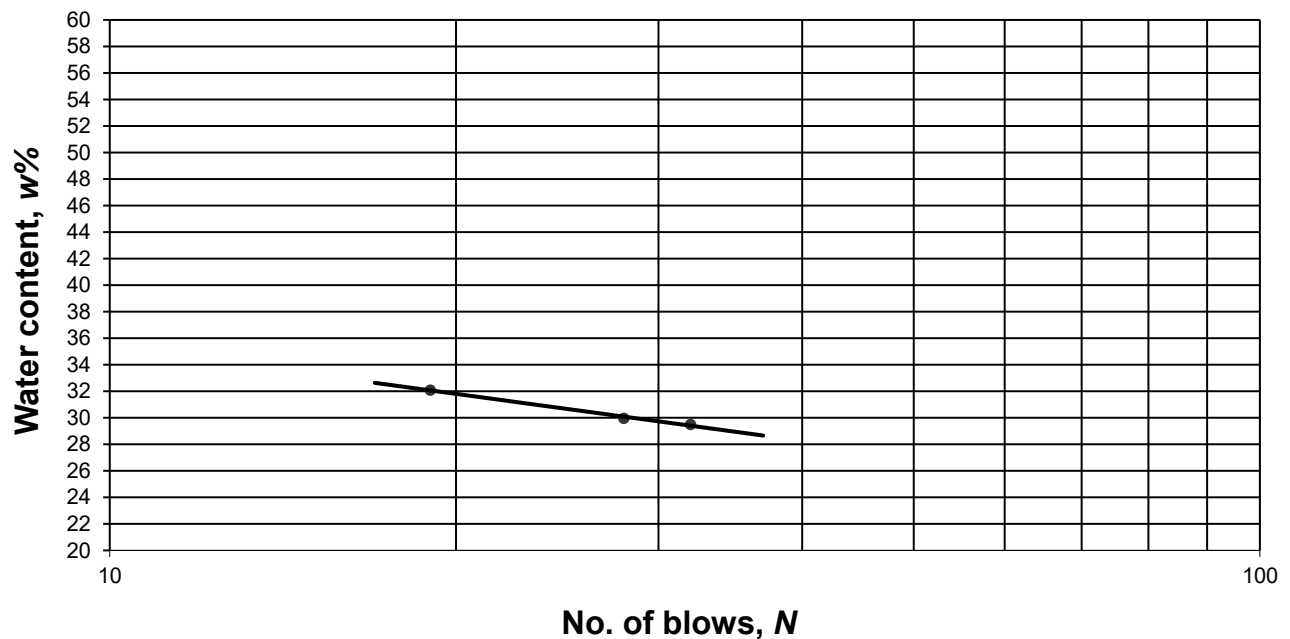


Atterberg Limits
AAASHTO T 89,90

Project	PTB 215-007 WO No. 6 IL 171 from 123rd to Bell Rd Geotech						
Client	Terra Engineering, Ltd., 225 W. Ohio Street, 4th Floor, Chicago, IL 60654						
File No.	10094	Sample #	B 17 - SS-01	Date Tested	12/2/2025	Tested By	BKP
						Qc By	AB

Date Sample Recd.	11/20/2025
Sample Location	1-2.5'
Sample Description	Yellowish brown (10YR 5/4) clay, trace gravel

LIQUID LIMIT DETERMINATION



Results					
Liquid Limit, LL	31	Plastic Limit, PL	16	Plasticity Index, PI	15

Remarks					

Appendix D
Pavement Core Logs

Table 1 - PAVEMENT CORE THICKNESS SUMMARY

File No : 10094	Pavement Coring - Shoulder Addition and Pavement Resurfacing of Archer Ave. Between 123rd St. & Bell Rd.
County : Cook	Field Technician : Paul Sponaugle
Section: Various	Cores Taken on : 11/19/25 and 11/20/25

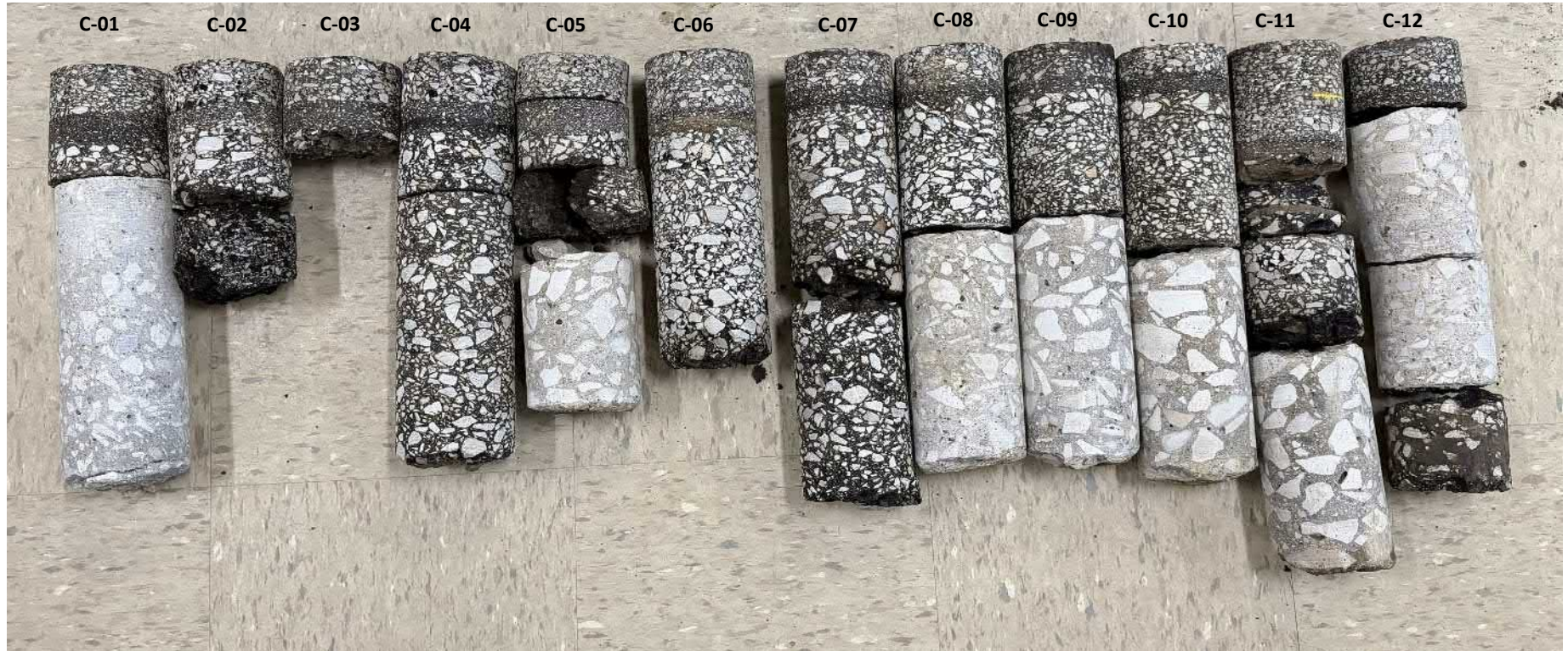
Core No.	Project Type	Station/Direction	Total Hot Mix Asphalt (HMA) Thickness (nearest 1/4 inch)	Total Concrete Base (PCC) Thickness (nearest 1/4 inch)	Total Pavement Thickness (nearest 1/4 inch)	Total Subbase (nearest 1 inch)
C-01	Shoulder Addition & Resurfacing	159+70, 18.3' RT, NB Lane	4.00	10.50	14.50	2
C-02	Shoulder Addition & Resurfacing	168+54, 3.3' RT, Center Island	8.25	0.00	8.25	6
C-03	Shoulder Addition & Resurfacing	177+33, 10.2' LT, SB Lane	3.00	0.00	3.00	0
C-04	Shoulder Addition & Resurfacing	185+90, 14.3' RT, NB Lane	14.25	0.00	14.25	0
C-05	Shoulder Addition & Resurfacing	194+96, 3.1' RT, Center Turn Lane	6.50	5.50	12.00	0
C-06	Shoulder Addition & Resurfacing	201+57, 11.9' LT, SB Lane	11.25	0.00	11.25	0
C-07	Shoulder Addition & Resurfacing	207+31, 5.0' LT, SB Lane	16.00	0.00	16.00	0
C-08	Shoulder Addition & Resurfacing	216+05, 12.6' RT, NB Lane	6.50	8.25	14.75	0
C-09	Shoulder Addition & Resurfacing	227+33, 5.4' LT, SB Lane	6.00	8.75	14.75	0
C-10	Shoulder Addition & Resurfacing	239+26, 13.7' RT, NB Lane	7.50	8.25	15.75	0
C-11	Shoulder Addition & Resurfacing	252+51, 5.3' RT, NB Lane	10.00	7.50	17.50	0
C-12	Shoulder Addition & Resurfacing	263+70, 21.0' LT, SB Lane	5.75	9.75	15.50	0

* Refer to attached photo logs for details.

All pavement cores were taken between 3 and 8 feet from edge of road/curb at the above referenced addresses.

Table 2 - PAVEMENT CORE PROFILE

File No : 10094	Pavement Coring - Shoulder Addition and Pavement Resurfacing of Archer Ave. Between 123rd St. & Bell Rd.
County : Cook	Field Technician : Paul Sponaugle
Section: Various	Cores Taken on : 11/19/25 and 11/20/25



* Refer to attached photo logs for details.

File No.:	10094	Project Name:	Pavement Coring - Shoulder Addition and Pavement Resurfacing of Archer Ave. Between 123rd St. & Bell Rd.				
Client:	Terra Engineering, Ltd.						
Core No.	C-01	Date Cored:	11/19/2025	Cored By:	Geocon	Measured By:	Sponaugle
Core Location:	159+70, 18.3' RT						
Easting:	1085979.9	Northing:	1820770.1	Elevation:	721.8'		
Core Diameter (in):	3.75	Core Height (in):	14.50	Notes:			

Separation/Debonding



Asphalt Surface - 1.75"

Sand Level Binder - 1.25"

Asphalt Binder - 1.00"

Concrete - 10.50"

Subbase - Subgrade:

Subbase Thickness: 2" crushed aggregate

Subgrade Material: gray silty clay

All measurements are average.

File No.:	10094	Project Name:	Pavement Coring - Shoulder Addition and Pavement Resurfacing of Archer Ave. Between 123rd St. & Bell Rd.				
Client:	Terra Engineering, Ltd.						
Core No.	C-02	Date Cored:	11/19/2025	Cored By:	Geocon	Measured By:	Sponaugle
Core Location:	168+54, 3.3' RT						
Easting:	1086596.8	Northing:	1821402.7	Elevation:	717.0'		
Core Diameter (in):	3.75	Core Height (in):	8.25	Notes:			

Separation/Debonding



Asphalt Surface - 1.75"

Sand Level Binder - 0.75"

Asphalt Binder - 2.5"

Weathered Asphalt Surface - 3.25"

Subbase - Subgrade:

 Subbase Thickness: 6" crushed aggregate
 Subgrade Material: gray silty clay

All measurements are average.

File No.:	10094	Project Name:	Pavement Coring - Shoulder Addition and Pavement Resurfacing of Archer Ave. Between 123rd St. & Bell Rd.				
Client:	Terra Engineering, Ltd.						
Core No.	C-03	Date Cored:	11/20/2025	Cored By:	Geocon	Measured By:	Sponaule
Core Location:	177+33, 10.2' LT						
Easting:	1087212.4	Northing:	1822031.1	Elevation:	705.9'		
Core Diameter (in):	3.75	Core Height (in):	3.00	Notes:			



Asphalt Surface - 1.75"

Sand Level Binder - 0.75"

Weathered Asphalt Surface - 0.50"

Highly Weathered/Fractured
Asphalt Binder - ~6"
Thickness based upon travel of
split spoon sampler.

Subbase - Subgrade:

Subbase Thickness: none noted

Subgrade Material: none noted

All measurements are average.

File No.:	10094	Project Name:	Pavement Coring - Shoulder Addition and Pavement Resurfacing of Archer Ave. Between 123rd St. & Bell Rd.				
Client:	Terra Engineering, Ltd.						
Core No.	C-04	Date Cored:	11/19/2025	Cored By:	Geocon	Measured By:	Sponaule
Core Location:	185+90, 14.3' RT						
Easting:	1087838.2	Northing:	1822617.3	Elevation:	709.4'		
Core Diameter (in):	3.75	Core Height (in):	14.25	Notes:			

Separation/Debonding



Asphalt Surface - 1.75"

Sand Level Binder - 1.0"

Asphalt Binder - 2.0"

Asphalt Binder - 9.5"

Subbase - Subgrade:

Subbase Thickness: none noted

Subgrade Material: brown silty clay

All measurements are average.

File No.:	10094	Project Name:	Pavement Coring - Shoulder Addition and Pavement Resurfacing of Archer Ave. Between 123rd St. & Bell Rd.				
Client:	Terra Engineering, Ltd.						
Core No.	C-05	Date Cored:	11/19/2025	Cored By:	Geocon	Measured By:	Sponaugle
Core Location:	194+96, 3.1' RT						
Easting:	1088473.1	Northing:	1823262.7	Elevation:	709.1'		
Core Diameter (in):	3.75	Core Height (in):	12.00	Notes:			

Separation/Debonding

Separation/Debonding



Asphalt Surface - 1.75"

Sand Level Binder - 1.25"

Asphalt Binder - 1.25"

Weathered Asphalt Surface - 2.25"

 Concrete pieces
 ~2" based on total depth of core

Concrete - 5.5"

Subbase - Subgrade:

Subbase Thickness: none noted

Subgrade Material: brown silty clay

All measurements are average.

File No.:	10094	Project Name:	Pavement Coring - Shoulder Addition and Pavement Resurfacing of Archer Ave. Between 123rd St. & Bell Rd.				
Client:	Terra Engineering, Ltd.						
Core No.	C-06	Date Cored:	11/20/2025	Cored By:	Geocon	Measured By:	Sponaagle
Core Location:	201+57, 11.9' LT						
Easting:	1088931.8	Northing:	1823738.7	Elevation:	702.1'		
Core Diameter (in):	3.75	Core Height (in):	11.25	Notes:			



Asphalt Surface - 2.25"

Sand Level Binder - 0.75"

Asphalt Binder - 8.25"

Subbase - Subgrade:

Subbase Thickness: none noted

Subgrade Material: brown silty clay

All measurements are average.

File No.:	10094	Project Name:	Pavement Coring - Shoulder Addition and Pavement Resurfacing of Archer Ave. Between 123rd St. & Bell Rd.				
Client:	Terra Engineering, Ltd.						
Core No.	C-07	Date Cored:	11/20/2025	Cored By:	Geocon	Measured By:	Sponaugle
Core Location:	207+31, 5.0' LT						
Easting:	1089344.6	Northing:	1824138.5	Elevation:	703.6'		
Core Diameter (in):	3.75	Core Height (in):	16.00	Notes:			

Separation/Debonding



Asphalt Surface - 1.5"

Sand Level Binder - 0.75"

Asphalt Binder - 5.5"

Asphalt Binder - 9.25"

Subbase - Subgrade:

Subbase Thickness: none noted

Subgrade Material: brown silty clay

All measurements are average.

File No.:	10094	Project Name:	Pavement Coring - Shoulder Addition and Pavement Resurfacing of Archer Ave. Between 123rd St. & Bell Rd.				
Client:	Terra Engineering, Ltd.						
Core No.	C-08	Date Cored:	11/19/2025	Cored By:	Geocon	Measured By:	Sponaugle
Core Location:	216+05, 12.6' RT						
Easting:	1089977.2	Northing:	1824741.1	Elevation:	711.6'		
Core Diameter (in):	3.75	Core Height (in):	14.75	Notes:			

Separation/Debonding



Asphalt Surface - 1.25"

Sand Level Binder - 0.75"

Asphalt Binder - 4.5"

Concrete - 8.25"

Subbase - Subgrade:

Subbase Thickness: none noted

Subgrade Material: brown silty clay

All measurements are average.

File No.:	10094	Project Name:	Pavement Coring - Shoulder Addition and Pavement Resurfacing of Archer Ave. Between 123rd St. & Bell Rd.				
Client:	Terra Engineering, Ltd.						
Core No.	C-09	Date Cored:	11/20/2025	Cored By:	Geocon	Measured By:	Sponaugle
Core Location:	227+33, 5.4' LT						
Easting:	1090765.4	Northing:	1825548.1	Elevation:	706.6'		
Core Diameter (in):	3.75	Core Height (in):	14.75	Notes:			

Separation/Debonding



Asphalt Surface - 1.25"

Sand Level Binder - 0.5"

Asphalt Binder - 0.75"

Asphalt Surface - 3.5"

Concrete - 8.75"

Subbase - Subgrade:

Subbase Thickness: none noted

Subgrade Material: brown silty clay

All measurements are average.

File No.:	10094	Project Name:	Pavement Coring - Shoulder Addition and Pavement Resurfacing of Archer Ave. Between 123rd St. & Bell Rd.				
Client:	Terra Engineering, Ltd.						
Core No.	C-10	Date Cored:	11/19/2025	Cored By:	Geocon	Measured By:	Sponaule
Core Location:	239+26, 13.7' RT						
Easting:	1091626.3	Northing:	1826375.1	Elevation:	699.4'		
Core Diameter (in):	3.75	Core Height (in):	15.75	Notes:			

Separation/Debonding



Asphalt Surface - 1.25"

Sand Level Binder - 0.75"

Asphalt Binder - 1.0"

Asphalt Surface - 4.5"

Fractured Concrete - ~2.0"

Concrete - 8.25"

Subbase - Subgrade:

Subbase Thickness: none noted

Subgrade Material: brown silty clay

All measurements are average.

File No.:	10094	Project Name:	Pavement Coring - Shoulder Addition and Pavement Resurfacing of Archer Ave. Between 123rd St. & Bell Rd.				
Client:	Terra Engineering, Ltd.						
Core No.	C-11	Date Cored:	11/19/2025	Cored By:	Geocon	Measured By:	Sponaugle
Core Location:	252+51, 5.3' RT						
Easting:	1092560.1	Northing:	1827315.4	Elevation:	703.0'		
Core Diameter (in):	3.75	Core Height (in):	17.50	Notes:			

Separation/Debonding

Separation/Debonding

Separation/Debonding

Separation/Debonding



Asphalt Surface - 3.5"

Sand Level binder - 1.0"

Weathered Asphalt Surface - 1.0"

Weathered Asphalt Binder - 1.0"

Asphalt Binder - 1.75"

Asphalt Surface - 1.0"

Weathered Asphalt Binder - 0.75"

Concrete - 7.5"

Subbase - Subgrade:

Subbase Thickness: none noted

Subgrade Material: brown silty clay

All measurements are average.

File No.:	10094	Project Name:	Pavement Coring - Shoulder Addition and Pavement Resurfacing of Archer Ave. Between 123rd St. & Bell Rd.				
Client:	Terra Engineering, Ltd.						
Core No.	C-12	Date Cored:	11/20/2025	Cored By:	Geocon	Measured By:	Sponaugle
Core Location:	263+70, 21.0' LT						
Easting:	1093463.3	Northing:	1827949.1	Elevation:	690.0'		
Core Diameter (in):	3.75	Core Height (in):	15.50	Notes:			

Separation/Debonding

 Possible mechanical break
 during coring/extraction
 process at 7.5".

Separation/Debonding



Asphalt Surface - 1.75"

Sand Level Binder - 0.75"

Concrete - 9.75"

Weathered Asphalt Binder - 3.25"

Subbase - Subgrade:

 Subbase Thickness: none noted
 Subgrade Material: brown silty clay

All measurements are average.

Appendix E

Soil Erosion Factors and Hazard Ratings

[illegible]

Hazard Rating and Soil Erosion Factors

Map Unit Symbol	Map Unit Name	Soil Erosion Factor, k	Hazard Rating
23B	Blount silt loam, Lake Michigan Lobe, 2 to 4 percent slopes	0.37	Slight
232A	Ashkum silty clay loam, 0 to 2 percent slopes	0.2	Slight
298B	Beecher silt loam, 2 to 4 percent slopes	0.37	Slight
330A	Peotone silty clay loam, 0 to 2 percent slopes	0.24	Slight
530B	Ozaukee silt loam, 2 to 4 percent slopes	0.43	Slight
530C2	Ozaukee silt loam, 4 to 6 percent slopes, eroded	0.43	Moderate
530D	Ozaukee silt loam, 6 to 12 percent slopes	0.43	Severe
530D2	Ozaukee silt loam, 6 to 12 percent slopes, eroded	0.43	Severe
530E	Ozaukee silt loam, 12 to 20 percent slopes	0.43	Very severe
531B	Markham silt loam, 2 to 4 percent slopes	0.37	Slight