ROADWAY GEOTECHNICAL REPORT
ILLINOIS ROUTE 47 IMPROVEMENTS
FROM US 14 TO ILLINOIS ROUTE 120
PTB 169/008
IDOT JOB D-19-022-14
MCHENRY COUNTY, ILLINOIS

For

AECOM

303 E. Wacker Drive, Suite 1400

Chicago, IL 60601

Submitted by

Wang Engineering, Inc.

1145 North Main Street

Lombard, IL 60148

(630) 953-9928

Report Date: October 3, 2023
Revised: January 29, 2025

Technical Report Documentation Page

1. Title and Subtitle Roadway Geotechnical Report, IL 47 Improvements From US 14 to IL 120		**2. Report Date** October 3, 2023 Revised: January 29, 2025 **3. Report Type** ☐ SGR ☒ RGR ☐ Draft ☒ Final ☒ Revised
4. Route / Section / County FAP 326 / 104-WRS-8(13) / McHenry		**5. Project Numbers** Contract D-19-022-14
6. PTB / Item No. 169/008	**7. Existing Structure Number(s)** n.a.	**8. Proposed Structure Number(s)** n.a.
9. Prepared by Wang Engineering, Inc. 1145 N Main Street Lombard, IL 60148	**Contributor(s)** Author: Andri A. Kurnia, PE Cornelia L Marin, PG QA/QC: Metin W. Seyhun, PE, F.ASCE Project Manager: Andri A. Kurnia, PE	**Contact Phone Number** (630) 953-9928 x 1025 akurnia@wangeng.com
10. Prepared for AECOM 303 E. Wacker Drive Suite 1400 Chicago, IL, 60601	**Design Engineer/ Project Manager** Design Engineer: Oranit Sanchez, PE Project Manager: Tim Whalen, PE Deputy PM: Monica Crinion, PE	**Contact Information** (312) 373-6516 monica.crinion@aecom.com

11. Abstract

This report presents subsurface investigation results and recommendations for the widening and reconstruction of IL Route 47 (IL 47) section between US 14 and Illinois Route 120 that extends for 2.3 miles. The improvements also include reconstruction of intersecting roadways (Southview Drive, Lake Avenue, McConnell Road, South Street, Judd Street, IL 120), construction of four detention basins and traffic signals at three intersections.

The surface conditions show generally 2- to 28-inches thick topsoil. The subgrade soil along the proposed improvement consists of up to 13.5 feet of cohesive or granular fill. Below the fill and/or surface, the subsurface soils include very soft to hard clay loam to silty loam or medium dense to very dense gravelly sand. In some sections along IL 47, 2 to 15 feet of very soft to stiff and very loose to loose, black organic silty and clayey soil and peat were encountered below the surface or fill. The soft soils and peat rest on very soft to hard clay loam to silty clay loam.

The topsoil should be stripped for the full length and width of the proposed improvement; we estimate a topsoil thickness of 10 inches should be used for estimating purposes. In general, the subgrade will exhibit poor drainage characteristics and we recommend installing longitudinal underdrain on both sides of the roadway and transverse underdrains every 300 feet and at the low points in the profile grade and at the base of any undercuts.

The alignments generally follow the existing ground elevation with little change in grade. Therefore, we do not expect slope stability and settlement problems. Ground improvement will be required in areas where soft soil and peat were encountered. A ground improvement option is discussed, and recommendations are provided in the report. Due to complexity of the ground conditions, several soil treatment methods should be considered.

12. Path to archived file

E:_WANGLegacy\SHARED\Netprojects\11001501\Reports\RGR\RPT_Wang_AAK-CLM_KE225006-11001501IL47RGRV04_20250129.docx

TABLE OF CONTENTS

Wang Engineering
A Terracon Company

1145 North Main Street
Lombard, Illinois 60148
Phone (630) 953-9928
www.wangeng.com

ROADWAY GEOTECHNICAL REPORT
ILLINOIS ROUTE 47 IMPROVEMENTS
FROM US 14 AND ILLINOIS ROUTE 120
IDOT CONTRACT D-91-022-14
MCHENRY COUNTY, ILLINOIS
FOR
AECOM

1.0 INTRODUCTION

This report presents the results of our geotechnical subsurface investigation, laboratory testing, and engineering analysis and evaluations for the widening and reconstruction of Illinois Route 47 (IL 47) from US 14 to Illinois Route 120 (IL 120). The roadways addressed in this report extend for about 2.3 miles between IL 47 Stations 93+62 and 209+18 in McHenry County, Illinois. A *Site Location Map* is presented as Exhibit 1.

Roadway design drawings provided to Wang Engineering, Inc., a Terracon Company (Wang) by AECOM indicate the scope of improvements include:

Widening, realignment, and reconstruction of

- IL 47, between Station 93+61.81 and Station 209+17.89;
- Southview Drive, between Station 203+55.00 and Station 207+60.69;
- Lake Avenue, between Station 169+46.46 and Station 183+19.06;
- McConnell Road, between Station 135+00.00 and Station 142+58.64;
- South Street/Country Club Road, between Station 111+00.00 and 118+17.70;
- Judd Street/Irving Avenue, between Station 108+72.05 and Station 204+25.91;
- IL 120, between Station 62+61.56 and Station 72+58.27;

Construction of

- Detention Basin 1 at Davis Road, IL 47 Station 95+00, left offset;
- Detention Basin 2 at McConnell Road, IL 47 Station 137+00, right offset;
- Detention Basin 3 at IL 47 Station 153+50, right offset;
- Detention Basin 4 at Irving Avenue, IL 47 Station 184+00, right offset;
- Traffic signal structures at the IL 47 and US 14 intersection;
- Traffic signal structures at the IL 47 and South Street/Country Club Road intersection;
- Traffic signal structures at the IL 47 and IL 120 intersection;

In addition to the roadway work, a 10-foot shared path will be constructed along IL 47 east side and a 5-foot wide sidewalk along IL 47 west side. The proposed improvements also include construction of a pedestrian tunnel below UPRR, and construction of two retaining walls. These structures are addressed in separate Structure Geotechnical Reports (SGRs). Overhead sign structures are also planned, it will be addressed in a separate letter report.

The purpose of the investigation was to characterize the site soil and groundwater conditions and provide geotechnical analyses and recommendations for the design and construction of the proposed pavements.

2.0 SITE AND REGIONAL GEOLOGY

The project area is located in Dorr Township, McHenry County, Illinois. On the USGS Woodstock 7.5 Minute Series Quadrangle map, the project runs from south to north through W½ of Section 16, W ½ of Section 9, ne ¼ of Section 8, and Section 5 of Tier 44 N, Range 7 E of the Third Principal Meridian.

The following review of published geologic data, with emphasis on factors that might influence the design and construction of the proposed engineering works, is meant to place the project area within a geological framework and confirm the dependability and consistency of the subsurface investigation results. For the study of the regional geologic framework, Wang considered northeastern Illinois in general and McHenry County in particular. Exhibit 3 illustrates the *Site and Regional Geology*.

2.1 Physiography

The Wheaton Morainal Country Physiographic Subsection (Leighton et al. 1948) dominates the eastern two thirds of McHenry County. The project site runs just north of Barlina Moraine, along West Chicago Moraine alignment and through one of the former outwash valleys carved by glacial meltwater through the moraines. The morainic surface is marked by kettle depressions left behind by ice blocks that were, in time, filled with lacustrine and organic sediments giving the topography a hummocky look.

In general, the relief within the project area is flat and occasionally hummocky. About 1000 feet south of the project, the Kishwaukee River crosses IL 47 and flows from west to east, through a channel about 10-foot wide. The existing surface elevation varies from as high as 948 feet near US 14 sloping towards north to as low as 885 feet near IL 120.

2.2 Pedological Features

After the Wisconsin glaciation, several types of soils developed through weathering of glacigenic sediments. In McHenry County, the soil types were surveyed by the USDA (2020). A summary of

the USDA soil types present within the project area, including their relevant geotechnical index properties and suitability as subgrade and road fill are shown in Exhibits 2-1 to 2-4. The soil information provided by USDA is meant to be used as a general reference in the absence of a site-specific investigation. In this instance, our findings regarding soil features affecting suitability for highway and street construction are not necessarily in agreement with the information presented in the exhibits.

2.3 Surficial Cover

The project area was shaped during the Wisconsin-age glaciation and about 175- to 250-foot thick overburden covers the bedrock. The glacigenic deposits were emplaced during pulsating advances and retreats of few icesheet lobes responsible for the formation of end moraines and associated low-relief till and lake plains (Hansel and Johnson 1996). The surficial cover within the project area consists of organic silt and clay, peat, and marl of the Grayslake Peat, found discontinuously throughout the project area. The Grayslake Peat overlies either the clay and silt of the Equality Formation, or gravelly outwash of the Henry Formation that interfinger with the silty to sandy loam diamicton of the Heager Member of the Lemont Formation and silty clay diamicton of the Yorkville Member of the Lemont Formation. The two diamictons, overlies up to 115-foot of loamy diamicton of the Tiskilwa Formation. The diamicton of the Tiskilwa Formation rest over sand and gravel outwash of the Ashmore tongue of the Henry Formation which in turn rests over Illinois-age drift of Perl and Glasford Formations.

The Grayslake Peat, less than 10-foot thick, consists of black to brown peat interbedded with gray organic rich sand and silty clay and white to light gray marl (Flaherty et al. 2013). The Equality Formation, less than 15 feet thick, consists of brown to gray, bedded fine sand, silt, and clay lacustrine deposits (Curry and Thomason 2012). The Henry Formation consists of stratified sand and gravel outwash with thicknesses of about 5 to 50 feet (Curry and Thomason 2012). The Heager Member of the Lemont Formation underlies the project northern section is up to 25-foot thick (ISGS 2020) of sandy loam diamicton with interstratified sand and gravel beds. The Yorkville Member of the Lemont Formation, up to 40-foot thick, consists of yellowish brown to gray silty clay to silty clay loam diamicton that contains lenses of gravel, sand, silt, and clay (Hansel and Johnson 1996, Curry and Thomason 2012). The Tiskilwa Formation, up to 115-foot thick, consists of calcareous reddish brown to gray clay loam, loam to sandy loam diamicton that contains lenses of gavel, sand, silt, and clay (Wickham et al. 1988, Curry and Thomason 2012). The Tiskilwa Formation diamicton rests over the about 15 feet of stratified sand and gravel of the Ashmore tongue of the Henry Formation. The Illinoian-age drift consists of pinkish brown to yellow brown loam to sandy loam diamicton of the Galsford Formation locally containing beds of stratified silts, sand, and gravel of the Pearl Formation. The Illinois drift is about 60 to 80-foot thick and

unconformably rests over the Silurian-age dolostone (Curry and Thomason 2012). The diamicton accounts for about 80% of the soil profile.

From a geotechnical viewpoint, the Heager Member is characterized by very low plasticity, high density, low compressibility, the Yorkville Member characterized by low to moderate plasticity, high strength, and low to moderate moisture content and the Tiskilwa Formation characterized by low plasticity, medium to high strength, low moisture content, moderately to highly pebbly (Wickham et al. 1988, Bauer et al. 1991).

2.4 Bedrock

In McHenry County, the surficial cover rests unconformably on top of Silurian-age bedrock. The top of the bedrock lies about 175 to 250 feet below the ground surface (bgs). Structurally, the site is located on the eastern flank of the Wisconsin Arch (Willman 1971). No active faults or underground mines are known in the area.

Our subsurface investigation results fit into the local geologic context. The borings drilled in the project area encountered native sediments consisting of organic rich silt and clay of the Grayslake Peat, occasionally lacustrine clay and silt of the Equality Formation, gravel and sand outwash of the Henry Formation interbedded with sandy loam diamicton of the Heager Formation, silty clay diamicton of the Yorkville Member of the Lemont Formation, and loamy diamicton of the Tiskilwa Formation. None of the borings were deep enough to encounter bedrock.

2.5 Climate Data

The subsurface investigation was performed from July to December of 2020. To assess the possible effects of temperature and precipitation on water table data and soil moisture, the climatic conditions for the investigation period and three months prior to the start of the investigation are summarized graphically in Figures 1 and 2. The precipitation and temperature data for the investigation period are compared against thirty-year monthly data (1981 to 2010) in box-and-whiskers format to show deviations from “normal” climate conditions during the current investigation. Local climate data were obtained from the O’Hare Station (NCDC 2020).

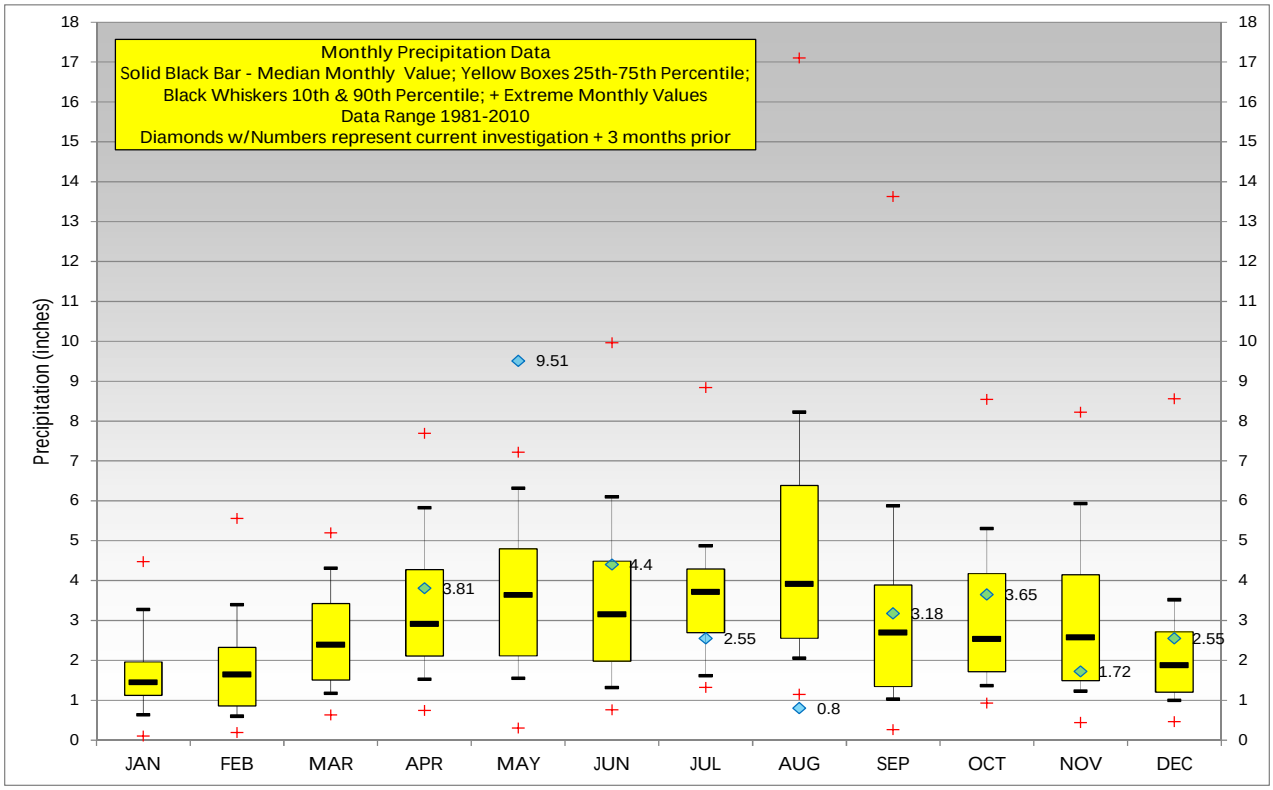


Figure 1: Monthly Precipitation Data for 2020

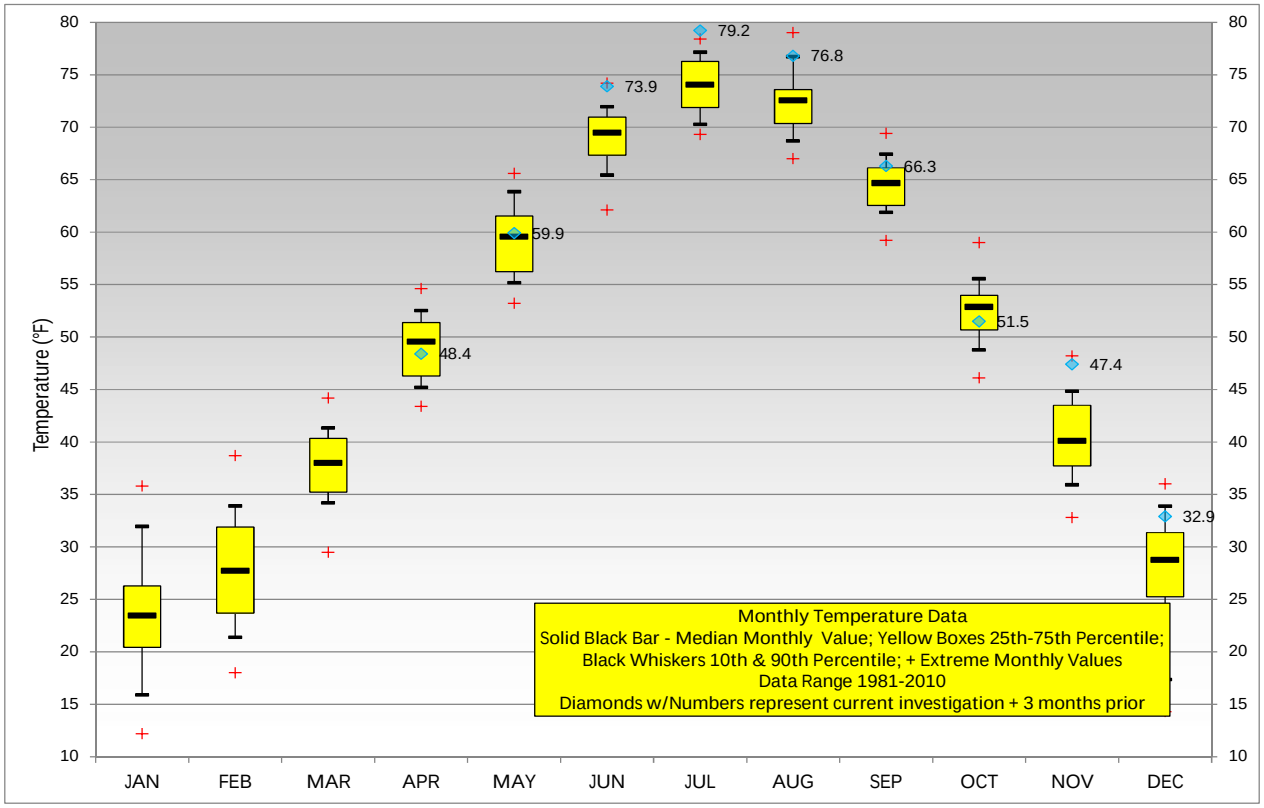


Figure 2: Monthly Temperature Data for 2020

The deviations from the historical 30-year climate data show the investigation period was characterized in general by average precipitations and temperature with the exception of record high temperatures with higher than average precipitation in July and followed by higher than average temperature with record low precipitation in August. Observations of perched water within the granular fill may have been influenced by these climate factors.

3.0 METHODS OF INVESTIGATION

The following sections outline the methods of subsurface and laboratory investigations. Elevations in this report are based on NAVD 1988.

3.1 Subsurface Investigation

Between July 9th and December 14th, 2020, Wang completed 156 soil borings and four shelby tube borings to characterize the soil and groundwater conditions. We considered data from subgrade (SGB) borings, detention pond (DPB) borings, peat delineation (PT) borings, retaining wall (RWB) borings, and traffic signal (TSB) borings drilled for this project. The roadway alignment limits and boring IDs are summarized in Table 1.

Table 1: Alignment and Reference Borings Summary

Alignment	Approximate Limits		Reference Boring IDs
	Start Station	End Station	
IL-47	93+61.81	209+17.89	SGB-01 through SGB-40, RWB-01 through RWB-22, TSB-01 through TSB-06, PT1-all, PT2-all, PT3-all, PT4-all, PT5-all
IL-47 Peat Area 1	115+00.00	119+00.00	PT1-01 through PT1-08, PT2-01 through PT2-10, RWB-01 through RWB-07, SGB-07
IL-47 Peat Area 2	153+00.00	156+00.00	PT5-01 through PT5-06, RWB-08 through RWB-13, SGB-19, SGB-20
IL-47 Peat Area 3	182+00.00	192+50	PT3-01 through PT3-16, PT4-01 through PT4-16, RWB-14 through RWB-17, SGB-29 to SGB32
Southview Drive	203+55.00	207+60.69	SGB-41, SGB-42
Lake Avenue	169+46.46	183+19.06	SGB-11, SGB-43 through SGB-46

Alignment	Approximate Limits		Reference Boring IDs
	Start Station	End Station	
McConnell Road	135+00.00	142+58.64	SGB-14, SGB-47
South Street/ Country Club Road	111+00.00	118+17.70	SGB-48 through SGB-50, TSB-03, TSB-04
Judd Street/ Irving Avenue	108+72.05	204+25.91	SGB-29, SGB-51 through SGB-53, PT3-01, PT4-01, PT4-02
IL 120	62+61.56	72+58.27	SGB-35, SGB-54 through SGB-57
Detention Basin 1 At Davis Road	95+00	96+00	DPB-01
Detention Basin 2 At McConnell Road	137+00	139+00	DPB-02, DPB-03
Detention Basin 3	153+00	153+50	DPB-04, DPB-05
Detention Basin 4 At Irving Avenue	184+00	186+00	DPB-06, DPB-07
Traffic Sign At US 14	NA	NA	TSB-01, TSB-02
Traffic Sign At South St/Co Club	NA	NA	TSB-03, TSB-04
Traffic Sign At IL 120	NA	NA	TSB-05, TSB-06

The as-drilled northing and easting coordinates were surveyed by Wang with a mapping-grade GPS unit; boring elevations, stations and offsets provided by AECOM. The boring location information is shown in the *Boring Logs* (Appendix A) and the as-drilled locations are shown in the *Boring Location Plan and Soil Profiles* (Appendix F).

Truck- or ATV-mounted drilling rigs equipped with hollow stem augers were used to advance and maintain open boreholes. Soil sampling was performed according to AASHTO T 206, *"Penetration Test and Split Barrel Sampling of Soils."* The soil was sampled continuously in the SGB borings and in the DPB, RWB, TSB borings were sampled at 2.5-foot intervals to 30 feet below ground surface (bgs) followed by 5-foot intervals to boring termination depths. A manually operated, jackhammer-

driven, LB-sized Geoprobe was used to continuously sample the soil in areas with limited access. Soil samples collected from each sampling interval were placed in sealed jars. At selected locations, Shelby tube samples were collected according to AASHTGO T207. The samples were transported to Wang Geotechnical Laboratory in Lombard, Illinois for further examination and laboratory testing.

Field boring logs, prepared and maintained by a Wang field geologist, include lithological descriptions, visual-manual soil classifications (IDH Soil Classification System), results of Rimac and pocket penetrometer unconfined compressive strength tests, and results of Standard Penetration Tests (SPT), recorded as blows per 6 inches of penetration.

Groundwater observations were made in each boring during and at the completion of drilling operations. The borings were backfilled with soil cuttings mixed with bentonite after completion, and the ground was restored to its original condition. Borings performed on pavement were patched with cold asphalt mix.

Wang performed four single-ring infiltration tests, designated as INF-01 through INF-04 at the proposed detention basins. The infiltration test was performed at the proposed bottom of detention basins elevations at depths of 11.5 to 82.5 inches below the existing ground surface.

3.2 Laboratory Testing

The soil samples were tested in the laboratory for moisture content (AASHTO T-265). Organic content (AASHTO T267), Atterberg limits (AASHTO T 89/T 90), and particle size (AASHTO T 88) analyses were performed to classify selected samples near the proposed roadway subgrade. One-Dimensional Consolidation tests (AASHTO T 208) were performed on select Shelby tube samples. Field visual descriptions of the soil samples were verified in the laboratory. The soils were classified according to the IDH Soil Classification System. Laboratory test results are shown on the *Boring Logs* (Appendix A), IDOT forms BMPR 507A and BMPR 508A (Appendix B), and in the *Laboratory Test Results* (Appendix C).

4.0 RESULTS OF FIELD AND LABORATORY INVESTIGATIONS

Detailed descriptions of the soil conditions encountered during the subsurface investigation are presented on the attached *Boring Logs* (Appendix A) and on the *Boring Location Plans and Soil Profiles* (Appendix F). Please note that strata contact lines represent approximate boundaries between soil types. The actual transition between soil types in the field may be gradual in horizontal and vertical directions.

4.1 Surface Conditions

The borings were drilled primarily off the existing roadway pavement, with about 75% of the borings encountering black, brown, and dark brown silty clay to silty clay loam topsoil. The topsoil has thickness of 2 to 28 inches; for estimation purposes, the topsoil thickness to be stripped is 10 inches, which representing the 75th percentile. The topsoil thicknesses are summarized in Table 2.

Table 2: Summary of Topsoil Thickness

Alignment	Number of Measurements	Topsoil Thickness Range (inches)	Average Thickness (inches)
IL-47	99	2 to 28	8
IL-47 Peat Area 1	19	2 to 10	5
IL-47 Peat Area 2	13	3 to 9	7
IL-47 Peat Area 3	36	4 to 18	10
Southview Drive	1	8	na
Lake Avenue	3	8 to 15	12
McConnell Road	1	28	na
South Street/ Country Club Road	3	12	12
Judd Street/ Irving Avenue	4	3 to 15	8
IL 120	2	3 to 10	7
Detention Basin 1 At Davis Road	1	2	na
Detention Basin 2 At McConnell Road	2	7 to 8	8
Detention Basin 3	2	4 to 6	5

Alignment	Number of Measurements	Topsoil Thickness Range (inches)	Average Thickness (inches)
Detention Basin 4 At Irving Avenue	2	15 to 16	16
Traffic Sign At US 14	2	3	3
Traffic Sign At South St/Co Club	2	12	12
Traffic Sign At IL 120	2	7 to 12	10

The 28 borings drilled along the existing pavement exposed 3 to 22 inches of asphalt or asphalt over concrete pavement overlying aggregate base along the IL 47 and 5 to 15 inches of asphalt or asphalt over concrete pavement overlying aggregate base along the crossroads.

4.2 Soil Conditions

Within the project limits, three general typical lithological (TL) profiles have been identified, with the soil units from each illustrated for reference in Figure 3 and described in Table 3.

Table 3: Description of the Typical Lithology Type

Type Designation	Location along the Project	Description
TL I	South one third	fill materials (Unit 1), sand and gravel outwash (Unit 6), clayey and silty cohesive diamicton (Units 7 and 8)
TL II	North two thirds	fill materials (Unit 1), sandy loamy diamicton (Unit 5) sand and gravel outwash (Unit 6), clayey and silty cohesive soils (Units 8)
TL III	Peat Areas	soft organic silty clay and peat (Unit 2) soft silty clay with some organic matter (Unit 3) clayey lacustrine deposits (Unit 4) overlying either TL I (Units 6, 7, and 8) or TL II (Units 5, 6, and 8)

The designated TL I represents the soil profile encountered primarily within the south one third of the project and primarily includes Unit 1 - fill, Unit 6 - sand and gravel outwash, Unit 7 – silty clay diamicton, Unit 6 - occasionally sand and gravel outwash lenses, and Unit 8 - loamy diamicton. The designated TL II represents the soil profile encountered primarily within the north two thirds of the project and primarily includes Unit 1 - fill, Unit 5 - sandy loamy diamicton, Unit 6 - sand and gravel outwash, and Unit 8 - loamy diamicton. The general lithology represented by TL III exposed kettle bog deposits, including modest thicknesses of Unit 2 - soft organic silty clay and peat and Unit 3 - very soft to medium stiff silty clay with some organic matter overlying the soil Units of TL I and TL II. The typical lithologies that represent subgrade and foundation soil for each alignment are summarized in Table 4; this alignment distribution is maintained throughout the following section.

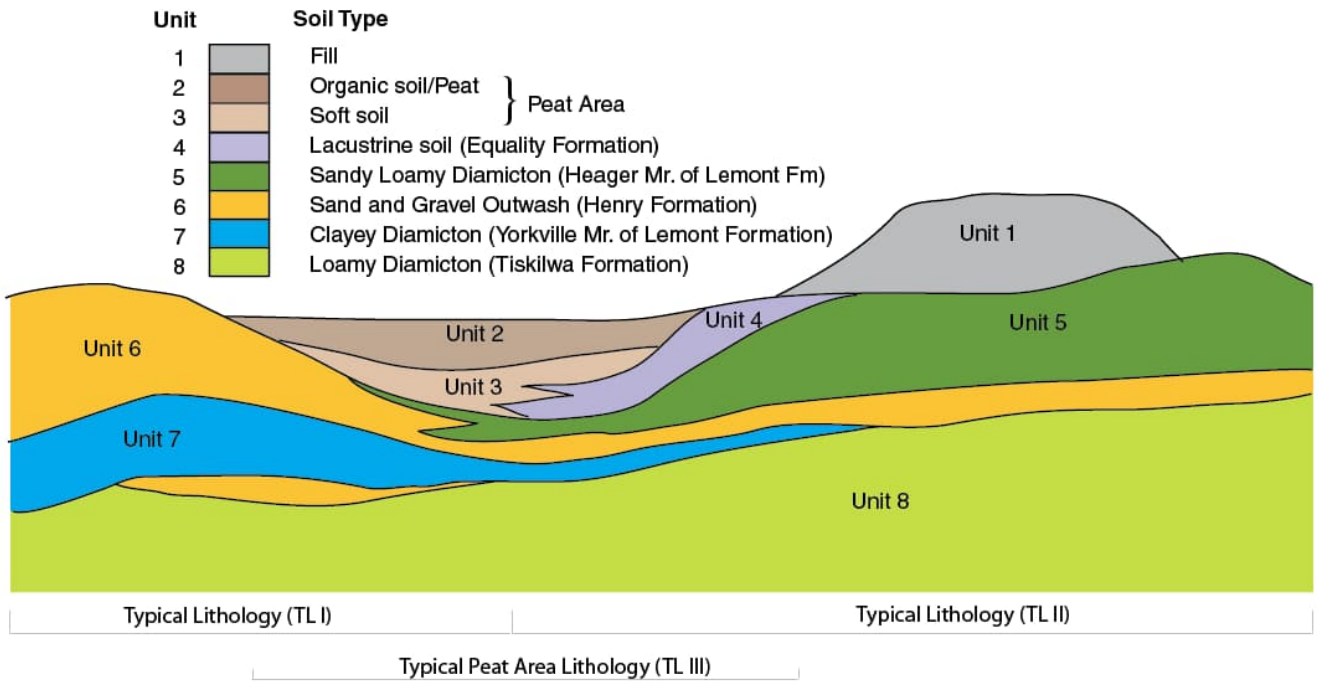


Figure 3: Typical lithological succession along the project areas

Table 4: Summary of Typical Lithology along the alignments

Alignment	Approximate Limits		Typical Lithological Profile
	Start Station	End Station	
IL-47	93+61.81	115+00.00	TL 1
IL-47 Peat Area 1	115+00.00	119+00.00	TL 3
IL 47	119+00.00	132+00.00	TL II
IL 47 Organic soils	132+00.00	134+00.00	TL III
IL 47	134+00.00	153+00.00	TL II
IL-47 Peat Area 2	153+00.00	156+00.00	TL III
IL 47	156+00.0	182+00.00	TL II
IL-47 Peat Area 3	182+00.00	192+50	TL III
IL 47	192+00.00	209+17.89	TL II
Southview Drive	203+55.00	209+17.89	TL II
Lake Avenue	169+46.46	188+19.06	TL II
McConnell Road	135+00.00	142+58.64	TL I
South Street/ Country Club Road	111+00.00	118+17.70	TL II
Judd Street/ Irving Avenue	108+72.05	204+25.91	TL III
IL 120	62+61.56	72+58.27	TL II
Detention Basin 1 At Davis Road	95+00	96+00	TL I

Alignment	Approximate Limits		Typical Lithological Profile
	Start Station	End Station	
Detention Basin 2 At McConnell Road	137+00	139+00	TL II
Detention Basin 3	153+00	153+50	TL III
Detention Basin 4 At Irving Avenue	184+00	186+00	TL III
Traffic Sign At US 14	NA	NA	TL I
Traffic Sign At South St/Co Club	NA	NA	TL II
Traffic Sign At IL 120	NA	NA	TL II

1) Man-made ground (fill, TL I, TL II, and TL III)

Underneath the surface, in general soil borings encountered up to 13.5 feet of cohesive and granular fill consisting of either soft to hard clay loam to silty clay loam or loose to dense, brown and gray silty loam, loam, sand and gravelly sand. The cohesive fill has unconfined compressive strength (Q_u) values of 0.3 to 5.2 tsf and moisture content values of 9 to 30%. The granular fill has N-values of 1 and 37 blows per foot and moisture content values of 4 to 20%. Laboratory index tests performed on samples from this unit show liquid limit (L_L) values of 24 to 40% and plastic limit (P_L) values of 13 to 18%. The soil belongs primarily to the A-6 group in accordance with AASHTO.

Table 5: Summary of Existing Fill Properties

Alignment	Q_u Min-Max (tsf)	SPT N-values Min-Max. (blows/foot)	Moisture Content Min-Max (%)	Liquid Limit Min-Max (%)	Plastic Limit Min-Max (%)
IL-47	0.3-5.2	0-37	4-30	24-40	13-18
IL-47 Peat Area 1	0.3-2.5	1-33	4-28	24	13
IL-47 Peat Area 2	0.5-4.5	0-14	10-30	NA	NA
IL-47 Peat Area 3	0.3-5.2	1-20	5-28	35-40	15-18

Alignment	Q_u Min-Max (tsf)	SPT N-values Min-Max. (blows/foot)	Moisture Content Min-Max (%)	Liquid Limit Min-Max (%)	Plastic Limit Min-Max (%)
Lake Avenue	0.4-2.2	2-7	18-21	NA	NA
McConnell Road	0	24	4	NA	NA
South Street/ Country Club Road	0.7-1.3	8-14	10-19	NA	NA
Judd Street/ Irving Avenue	0.5	6-23	8-23	NA	NA
Detention Basin 1 At Davis Road	2.0-3.7	14	21-22	NA	NA
Detention Basin 3	1.2	6	19	NA	NA
Traffic Sign At South St/ Country Club Rd	0.7-1.3	8-14	10-19	NA	NA

*2) Very soft to stiff organic silty and clayey (**Unit 2**) (TL III) and*

*3) Very loose to loose peat (**Unit 3**) (TL III)*

At elevations at 839 to 928 feet, or 0.5 to 14 feet bgs, the borings advanced through the TL III areas encountered 2 to 15 feet of very soft to stiff and very loose to loose, black and gray organic silty and clayey soil and peat. This unit has Q_u values of 0.1 to 1.6 tsf, SPT N-values of 0 to 11 blows per foot, and moisture content values of 34 to 669%. Laboratory index testing performed on samples from this layer shows L_L values of 33 to 69% and P_L values of 18 to 40%. These soils classify in the A-4, A-7-5 and A-7-6 groups.

Table 6: Summary of Unit 2 and 3 Properties

Alignment	Q_u Min-Max (tsf)	SPT N-values Min-Max (blows/foot)	Moisture Content Min-Max (%)	Liquid Limit Min-Max (%)	Plastic Limit Min-Max (%)
IL-47 (other)	0.3-0.5	0-1	58-70	61	30
IL-47 Peat Area 1	0.3-1.6	1-6	40-490	65	29

Alignment	Q_u Min-Max (tsf)	SPT N-values Min-Max (blows/foot)	Moisture Content Min-Max (%)	Liquid Limit Min-Max (%)	Plastic Limit Min-Max (%)
IL-47 Peat Area 2	0.3-0.8	0-7	43-136	33	18
IL-47 Peat Area 3	0.1-1.5	0-11	34-669	43-55	24-30
Detention Basin 3	0.8	1-4	77-84	NA	NA
Detention Basin 4 At Irving Avenue	0.2-0.8	0-6	73-580	NA	NA
Lake Avenue	0.3	0	44-65/55	NA	NA

*4) Very soft to very stiff lacustrine silt, clay to silty clay (**Unit 4**) (TL I and TL II)*

Beneath the fill or surface in the TL I and TL II areas, beneath the high moisture organic clays and peat of the TL III area or at surface, lacustrine clay to silty clay with silt and sand interbeds deposits are discontinuously encountered. From elevations of 870 to 948 feet, the borings encountered 2 to 22 feet of very soft to very stiff, brown and gray clay to silty clay and loose to medium dense, brown and gray, saturated silt and sand resting over both TL I and TL II deposits. This unit is characterized by Q_u values of 0.1 to 3.0 tsf, SPT N-values of 0 to 28 blows per foot, and moisture content values of 8 to 44%. Laboratory index testing performed on samples from this unit shows L_L values of 18 to 55% and P_L values of 11 to 24%. This unit cohesive soil belongs to the A-7-6 and and granular to A-4 group.

Table 7: Summary of Unit 4 Properties

Alignment	Q_u Min-Max (tsf)	SPT N-values Min-Max (blows/foot)	Moisture Content Min-Max (%)	Liquid Limit Min-Max (%)	Plastic Limit Min-Max (%)
IL-47	0.1-2.5	0-28	8-44	18-55	11-24
IL-47 Peat Area 1	0.3-1.3	2-10	13-42	NA	NA
IL-47 Peat Area 2	0.2-1.0	2-16	8-44	24-43	14-18

Alignment	Q_u Min-Max (tsf)	SPT N-values Min-Max (blows/foot)	Moisture Content Min-Max (%)	Liquid Limit Min-Max (%)	Plastic Limit Min-Max (%)
IL-47 Peat Area 3	0.1-2.5	1-28	12-38	45-50	17-24
Detention Basin 2 At McConnell Road	1.6-3.0	3-13	13-27	NA	NA
Southview Drive	1.6	6	21	NA	NA
Lake Avenue	0.3-2.3	2-10	23-32	NA	NA
South Street/ Country Club Road	1.1-2.1	7-9	21-28	NA	NA
Judd Street/ Irving Avenue	0.3	1	22	NA	NA
IL 120	1.2-1.3	5-9	23-30	NA	NA
Detention Basin 3	0	2-10	10-29	NA	NA
Detention Basin 4 At Irving Avenue	0.3-0.5	3-4	29-31	NA	NA

*5) Very soft to hard clay loam to silty loam diamicton (**Unit 5**) (TL II)*

Either directly beneath the surface within the north section or below the organic/ peat (Unit 2 and 3) areas, the loamy diamicton is continuously present with a softer consistency near or underneath TL III areas or stiff to rarely hard at the surface. The diamicton is borderline cohesive and granular exhibiting 2- to more than 10-foot thick lenses of very loose to medium dense gravelly loam to sandy loam. While these are fairly equally represented they are part of the same pebbly diamicton exhibiting low to moderate compressibility. About 10% of this unit soil is very stiff to hard and/or dense to very dense. This unit is characterized by Qu values of 0.1 to 4.5 tsf, SPT N-values of 0 to 54 blows per foot, and moisture content values of 3 to 34%. Laboratory index testing performed on samples from this unit shows L_L values of 15 to 38% and P_L values of 11 to 17%. These units belong mainly to the A-4 and A-6 soil groups.

Table 8: Summary of Unit 5 Properties

Alignment	Q_u Min-Max (tsf)	SPT N-values Min-Max (blows/foot)	Moisture Content Min-Max (%)	Liquid Limit Min-Max (%)	Plastic Limit Min-Max (%)
IL-47	0.2-3.00	0-54	3-34	15-33	11-17
IL-47 Peat Area 1	0.3-2.5	4-54	8-25	NA	NA
IL-47 Peat Area 2	0.3-3.0	5-41	4-25	33	13
IL-47 Peat Area 3	0.1-2.8	2-42	3-24	15	12
Southview Drive	0.4-1.0	5-25	9-14	27	14
Lake Avenue	0.3-1.4	3-15	9-19	29	17
South Street/ Country Club Road	0.3-3.5	6-30	5-18	38	14
Judd Street/ Irving Avenue	0.1-3.5	2-29	8-24	NA	NA
IL 120	0.3-3.6	4-24	9-28	26	12
Detention Basin 3	0.5-2.5	4-14	8-14	NA	NA
Detention Basin 4 At Irving Avenue	0.4-2.8	6-21	9-21	NA	NA
Traffic Sign At South St/Co Club	0.3-3.5	6-29	8-15	NA	NA
Traffic Sign At IL 120	0.2-2.3	1-25	9-25	18	11

Based on the lower moisture content and plasticity measurements, these loamy soils are likely more granular than cohesive in nature and the Qu value does not necessarily indicate weak or deformable soils. Most of the borings advanced through this unit within the northern section were terminated in it.

6) Medium dense to very dense gravelly sand (Unit 6)(TL I and TL II)

The borings along the southern portion of the project encountered at the surface medium dense to very dense, brown, moist to saturated, sandy loam, gravelly loam, and gravelly sand with N-values of 13-51 blows per foot. Along the northern two third of the project the sand and gravel outwash is encountered beneath the Unit 5 loamy diamicton. This unit thickness ranges from 4 to more than 30 feet and has N-values of 0 to 61 blows per foot. Most of the borings advanced through this unit were terminated in it.

4.3 Groundwater Conditions

Groundwater was observed in 98 out of 154 borings during drilling at elevations of 862 to 932 feet (0 to 33 feet bgs) with very few of them dry. After drilling the groundwater was measured in 57 borings at elevations of 862 to 931 feet (0 to 37 feet bgs). The granular Unit 6 is water bearing and not under pressure. Dewatering along the entire project may be needed.

Where encountered, the granular unit is moist to saturated. During our investigation, ten borings along IL 47, showed under pressure groundwater bearing layer. Granular lenses within the diamicton and the peat areas, and some of the coarser diamicton were found to be moist to saturated. If exposed during construction, these soils are prone to release water into excavated sections.

During periods of precipitation, we anticipate that perched groundwater may pond within the sag and peat areas that will impact the roadway or pavement design.

5.0 ENGINEERING ANALYSIS AND RECOMMENDATIONS

According to the plans and cross-section drawings provided by AECOM, the alignments generally follow the existing ground elevation with little change in grade. Embankment fill will be placed within the widening areas, along IL 47 between Station 153+00 and 156+00, and along IL 47 between Station 186+00 and Station 193+00. The new design includes embankment fills of up to 7 feet (IL 47 Station 192+00). In general, the embankments will have maximum side slopes of 1:3 (V: H). The pavement section includes 12 inches of improved aggregate subgrade.

5.1 Site Preparation and Earthwork

It is recommended that the existing topsoil, pavement, vegetation, and debris be stripped within the limits of the proposed improvements. For estimating purposes, the topsoil thickness to be stripped is 10 inches. The actual need for topsoil removal should be determined in the field. It is recommended the stripped topsoil be stockpiled, sorted, and reused for the proposed landscaping improvements.

According to IDOT District One policy, a shrinkage factor of 15% should be used to estimate borrowed and furnished excavation quantities. We recommend the Contractor create sufficient runoff drainage to prevent excess pooling of precipitation and facilitate runoff in the event of extended construction delays.

After the surface removal, the stability of the exposed subgrade should be immediately observed for the presence of any unsuitable and/or unstable soils to determine if remedial treatment is necessary. The subgrade should be proofrolled to observe the amount of deflection and rutting under the wheels of heavy construction equipment, such as a fully-loaded dump truck. The 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. Any material not needed for undercut replacement at the time of construction should be deleted from the contract with no extra compensation to the contractor.

Where existing embankments are to be widened, the existing slopes should be deeply plowed or benched according to Section 205 (IDOT 2022). We recommend including the IDOT District One benching detail (Appendix D) in the contract plans.

5.2 Subgrade Treatment and Recommendations

The new roadway pavement will be supported on the existing cohesive or granular subgrade or on new compacted fill material. Based on the typical sections, the proposed roadway sections will consist of 9.75 of Portland cement concrete followed by 12 inches of aggregate subgrade improvement *(within this report, hereafter also known as ASI)*. Thus, any additional subgrade improvements identified in this report shall be placed beyond the proposed 12 inches of aggregate subgrade (aka ASI).

Along the investigated alignments, the subgrade consists of granular soils or cohesive soils with Q_u values generally greater than 1.0 tsf, moisture contents less than 25%, and liquid limit (L_L) values below 50%. Overall, the subgrade will provide a stable working platform, with the exception of specific areas along the alignments. If removal and replacement is considered, we recommend providing geotechnical fabric for ground stabilization before placement of replacement material. The limits of the areas with unstable soils requiring subgrade treatment are summarized in Table 9.

The actual need for removal and replacement of unstable and unsuitable soils, including the required width and depth of improvement shown in Table 9, should be determined in the field at the time of construction by the geotechnical engineer or soil inspector. It is possible that undercuts may be required in areas where borings were not performed and in between borings. Undercut determinations should

be made by a qualified soils inspector at the time of construction. We recommend that a provisional quantity be included for removal and replacement in the contract to account for unknown subgrade treatment areas. The provisional quantity should be 25 percent of the remaining plan pavement areas not included in Table 9 assuming 12 inches of thickness for the full width of the pavement.

Several of the unstable areas specified in Table 9 include soft soils, compressible organic silts, organic clays, and peat. A ground improvement option, other than removal and replacement option, is discussed in Section 5.6.

The replacement material should be in accordance with the IDOT Bureau of Design and Environment (BDE) Aggregate Subgrade Improvement Special Provision (BDE 2022). Based on the above recommendation, we recommend including two separate Aggregate Subgrade Improvement line items in the Schedule of Quantities (SOQ) included in the design plans:

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

We also recommend including a plan quantity of GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (SQ YD) equal to at least 25 percent of the planned pavement area, in addition to the areas listed in the undercut table. 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 placing the fabric at the base of the proposed 12-inch improved subgrade layer unless it is determined to be necessary to achieve stability by the Geotechnical Engineer or soils inspector at the time of construction. Fabric should meet the requirements of Article 210, Fabric for Ground Stabilization, of the SSRBC. Any material not needed at time of construction should be deleted from the contract with no extra compensation to the contractor.

The following or similar notes should also be included in the contract document.

The removal and replacement areas shown on the plans are estimated from the borings information. The actual extent of the removal and replacement shall be determined and either verified or adjusted to the conditions encountered in the field at the time of construction by a qualified soils inspector.

A provisional Aggregate Subgrade Improvement quantity of _____ Cubic Yard and Geotechnical Fabric for Ground Stabilization _____Square Yard is included in the total quantity to account for subgrade treatment in areas outside of areas shown on the Plans. Any material not needed during the construction will be deleted from the contract with no extra compensation to the contractor.

Table 9: Summary of Subgrade Treatment Recommendations

Roadway	Limits Station to Station	Treatment Width(1)	Treatment Type	Treatment Depth/Elevation (feet)	Reference Borings/ Subgrade Concerns
IL 47	115+50 to 118+50	30' RT to 55' RT	Column Supported Ground Improvement (5)	9.0/922 (3)	PT1-04, PT1-05, RWB-01, RWB-02 (Q_u=0.5 tsf, MC=120 to 243%)
IL 47	122+50 to 134+50	Entire Pavement Width	Aggregate Subgrade Improvement and Geofabric	1.0 ft below the bottom of ASI (2)	SGB-09 to SGB-12 (Q_u=0.41-0.74 tsf, MC=77%, buried topsoil)
IL 47	146+50 to 152+50	Entire Pavement Width	Aggregate Subgrade Improvement and Geofabric	1.0 ft below the bottom of ASI (2)	SGB-17 and SGB-18 (Q_u=0.5 tsf)
IL 47	152+50 to 155+50	20' RT to 70' RT	Column Supported Ground Improvement (5)	15.0/893 (3)	PT5-02 to PT5-04, RWB-09 to RWB-11, SGB-19 (Q_u< 0.25 to 0.49 tsf, MC=40-131%)
IL 47	155+50 to 156+50	30' RT to 60' RT	Column Supported Ground Improvement (5)	5.0/900 (3)	PT5-05 (Q_u<0.25, MC=30-124%)

Roadway	Limits Station to Station	Treatment Width(1)	Treatment Type	Treatment Depth/Elevation (feet)	Reference Borings/ Subgrade Concerns
IL 47	158+50 to 161+50	Entire Pavement width	Aggregate Subgrade Improvement and Geofabric	1.0 ft below the bottom of ASI (2)	SGB-21 (Q_u=0.25-0.57 tsf, buried topsoil
IL 47	176+50 to 179+50	Entire Pavement width	Aggregate Subgrade Improvement and Geofabric	1 ft below the bottom of ASI (2)(4)	SGB-27 (MC=25%, buried topsoil)
IL 47	179+50 to 182+00	Entire Pavement width	Aggregate Subgrade Improvement and Geofabric	1.0 ft below the bottom of ASI (2)	SGB-28 (Q_u=0.5 tsf)
IL 47	182+50 to 184+50	Center line to 130' RT	Column Supported Ground Improvement (5)	13.0/872 (3)	PT3-01 to PT3-03, PT4-01 to PT4-04 (Q_u<0.25, MC= 48-230%)
IL 47	184+50 to 186+50	30' RT to 90' RT	Column Supported Ground Improvement (5)	13.0/872(3)	PT3-03 to PT3-06, PT4-04 to PT4-07 (Q_u<0.25, MC= 50-518%)
IL 47	186+50 to 187+50	20' RT to 120' RT	Column Supported Ground Improvement (5)	13.0/872 (3)	PT3-06 to PT3-08, PT4-07 to PT4-09 (Q_u<0.25, MC= 47-455%)
IL 47	187+50 to 192+50	30' RT to 85' RT	Column Supported Ground Improvement (5)	10/875 (3)	PT3-08 to PT3-16, PT4-09 to PT4-16 (Q_u<0.25, MC= 47-455%)

Roadway	Limits Station to Station	Treatment Width(1)	Treatment Type	Treatment Depth/Elevation (feet)	Reference Borings/ Subgrade Concerns
IL 47	195+40 to 197+50	Entire Pavement width	Aggregate Subgrade Improvement and Geofabric	1.0 ft below the bottom of ASI (2)	SGB-33 and RWB-20 (Q_u=0.75 to 0.82 tsf, MC=27%, buried topsoil)
IL 47	197+50 to 199+50	Entire Pavement width	Aggregate Subgrade Improvement and Geofabric	1.0 ft below the bottom of ASI (2)	SGB-34 (Q_u=0.82 tsf)
IL 47	200+75 to 201+70	Entire Pavement width	Aggregate Subgrade Improvement and Geofabric	3.5 ft below the bottom of ASI (2)	TSB-06 (Q_u=0.16 to 0.41 tsf)
Southview Drive	205+50 to 207+50	Entire Pavement width	Aggregate Subgrade Improvement and Geofabric	1.0 ft below the bottom of ASI (2)	SGB-42 (Q_u=0.66 tsf)
Lake Avenue	178+50 to 181+20	Entire Pavement width	Aggregate Subgrade Improvement and Geofabric	1.0 ft below the bottom of ASI (2)	SGB-45 (Q_u=0.75 tsf)

(1) The base of the undercuts should extend away from the pavement at a minimum slope of 1:1 (V: H).
(2) Removal quantity should be calculated considering the thickness below the proposed 12 inches of aggregate subgrade.
(3) The removal depth is measured from the existing grade elevation.
(4) Further evaluation in field during construction.
(5) Discussed in Section 5.6.1-*Column Supported Ground Improvement*

All undercuts should be measured from the bottom of the 12-inch aggregate base course layer below the proposed pavement. The areas in the table should be further evaluated in the field during construction to determine if undercuts are warranted. Any undercuts should be backfilled in accordance with the IDOT Bureau of Design and Environment (BDE) Aggregate Subgrade Improvement Special Provision (April 1, 2022). We also recommend placing geotextile fabric at the base of all undercuts.

Please note that at IL 47 between Station 116+50 and Station 117+90, left offset, peat and soft soils were encountered at deeper depths, around 5 feet bgs. With the proposed widening and fill of less than 2 feet, we do not expect settlement of more than 1 inch in this area.

The frost depth for pavement design in northeastern Illinois is 42 inches. Within the frost depths, in general, the subgrade samples tested in the laboratory measured silt and fine sand contents less than 65% and had plasticity indices (PI) of greater than 12%. The borings mainly encountered groundwater below the frost depth; therefore, the subgrade soil will exhibit low frost susceptibility. Adequate drainage will suffice to alleviate any frost heave. Any highly moist soils, if not otherwise unsuitable or unstable, encountered within the exposed roadway subgrade should be disked or tilled, dried, and compacted before placing the new pavement structure.

5.3 Subgrade Support Rating

The proposed pavement will be supported mainly on granular soils, stiff clayey soils, or compacted fill material. Laboratory testing on selected subgrade samples shows a Subgrade Support Rating (SSR) of POOR to GRANULAR (Exhibit 4). Considering the worst subgrade conditions, we recommend that an SSR of POOR be used for the design of the pavement. The pavement could also be designed using an IBR value of 2 based on correlations to the A-7-6 soil classification provided in the *IDOT Geotechnical Manual* (2020).

5.4 Roadway Drainage

The proposed subgrade and pavement should have proper surface grading to prevent the pooling of water. The soils encountered beneath the proposed subgrade will exhibit poor to fair drainage characteristics. The fill material to be placed in support of the widening will likely be cohesive and will exhibit poor drainage characteristics. We recommend installing longitudinal pipe underdrains under the edge of new pavement in widening areas, and transverse pipe underdrains using a spacing of 300-foot, at the low points in the profile, and at the base of any undercuts. The pipe underdrains should be 4 inches in diameter and should be installed according to Standard Specification Specifications Section 601 and Highway Standard 601001-05 and shall consist of Type 2 underdrains. Top of pipe underdrains shall be placed 6 inches below the subgrade or undercut.

5.5 Embankment and Cut Sections

The alignments generally follow the existing ground elevation with little change in grade. Therefore, the construction of the roadway will have minor fill or cut sections. The highest embankment fill of about 7 feet will be located along IL 47 between Station 187+50 and Station 192+50. New fill up to 12 feet is expected at Station 154+00 to raise the grade of an existing ditch to accommodate roadway widening.

We have evaluated the potential long-term settlement and global slope stability of the cut and fill sections along the proposed improvements.

5.5.1 Settlement

In general, we do not anticipate excessive settlement except in the wetland areas where the borings encountered organic soils and peat. Settlement evaluations performed for the organic soil and peat areas and treatment options are discussed in Section 5.6.

5.5.2 Global Stability

In general, there is no slope stability concern since the alignments generally follow the existing ground elevation with little change in grade. Global stability analyses were performed at the proposed embankment fill along IL 47 between Station 187+50 and Station 192+50. Due to the presence of peat and soft soils in this area, the analysis indicates that the factors of safety (FOS) does not meet IDOT's minimum requirement of 1.5 for embankment. Treatment options to improve the slope stability are discussed in Section 5.6. Slope stability analyses results are included in Appendix E.

5.6 Ground Improvement

The subsurface investigation along the IL 47 alignment revealed the presence of compressible, organic silty clay and peat. These compressible soils were encountered mainly along IL 47 between Station 115+50 and Station 118+50, between station 152+50 and station 156+50, and between Station 182+50 and Station 192+50.

We performed settlement analyses at several locations along IL 47. Our evaluations show estimated long-term settlements of 2.7 to 29.3 inches within the peat and soft soils areas. The summary of settlement analyses is presented in Table 10.

Table 10: Summary of settlement analyses

Roadway	Station	Direction	Fill Height (feet)	Reference Borings	Settlement (inches)
IL 47	117+10 RT	Northbound	5.0	PT1-05	2.7
IL 47	118+00 RT	Northbound	5.0	RWB-02	4.3
IL 47	155+00 RT	Northbound	9.0	PT5-04	6.6
IL 47	156+00 RT	Northbound	6.5	SGB-23	3.1

Roadway	Station	Direction	Fill Height (feet)	Reference Borings	Settlement (inches)
IL 47	190+00 RT	Northbound	7.0	SGB-31, PT4-13	29.3

In addition to the large settlement issues, our global stability analyses show the FOS do not meet the IDOT's minimum requirement at the peat areas between Station 187+50 and Station 192+50. To mitigate the anticipated long-term settlement concerns and achieve adequate FOS in global stability, we recommend a column supported ground improvement program.

5.6.1 Column Supported Ground Improvement

The soil within the limits as shown in Table 11 should be improved according to the *Column Supported Ground Improvement* Special Provision included in the contract documents.

Additional deeper borings are recommended to provide deeper soil information. The Contractor is responsible for any additional subsurface information that the Contractor's design team needs.

Table 11: Summary of Areas Requiring Column Supported Ground Improvement

Roadway	Limits Station to Station	Treatment Width	Approximate Bottom Elevation of Soft Soil and Peat (feet)
IL 47	115+50 to 118+50	30' RT to 55' RT	922
IL 47	152+50 to 155+50	20' RT to 70' RT	893
IL 47	155+50 to 156+50	30' RT to 60' RT	900
IL 47	182+50 to 184+50	Centerline to 130' RT	872
IL 47	184+50 to 186+50	30' RT to 90' RT	872
IL 47	186+50 to 187+50	20' RT to 120' RT	872
IL 47	187+50 to 192+50	30' RT to 85' RT	875

5.7 Detention Ponds and Infiltration Rates

Based on information received from AECOM in July 2020, there are four detention basins being proposed within the project limits. The proposed detention basin locations and base elevations are summarized in Table 12. In general, the base of the detention basins consists of stiff clay loam or loose silty loam. An exception is noted at Detention Basin at Station 185+00 (right offset) where very soft peat is expected to be exposed at the base of the basin, based on soil boring DPB-06. Therefore, the construction of detention pond at Station 185+00 (right offset) should consider this condition. Stability of the slope will also need to be analyzed. The proposed cut slopes should be checked during and after construction. The slope surfaces will require permanent protection to prevent erosion and storm water runoff and to prevent water seepage from within the cut slope. Slope protections such as riprap or seeding can be considered.

Groundwater may be expected during and after construction depending upon the time of year and prevailing precipitation. Sloughing of granular soils during and after completion of excavation is possible. Detention basin at Station 185+00 is expected to have groundwater above the basin's base elevation.

Table 12: Summary of Detention Basin Location

Alignment	Station	Offset	Approximate Base Elevation (feet)	Boring Reference
IL 47	95+00	LT	936	DPB-01
IL 47	137+50	RT	915	DPB-02 and DPB-03
IL 47	153+50	RT	904	DPB-04 and DPB-05
IL 47	185+00	RT	877	DPB-06 and DPB-07

Wang completed four infiltration tests at the proposed detention basin areas shown in Table 12. The infiltration test result is summarized in Table 13 and is shown in Appendix G, Infiltration Rate Testing Result. Field infiltration rates could not be obtained at INF-03 and INF-04 test locations due to the fact that the water rose from the bottom of test depths while we were preparing the test hole. Please note that one of the locations where the water rose is at the area with peat (Station 185+00 - right offset).

Table 13: Infiltration Test Result

Test ID	Location	Test Depth (inch)	Test Elevation (feet)	Soil Description (USDA)	Field Infiltration Rate (inch/ hour)
INF-01	Sta. 95+35, offset 84.2' LT	11.5	938.7	Clay Loam	1.520
INF-02	Sta. 138.15, offset 271.2' RT	72.0	920.5	Silt Loam	0.001
INF-03	Sta. 153+55, offset 176.2' RT	11.5	903.7	Silty Clay Loam	NA(1)
INF-04	Sta. 184+92, Offset 181.5' RT	82.5	878.0	Silt Clay (Peat Area)	NA(2)

(1) Water rose for 2.25 inches from the bottom of the test depth.

(2) Water rose for 39.5 inches from the bottom of the test depth.

As per CCSMO, subsoil infiltration rates must be 0.5 inch/hour or greater for use of standard infiltration Best Management Practice (BMP). For the subsoil with infiltration rates less than 0.5 inch/ hour, a prepared subgrade and underdrain system would be required to facilitate implementation of runoff water volume control.

5.8 Sign Structure

Six traffic signal structure borings (TSB-01 through TSB-06) were drilled at three intersections with IL 47. Proposed traffic signal foundation depths can be determined using *IDOT Highway Standard 878001* that provides a traffic signal foundation design table based upon traffic signal mast arm lengths. The table provides standard drilled shaft diameters and embedment depths for concrete foundations. The foundation details provided in *Highway Standard 878001-10* were developed for sites that have cohesive soils along the length of the shaft.

The borings, drilled at the proposed traffic signal locations, encountered mostly soft to stiff cohesive soils and granular soils to boring termination depths. According to the IDOT *Geotechnical Manual*, when soil conditions preclude the use of standard foundation designs, project specific foundation designs shall be performed in accordance with Article 13.6 of the *AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals.*

Given the presence of mostly soft to medium stiff cohesive soils with an average Qu value of less than 1.5 tsf. and granular soils, Wang recommends the minimum required depth for the drilled shaft

foundation be analyzed in accordance with IDOT Design Guide *AGMU Memo 11.1-Shaft Overturning and Torsion Analysis.* Soil profile data for the traffic signal should be entered based on the boring at the proposed traffic signal location. The analysis should be based on the anticipated design loading data. We recommend the length of the drilled shafts below the finished ground surface be at least four times the shaft diameter.

6.0 Construction Considerations

6.1 Excavation, Dewatering, and Utilities

The excavations should be performed in accordance with local, state, and federal regulations. The potential effect of ground movements upon nearby roadways and utilities should be considered during construction. Temporary excavations should be sloped at no greater than 1:2 (V: H).

Excavations required for cuts and undercutting will require dewatering as the water table is occasionally seated above the excavation depths. The Contractor should ensure proper surface grading to prevent the pooling of runoff into open excavations. Any water allowed to enter excavations should immediately be removed.

6.2 Filling and Backfilling

Fill material used to attain the final design elevations should be structural fill material. Coarse aggregate of IDOT gradation CA-6 or pre-approved, compacted, cohesive or granular soil conforming to Section 204 would be acceptable as structural fill (IDOT, 2022). The fill material should be free of organic matter and debris and should be placed in lifts and compacted according to IDOT Section 205, *Embankment* (IDOT, 2022).

6.3 Reuse of Excavated Materials

Excavated soils and granular subbase material from within the project limits may be reused in embankments if it meets requirements of IDOT Standard Specifications Section 204 and IDOT District One Special Provision *Embankment I.*

6.4 Earthwork Operations

The required earthwork can be accomplished with conventional construction equipment. Moisture and traffic will cause deterioration of exposed subgrade soils. Precautions should be taken by the Contractor to prevent water erosion of the exposed subgrade. A compacted subgrade will minimize water run-off erosion. Earth moving operations should be scheduled to avoid excessive cold or wet weather (early spring, late fall or winter). Any soil allowed to freeze or soften due to the standing water should be

removed. Wet weather can cause problems with subgrade compaction.

It is recommended that an experienced geotechnical engineer be retained to inspect the exposed subgrade, monitor earthwork operations, and provide material inspection services during the construction phase of this project.

7.0 QUALIFICATIONS

The analysis and recommendations submitted in this report are based upon the data obtained from the borings drilled at the locations shown on the boring logs and in Appendix F. This report does not reflect any variations that may occur between the borings or elsewhere on the site, variations whose nature and extent may not become evident until the course of construction. In the event that any changes in the design and/or location of the roadway are planned, we should be timely informed so that our recommendations can be adjusted accordingly.

It has been a pleasure to assist AECOM and the Illinois Department of Transportation on this project. Please call if there are any questions, or if we can be of further service.

Respectfully Submitted,

WANG ENGINEERING, INC.

Cornelia L. Marin, P.G.
Senior Engineering Geologist

Metin W. Seyhun, P.E., F.ASEC
QC/QA Reviewer

Andri A. Kurnia, P.E.
Senior Geotechnical Engineer

REFERENCES

BAUER, R.A., CURRY, B.B., GRAESE, A.M., VAIDEN, R.C., SU, W.J., and HASEK, M.J., 1991, *Geotechnical Properties of Selected Pleistocene, Silurian, and Ordovician Deposits of Northeastern Illinois*: Environmental Geology 139, Illinois State Geological Survey, 69 p.

CURRY, B.B., AND J.F. THOMASON, 2012, *Surficial Geology of Huntley Quadrangle, McHenry and Kane Counties, Illinois*: Illinois State Geological Survey, USGS-STATEMAP contract report, 2 sheets, 1:24,000.

FLAHERTY, S.T., JASON F. THOMASON, AND DAVID H. MALONE (2013) Surficial Geology of Woodstock Quadrangle McHenry County, Illinois: Illinois State University, EDMAP; 1 sheet, , 1:24,000.

HANSEL, A.K., and JOHNSON, W.H. (1996) W*edron and Mason Groups: Lithostratigraphic Reclassification of the Wisconsin Episode, Lake Michigan Lobe Area: ISGS Bulletin 104.* Illinois State Geological Survey, Champaign, IL. 116 p.

ILLINOIS DEPARTMENT OF TRANSPORTATION (April 1,2022) Bureau of Design and Environment (BDE) *Aggregate Subgrade Improvement Special Provision.* IDOT Division of Highways, Springfield, IL

ILLINOIS DEPARTMENT OF TRANSPORTATION (2020) *Geotechnical Manual.* IDOT Bureau of Materials and Physical Research, Springfield, IL.

ILLINOIS DEPARTMENT OF TRANSPORTATION (2022) *Standard Specifications for Road and Bridge Construction.* IDOT Division of Highways, Springfield, IL.

LEIGHTON, M.M., EKBLAW, G.E., and HORBERG, L. (1948) *Physiographic Divisions of Illinois.* The Journal of Geology, v. 56, p. 16-33.

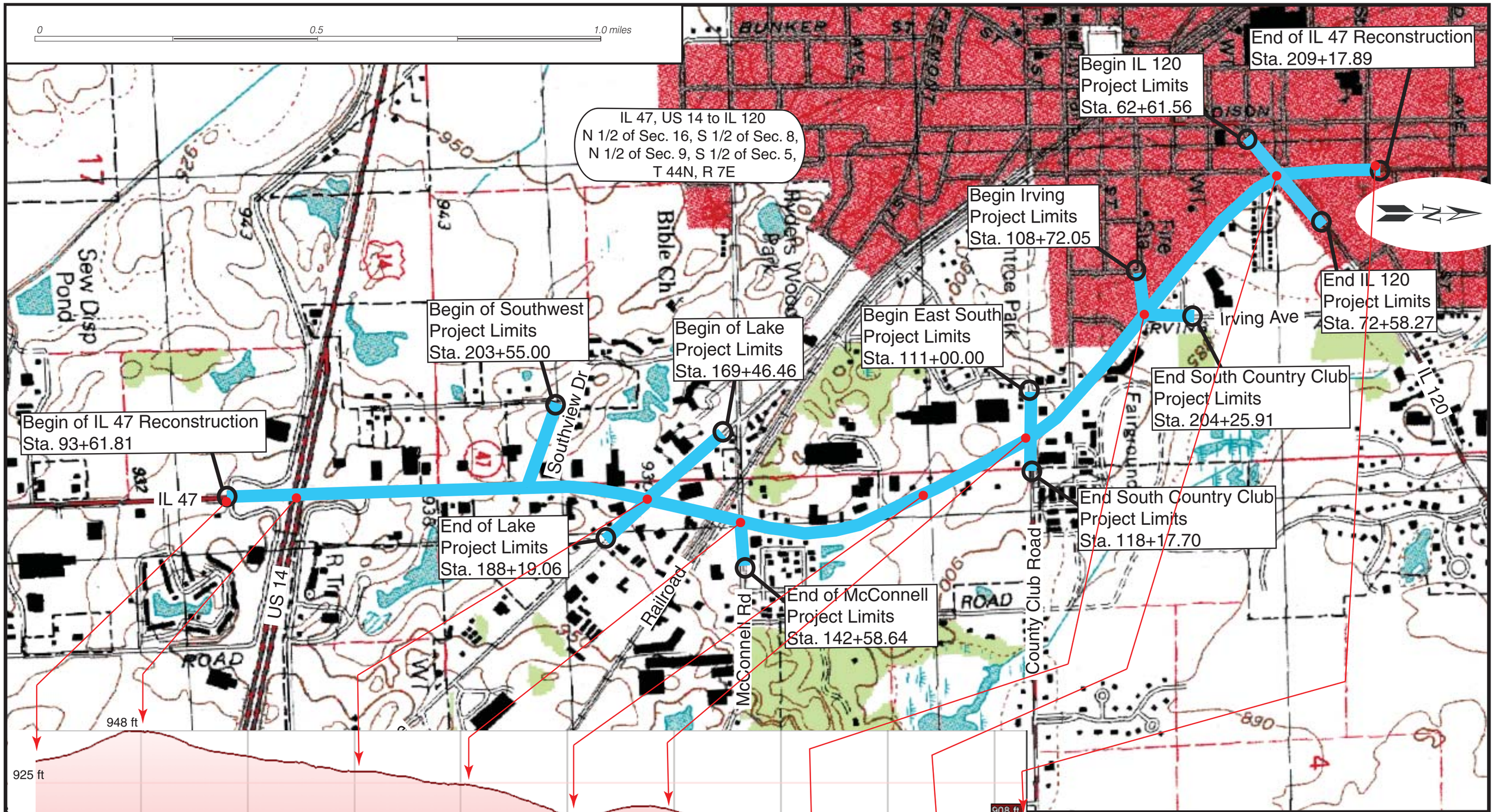
ILLINOIS DEPARTMENT OF TRANSPORTATION (2005) *Subgrade Stability Manual.* IDOT Bureau of Bridges and Structures.

NCDC (2017) National Climatic Data Center: Global Historical Climatological Network Data, http://www.ncdc.noaa.gov/ghcn/ghcn.SELECT.html.

WICKHAM, S.S., W.H. JOHNSON, AND H.D. GLASS (1988) Regional Geology of the Tiskilwa Till Member, Weadron Formation, Northeastern Illinois, Illinois State Geological Survey, Circular 543; Champaignm, IL.

WILLMAN, H.B., ATHERTON, E., BUSCHBACH, T.C., COLLINSON, C., FRYE, J.C., HOPKINS, M.E., LINEBACK, J.A., and SIMON, J.A., 1971, Handbook of Illinois Stratigraphy: ISGS Bulletin 95: Urbana, Illinois State Geological Survey, 261 p.

EXHIBITS



SITE LOCATION MAP: IL 47, US 14 to IL 120
McHENRY COUNTY, ILLINOIS

SCALE: GRAPHICAL	EXHIBIT 1	DRAWN BY: R. KC CHECKED BY: C. Marin

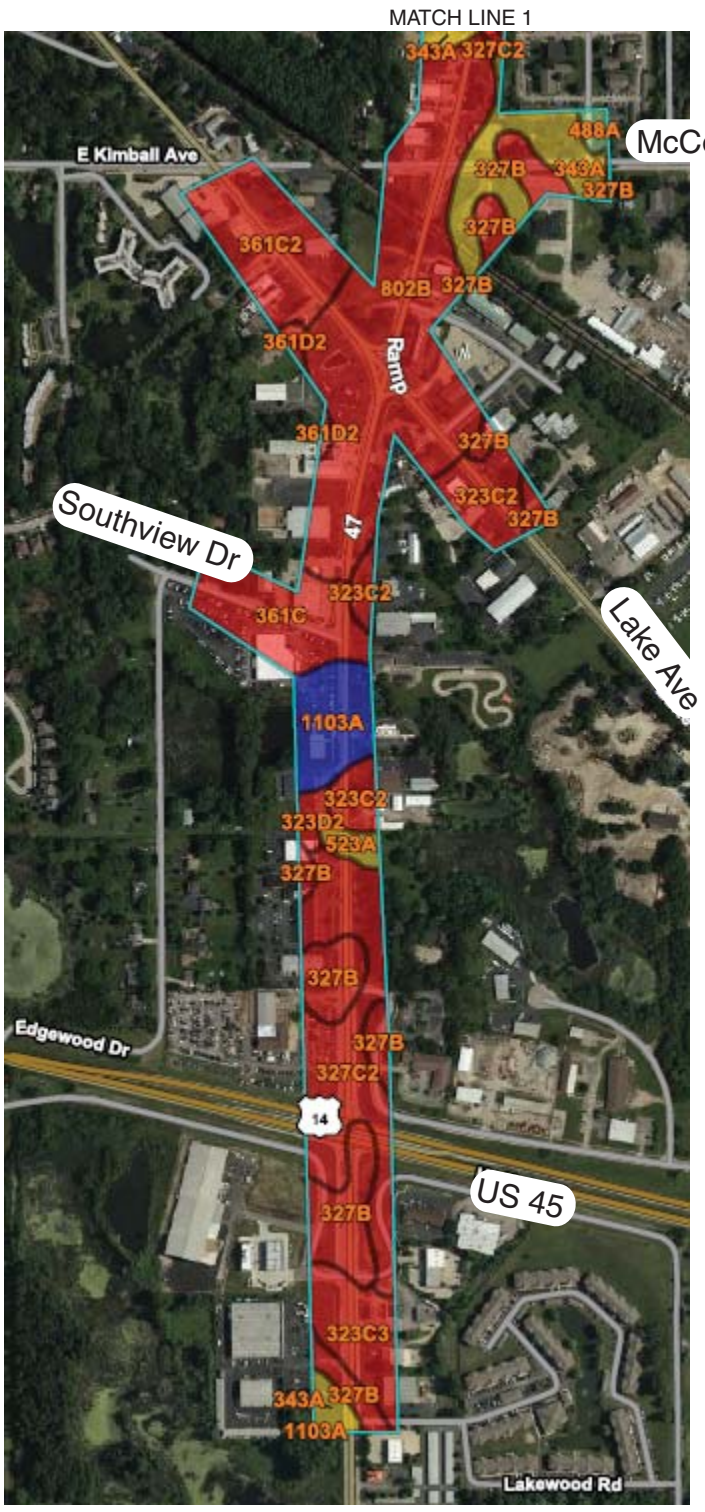
Wang Engineering
1145 N. Main Street
Lombard, IL 60148
www.wangeng.com

FOR AECOM

1100-15-01

MATCH LINE 1

MATCH LINE 1



Modified after USDA - Natural Resources Conservation Service, McHenry Co. Map (May 2020)

0 0.1 0.2 0.3 0.4 miles

N

LEGEND

ORGANIC MATTER %
(Map Unit Symbol)

- <= 0.69 % (310B, 323C2, 323C3, 323D2, 325B, 327B, 327C2, 361C, 361C2, 361D2, 802B)
- 0.69 - 1.67 % (59A, 59B, 153A, 343A, 523A, 626A)
- 2.33 % (488A)
- 54.25 % (103A) - Muck, Peat
- 84.50 % (1103A) - Muck, Peat

SITE PEDOLOGY MAP: IL 47, US 14 to IL 120
McHENRY COUNTY, ILLINOIS

SCALE: GRAPHICAL	EXHIBIT 2-1	DRAWN BY: C. Marin CHECKED BY: L. Iordache

Wang Engineering

1145 N. Main Street
Lombard, IL 60148
www.wangeng.com

FOR AECOM

1100-15-01

Map unit symbol and soil name	Depth	USDA texture	Classification	Fragments		Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Organic matter	Liquid limit	Plasticity index	Erosion factors			Potential as a source of roadfill	Local roads and streets	Shallow excavations
			AASHTO	>10 inches	3-10 inches									Kw	Kf	T	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
	In			Pct	Pct	Pct	Pct	Pct	g/cc	micro m/sec	Pct	Pct							
59A—Lisbon silt loam, 0 to 2 percent slopes																			
Lisbon silt loam	0-11	Silt loam	A-7-6, A-7-5, A-6	0- 0- 0	0- 0- 0	0- 8- 15	58-69- 80	20-24- 27	1.10-1.20-1.30	4.23-9.17-14.11	3.0- 4.0-5.0	37-42-48	13-15-18	0.28	0.28	5	Poor, Low strength, Wetness, Dusty, Shrink-swell	Very limited, Low strength, Shrink-swell, Depth to saturated zone, Frost action	Very limited, Depth to saturated zone, Dusty, Unstable excavation walls, Dense layer
	11-36	Silty clay loam, silt loam	A-7-6, A-6	0- 0- 0	0- 0- 0	0- 7- 15	50-63- 75	25-30- 35	1.15-1.25-1.35	4.23-9.17-14.11	0.5- 1.3-2.0	36-43-49	17-21-25	0.43	0.43				
	36-39	Loam, clay loam	A-6, A-7-6	0- 0- 0	0- 1- 1	20-32- 45	21-40- 53	20-28- 34	1.45-1.50-1.55	4.23-9.17-14.11	0.2- 0.3-0.5	30-39-45	13-20-24	0.37	0.37				
	39-60	Loam, sandy loam	A-6, A-4	0- 0- 0	0- 1- 2	25-40- 55	25-40- 50	15-20- 25	1.70-1.80-1.90	1.41-2.82-4.23	0.0- 0.3-0.5	25-30-36	9-13-17	0.43	0.43				
59B—Lisbon silt loam, 2 to 4 percent slopes																			
Lisbon silt loam	0-11	Silt loam	A-4, A-6	0- 0- 0	0- 0- 0	-10-	-68-	20-23- 25	1.10-1.20-1.30	4.23-9.17-14.11	3.0- 4.0-5.0	25-33-40	5-13-20	0.32	0.32	5	Fair, Wetness, Low strength, Dusty	Very limited, Depth to saturated zone, Frost action, Low strength, shrink-swell	Very limited, Depth to saturated zone, Dense layer, Dusty, Unstable excavation walls
	11-36	Silty clay loam, silt loam	A-6, A-7	0- 0- 0	0- 0- 0	- 7-	-63-	25-30- 35	1.15-1.25-1.35	4.23-9.17-14.11	0.5- 1.3-2.0	35-45-55	15-25-35	0.43	0.43				
	36-39	Loam, clay loam	A-4, A-6, A-7	0- 0- 0	0- 1- 1	-31-	-42-	20-27- 34	1.45-1.50-1.55	4.23-9.17-14.11	0.2- 0.3-0.5	20-33-45	8-17-25	0.49	0.49				
	39-69	Loam, sandy loam	A-4, A-6	0- 0- 0	0- 1- 2	-37-	-43-	15-20- 25	1.70-1.80-1.90	1.41-2.82-4.23	0.2- 0.3-0.5	20-30-40	8-14-20	0.55	0.55				
103A—Houghton muck, 0 to 2 percent slopes																			
Houghton muck	0-6	Muck	A-8	0- 0- 0	0- 0- 0	0- 0- 0	0- 0- 0	0- 0- 0	0.23-0.33-0.43	1.00-22.00-42.00	30.0-45.0-80.0	—	—			2	Poor, Wetness, Low strength, Dusty	Very limited, Ponding, Depth to saturated zone, Subsidence, Frost action, Low strength	Very limited, Ponding, Depth to saturated zone, Organic matter content, Dusty, Unstable excavation walls
	6-79	Muck	A-8	0- 0- 0	0- 0- 0	0- 0- 0	0- 0- 0	0- 0- 0	0.32-0.38-0.43	1.00-22.00-42.00	30.0-55.0-85.0	—	—						
153A—Pella silty clay loam, 0 to 2 percent slopes																			
Pella silty clay loam	0-14	Silty clay loam	A-7-5	0- 0- 0	0- 0- 0	4- 7- 19	51-62- 69	27-31- 35	1.23-1.27-1.32	0.42-1.41-4.23	5.0- 5.5-6.0	47-51-56	18-21-24	0.28	0.28	5	Poor, Wetness, Dusty, Shrink-swell	Very limited, Ponding, Depth to saturated zone, Low strength, Shrink-swell, Frost action	Very limited, Ponding, Depth to saturated zone, Dusty, Unstable excavation walls
	14-46	Silty clay loam	A-6, A-7-6	0- 0- 0	0- 0- 0	4- 7- 19	51-62- 69	27-31- 35	1.35-1.39-1.43	0.42-1.40-4.23	0.5- 0.8-1.5	37-42-48	18-22-25	0.43	0.43				
	46-79	Loam	A-6	0- 0- 0	0- 3- 4	25-45- 50	20-33- 53	15-22- 30	1.47-1.49-1.51	4.23-9.00-14.11	0.0- 0.0-0.2	25-32-40	9-15-21	0.32	0.32				
310B—McHenry silt loam, 2 to 4 percent slopes																			
McHenry silt loam	0-5	Silt loam	A-4, A-6	0- 0- 0	0- 0- 0	10-20- 30	50-64- 80	10-16- 22	1.46-1.47-1.48	4.23-9.17-14.11	1.0- 2.0-3.0	23-31-39	6-10-15	0.49	0.49	5	Fair, Dusty	Very limited, Low strength, Frost action	Somewhat limited, Dusty, Unstable excavation walls
	5-10	Silt loam	A-4, A-6	0- 0- 0	0- 0- 0	10-20- 30	50-64- 80	10-16- 22	1.48-1.50-1.52	4.23-9.17-14.11	0.5- 1.0-1.5	22-28-35	6-10-15	0.49	0.49				
	10-22	Silty clay loam, silt loam	A-6, A-7-6	0- 0- 0	0- 0- 0	5-15- 25	40-55- 72	22-30- 35	1.42-1.44-1.47	4.23-9.17-14.11	0.5- 0.8-1.0	33-41-47	15-21-25	0.37	0.37				
	22-32	Sandy clay loam, clay loam, loam	A-6, A-7-6	0- 0- 0	0- 1- 1	30-42- 55	15-33- 51	18-25- 30	1.42-1.53-1.64	4.23-9.17-14.11	0.5- 0.8-1.0	29-36-42	12-17-21	0.28	0.28				
	32-37	Loam, fine sandy loam, sandy loam	A-4, A-6	0- 0- 0	0- 3- 4	45-55- 65	20-35- 47	8-10- 18	1.59-1.61-1.63	4.23-9.17-14.11	0.2- 0.3-0.5	19-21-29	4-6 -12	0.43	0.43				
	37-79	Sandy loam, gravelly sandy loam, fine sandy loam	A-4, A-2-4	0- 0- 0	0- 6- 9	55-60- 70	18-30- 40	5-10- 15	1.45-1.56-1.67	14.11-28.23-42.34	0.0- 0.3-0.5	16-21-26	2-6 -9	0.20	0.32				
323C2—Casco loam, 4 to 6 percent slopes, eroded																			
Casco loam	0-8	Loam	A-4	0- 0- 0	0- 4- 7	-44-	-41-	10-15- 20	1.35-1.45-1.55	4.23-9.17-14.11	1.0- 2.0-3.0	20-25-30	3-7 -10	0.24	0.37	2	Good	Not limited	Very limited, Dusty, Unstable excavation walls
	8-17	Clay loam, sandy clay loam, gravelly loam	A-2, A-6, A-7	0- 1- 1	0- 4- 5	-35-	-38-	18-27- 35	1.55-1.60-1.65	4.23-9.17-14.11	0.0- 0.3-0.5	25-36-46	11-19-26	0.15	0.32				
	17-60	Very gravelly, gravelly sand, sandy loam, loam	A-1, A-2, A-3	0- 1- 2	0-11- 17	-98-	- 2-	0- 1- 2	1.30-1.50-1.70	141.14-141.14-141.14	0.0- 0.3-0.5	0-7 -14	NP	0.02	0.05				

Source: USDA, Natural Resources Conservation Service; Web Soil Survey
Soil Survey Area: McHenry County, Illinois
Survey Area Data: Version 16, May 29, 2020

SITE PEDOLOGY DATA: IL 47, US 14 to IL 120
McHENRY COUNTY, ILLINOIS

SCALE: GRAPHICAL

EXHIBIT 2-2

DRAWN BY: J. Bensen
CHECKED BY: C. Marin

Wang Engineering

1145 N. Main Street
Lombard, IL 60148
www.wangeng.com

FOR AECOM

1100-15-01

Map unit symbol and soil name	Depth	USDA texture	Classification	Fragments		Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Organic matter	Liquid limit	Plasticity index	Erosion factors			Potential as a source of roadfill	Local roads and streets	Shallow excavations
			AASHTO	>10 inches	3-10 inches									Kw	Kf	T	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
	In			Pct	Pct	Pct	Pct	Pct	g/cc	micro m/sec	Pct	Pct							
323C3—Casco clay loam, 4 to 6 percent slopes, severely eroded																			
Casco clay loam	0-7	Clay loam	A-6	0- 0- 0	0- 4- 7	-34-	-37-	27-29- 30	1.40-1.45-1.50	4.23-9.17-14.11	0.5- 0.8-1.0	30-35-40	10-15-20	0.20	0.32	1	Fair, Dusty	Not limited	Somewhat limited, Dusty, Unstable excavation walls
	7-19	Clay loam, sandy clay loam, gravelly loam	A-2, A-6, A-7	0- 1- 1	0- 4- 5	-35-	-38-	18-27- 35	1.55-1.60-1.65	4.23-9.17-14.11	0.0- 0.3-0.5	25-36-46	11-19-26	0.15	0.32				
	19-60	very gravelly, gravelly sand, sandy loam, loam, coarse sand	A-1, A-2, A-3	0- 1- 2	0-11- 17	-98-	- 2-	0- 1- 2	1.30-1.55-1.80	141.14-141.14-141.14	0.0- 0.3-0.5	0-7 -14	NP	0.02	0.05				
323D2—Casco loam, 6 to 12 percent slopes, eroded																			
Casco loam eroded	0-5	Loam	A-4	0- 0- 0	0- 0- 0	30-44- 52	28-41- 57	10-15- 20	1.42-1.47-1.51	4.23-9.17-14.11	1.0- 2.0-3.0	23-30-37	6-9 -13	0.32	0.32	2	Good	Somewhat limited, Frost action, slope	Somewhat limited, Dusty, Unstable excavation walls, slope
	5-17	Clay loam, loam	A-6, A-7	0- 1- 1	0- 3- 4	23-35- 40	25-38- 55	18-27- 35	1.51-1.52-1.53	4.23-9.17-14.11	0.0- 0.3-0.5	28-37-46	12-19-25	0.32	0.32				
	17-79	Very gravelly coarse sand, extremely gravelly coarse sand, stratified sand to gravel	A-1-a, A-3, A-1-b	0- 1- 2	0- 4- 11	85-93- 95	1- 4- 11	0- 3- 4	1.37-1.59-1.62	141.10-282.05-423.00	0.0- 0.3-0.5	0-0 -16	NP-0 -1	0.02	0.02				
325B—Dresden silt loam, 2 to 4 percent slopes																			
Dresden silt loam	0-7	Silt loam	A-7-6, A-6	0- 0- 0	0- 0- 0	2-18- 30	50-60- 78	18-23- 27	1.29-1.36-1.42	4.23-9.17-14.11	2.0- 3.0-4.0	32-38-45	12-15-18	0.32	0.32	3	Fair, Dusty	Somewhat limited, Frost action, Low strength	Somewhat limited, Dusty, Unstable excavation walls
	7-19	Silty clay loam	A-6	0- 0- 0	0- 0- 0	5-18- 20	42-52- 65	27-30- 38	1.44-1.44-1.45	4.23-9.17-14.11	0.2- 0.6-1.0	37-40-49	19-21-27	0.43	0.43				
	19-32	Clay loam, gravelly clay loam, sandy clay loam, very gravelly loam	A-2-6, A-6	0- 0- 0	0- 1- 3	30-48- 70	0-23- 48	20-29- 30	1.50-1.58-1.65	4.23-9.17-14.11	0.0- 0.3-0.5	29-39-40	13-20-21	0.24	0.24				
	32-79	Stratified gravelly loamy sand to extremely gravelly coarse sand, very gravelly sand	A-1-b, A-1-a	0- 0- 0	4-23- 24	80-91- 99	0- 6- 18	1- 3- 5	1.56-1.60-1.64	141.14-423.42-705.00	0.0- 0.3-0.5	0-0 -17	NP-0 -2	0.02	0.05				
327B—Fox silt loam, 2 to 4 percent slopes																			
Fox silt loam	0-7	Silt loam	A-4, A-6	0- 0- 0	0- 0- 0	5-18- 30	50-62- 80	15-20- 25	1.34-1.37-1.40	4.23-9.17-14.11	1.0- 2.0-3.0	28-34-41	9-13-17	0.37	0.37	3	Fair, Dusty	Somewhat limited, Frost action	Somewhat limited, Dusty, Unstable excavation walls
	7-11	Silty clay loam, silt loam	A-6, A-7-6	0- 0- 0	0- 1- 1	5-18- 30	50-50- 77	18-32- 35	1.48-1.52-1.57	4.23-9.17-14.11	0.2- 0.3-0.5	28-42-46	12-22-25	0.37	0.37				
	11-32	Clay loam, sandy clay loam, gravelly loam	A-7-6	0- 1- 1	0- 1- 4	20-42- 75	5-26- 50	18-32- 35	1.48-1.57-1.66	4.23-9.17-14.11	0.0- 0.3-0.5	28-42-46	12-22-25	0.24	0.24				
	32-79	Stratified gravelly sand to very gravelly coarse sand to extremely gravelly coarse sand	A-1-b	1- 1- 2	1- 3- 5	90-92- 98	0- 7- 10	0- 1- 2	1.55-1.61-1.67	141.14-423.42-705.00	0.0- 0.3-0.5	0-0 -14	NP	0.02	0.02				
327C2—Fox silt loam, 4 to 6 percent slopes, eroded																			
Fox silt loam	0-6	Silt loam	A-4, A-6	0- 0- 0	0- 0- 0	5-18- 30	50-62- 80	15-20- 25	1.34-1.37-1.40	4.23-9.17-14.11	1.0- 2.0-3.0	28-34-41	9-13-17	0.37	0.37	3	Fair, Dusty	Somewhat limited, Frost action	Somewhat limited, Dusty, Unstable excavation walls
	6-11	Silty clay loam, silt loam	A-6, A-7-6	0- 0- 0	0- 1- 1	5-18- 30	50-50- 77	18-32- 35	1.48-1.52-1.57	4.23-9.17-14.11	0.2- 0.3-0.5	28-42-46	12-22-25	0.37	0.37				
	11-32	Clay loam, sandy clay loam, gravelly loam	A-7-6	0- 1- 1	0- 1- 4	20-42- 75	5-26- 50	18-32- 35	1.48-1.57-1.66	4.23-9.17-14.11	0.0- 0.3-0.5	28-42-46	12-22-25	0.24	0.24				
	32-79	Stratified gravelly sand to very gravelly coarse sand to extremely gravelly coarse sand	A-1-b	1- 1- 2	1- 3- 5	90-92- 98	0- 7- 10	0- 1- 2	1.55-1.61-1.67	141.14-423.42-705.00	0.0- 0.3-0.5	0-0 -14	NP	0.02	0.02				
343A—Kane silt loam, 0 to 2 percent slopes																			
Kane silt loam	0-12	Silt loam	A-4, A-6	0- 0- 0	0- 0- 0	-24-	-52-	18-24- 30	1.35-1.45-1.55	4.23-9.17-14.11	3.0- 4.0-5.0	25-30-35	5-10-15	0.24	0.24	3	Fair, Wetness, Dusty	Very limited, Frost action, Low strength, Depth to saturated zone	Very limited, Depth to saturated zone, Dusty, Unstable excavation walls
	12-22	Silty clay loam, clay loam	A-6, A-7	0- 0- 0	0- 0- 0	-20-	-49-	27-31- 35	1.35-1.45-1.55	4.23-9.17-14.11	0.5- 0.8-1.0	35-40-45	10-15-20	0.37	0.37				
	22-29	Sandy clay loam, sandy loam	A-4, A-6	0- 1- 1	0- 3- 4	-60-	-18-	15-23- 30	1.40-1.50-1.60	4.23-23.29-42.34	0.0- 0.3-0.5	20-28-35	8-12-15	0.20	0.20				
	29-60	Gravelly loamy sand, sand,	A-1	0- 1- 1	0- 3- 6	-85-	- 9-	1- 6- 10	1.65-1.75-1.85	141.14-141.14-141.14	0.0- 0.1-0.2	0-3 -5	NP	0.10	0.20				

Source: USDA, Natural Resources Conservation Service; Web Soil Survey
Soil Survey Area: McHenry County, Illinois
Survey Area Data: Version 16, May 29, 2020

SITE PEDOLOGY DATA: IL 47 from IL 120 to US 14, McHENRY COUNTY, ILLINOIS

SCALE: GRAPHICAL

EXHIBIT 2-3

DRAWN BY: J. Benson
CHECKED BY: C. Marin

Wang Engineering

1145 N. Main Street
Lombard, IL 60148
www.wangeng.com

FOR AECOM

1100-15-01

Map unit symbol and soil name	Depth	USDA texture	Classification	Fragments		Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Organic matter	Liquid limit	Plasticity index	Erosion factors			Potential as a source of roadfill	Local roads and streets	Shallow excavations
			AASHTO	>10 inches	3-10 inches									Kw	Kf	T	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
	In			Pct	Pct	Pct	Pct	Pct	g/cc	micro m/sec	Pct	Pct							
361C—Kidder loam, 4 to 6 percent slopes																			
Kidder loam	0-11	Loam	A-4	0- 0- 0	0- 0- 0	40-45- 52	31-42- 48	11-14- 17	1.41-1.48-1.54	4.23-9.17-14.11	1.0- 2.0-3.0	23-28-33	6-8 -11	0.37	0.37	5	Fair, Dusty	Somewhat limited, Frost action	Somewhat limited, Dusty, Unstable excavation walls
	11-28	Clay loam, sandy clay loam, loam	A-6	0- 0- 0	0- 3- 3	32-36- 52	24-39- 48	20-25- 30	1.43-1.50-1.58	4.23-9.17-14.11	0.2- 0.6-1.0	30-35-41	13-17-21	0.32	0.32				
	28-79	Fine sandy loam, sandy loam, gravelly sandy loam	A-1, A-4, A-1-b	0- 0- 0	2- 2- 2	48-66- 75	10-23- 41	6-11- 15	1.52-1.60-1.68	14.11-28.23-42.34	0.0- 0.3-0.5	17-21-26	3-6 -9	0.15	0.28				
361C2—Kidder loam, 4 to 6 percent slopes, eroded																			
Kidder loam eroded	0-8	Loam	A-4	0- 0- 0	0- 0- 0	32-45- 52	33-42- 50	11-14- 20	1.39-1.44-1.50	4.23-9.17-14.11	1.0- 2.0-3.0	23-28-33	6-8 -11	0.28	0.28	5	Good	Somewhat limited, Frost action	Somewhat limited, Dusty, Unstable excavation walls
	8-31	Sandy clay loam, loam	A-2, A-6	0- 0- 0	0- 3- 3	46-57- 65	6-18- 30	20-25- 30	1.58-1.62-1.65	4.23-9.17-14.11	0.0- 0.3-0.5	30-35-40	13-17-21	0.24	0.24				
	31-79	Gravelly sandy loam, sandy loam, fine sandy loam	A-1, A-4, A-1-b	0- 0- 0	2- 2- 2	48-66- 75	12-23- 38	6-11- 15	1.44-1.57-1.70	14.11-28.23-42.34	0.0- 0.3-0.5	17-21-26	3-6 -9	0.15	0.28				
361D2—Kidder loam, 6 to 12 percent slopes, eroded																			
Kidder loam eroded	0-8	Loam	A-4	0- 0- 0	0- 0- 0	32-45- 52	33-42- 50	11-14- 20	1.39-1.44-1.50	4.23-9.17-14.11	1.0- 2.0-3.0	23-28-33	6-8 -11	0.28	0.28	5	Good	Somewhat limited, Frost action, Slope	Somewhat limited, Dusty, Slope, Unstable excavation walls
	8-31	Sandy clay loam, loam	A-2, A-6	0- 0- 0	0- 3- 3	46-57- 65	6-18- 30	20-25- 30	1.58-1.62-1.65	4.23-9.17-14.11	0.0- 0.3-0.5	30-35-40	13-17-21	0.24	0.24				
	31-79	Gravelly sandy loam, sandy loam, fine sandy loam	A-1, A-4, A-1-b	0- 0- 0	2- 2- 2	48-66- 75	12-23- 38	6-11- 15	1.44-1.57-1.70	14.11-28.23-42.34	0.0- 0.3-0.5	17-21-26	3-6 -9	0.15	0.28				
488A—Hooppole loam, 0 to 2 percent slopes																			
Hooppole loam	0-17	Loam	A-4, A-6	0- 0- 0	0- 0- 0	-39-	-37-	20-24- 27	1.40-1.50-1.60	4.23-9.17-14.11	4.0- 6.0-8.0	25-30-35	7-12-17	0.20	0.20	4	Poor, Wetness, Low strength, Dusty, Shrink-swell	Very limited, Frost action, Low strength, Depth to saturated zone, Shrink-swell	Very limited, Depth to saturated zone, Dusty, Unstable excavation walls
	17-44	Clay loam, loam, silt loam	A-6, A-7	0- 0- 0	0- 0- 0	-34-	-37-	25-30- 35	1.35-1.43-1.50	4.23-9.17-14.11	0.5- 1.3-2.0	30-38-45	10-15-20	0.28	0.28				
	44-60	Loamy sand, sand	A-2, A-3	0- 0- 0	0- 0- 0	-84-	- 9-	2- 7- 12	1.65-1.73-1.80	42.34-91.74-141.14	0.0- 0.3-0.5	0-19 -25	NP	0.15	0.15				
523A—Dunham silty clay loam, 0 to 2 percent slopes																			
Dunham silty clay loam	0-12	Silty clay loam	A-6, A-7	0- 0- 0	0- 0- 0	- 7-	-62-	27-31- 35	1.10-1.20-1.30	4.23-9.17-14.11	5.0- 5.5-6.0	30-40-50	15-23-30	0.32	0.32	4	Poor, Low strength, Dusty, Shrink-swell, Wetness	Very limited, Ponding, Depth to saturated zone, Frost action, Low strength, Shrink-swell	Very limited, Ponding, Depth to saturated zone, Dusty, Unstable excavation walls
	12-35	Silty clay loam, silt loam	A-6, A-7	0- 0- 0	0- 0- 0	- 7-	-64-	23-29- 35	1.30-1.40-1.50	4.23-9.17-14.11	0.5- 1.3-2.0	35-40-45	15-20-25	0.43	0.43				
	35-44	Clay loam, silt loam, gravelly sandy loam, loam	A-2, A-4, A-6	0- 0- 0	0- 3- 4	-30-	-50-	10-20- 30	1.35-1.48-1.60	4.23-9.17-14.11	0.0- 0.3-0.5	25-33-40	8-14-20	0.55	0.55				
	44-60	Gravelly sand, extremely gravelly coarse sand	A-1	0- 1- 2	0- 3- 6	-96-	- 2-	1- 3- 5	1.60-1.73-1.85	141.14-141.14-141.14	0.0- 0.3-0.5	0-7 -14	NP	0.02	0.05				
626A—Kish loam, 0 to 2 percent slopes																			
Kish loam	0-11	Loam	A-4, A-6	0- 0- 0	0- 0- 0	-39-	-37-	20-24- 27	1.40-1.50-1.60	4.23-9.17-14.11	4.0- 5.0-6.0	25-30-35	7-12-17	0.24	0.24	5	Poor, Wetness, Low Strength, Dusty, Shrink-swell	Very limited, Ponding, Depth to saturated zone, Frost action, Low strength, Shrink-swell	Very limited, Ponding, Depth to saturated zone, Dusty, Unstable excavation walls
	11-47	Loam, clay loam, sandy loam	A-6	0- 0- 0	0- 1- 1	-39-	-37-	18-25- 32	1.40-1.50-1.60	4.23-9.17-14.11	0.0- 1.0-2.0	24-30-36	11-15-19	0.32	0.32				
	47-60	Stratified sandy loam to silt loam	A-4, A-6	0- 0- 0	0- 1- 1	-68-	-20-	7-13- 18	1.45-1.58-1.70	4.23-9.17-14.11	0.0- 0.5-1.0	15-25-35	5-13-20	0.24	0.24				
802B—Orthents, loamy, undulating																			
Orthents loam	0-8	Loam	A-6	0- 1- 1	0- 2- 4	-38-	-36-	22-26- 30	1.70-1.73-1.75	1.41-2.82-4.23	0.5- 1.3-2.0	20-30-40	10-15-20	0.32	0.32	5	Poor, Low strength, Dusty, Shrink-swell	Very limited, Frost action, Low strength, Shrink-swell	Somewhat limited, Depth to saturated zone, Dusty, Unstable excavation walls
	8-60	Loam, silt loam, clay loam	A-6	0- 1- 1	0- 2- 4	-38-	-36-	22-26- 30	1.70-1.75-1.80	1.41-2.82-4.23	0.2- 0.6-1.0	20-30-40	10-15-20	0.37	0.37				
1103A—Houghton muck, 0 to 2 percent slopes, undrained																			
Houghton muck	0-7	Muck	A-8	0- 0- 0	0- 0- 0	—	- 0-	0- 0- 0	0.20-0.28-0.35	1.41-21.88-42.34	70.0-84.5-99.0	—	NP			2	Poor, Dusty, Wetness	Very limited, Ponding, Depth to saturated zone, Subsidence, Frost action, Low strength	Very limited, Ponding, Depth to saturated zone, Organic matter content, Dusty, Unstable excavation walls
	7-60	Muck	A-8	0- 0- 0	0- 0- 0	—	- 0-	0- 0- 0	0.15-0.20-0.25	1.41-21.88-42.34	70.0-84.5-99.0	—	NP						

Source: USDA, Natural Resources Conservation Service; Web Soil Survey
Soil Survey Area: McHenry County, Illinois
Survey Area Data: Version 16, May 29, 2020

SITE PEDOLOGY DATA: IL 47 from IL 120 to US 14, McHENRY COUNTY, ILLINOIS

SCALE: GRAPHICAL

EXHIBIT 2-4

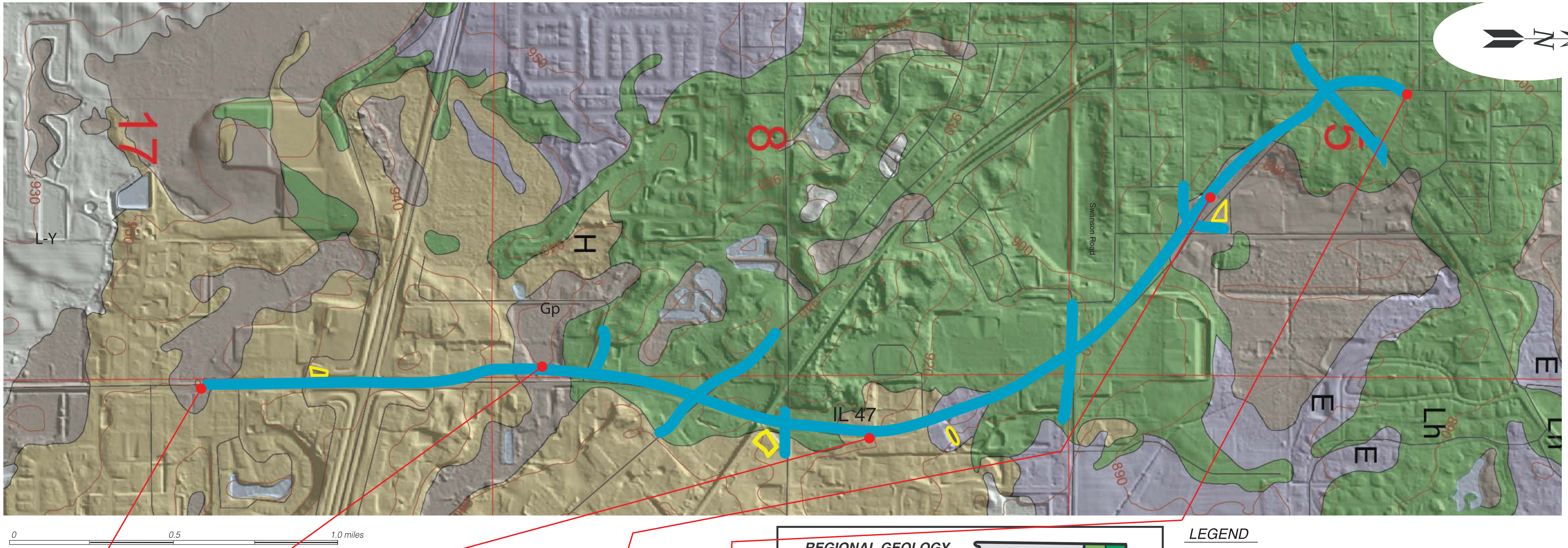
DRAWN BY: J. Bensen
CHECKED BY: C. Marin

Wang Engineering

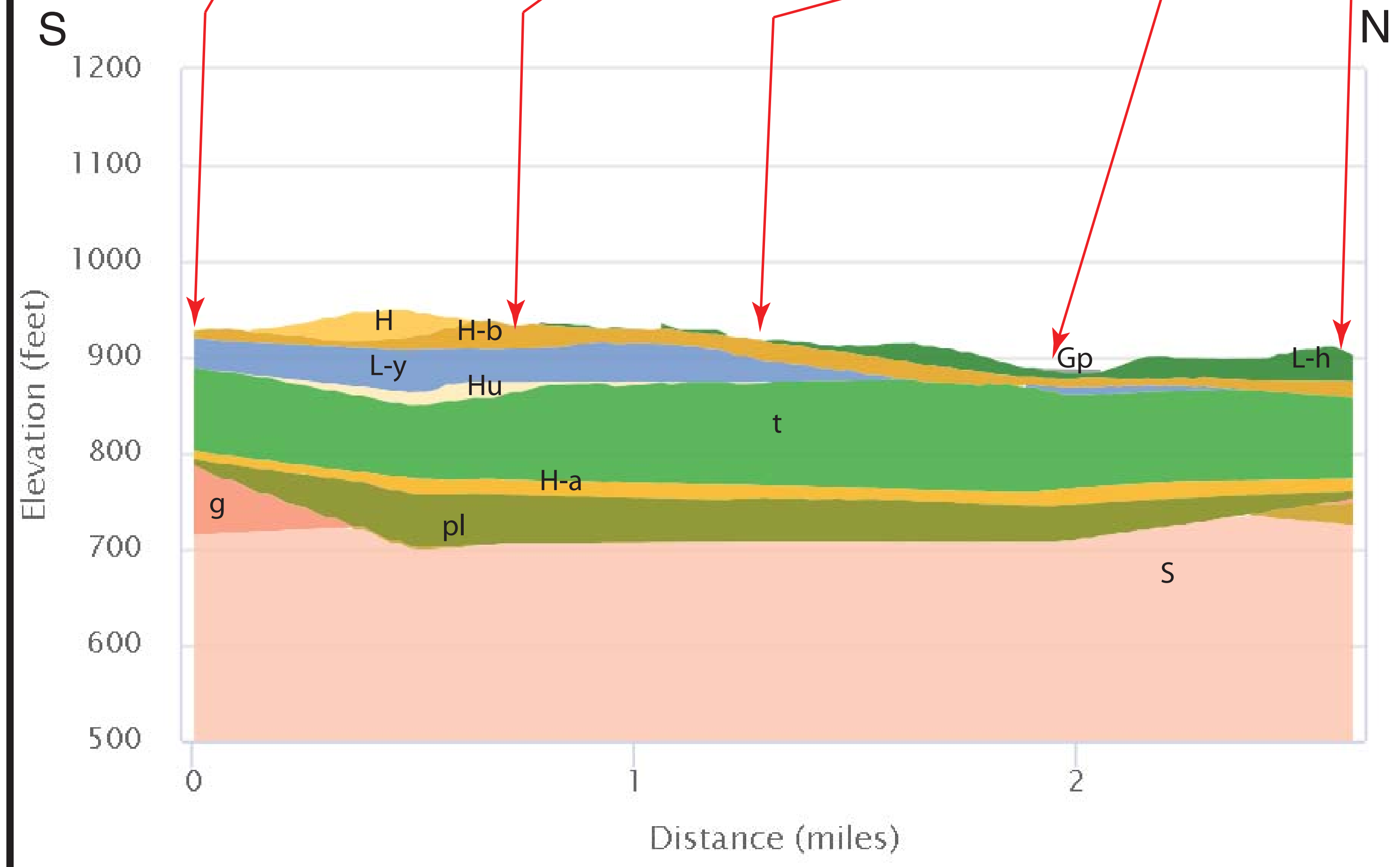
1145 N. Main Street
Lombard, IL 60148
www.wangeng.com

FOR AECOM

1100-15-01



Modified after Flaherty et al (2013)



ISGS , interactive Surface Geology Map of McHenry County (2021)

REGIONAL GEOLOGY

Wedron Group

🟩	Wadsworth Formation
🟩	Lemont Formation
🟩	Tiskilwa Formation

Modified after Hansel and Johnson (1996)

LEGEND *(cross section)*

HUDSON EPISODE

Gp	**Grayslake Peat**

WISCONSIN EPISODE

H	**Henry Formation**
H-b	**Henry Formation, Beverly Tongue**
Hu	**Henry Formation, unnamed**
H-a	**Henry Formation, Ashmore Tongue**
L-h	**Lemont Formation, Hager Member**
L-y	**Lemont Formation, Yorkville Member**
t	**Tiskilwa Formation**

ILLINOIS EPISODE

pl	**Pearl Formation**
g	**Glasford Formation**

PALEOZOIC BEDROCK

S	**Silurian**

LEGEND

HUDSON EPISODE

Gp	**Grayslake Peat** Decomposed wetland vegetation and sediment; peat and muck, interbedded sand, silty clay, and marl

WISCONSIN EPISODE

E	**Equality Formation** Lake deposits in kettles and valleys; silt, clay, and fine sand; layered to massive
H	**Henry Formation** Proglacial outwash plains downslope of glacial margins; sand and gravel, or sand; with lenses of silt and clay, or diamicton
L-h	**Lemont Formation, Heager Member** Dense clayey to silty to sandy loam diamicton with interbedded gravel, sand, and silt lenses; light gray.
L-y	**Lemont Fornation, Yorkville Member** Debris flow deposits and diamicton; silty clay, silty clay loam, and clay, includes layers of sand and gravel
t	**Tiskilwa Formation (Cross section only)** Till, debris flow deposits, and outwash; clay loam to loam; includes lenses of sand and gravel.

ILLINOIS EPISODE

g	**Glasford Formation (Cross section only)** Till and debris flow deposits (diamicton) and outwash (sand and gravel); the diamicton bouldery in places with reddish brown, sandy loam to loam matrix, with abundant lenses, and channel fills of sand and gravel

PALEOZOIC BEDROCK

Pz	**Bedrock (Cross section only)** Dolomite, shaly dolomite, and shale

Modified after Flaherty et al (2013)

SITE AND REGIONAL GEOLOGY: IL 47 from IL 120 to US 14,
McHENRY COUNTY, ILLINOIS

SCALE: GRAPHICAL	EXHIBIT 3	DRAWN BY: C. Marin CHECKED BY: L. Iordache

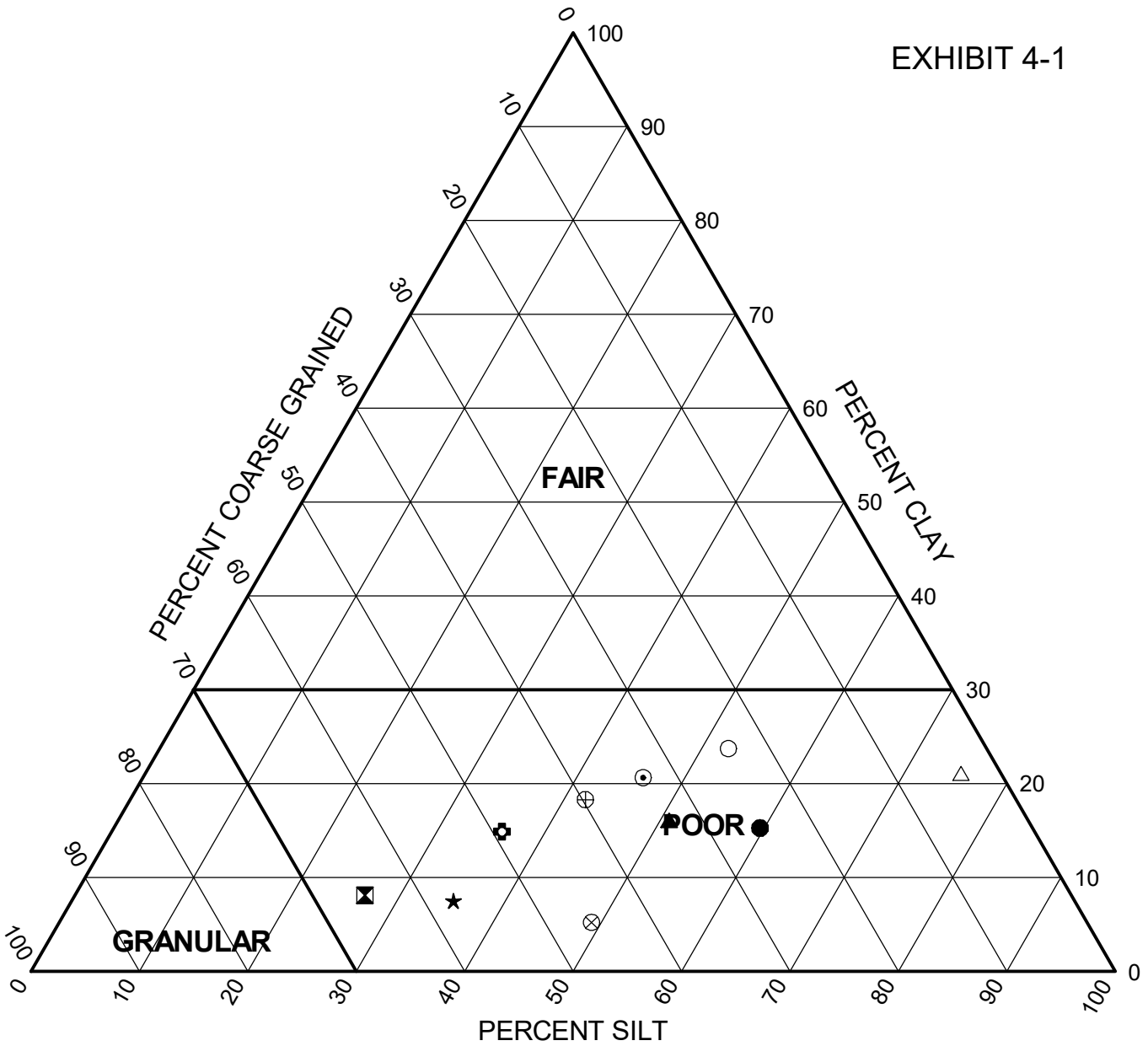
Wang Engineering

1145 N. Main Street
Lombard, IL 60148
www.wangeng.com

FOR AECOM

1100-15-01

EXHIBIT 4-1



	Sample	Depth (ft)	Coarse (%)	Silt (%)	Clay (%)	Classification		
						IL DOT	AASHTO	RATING
●	PT1-03#3	6.0	25.1	59.6	15.3	Silty Loam	A-4 (0)	POOR
⊠	PT2-02#2	3.5	65.1	26.7	8.1	Gravelly Sandy Loam	A-2-6 (0)	POOR
▲	PT3-01#2	3.5	33.1	50.8	16.1	Silty Loam	A-7-6 (16)	POOR
★	PT3-05#2	3.5	57.3	35.2	7.5	Gravelly Loam	A-4 (0)	POOR
⊙	PT3-10#2	3.5	33.2	46.1	20.7	Clay Loam	A-6 (9)	POOR
✿	PT3-13#1	1.0	49.1	36.0	14.9	Loam	A-6 (6)	POOR
○	PT3-13#3	6.0	23.8	52.4	23.8	Silty Clay Loam	A-6 (17)	POOR
△	PT4-15#3	6.0	3.7	75.2	21.1	Silty Clay Loam	A-7-5 (29)	POOR
⊗	RWB-02#2	2.0	45.7	49.1	5.2	Silty Loam	A-6 (7)	POOR
⊕	RWB-10#3	6.0	39.7	42.0	18.3	Clay Loam	A-7-6 (14)	POOR

WEI SINCE 1982

Wang Engineering, Inc.
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

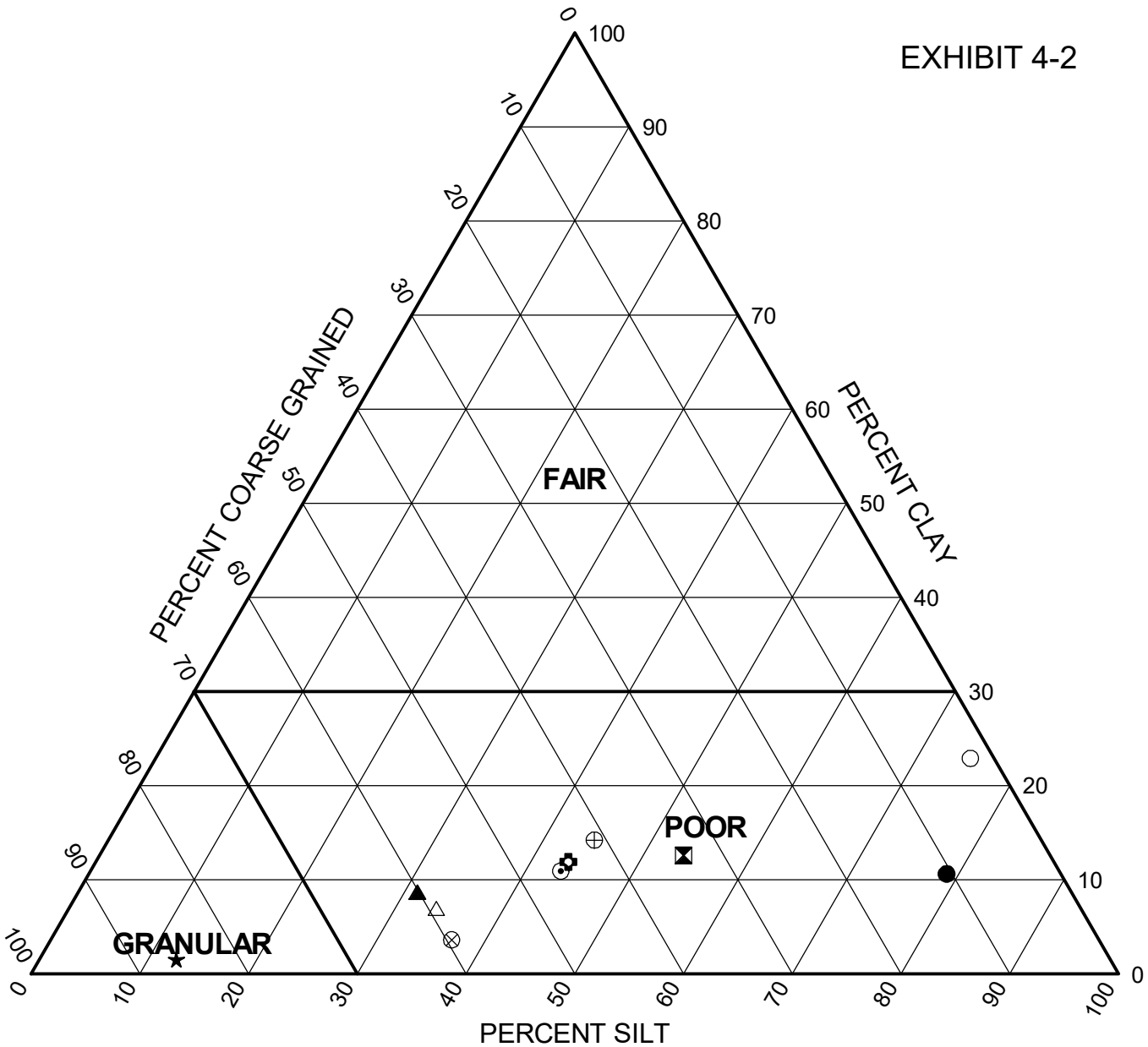
Subgrade Support Rating Chart

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01

EXHIBIT 4-2



	Sample	Depth (ft)	Coarse (%)	Silt (%)	Clay (%)	Classification		
						IL DOT	AASHTO	RATING
●	RWB-21#2	3.5	10.5	78.9	10.6	Silt	A-4 (0)	POOR
⧗	RWB-22#3	6.0	33.7	53.7	12.6	Silty Loam	A-4 (1)	POOR
▲	SGB-01#2	2.0	60.1	31.2	8.7	Gravelly Loam	A-6 (3)	POOR
★	SGB-03#2	2.0	85.9	12.6	1.5	Gravelly Sandy Loam	A-1-b (0)	GRANULAR
⊙	SGB-09#3	4.0	45.8	43.2	10.9	Loam	A-6 (5)	POOR
✿	SGB-11#3	4.0	44.7	43.4	11.9	Loam	A-6 (4)	POOR
○	SGB-12#4	6.0	2.2	74.9	22.9	Silty Clay Loam	A-7-5 (37)	POOR
△	SGB-18#3	4.0	59.3	33.8	7.0	Gravelly Loam	A-4 (0)	POOR
⊗	SGB-22#3	4.0	59.5	36.9	3.6	Sandy Loam	A-4 (0)	POOR
⊕	SGB-25#3	4.0	41.1	44.7	14.2	Loam	A-6 (9)	POOR

WEI SINCE 1982

Wang Engineering, Inc.
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

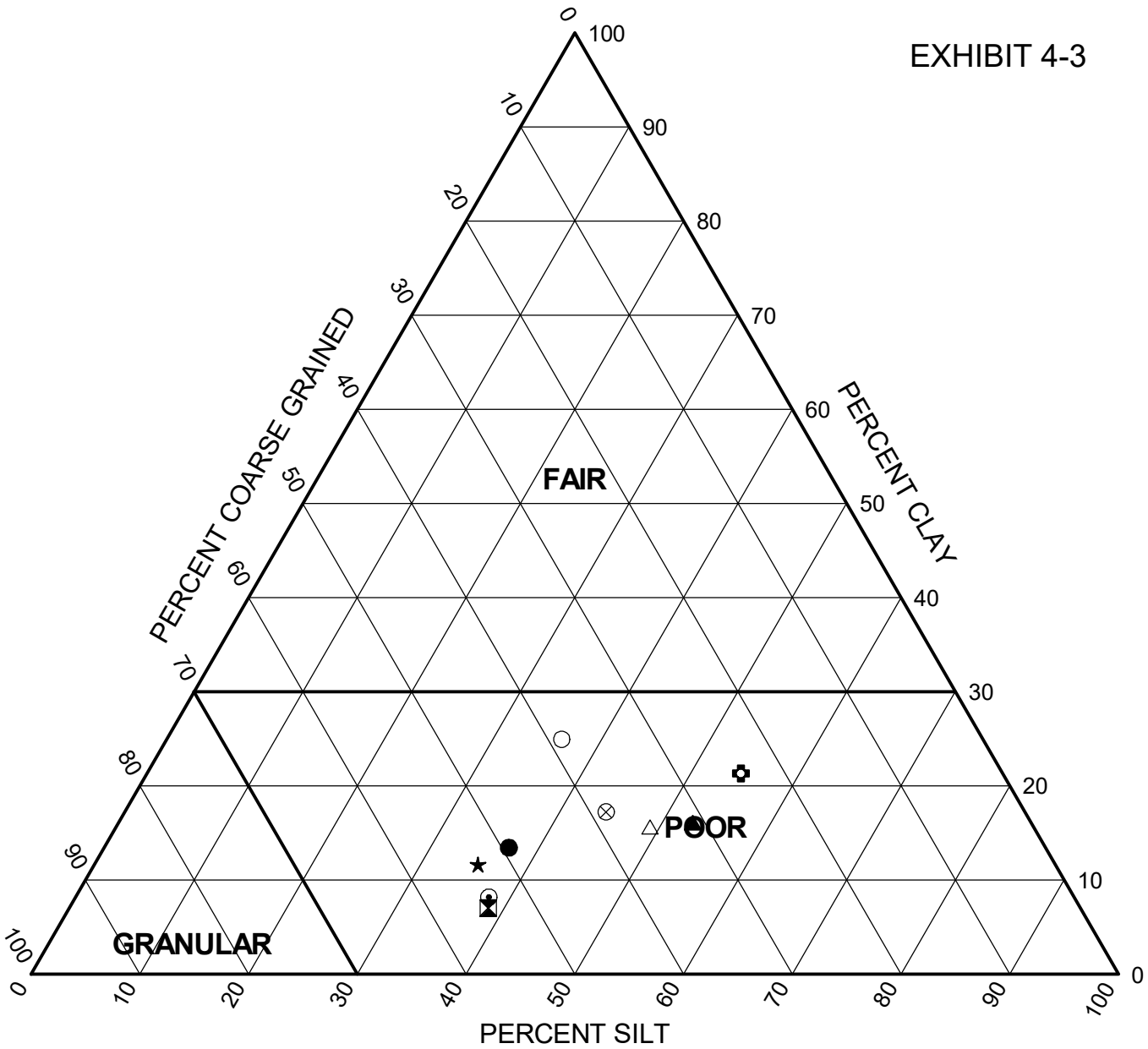
Subgrade Support Rating Chart

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01

EXHIBIT 4-3



	Sample	Depth (ft)	Coarse (%)	Silt (%)	Clay (%)	Classification		
						IL DOT	AASHTO	RATING
●	SGB-31#3	4.0	49.3	37.2	13.4	Gravelly Loam	A-6 (8)	POOR
⧗	SGB-34#3	4.0	54.5	38.5	7.0	Loam	A-4 (0)	POOR
▲	SGB-38#3	5.0	31.1	52.8	16.1	Silty Loam	A-4 (2)	POOR
★	SGB-42#2	2.0	53.1	35.3	11.7	Loam	A-6 (3)	POOR
⊙	SGB-45#3	4.0	53.8	38.0	8.2	Gravelly Silty Loam	A-6 (2)	POOR
✿	SGB-47#2	3.0	24.1	54.6	21.3	Silty Clay Loam	A-6 (18)	POOR
○	SGB-50#2	2.0	38.7	36.3	25.0	Clay Loam	A-6 (12)	POOR
△	SGB-52#3	4.0	35.2	49.1	15.7	Silty Loam	A-7-6 (13)	POOR
⊗	SGB-56#3	4.0	38.5	44.2	17.3	Loam	A-6 (5)	POOR

WEI SINCE 1982

Wang Engineering, Inc.
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

Subgrade Support Rating Chart

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01

APPENDIX A

Wang Engineering

LEGEND FOR BORING LOG

Relative Density of Non-Cohesive Soils

N-Blows/ 12 inches	Relative Density Term
0-3	Very Loose
4-9	Loose
10-29	Medium Dense
30-49	Dense
50-80+	Very Dense

Consistency of Cohesive Soils

Unconfined Compressive Strength Qu, tsf	Consistency Term
<0.25	Very Soft
0.25-0.49	Soft
0.50-0.99	Medium Stiff
1.00-1.99	Stiff
2.00-3.99	Very Stiff
>4.00	Hard

Rock Quality Designation (RQD)

0-25%	Very Poor
25-50%	Poor
50-75%	Fair
75-90%	Good
90-100%	Excelent

SS = Split Spoon
ST = Shelby Tube
SPT = Standard Penetration Test
Q_u = Unconfined Compressive Strength
NP = Non Plastic
P = Pocket Penetrometer
S = Shear failure of sample, Rimac test
B = Bulge failure of sample, Rimac test
SSA = Solid Stem Augers,
HSA = Hollow Stem Augers,

Proportional Terms

Trace	1-9	Percent of Dry Weight
Little	10-19	
Some	20-34	
And	35-50	

Gradation Terminology

Boulders	>200mm
Cobbles	200mm to 75mm
Gravel	75mm to 2mm
Sand	2-0mm to 0.074mm
Silt	0.074mm to 0.002mm
Clay	<0.002mm

Relative Moisture Conditions

Term	Description
Dry	Dusty, No visible moisture
Damp	Cohesives hard to mold; Granulars do not flow easily
Moist	Cohesives can be molded; Granulars start to stick together
Wet	Cohesives can be very easily molded and sticky; Granulars stick together easily
Saturated	Only granular soils; Water drains freely from sample

Relative Drilling Resistance (RDR)

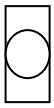
1	No Chatter - Very Easy Drilling
2	No Chatter - Easy Drilling
3	Some Chatter - Moderate Advancement
4	Frequent Chatter - Slow Advancement
5	Constant Chatter - Very Slow Advanement

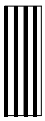
Sample Type Symbols


Split Spoon


Rock Core


In-situ Vane Shear Test


No Recovery


Shelby Tube

SPT = Standard Penetration Test
N Value is the sum of the second and the third numbers


Geoprobe


Auger Cuttings

(Rev. 05/23/2018)

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG DPB-01

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 939.60 ft
North: 2049649.97 ft
East: 957144.24 ft
Station: 95+41.50
Offset: 83.23 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	939.4	2-inch thick, brown SILTY CLAY LOAM --TOPSOIL--						
		Stiff to very stiff, brown CLAY LOAM to SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--			1	7 6 8	3.69 B	21
			5		2	3 6 8	1.97 B	22
	933.4	--RDR 3-- --frequent rig chatter from 6.5 feet-- --possible cobbles--			3	50/5"	1.50 P	22
		Dense, brown Gravelly SAND; damp to saturated --RDR 2 to 3--	10		4	1 13 18	NP	5
					5	3 13 22	NP	17
			15		6	9 18 20	NP	12
					7	31 19 23	NP	10
	919.6		20		8	12 20 18	NP	16
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **07-09-2020** Complete Drilling: **07-09-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18CME55T [85%]**
Driller: **A&K** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **11.00 ft**
At Completion of Drilling: **13.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG DPB-02

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 926.73 ft
North: 2053786.55 ft
East: 957658.93 ft
Station: 137+46.52
Offset: 96.97 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Stiff, black SILTY CLAY LOAM --TOPSOIL--						
	925.4	Loose, brown to gray SILTY LOAM; damp to saturated --RDR 2--			1	2 5 4	1.07 B	18
			5		2	2 2 3	NP	20
					3	2 2 3	NP	19
		--medium sand lens; saturated--	10		4	1 3 3	NP	21
		--fine sand seams; saturated--			5	2 2 4	NP	21
	913.7	Loose, gray, medium SAND, trace gravel; saturated --RDR 2--	15		6	5 4 4	NP	23
		--possible cobbles--			7	5 7 9	NP	21
	908.7	Medium dense, gray LOAM to SANDY LOAM; saturated --RDR 2--			8	6 8 10	NP	19
	906.7	Boring terminated at 20.00 ft	20					

GENERAL NOTES

Begin Drilling: **11-20-2020** Complete Drilling: **11-20-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **E. Greenwood** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **5.50 ft**
At Completion of Drilling: **15.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG DPB-03

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 929.28 ft
North: 2053799.49 ft
East: 957856.36 ft
Station: 140+50.44
Offset: 158.90 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	928.7	7-inch thick TOPSOIL						
		Stiff to very stiff, black and brown CLAY to SILTY CLAY, trace organic matter; damp --RDR 2--			1	1 2 4	3.00 P	27
					2	1 1 2	1.64 B	27
	924.3	--frequent rig chatter at 5 feet--	5					
		Brown Gravelly SAND; saturated --RDR 3--						
	922.8							
	922.4	Brown, SILTY LOAM			3	4 3 2	NP	13
		Stiff, gray SILTY CLAY; damp						
	921.3							
		Loose to medium dense, black and gray to gray SILTY LOAM; saturated --RDR 2--			4	2 2 3	NP	21
			10					
					5	2 2 3	NP	20
					6	1 2 3	NP	21
			15					
		--sand seams--						
					7	2 4 4	NP	18
					8	3 5 8	NP	21
	909.3		20					
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-20-2020** Complete Drilling: **11-20-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **E. Greenwood** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **5.50 ft**
At Completion of Drilling: **--**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG DPB-04

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 904.63 ft
North: 2055437.22 ft
East: 957666.40 ft
Station: 153+57.85
Offset: 167.08 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
904.1	6-inch thick, brown, organic SILTY CLAY LOAM; damp					
	Stiff, brown and gray SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--		1	1 2 4	1.23 B	19
902.4	Medium stiff to stiff, black to brown Organic SILTY CLAY LOAM, few peat lenses; damp --RDR 2--	5	2	2 2 2	1.25 P	77
	--few peat lenses--		3	1 1 0	NP	84
896.6	Very loose, gray SILTY LOAM, trace gravel; damp to moist --RDR 2--	10	4	1 1 1	NP	29
892.9	Medium dense, gray Gravelly SAND; saturated --RDR 2--		5	4 7 7	NP	7
890.1	Loose to medium dense, gray LOAM to SANDY LOAM, little to some gravel; moist --RDR 2--	15	6	7 7 7	NP	12
			7	6 4 4	NP	9
		20	8	5 5 4	NP	8
		25	9	7 10 13	NP	8
882.1	Boring terminated at 22.50 ft					
		30				
		35				
		40				

GENERAL NOTES

Begin Drilling: **11-24-2020** Complete Drilling: **11-24-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **11.75 ft**
At Completion of Drilling: **12.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG DPB-05

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 903.42 ft
North: 2055496.28 ft
East: 957778.23 ft
Station: 153+63.73
Offset: 293.41 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	903.1	4-inch thick, brown SILTY CLAY LOAM						
	902.4	--TOPSOIL--						
		Brown and gray SILTY CLAY LOAM, trace gravel; damp --FILL--			1	5 5 5	NP	10
		Medium dense, brown and gray, medium SAND, trace to little gravel; wet to saturated						
	899.4	--RDR 2--			2	5 3 1	0.49 B	12
		Soft, gray CLAY LOAM, trace gravel; damp to moist --RDR 2--	5					
	897.2	Loose, gray SANDY GRAVEL; wet to saturated --RDR 2--			3	3 3 3	NP	8
	895.4	Loose, gray SILTY LOAM, little gravel; moist --RDR 2--	10		4	4 3 4	NP	10
	892.9	Medium stiff to very stiff, gray CLAY LOAM to LOAM, little gravel; damp to moist --RDR 2--			5	3 3 6	2.46 B	12
			15		6	4 6 8	0.75 P	14
	887.9	Medium dense, gray Gravelly SANDY LOAM; moist --RDR 2--			7	2 5 8	NP	12
	883.4		20		8	6 6 7	NP	10
		Boring terminated at 20.00 ft						

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **11-24-2020** Complete Drilling: **11-24-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **3.00 ft**
At Completion of Drilling: **16.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG DPB-06

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 883.08 ft
North: 2057974.94 ft
East: 955689.07 ft
Station: 185+68.79
Offset: 122.02 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		14-inch thick, black SILTY CLAY --TOPSOIL--						
	881.7	Very soft, black, brown to gray, PEAT; moist --RDR 1--			1	1 2 2	< 0.25 P	260
			5		2	0 0 1	0.00 B	580
					3	0 0 0	0.25 B	535
			10		4	0 0 1	< 0.25 B	380
	872.6	Very soft to soft, gray Organic SILTY CLAY; wet --RDR 1--			5	0 0 1	0.16 B	79
			15		6	1 2 2	0.25 B	31
	867.6	Stiff to very stiff, gray SILTY CLAY LOAM to CLAY LOAM, trace gravel; damp to moist --RDR 2--			7	3 4 5	1.23 B	21
	863.1		20		8	5 9 12	2.79 B	15
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-16-2020** Complete Drilling: **11-16-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&JS** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **10.50 ft**
At Completion of Drilling: **--**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG DPB-07

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 885.04 ft
North: 2057980.17 ft
East: 955808.33 ft
Station: 203+36.94
Offset: 71.88 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		15-inch thick, black SILTY CLAY --TOPSOIL--						
	883.8	Medium stiff, brown and gray Organic SILTY CLAY; moist --RDR 2--			1	3 3 3	0.50 P	73
			5		2	1 2 2	0.75 P	120
	879.5	Medium stiff, gray CLAY to SILTY CLAY, trace organic matter; moist --RDR 2--			3	1 1 2	0.50 P	29
	877.0	Loose, gray LOAM, little gravel; moist --RDR 2--	10		4	4 5 3	NP	11
					5	3 3 3	NP	10
	872.0	Soft to stiff, gray CLAY LOAM to LOAM, little gravel; moist --RDR 2--	15		6	8 5 2	0.50 P	10
					7	5 6 7	0.41 B	10
	865.0		20		8	7 4 7	1.15 B	9
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-16-2020** Complete Drilling: **11-16-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&JS** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT1-01

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 937.02 ft
North: 2051668.58 ft
East: 957238.31 ft
Station: 115+59.18
Offset: 26.65 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
936.8	2-inch thick, black and brown, organic SILTY LOAM; damp						
	Medium stiff to stiff, brown and gray to brown CLAY LOAM, little gravel; damp to moist --FILL-- --RDR 2-- --2-in sandy gravel lens; moist--			1	5 3 4	1.25 P	14
		5		2	2 3 3	0.75 P	19
931.5	Medium stiff to stiff, black SILTY CLAY LOAM, trace organic matter; damp --RDR 2--			3	2 2 2	0.90 B	30
928.3	Very soft, brown Organic SILTY CLAY, trace peat seams; damp --RDR 2--	10		4	0 1 1	NP	106
926.5	Soft, gray SILTY CLAY LOAM; damp to moist --RDR 2--			5	2 2 2	0.25 B	17
925.5 / 925.2	Gray, coarse SAND; saturated						
924.0	Soft, gray SILTY CLAY LOAM; damp to moist --RDR 2--						
	Very loose to medium dense, gray SILTY LOAM; moist to wet --RDR 2-- --black silt seams; wet--	15		6	2 3 2	NP	18
				7	1 1 2	NP	25
		20		8	0 2 2	NP	23
		25		9	2 2 3	NP	21
				10	3 3 3	NP	21
				11	3 4 4	NP	18
		30		12	3 3 5	NP	21
				13	3 4 6	NP	20
904.5	Boring terminated at 32.50 ft						
		35					
		40					

GENERAL NOTES

Begin Drilling: **11-23-2020** Complete Drilling: **11-23-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **16.00 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT1-02

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NGVD
Elevation: 936.25 ft
North: 2051748.65 ft
East: 957235.50 ft
Station: 116+39.37
Offset: 24.95 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
935.9	4-inch thick, brown SILTY CLAY LOAM --TOPSOIL--						
	Medium stiff, brown CLAY LOAM, trace to some gravel; damp --FILL-- --RDR 2--			1	4 4 5	0.50 P	9
		5		2	4 3 1	0.75 P	10
930.8	Very loose, brown SANDY LOAM, some gravel; saturated --FILL-- --RDR 2--			3	0 1 2	NP	13
929.0	Medium stiff, black Organic SILTY CLAY LOAM; damp --RDR 2--						
		10		4	2 2 2	0.50 P	139
925.8	Stiff, brown PEAT; damp --RDR 2--						
924.3	Stiff, gray CLAY to SILTY CLAY, trace organic matter; damp			5	1 1 1	1.23 B	267
923.3	Soft, gray SILTY CLAY LOAM, trace gravel; damp --RDR 2--						
		15		6	2 2 3	0.49 B	26
920.8	Loose to medium dense, gray SILTY LOAM, trace gravel; damp to moist --RDR 2--			7	5 5 6	NP	13
		20		8	2 3 4	NP	19
914.8	Soft to medium stiff, gray SILTY CLAY LOAM to SILTY LOAM; damp --RDR 2--			9	2 5 7	0.49 B	18
		25		10	1 2 5	0.74 B	21
910.8	Medium dense, gray SILTY LOAM, little gravel; damp --RDR 2--			11	8 6 7	NP	13
908.8	Boring terminated at 27.50 ft						
		30					
		35					
		40					

GENERAL NOTES

Begin Drilling: **12-11-2020** Complete Drilling: **12-11-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **5.50 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT1-03

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 935.17 ft
North: 2051789.69 ft
East: 957244.52 ft
Station: 116+78.70
Offset: 45.06 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
934.9	3-inch thick, black SILTY LOAM --TOPSOIL--						
933.4	Medium stiff, brown CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--			1	4 5 9	0.50 P	18
	Loose to medium dense, brown Gravelly SAND to SANDY LOAM; damp --FILL-- --RDR 2 to 3--	5		2	7 4 4	NP	19
929.7	Very loose to loose, black Organic SILTY LOAM; damp --RDR 2-- --L_L(%)=NP, P_L(%)=NP-- --%Gravel=1.7-- --%Sand=23.5-- --%Silt=59.6-- --%Clay=15.3-- --A-4 (0)--			3	3 3 3	NP	110
926.2	Very soft, black and brown to brown, PEAT; damp --RDR 2--	10		4	1 1 1	NP	301
923.7	Medium stiff, gray SILTY CLAY LOAM, some organic matter; damp --RDR 2--			5	1 0 1	0.74 B	78
922.2	Stiff, gray SILTY CLAY LOAM; damp --RDR 2--	15		6	2 2 3	1.07 B	24
919.7	Medium dense, gray SILTY LOAM, little gravel; damp --RDR 2--			7	5 5 5	NP	11
917.2	Medium dense, gray GRAVELLY SAND; saturated --RDR 2--	20		8	6 6 6	NP	13
915.2	Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-23-2020** Complete Drilling: **11-23-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **18.00 ft**
At Completion of Drilling: **18.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT1-03B

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 936.00 ft
North: 2051789.69 ft
East: 957230.52 ft
Station: 116+80.45
Offset: 20.30 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
935.3	8-inch thick, brown SILTY CLAY LOAM; damp --TOPSOIL--		1	PUSH	1.50 P	9
934.0	Brown SILTY LOAM, trace gravel; damp --FILL--		2	PUSH	NP	7
931.0	Brown, GRAVELLY SANDY LOAM; damp to saturated --FILL--	5	3	PUSH	NP	10
929.8	Medium stiff (0.75P), brown and gray SILTY CLAY; wet --FILL--		4	PUSH	< 0.25 P	14
927.8	Brown and gray to gray, SILTY LOAM to CLAY LOAM, little gravel; moist to wet --FILL--		5	PUSH	0.75 P	145
926.3	Medium stiff, black Organic SILTY CLAY LOAM; moist to damp	10	6	PUSH	0.50 P	359
923.1	Medium stiff to stiff, brown PEAT; moist		7	PUSH	1.00 P	237
920.3	Medium stiff, brownish gray to gray Organic SILTY CLAY LOAM ; moist to wet	15	8	PUSH	0.67 B	68
919.6	Very soft (<0.25P), gray CLAY to SILTY CLAY LOAM; wet		9	PUSH	1.25 P	15
918.5	Stiff, gray SILTY CLAY LOAM, trace gravel; moist					
917.8	Very soft, gray CLAY LOAM to SILTY CLAY LOAM; wet		10	PUSH	NP	8
916.0	Gray SILTY LOAM, little gravel; damp	20				
	Boring terminated at 20.00 ft					

GENERAL NOTES

Begin Drilling: **11-24-2020** Complete Drilling: **11-24-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **RR&MG** Logger: **E. Yim** Checked by: **C. Marin**
Drilling Method: **1" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **4.00 ft**
At Completion of Drilling: **6.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT1-04

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 935.46 ft
North: 2051841.03 ft
East: 957234.94 ft
Station: 117+31.76
Offset: 25.14 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
935.0	6-inch thick, black SILTY CLAY LOAM --TOPSOIL--					
	Medium dense, brown Gravelly SANDY LOAM; damp --FILL-- --RDR 2--		1	5 8 8	NP	8
932.5	Very stiff, brown, gray and black CLAY LOAM, little gravel; damp --FILL-- --RDR 2--	5	2	3 5 6	2.54 B	11
930.0	Medium dense, gray SANDY LOAM, little gravel; moist --FILL-- --RDR 2-3--		3	10 5 5	NP	15
927.5	Soft (0.25 P), gray and brown SILTY CLAY; damp --FILL--					
926.8	Very loose, black SILTY LOAM, trace organic matter; damp	10	4	1 1 2	NP	72
925.0	Very loose, brown PEAT; damp --RDR 2--		5	1 1 2	NP	171
922.5	Medium stiff, gray SILTY CLAY to SILTY CLAY LOAM , trace to some organic matter; damp --RDR 2-- --L_L(%)=65, P_L(%)=29-- --%Gravel=0.0-- --%Sand=1.6-- --%Silt=76.2-- --%Clay=22.2-- --A-7-6 (42)--	15	6	0 1 1	0.66 B	66
			7	0 0 2	0.98 B	60
917.5	Stiff, gray SILTY CLAY LOAM; damp --RDR 2--	20	8	1 2 3	1.23 B	20
915.0	Loose to medium dense, gray, fine to coarse SAND, trace gravel; saturated --RDR 2--		9	3 3 3	NP	18
		25	10	1 2 2	NP	13
			11	2 2 2	NP	20
		30	12	6 3 3	NP	16
			13	2 2 5	NP	18
		35	14	2 3 7	NP	20
900.5	Boring terminated at 35.00 ft					
		40				

GENERAL NOTES

Begin Drilling: **12-08-2020** Complete Drilling: **12-08-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20D50A (87%)**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **20.50 ft**
At Completion of Drilling: **14.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT1-05

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 935.16 ft
North: 2051893.81 ft
East: 957235.43 ft
Station: 117+84.54
Offset: 26.05 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
934.7	6-inch thick, medium stiff, black SILTY CLAY LOAM; moist --TOPSOIL--		1	PUSH	0.50 P	9
	Soft to medium stiff, black and brown CLAY LOAM, trace to little gravel; damp --FILL--		2	PUSH	0.25 P	12
		5	3	PUSH	0.25 P	15
928.9	Black PEAT; moist		4	PUSH	NP	120
927.7	Stiff, black Organic SILTY CLAY LOAM to LOAM; moist					
926.4	Medium stiff to stiff, brown PEAT; moist		5	PUSH	1.00 P	66
		10	6	PUSH	NP	214
	--3-in, gray silty loam layer; damp--					
923.4	Medium stiff, gray Organic SILTY CLAY LOAM; moist to wet		7	PUSH	0.50 P	51
920.2		15	8	PUSH	0.75 P	50
	Medium stiff to stiff, gray SILTY CLAY LOAM, trace gravel; moist to wet		9	PUSH	1.25 P	17
917.7	Gray, fine to medium SAND; saturated		10	PUSH	NP	18
915.2		20				
	Boring terminated at 20.00 ft					

GENERAL NOTES

Begin Drilling: **12-04-2020** Complete Drilling: **12-04-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **RR&MG** Logger: **E. Yim** Checked by: **C. Marin**
Drilling Method: **1" ID; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **5.00 ft**
At Completion of Drilling: **8.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT1-06

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 935.10 ft
North: 2051937.72 ft
East: 957234.09 ft
Station: 118+28.45
Offset: 25.06 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
934.6	6-inch thick, black SILTY CLAY LOAM --TOPSOIL--					
	Medium dense, black, gray, and brown SILTY CLAY LOAM, trace gravel; damp		1	2 1 2	0.75 P	17
932.1	--FILL--					
	Very loose, black SILTY LOAM; damp --Buried TOPSOIL--	5	2	1 1 1	NP	22
929.6						
	Medium stiff, gray SILTY CLAY, trace organic matter; damp --RDR 1--		3	0 1 1	0.74 B	36
927.1	Gray, fine SAND; saturated					
926.1	Medium stiff, gray SILTY CLAY, trace organic matter; damp --RDR 2--	10	4	1 1 1	0.57 B	53
924.6	Medium stiff to stiff, gray SILTY CLAY LOAM, trace gravel; damp to moist --RDR 2--		5	0 1 3	0.57 B	13
		15	6	2 3 3	1.15 B	17
			7	3 5 5	0.82 B	19
917.1	Medium dense, gray SILTY LOAM, trace to little gravel; moist --RDR 2-- --sandy gravel seam--	20	8	6 8 8	NP	10
		25	9	7 6 7	NP	18
			10	7 9 9	NP	10
909.6	Gray GRAVELLY SAND; saturated					
908.6	Medium dense, gray SILTY LOAM, some gravel; moist to saturated --RDR 2--		11	7 8 8	NP	19
		30	12	6 7 7	NP	19
			13	10 8 9	NP	20
902.1	Loose to medium dense, gray, medium to coarse SAND; saturated --RDR 2--	35	14	4 3 6	NP	18
897.6	Boring terminated at 37.50 ft		15	8 10 11	NP	17
		40				

GENERAL NOTES

Begin Drilling: **12-08-2020** Complete Drilling: **12-08-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20D50A (87%)**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **20.50 ft**
At Completion of Drilling: **mud in borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT1-07

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 933.75 ft
North: 2051985.80 ft
East: 957243.06 ft
Station: 118+74.82
Offset: 38.41 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
933.2	6-inch thick, brown SILTY CLAY LOAM --TOPSOIL--		1	PUSH	NP	10
932.6	Brown SILTY LOAM, trace gravel; damp --FILL--					
931.5	Very stiff (2.25P), gray CLAY LOAM, trace gravel; damp --FILL--		2	PUSH	NP	14
930.0	Brown, SILTY LOAM, trace gravel; damp --FILL--					
	Black and gray CLAY LOAM, trace gravel; wet to saturated	5	3	PUSH	NP	17
928.2	Brown GRAVELLY SANDY LOAM; saturated					
927.0	Very soft (<0..25P), gray SILTY CLAY LOAM, trace gravel; wet		4	PUSH	NP	11
926.2	Gray GRAVELLY SANDY LOAM; saturated					
925.5	Very soft to soft, gray SILTY CLAY LOAM; wet		5	PUSH	< 0.25 P	16
	--trace organic matter--	10	6	PUSH	0.25 P	27
920.7	Gray SILTY LOAM, trace gravel; saturated --sand lenses; wet--		7	PUSH	NR	
919.0	Gray, medium to coarse SAND, trace gravel; saturated	15	8	PUSH	NP	16
			9	PUSH	NP	19
			10	PUSH	NP	17
913.7	Boring terminated at 20.00 ft	20				

GENERAL NOTES

Begin Drilling: **11-24-2020** Complete Drilling: **11-24-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **16.00 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT1-08

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 935.96 ft
North: 2052101.32 ft
East: 957268.18 ft
Station: 119+93.28
Offset: 59.35 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		10-inch thick, black SILTY CLAY LOAM						
	935.1	--TOPSOIL--						
		Loose, brown GRAVELLY LOAM; damp --FILL--			1	4 5 4	NP	12
	933.0							
		Medium dense, brown SILTY LOAM to LOAM, trace gravel; damp --FILL-- --RDR 1--	5		2	5 5 5	NP	12
	929.2				3	3 2 3	NR	
		Very loose, brown and gray SILTY LOAM, trace gravel; wet --RDR 1--						
			10		4	1 1 1	NP	23
	925.5							
		Loose, brown to gray SANDY GRAVEL; saturated --RDR 1--			5	1 3 4	NP	25
			15		6	4 3 4	NP	13
					7	4 5 4	NP	13
	918.0							
		Loose, gray, coarse SAND; wet			8	3 3 4	NP	12
	916.0		20					
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-30-2020** Complete Drilling: **11-30-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **8.00 ft**
At Completion of Drilling: **10.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT2-01

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 936.44 ft
North: 2051586.05 ft
East: 957176.74 ft
Station: 114+66.85
Offset: 47.28 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	935.4	Black and brown Gravelly SANDY LOAM --FILL--						
		Stiff to very stiff, black and brown CLAY LOAM, some gravel; damp --FILL-- --RDR 2--			1	6 6 8	2.30 B	16
			5		2	3 3 4	1.25 P	11
	930.9	Very loose, brown Gravelly SANDY LOAM; moist --FILL-- --RDR 2 to 3--			3	1 1 1	NP	13
	928.4	Medium stiff to stiff, black SILTY CLAY, trace organic matter; damp --Buried TOPSOIL-- --RDR 2--	10		4	1 2 2	1.25 P	30
	925.3	Soft, black and brown Organic SILTY CLAY; wet --few PEAT lenses-- --RDR 1--			5	1 1 1	0.25 P	86
	923.4	Medium stiff, gray Organic SILTY CLAY LOAM, damp --RDR 2--	15		6	0 1 1	0.74 B	53
	920.9	Medium stiff, gray SILTY CLAY, trace organic matter; damp --RDR 2--			7	0 1 3	0.57 B	22
	918.4	Stiff, gray CLAY LOAM, little gravel; damp --RDR 2--			8	3 3 5	1.07 B	13
	916.4	Boring terminated at 20.00 ft	20					

GENERAL NOTES

Begin Drilling: **11-23-2020** Complete Drilling: **11-23-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT2-02

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NGVD
Elevation: 936.26 ft
North: 2051631.21 ft
East: 957183.62 ft
Station: 115+22.36
Offset: 27.88 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
935.9	4-inch thick, brown SILTY CLAY LOAM --TOPSOIL--						
	Soft to medium stiff, brown Gravelly SANDY LOAM; damp to moist --FILL-- --RDR 2--			1	3 1 1	0.75 P	11
	--L_L(%)=24, P_L(%)=13-- --%Gravel=25.4-- --%Sand=39.7-- --%Silt=26.7-- --%Clay=8.1-- --A-2-6 (0)--	5		2	1 1 1	0.25 P	15
930.8	Very loose, brown SILTY LOAM, little gravel; moist to wet --FILL-- --RDR 2--			3	1 0 1	NP	16
928.3	Medium stiff, black Organic SILTY CLAY LOAM; damp --RDR 1--	10		4	1 1 2	0.87 B	81
925.8	Very loose, brown PEAT; damp --RDR 2--			5	1 2 1	0.82 B	136
922.0	Stiff, gray SILTY CLAY, trace to little organic matter; damp --RDR 2--	15		6	1 1 2	1.07 B	40
920.0	Loose, gray SILTY CLAY, little gravel; damp to moist			7	5 3 4	NP	13
918.3	Soft, gray SILTY CLAY LOAM; damp --RDR 2--	20		8	2 1 5	0.33 B	19
915.8	Medium dense, gray, fine to coarse SAND; saturated --RDR 2--	25		9	6 9 11	NP	16
913.8	Boring terminated at 22.50 ft	30 35 40					

GENERAL NOTES

Begin Drilling: **12-11-2020** Complete Drilling: **12-11-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **18.00 ft**
At Completion of Drilling: **14.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT2-03

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 936.28 ft
North: 2051680.45 ft
East: 957174.52 ft
Station: 115+71.58
Offset: 25.25 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
936.0	3-inch thick, black SILTY LOAM --TOPSOIL--						
	Medium stiff, black and brown CLAY LOAM, little gravel --FILL-- --RDR 2--			1	3 2 3	0.90 B	17
933.3	Loose, brown, Gravelly SAND; damp to moist --RDR 2--	5		2	5 2 3	NP	7
930.8	Loose, brown, SANDY LOAM, little gravel; moist --FILL-- --RDR 2--			3	1 3 3	NP	11
928.3	Stiff, brown and gray, SILTY CLAY, trace gravel; damp --FILL-- --RDR 2--	10		4	1 2 3	1.72 B	26
925.8	Very loose, black Organic SILTY LOAM; damp --RDR 2--			5	1 1 1	NP	340
924.8	Very soft, black and brown to brown, PEAT, organic matter; damp --RDR 2--	15		6	1 1 1	NP	166
920.8	Medium stiff, gray SILTY CLAY LOAM, trace to little organic matter; damp --RDR 2--			7	0 1 1	0.90 B	68
917.3	Loose, gray SANDY LOAM, little gravel; moist	20		8	4 4 5	NP	12
915.8	--RDR 2-- Medium dense, gray SILTY LOAM; wet --RDR 2--	25		9	3 5 7	NP	20
913.8	Boring terminated at 22.50 ft	30 35 40					

GENERAL NOTES

Begin Drilling: **11-23-2020** Complete Drilling: **11-23-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **20.50 ft**
At Completion of Drilling: **21.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT2-04

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 932.97 ft
North: 2051739.41 ft
East: 957175.22 ft
Station: 116+30.63
Offset: 35.40 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
932.5	6-inch thick, brown SILTY CLAY LOAM --TOPSOIL--		1	PUSH	NP	11
931.5	Brown SILTY LOAM, trace gravel; moist --FILL--					
	Brown LOAM, little to some gravel; damp to moist --FILL--		2	PUSH	NP	12
929.5	Medium stiff to stiff, brown to gray CLAY LOAM, little gravel; wet --FILL--	5	3	PUSH	0.75 P	13
925.8	Black SILTY CLAY LOAM; moist --Buried TOPSOIL--		4	PUSH	1.00 P	26
924.5	Medium stiff, dark brown Organic SILTY CLAY LOAM; moist	10	5	PUSH	0.96 B	206
922.5	Soft to medium stiff, brown PEAT; moist --2-in, gray silty loam lens; saturated--		6	PUSH	0.76 B	483
919.2	Soft to medium stiff, gray Organic SILTY CLAY LOAM; wet	15	7	PUSH	0.50 P	259
			8	PUSH	0.48 B	74
			9	PUSH	0.25 P	75
913.0	Boring terminated at 20.00 ft	20	10	PUSH	0.67 B	59

GENERAL NOTES

Begin Drilling: **11-25-2020** Complete Drilling: **11-25-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **RR&MG** Logger: **E. Yim** Checked by: **C. Marin**
Drilling Method: **1" ID; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **4.50 ft**
At Completion of Drilling: **NA**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT2-05

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 932.90 ft
North: 2051782.05 ft
East: 957175.39 ft
Station: 116+71.92
Offset: 34.86 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	932.2	8-inch thick, brown SILTY CLAY LOAM; moist --TOPSOIL--			1	PUSH	0.75 P	22
		Brown, LOAM, little gravel; damp to saturated --FILL--			2	PUSH	NP	9
			5		3	PUSH	NP	13
	927.7	Medium stiff (0.5P), gray CLAY to SILTY CLAY; wet						
	926.7	Soft to stiff, dark brown PEAT; moist to wet			4	PUSH	0.50 P	169
					5	PUSH	0.50 P	339
			10		6	PUSH	0.75 P	490
	919.9	Gray Organic SILTY CLAY LOAM; wet			7	PUSH	1.05 B	265
			15		8	PUSH	0.25 P	77
	917.2	Medium stiff, gray SILTY CLAY LOAM, trace gravel; moist to wet			9	PUSH	0.57 B	21
	915.2	Gray SILTY LOAM, trace to little gravel; damp			10	PUSH	2.50 P	15
	912.9	Boring terminated at 20.00 ft	20					

GENERAL NOTES

Begin Drilling: **11-23-2020** Complete Drilling: **11-23-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **RR&MG** Logger: **E. Yim** Checked by: **C. Marin**
Drilling Method: **1" ID; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **4.25 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT2-06

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 932.77 ft
North: 2051832.34 ft
East: 957175.80 ft
Station: 117+23.55
Offset: 34.07 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
932.3	6-inch thick, black SILTY CLAY LOAM --TOPSOIL--		1	PUSH	NP	9
931.0	Brown SILTY LOAM to SILTY CLAY LOAM, trace gravel; damp --FILL--					
930.3	Brown CLAY LOAM, trace gravel; damp --FILL--		2	PUSH	NP	8
928.0	Brown LOAM, little gravel; damp to wet --FILL--	5	3	PUSH	NP	15
927.8						
927.0	Brown SANDY GRAVEL; saturated --FILL--					
	Very soft (<0.25P), gray CLAY; wet		4	PUSH	< 0.25 P	196
	Black to dark brown, organic LOAM; damp					
924.5	Medium stiff to stiff, brown PEAT; moist		5	PUSH	0.50 P	457
		10	6	PUSH	1.24 B	327
920.9	--few silt lenses; wet--					
	Medium stiff, gray, Organic SILTY CLAY LOAM, trace wood fragments; wet		7	PUSH	0.76 B	63
917.9		15	8	PUSH	0.50 P	33
	Gray SILTY LOAM, trace to little gravel; damp to moist					
917.0	Stiff (1.0P), gray SILTY CLAY					
916.4						
915.9	Gray SILTY LOAM, trace gravel; saturated		9	PUSH	NP	12
	Gray Gravelly SANDY LOAM; saturated		10	PUSH	NP	10
912.8		20				
	Boring terminated at 20.00 ft					

GENERAL NOTES

Begin Drilling: **12-03-2020** Complete Drilling: **12-03-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **RR&MG** Logger: **E. Yim** Checked by: **C. Marin**
Drilling Method: **1" ID; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **4.75 ft**
At Completion of Drilling: **NA**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT2-07

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 932.55 ft
North: 2051867.32 ft
East: 957175.35 ft
Station: 117+58.59
Offset: 34.22 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	931.9	Brown, SILTY CLAY LOAM --TOPSOIL--						
		Brown, SILTY LOAM to SILTY CLAY LOAM, trace to little gravel; damp to wet --FILL--			1	PUSH	NP	21
					2	PUSH	NP	15
			5		3	PUSH	NP	20
	927.1	Medium stiff to stiff, brown PEAT; moist			4	PUSH	1.34 B	136
	923.5	--sand lens--			5	PUSH	0.76 B	174
		Brownish gray to gray Organic SILTY LOAM; wet	10					
		--L_L(%)=60, P_L(%)=24-- --%Gravel=0.0-- --%Sand=16.1-- --%Silt=65.0-- --%Clay=18.9-- --A-7-6 (33)--			6	PUSH	NP	65
	921.0	Very soft, gray SILTY CLAY to SILTY CLAY LOAM; wet			7	PUSH	< 0.25 P	28
	917.9	Gray GRAVELLY SAND; saturated	15		8	PUSH	NP	8
					9	PUSH	NP	17
	912.5		20		10	PUSH	NP	14
		Boring terminated at 20.00 ft						

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **11-23-2020** Complete Drilling: **11-23-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **RR&MG** Logger: **E. Yim** Checked by: **C. Marin**
Drilling Method: **1" ID; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **5.00 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT2-08

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 932.12 ft
North: 2051923.96 ft
East: 957176.47 ft
Station: 118+15.15
Offset: 32.67 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	931.6	6-inch thick, black SILTY CLAY LOAM --TOPSOIL--			1	PUSH	NP	20
	929.9	Brown and gray SILTY LOAM, trace gravel; damp to wet --FILL--						
	929.4	Very soft, brown and dark gray CLAY LOAM, trace gravel; wet --FILL--			2	PUSH	< 0.25 P	28
	927.9	Stiff (1.25P), black SILTY CLAY LOAM; moist --Buried TOPSOIL--	5		3	PUSH	1.25 P	19
	927.6	Black, medium to coarse SAND; saturated						
	927.0	Stiff, gray SILTY CLAY LOAM, trace gravel; moist			4	PUSH	NP	18
		Gray, fine to coarse SAND, trace gravel; saturated			5	PUSH	NP	22
			10		6	PUSH	NP	21
	920.9	Gray Gravelly SAND to SANDY LOAM; saturated			7	PUSH	NP	20
			15		8	PUSH	NP	14
					9	PUSH	NP	19
					10	PUSH	NP	22
	912.1		20					
		Boring terminated at 20.00 ft						

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **12-03-2020** Complete Drilling: **12-03-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **RR&MG** Logger: **E. Yim** Checked by: **C. Marin**
Drilling Method: **1" ID; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **4.25 ft**
At Completion of Drilling: **5.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT2-09

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 931.74 ft
North: 2051976.84 ft
East: 957174.37 ft
Station: 118+67.66
Offset: 34.85 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
931.2	6-inch thick, brown SILTY CLAY LOAM, trace gravel; damp --TOPSOIL--		1	PUSH	NP	13
	Brown SANDY LOAM to LOAM; damp					
928.7	Brown, medium to coarse grained, SAND, trace gravel; moist to saturated		2	PUSH	NP	15
		5	3	PUSH	NP	19
926.2	Brown LOAM to SANDY LOAM; saturated					
925.5	Gray, medium to coarse grained, SAND, trace gravel; saturated		4	PUSH	NP	17
			5	PUSH	NP	21
		10	6	PUSH	NP	17
919.0	Gray LOAM to SANDY LOAM; saturated		7	PUSH	NP	24
	--medium grained--	15	8	PUSH	NP	19
			9	PUSH	NP	25
			10	PUSH	NP	24
911.7	Boring terminated at 20.00 ft	20				

GENERAL NOTES

Begin Drilling: **11-23-2020** Complete Drilling: **11-23-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **RR&MG** Logger: **E. Yim** Checked by: **C. Marin**
Drilling Method: **1" ID; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **4.00 ft**
At Completion of Drilling: **5.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT2-10

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 933.15 ft
North: 2052025.42 ft
East: 957176.09 ft
Station: 119+16.50
Offset: 32.25 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
932.8	4-inch thick, black SILTY CLAY LOAM		1	PUSH	0.50 P	27
932.4	--TOPSOIL--					
931.4	Gray SILTY LOAM, trace gravel; damp		2	PUSH	2.00 P	12
	--FILL--					
930.1	Medium stiff, black SILTY CLAY LOAM; damp					
	--Buried TOPSOIL--					
	Very stiff, gray SILTY CLAY LOAM to LOAM; damp		3	PUSH	NP	11
	Gray, fine to coarse SAND, trace gravel; damp to saturated	5				
			4	PUSH	NP	19
			5	PUSH	NP	19
		10				
			6	PUSH	NP	19
921.6	Gray LOAM to SANDY LOAM; saturated					
	--alternating silt and sand layers--		7	PUSH	NP	19
	--silt lens--					
		15	8	PUSH	NP	19
917.4	Gray, fine SAND to SANDY LOAM; saturated					
916.1			9	PUSH	NP	18
915.8	Gray SILTY LOAM; saturated					
	Gray, fine SAND to SANDY LOAM; saturated		10	PUSH	NP	16
913.9	Gray SILTY LOAM; saturated					
913.1		20				
	Boring terminated at 20.00 ft					

GENERAL NOTES

Begin Drilling: **12-04-2020** Complete Drilling: **12-04-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **RR&MG** Logger: **E. Yim** Checked by: **C. Marin**
Drilling Method: **1" ID; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **6.00 ft**
At Completion of Drilling: **6.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT3-01

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 887.29 ft
North: 2057744.64 ft
East: 955812.43 ft
Station: 183+23.98
Offset: 30.80 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
886.7	7-inch thick SILTY CLAY --TOPSOIL--					
	Very stiff, black and brown CLAY LOAM, trace to little gravel; damp --FILL-- --RDR 2 to 3--		1	2 3 4	2.50 P	24
884.3	Soft, black and brown SILTY LOAM to SILTY CLAY LOAM, trace organic matter, trace gravel; damp --RDR 2--	5	2	2 2 3	0.25 B	27
881.8	--L_L(%)=50, P_L(%)=24-- --%Gravel=7.3-- --%Sand=25.8-- --%Silt=50.8-- --%Clay=16.1-- --A-7-6 (16)--		3	0 0 0	< 0.25 P	66
	Very soft to soft, black, dark gray and dark green Organic SILTY CLAY; damp --few PEAT lenses-- --organic odor-- --RDR 1--	10	4	0 1 1	< 0.25 P	98
875.8	Medium stiff, gray CLAY LOAM to LOAM, little to some gravel; damp to moist --RDR 2--		5	2 2 3	0.50 P	10
874.3	Loose, gray SILT; wet to saturated --RDR 2--	15	6	3 4 3	NP	11
			7	2 4 4	NP	10
869.3	Medium dense, gray SILTY LOAM, trace to little gravel; wet to saturated --RDR 2--		8	7 6 7	NP	10
867.3	Boring terminated at 20.00 ft	20				

GENERAL NOTES

Begin Drilling: **11-16-2020** Complete Drilling: **11-16-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **E. Greenwood** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **13.00 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT3-02

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 887.73 ft
North: 2057812.83 ft
East: 955725.61 ft
Station: 184+34.20
Offset: 24.56 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	887.2	6-inch thick, dark brown SILTY CLAY --TOPSOIL--						
		Stiff, black and gray CLAY LOAM, little gravel and organic matter; damp to moist --FILL-- --RDR 2--			1	8 7 3	1.00 P	9
			5		2	3 3 3	1.00 P	10
	882.2	Soft, gray SILTY CLAY, little organic matter; moist --RDR 2--			3	2 3 2	0.33 B	50
	879.7	Medium stiff, gray and black SILTY CLAY, trace gravel and organic matter debris; moist --RDR 1-2--	10		4	2 3 3	0.57 B	26
	877.2	Soft to stiff, gray CLAY LOAM to LOAM, little gravel; moist --RDR 1-2--			5	2 3 3	0.33 B	12
			15		6	4 5 6	0.90 B	10
		--wet spoon recovery--			7	3 4 7	0.82 B	12
	867.7		20		8	6 7 7	1.07 B	9
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-30-2020** Complete Drilling: **11-30-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&KG** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **16.00 ft**
At Completion of Drilling: **19.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT3-03

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 887.84 ft
North: 2057854.23 ft
East: 955680.34 ft
Station: 184+95.53
Offset: 25.68 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	17-inch thick TOPSOIL						
886.4	Loose, brown SANDY GRAVEL; dry --FILL--			1	10 7 2	NP	5
884.8	--RDR 2 to 3-- Stiff, black and brown CLAY LOAM, trace gravel; damp --FILL-- --RDR 3--	5		2	2 2 3	1.00 P	11
882.3	--frequent rig chatter-- --possible cobbles-- Very soft, dark gray and dark green Organic SILTY CLAY, few to little PEAT lenses; damp --RDR 1--			3	0 0 0	< 0.25 P	104
	--trace wood fragments--	10		4	0 0 1	< 0.25 P	48
877.3	Soft, gray CLAY to SILTY CLAY; damp --RDR 2--			5	1 2 1	0.33 B	16
876.5	Gray SANDY LOAM; wet --RDR 2--						
876.0	Gray SILTY CLAY; damp --sand seams-- --RDR 2--			6	3 1 2	NP	17
874.8	Loose, gray, fine to medium SAND, trace to little gravel; saturated --RDR 2--	15		7	5 4 4	NP	10
		20		8	5 2 3	NP	10
		25		9	4 6 8	NP	10
865.3	Boring terminated at 22.50 ft						
		30					
		35					
		40					

GENERAL NOTES

Begin Drilling: **11-16-2020** Complete Drilling: **11-16-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **E. Greenwood** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **11.33 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT3-04

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 887.18 ft
North: 2057877.81 ft
East: 955652.54 ft
Station: 185+31.98
Offset: 25.00 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	886.4	9-inch thick, dark brown SILTY CLAY --TOPSOIL--						
		Soft, black SILTY CLAY, some organic matter; moist --gasoline odor--			1	3 2 4	0.25 P	52
	884.2	Medium stiff, black and gray CLAY LOAM; moist --RDR 1--	5		2	2 2 2	0.50 P	25
	881.7	Very soft to medium stiff, gray Organic SILTY CLAY; moist --RDR 1--			3	2 2 2	0.75 P	66
			10		4	2 2 4	< 0.25 P	53
	875.2	Medium stiff to stiff, gray CLAY LOAM, trace gravel; moist --RDR 2--			5	3 4 5	0.16 B	44
			15		6	4 8 12	1.23 B	14
					7	6 7 9	0.82 B	14
	867.2		20		8	6 7 8	1.15 B	9
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **12-03-2020** Complete Drilling: **12-03-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&KG** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT3-05

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 886.73 ft
North: 2057922.57 ft
East: 955603.82 ft
Station: 185+98.13
Offset: 26.37 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
886.1	8-inch thick SILTY LOAM --TOPSOIL--						
	Very stiff, black and brown CLAY LOAM; damp --FILL-- --RDR 2--			1	1 3 1	3.25 P	23
883.7	Medium stiff, black, brown, and gray Gravelly LOAM, trace organic debris; wet --RDR 2-- --L_L(%)=NP, P_L(%)=NP-- --%Gravel=23.2-- --%Sand=34.0-- --%Silt=35.2-- --%Clay=7.5-- --A-4 (0)--	5		2	1 2 2	0.57 B	50
881.2	Very loose, black, brown and gray PEAT; wet --RDR 1--			3	0 0 2	0.50 P	184
877.2	Very soft to soft, brownish gray to gray, SILTY CLAY; damp --2-in, gray sandy gravel layer; saturated-- --RDR 2--	10		4	0 0 1	0.33 B	240
874.7	Loose, gray LOAM to SANDY LOAM, trace gravel; saturated --RDR 2--			5	2 1 0	< 0.08 B	18
		15		6	2 3 3	NP	10
				7	0 2 4	NP	11
		20		8	2 2 3	NP	11
		25		9	3 5 5	NP	6
864.2	Boring terminated at 22.50 ft						
		30					
		35					
		40					

GENERAL NOTES

Begin Drilling: **11-17-2020** Complete Drilling: **11-17-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **E. Greenwood** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **12.00 ft**
At Completion of Drilling: **--**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT3-06

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 886.46 ft
North: 2057954.45 ft
East: 955566.99 ft
Station: 186+46.84
Offset: 25.93 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		10-inch thick, black SILTY CLAY --TOPSOIL--						
	885.6	Stiff, brown CLAY LOAM, little gravel; damp --FILL-- --RDR 2--			1	3 2 3	1.31 B	20
	883.5	Very soft, dark brown SILTY CLAY; moist --RDR 1--	5		2	3 3 3	< 0.25 P	20
	880.0	Very soft to soft, dark brown PEAT; moist --RDR 1--			3	2 3 3	< 0.25 P	340
			10		4	1 1 1	< 0.25 P	269
					5	1 2 2	0.25 B	235
	873.5	Soft, gray Organic SILTY CLAY; moist --RDR 1--			6	3 2 2	0.33 B	64
	872.2	Stiff, gray CLAY LOAM, little gravel; moist --RDR 2--	15					
					7	3 4 6	1.23 B	10
					8	5 6 9	1.72 B	9
	866.5	Boring terminated at 20.00 ft	20					

GENERAL NOTES

Begin Drilling: **12-02-2020** Complete Drilling: **12-02-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&KG** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT3-07

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 886.61 ft
North: 2058017.49 ft
East: 955505.96 ft
Station: 187+34.30
Offset: 32.87 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
886.0	7-inch thick TOPSOIL						
885.2	Very soft, black and brown SILTY CLAY LOAM; dry --FILL-- --RDR 2--			1	4 1 3 7	NP	5
	Loose to medium dense, black and brown to brown SANDY GRAVEL; dry --FILL-- --RDR 2--	5		2	3 2 2	NP	7
881.1	Medium stiff, black and brown Organic SILTY CLAY LOAM, little peat lenses; damp --RDR 2--			3	2 2 1	0.50 P	45
878.6	Dark brown PEAT; damp --RDR 2--	10		4	0 0 2	< 0.25 P	256
875.2	Very soft, gray CLAY to SILTY CLAY; damp --RDR 2--			5	1 2 3	< 0.08 B	26
873.6	Very soft to medium stiff, gray SILTY CLAY LOAM; damp --sand seam-- --RDR 2--	15		6	2 1 2	< 0.08 B	17
				7	2 4 9	0.90 B	19
868.6	Loose, gray SILTY LOAM; wet --RDR 2--	20		8	2 2 4	NP	8
866.1	Medium dense, gray SANDY LOAM, trace gravel; saturated --RDR 2--	25		9	6 7 8	NP	9
864.1	Boring terminated at 22.50 ft	30 35 40					

GENERAL NOTES

Begin Drilling: **11-17-2020** Complete Drilling: **11-17-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **E. Greenwood** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **18.00 ft**
At Completion of Drilling: **21.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT3-08

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 886.10 ft
North: 2058051.15 ft
East: 955466.94 ft
Station: 187+85.84
Offset: 32.32 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	885.6	6-inch thick, black, SILTY CLAY LOAM; damp --TOPSOIL--						
		Stiff, black, brown and gray SILTY CLAY LOAM, trace gravel; damp			1	2 2 3	1.25 P	26
	883.1	--FILL-- --RDR 2--						
	882.1	Medium stiff, black Organic SILTY LOAM; damp			2	2 1 1	0.50 P	47
	881.9	Brown SAND; damp	5					
		Stiff, brown and gray, PEAT, organic matter; damp --RDR 2--			3	1 2 1	1.31 B	214
	878.1	Soft, gray SILTY CLAY LOAM, little gravel; damp to moist --RDR 2--	10		4	1 2 3	0.49 B	22
	875.6	Medium stiff, gray CLAY LOAM, trace to little gravel; damp to moist --RDR 2--			5	2 2 3	0.49 B	10
			15		6	2 2 3	0.66 B	12
					7	6 6 8	0.98 B	10
	868.1	Medium dense, gray SILTY LOAM, little gravel; damp to moist --RDR 2--			8	5 7 6	NP	10
	866.1	Boring terminated at 20.00 ft	20					

GENERAL NOTES

Begin Drilling: **12-09-2020** Complete Drilling: **12-09-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT3-09

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 886.11 ft
North: 2058081.32 ft
East: 955431.02 ft
Station: 188+32.74
Offset: 31.21 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
885.5	7-inch thick TOPSOIL						
	Very soft to very stiff, black and brown CLAY LOAM; damp --FILL-- --RDR 2--			1	2 2 2	< 0.25 P	28
883.1	Very soft, black SILTY CLAY LOAM --RDR 2--			2	1 2 1	< 0.08 B	37
881.4							
881.0	Brown SILT; wet to saturated	5					
	Very soft, dark brown to brown PEAT, organic; damp --RDR 1--			3	0 0 0	< 0.25 P	358
877.1	Very soft, gray Organic SILTY CLAY; damp	10		4	0 1 1	< 0.25 P	80
875.6	Loose, gray, medium SAND; saturated --RDR 2--			5	4 3 3	NP	15
873.1	Soft, gray CLAY LOAM; wet --RDR 2--	15		6	5 1 4	0.33 B	12
870.6	Medium dense, gray SAND to SANDY LOAM, trace gravel; saturated --RDR 2--			7	2 5 5	NP	10
866.1		20		8	4 5 6	NP	9
	Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-17-2020** Complete Drilling: **11-17-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **E. Greenwood** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **4.25 ft**
At Completion of Drilling: **19.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT3-10

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 886.60 ft
North: 2058106.17 ft
East: 955402.02 ft
Station: 188+70.92
Offset: 30.68 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
886.1	6-inch thick, black, SILTY CLAY LOAM; damp --TOPSOIL--					
	Medium stiff, black and gray to black and brown CLAY LOAM, trace to little gravel; damp --FILL-- --RDR 2--		1	2 2 2	0.75 P	21
	--L_L(%)=35, P_L(%)=18-- --%Gravel=3.3-- --%Sand=29.9-- --%Silt=46.1-- --%Clay=20.7-- --A-6 (9)--	5	2	1 1 2	0.74 B	19
881.1	Very loose, brown PEAT; damp --RDR 2--		3	1 1 1	NP	296
			4	0 2 2	1.23 B	188
876.8	Soft, gray Organic SILTY LOAM; damp --RDR 2--	10				
	--L_L(%)=43, P_L(%)=24-- --%Gravel=0.3-- --%Sand=9.3-- --%Silt=72.1-- --%Clay=18.2-- --A-7-6 (19)--		5	1 1 1	0.49 B	50
873.6	Stiff, gray SILTY CLAY; damp --RDR 2--	15	6	2 4 5	1.07 B	25
871.1	Stiff, gray SILTY LOAM, little gravel --RDR 2--		7	3 3 4	1.23 B	11
868.6	Medium dense, gray LOAM to SILTY LOAM, little gravel; moist --RDR 2--		8	4 5 7	NP	9
866.6	Boring terminated at 20.00 ft	20				

GENERAL NOTES

Begin Drilling: **12-09-2020** Complete Drilling: **12-09-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT3-11

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 888.93 ft
North: 2058144.77 ft
East: 955350.12 ft
Station: 189+35.37
Offset: 25.33 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	888.4	6-inch thick TOPSOIL						
		Medium stiff to stiff, black to black and brown Organic SILTY CLAY LOAM; damp --RDR 2--			1	1 1 2	1.00 P	70
			5		2	1 2 3	0.50 P	41
	882.6							
	882.3	Brown, SANDY GRAVEL; wet to saturated			3	1 0 1	0.33 B	34
		Very loose to loose, dark brown to green PEAT; damp --RDR 2--						
			10		4	2 2 3	1.00 P	298
	876.9				5	0 1 1	0.75 P	196
		Soft, black and greenish gray SILTY CLAY, trace gravel and wood fragments; damp --RDR 2--						
			15		6	0 0 29	0.25 B	60
	873.4							
		Medium stiff, gray SILTY CLAY; damp						
	872.4	Loose, gray SILTY LOAM; wet --RDR 2--			7	2 3 4	NP	10
	870.9							
		Medium dense, gray SANDY LOAM; wet --RDR 2--			8	4 4 8	NP	9
	868.9		20					
		Boring terminated at 20.00 ft						

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **11-17-2020** Complete Drilling: **11-17-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **E. Greenwood** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **6.33 ft**
At Completion of Drilling: **--**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT3-12

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 892.11 ft
North: 2058223.03 ft
East: 955264.13 ft
Station: 190+51.63
Offset: 27.18 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	13-inch thick, black SILTY CLAY --TOPSOIL--						
891.0	Soft to medium stiff, brown CLAY LOAM, little gravel; moist --FILL-- --RDR 2--			1	3 2 1	0.50 P	13
		5		2	2 1 1	0.25 B	16
886.6	Brown SAND, trace gravel; moist --FILL--						
885.6	Soft, dark brown CLAY LOAM, trace gravel; moist --FILL-- --RDR 1--			3	12 5 4	0.25 B	17
884.1	Black SILTY CLAY --Buried TOPSOIL--						
883.4	Medium stiff, gray CLAY LOAM, trace gravel; moist --RDR 1--	10		4	6 4 3	0.66 B	24
881.6	Soft, black and gray SILTY CLAY, trace organic matter; moist --RDR 1--			5	6 4 4	0.49 B	27
879.1	Medium stiff, gray SILTY CLAY, trace organic matter; moist --RDR 1 to 2--	15		6	3 2 3	0.90 B	56
876.6	Medium stiff, gray CLAY to SILTY CLAY, trace organic matter; moist --RDR 2--			7	4 4 7	0.82 B	31
875.1	Medium stiff to stiff, gray CLAY LOAM to LOAM, trace to little gravel; moist --RDR 2--	20		8	7 7 6	0.66 B	9
		25		9	4 6 7	1.31 S	9
869.6	Boring terminated at 22.50 ft	30					
		35					
		40					

GENERAL NOTES

Begin Drilling: **12-02-2020** Complete Drilling: **12-02-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&KG** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **3.75 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT3-13

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 894.10 ft
North: 2058260.36 ft
East: 955224.05 ft
Station: 191+06.39
Offset: 28.69 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
893.5	7-inch thick TOPSOIL						
	Very soft, black and brown LOAM to CLAY LOAM, trace gravel; damp --FILL-- --RDR 2-- --L_L(%)=35, P_L(%)=16-- --%Gravel=8.5-- --%Sand=40.6-- --%Silt=36.0-- --%Clay=14.9-- --A-6 (6)--	5		1	2 1 2	< 0.25 P	26
				2	2 1 3	0.98 B	17
888.6	Soft to medium stiff, black and brown, SILTY CLAY LOAM to CLAY LOAM, trace to little gravel; damp --FILL-- --RDR 2-- --L_L(%)=40, P_L(%)=15-- --%Gravel=2.3-- --%Sand=21.5-- --%Silt=52.4-- --%Clay=23.8-- --A-6 (17)-- --trace organic matter--	10		3	0 1 1	0.25 P	23
				4	1 1 1	0.66 B	23
882.9	Soft to medium stiff, black, dark gray and dark green, SILTY CLAY, trace to little organic matter; damp --RDR 2--			5	1 2 1	0.25 P	33
		15		6	1 1 6	0.82 B	56
878.6	Soft, gray CLAY LOAM, little gravel; moist --RDR 2--			7	1 1 1	0.16 B	12
876.1	Medium dense, gray, fine SAND; saturated --RDR 2--	20		8	4 5 5	NP	11
874.1	Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-17-2020** Complete Drilling: **11-17-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **E. Greenwood** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **4.25 ft**
At Completion of Drilling: **19.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT3-14

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 895.70 ft
North: 2058294.54 ft
East: 955183.58 ft
Station: 191+59.35
Offset: 27.58 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	895.0	8-inch thick, brown SILTY CLAY --TOPSOIL--						
		Soft to stiff, brown to dark brown CLAY LOAM, trace to little gravel; moist --FILL-- --RDR 1 to 2--			1	5 3 2	0.82 B	16
			5		2	2 2 2	1.00 P	25
					3	2 2 2	1.00 P	16
			10		4	2 1 2	0.90 B	22
					5	3 2 3	0.25 B	23
	882.7	Soft to medium stiff, black and gray Organic SILTY CLAY, trace peat lenses; moist --RDR 1 - 2--			6	2 3 2	0.74 B	45
			15		7	3 5 3	0.33 B	41
	877.7	Stiff, gray CLAY LOAM, little gravel; moist --RDR 2--			8	3 4 7	0.49 B	32
			20					
			25		9	3 5 8	1.15 B	15
	873.2	Boring terminated at 22.50 ft						
			30					
			35					
			40					

GENERAL NOTES

Begin Drilling: **12-02-2020** Complete Drilling: **12-02-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&KG** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT3-15

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 897.01 ft
North: 2058320.52 ft
East: 955153.63 ft
Station: 191+98.99
Offset: 27.26 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
896.4	7-inch thick TOPSOIL						
	Medium stiff to very stiff, black, brown and gray CLAY LOAM to SILTY CLAY LOAM, trace to little gravel; damp --FILL-- --RDR 2 to 3--			1	3 2 3	2.00 P	17
				2	3 2 3	2.00 P	15
		5					
				3	0 3 2	1.07 B	19
				4	5 8 3	0.66 B	17
		10					
885.5	Very loose to loose, brown medium SAND; moist to wet --FILL-- --RDR 2--			5	3 3 3	NP	13
883.0							
882.5	Black PEAT; damp			6	2 1 1	0.75 P	46
	Medium stiff, gray SILTY CLAY, trace to some organic matter; damp --RDR 2--	15					
				7	0 1 1	0.74 B	43
				8	1 2 3	0.90 B	32
		20					
876.5	Very loose, gray SANDY LOAM, trace gravel; damp to wet --RDR 2--			9	2 1 3	NP	13
874.0	Medium stiff, gray LOAM to CLAY LOAM, little gravel; moist --RDR 2--			10	3 3 6	0.75 P	12
		25					
871.5	Medium dense, gray SANDY LOAM, little gravel; moist --RDR 2--			11	6 6 7	NP	9
869.5	Boring terminated at 27.50 ft						
		30					
		35					
		40					

GENERAL NOTES

Begin Drilling: **11-18-2020** Complete Drilling: **11-18-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT3-16

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 899.01 ft
North: 2058357.57 ft
East: 955112.90 ft
Station: 192+54.04
Offset: 28.13 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	898.5	6-inch thick, dark brown SILTY CLAY --TOPSOIL--						
		Soft, gray to dark brown, CLAY LOAM, little gravel; moist to wet --FILL-- --RDR 2 to 3--			1	6 7 7	0.41 B	13
			5		2	2 3 2	0.25 P	27
	893.5	Stiff, brown SILTY CLAY LOAM, little gravel; moist --FILL-- --RDR 2--			3	2 1 2	1.23 B	26
	891.5	Very soft to soft, dark brown to brown and gray, CLAY LOAM, little gravel; moist --FILL-- --RDR 2--	10		4	2 2 2	0.49 B	19
					5	3 3 2	< 0.25 P	20
	886.0	Medium stiff to very stiff, brown and gray to brown, CLAY LOAM to CLAY, little gravel; damp to moist --RDR 2--	15		6	3 7 12	1.23 B	13
					7	8 8 10	0.90 B	10
	879.0		20		8	5 7 12	2.13 B	10
		Boring terminated at 20.00 ft						

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **12-02-2020** Complete Drilling: **12-02-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&KG** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **3.50 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT4-01

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 886.34 ft
North: 2057786.72 ft
East: 955837.86 ft
Station: 183+32.73
Offset: 79.19 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
886.1	3-inch thick GRAVEL --FILL--						
	Medium dense, brown SAND; damp --FILL-- --RDR 2--			1	9 9 7	NP	6
882.6	Soft, black to gray Organic SILT to SILTY CLAY; moist --organic matter odor-- --RDR 1--	5		2	4 3 5	0.25 P	83
				3	1 2 1	0.33 B	81
	--gasoline odor--	10		4	1 2 3	0.25 B	39
875.8	Soft, gray SILT, trace gravel; moist to saturated --RDR 1 to 2--			5	8 9 3	NR	
		15		6	5 5 4	0.25 B	20
870.8	Soft to medium stiff, gray LOAM to CLAY LOAM, little gravel; moist --RDR 1-2--			7	7 5 7	0.33 B	13
		20		8	7 8 9	0.98 B	10
866.3	Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-16-2020** Complete Drilling: **11-16-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&JS** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **13.00 ft**
At Completion of Drilling: **19.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT4-02

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 886.13 ft
North: 2057839.98 ft
East: 955814.96 ft
Station: 183+85.12
Offset: 104.01 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	885.6	6-inch thick, dark brown SILTY CLAY LOAM --TOPSOIL--						
		Medium dense, brown Gravelly LOAM to CLAY LOAM; damp --FILL-- --RDR 2--			1	10 6 4	4.00 P	11
	883.1	Very soft to soft, black to gray Organic SILTY CLAY; damp --strong gasoline/organic odor-- --RDR 1-2--	5		2	3 3 2	< 0.25 P	68
					3	1 1 1	0.49 B	63
	878.1	Medium stiff, gray SILTY CLAY, trace gravel and organic matter; moist --RDR 2--	10		4	2 3 4	0.57 B	27
	875.6	Soft to very stiff, gray LOAM to CLAY LOAM, little gravel; moist to wet --RDR 2--			5	2 2 2	0.66 B	11
			15		6	6 6 6	2.25 P	10
					7	5 5 5	0.98 B	10
	866.1		20		8	6 5 8	1.07 B	8
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-30-2020** Complete Drilling: **11-30-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&KG** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **13.50 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT4-03

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 886.39 ft
North: 2057861.49 ft
East: 955766.72 ft
Station: 184+35.54
Offset: 88.24 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		12-inch thick, black and brown, SILTY CLAY LOAM						
	885.4	--TOPSOIL--						
		Soft, brown CLAY LOAM, trace gravel; moist			1	30 50/2"	0.25 P	17
		--FILL--						
	883.6	--RDR 2--						
		Medium stiff, black SILTY CLAY, trace gravel; moist						
		--Buried TOPSOIL--			2	1 1 3	0.50 P	25
	881.9	--RDR 2--	5					
		Soft, gray SILTY CLAY, little organic matter; damp						
		--gasoline/organic odor--			3	1 2 1	0.25 B	59
	878.4							
		Soft, gray SILTY CLAY; damp to moist						
		--RDR 1--			4	2 2 2	0.25 P	25
			10					
	875.9							
		Medium stiff to stiff, gray SILTY CLAY LOAM to CLAY LOAM, trace to little gravel; moist						
		--RDR 2--			5	3 4 5	0.49 B	15
					6	2 3 5	0.66 B	13
			15					
					7	5 5 5	0.98 B	10
					8	4 4 6	1.07 B	10
	866.4		20					
		Boring terminated at 20.00 ft						

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **11-16-2020** Complete Drilling: **11-16-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&JS** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT4-04

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 886.59 ft
North: 2057896.72 ft
East: 955719.87 ft
Station: 184+93.98
Offset: 83.70 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	885.9	8-inch thick, brown, gravelly SILTY CLAY LOAM --TOPSOIL--						
		Medium stiff, brown and gray CLAY LOAM, little gravel; moist --FILL-- --RDR 3--			1	8 6 5	0.50 P	9
	882.6	Medium stiff, black SILTY CLAY, little organic matter; moist	5		2	2 2 3	0.50 P	18
	881.1	Very soft to medium stiff, dark brown to brown PEAT; moist --RDR 1--			3	5 5 6	< 0.25 P	208
			10		4	2 2 2	0.66 B	230
	876.1	Medium stiff, brown to gray SILTY CLAY LOAM to SILTY LOAM, little gravel; moist --RDR 2--			5	2 3 5	0.74 B	17
			15		6	3 3 3	0.98 B	16
	871.1	Medium stiff to stiff, gray CLAY LOAM, little gravel; moist --RDR 2--			7	3 6 6	0.82 B	9
	866.6		20		8	4 4 7	1.23 S	10
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-30-2020** Complete Drilling: **11-30-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&KG** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT4-05

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 884.59 ft
North: 2057935.10 ft
East: 955678.90 ft
Station: 185+50.09
Offset: 85.41 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		15-inch thick, black SILTY CLAY; moist						
	883.3	--TOPSOIL--						
		Medium stiff, black and brown SILTY CLAY, trace organic matter; moist			1	3 2 3	0.50 P	35
	881.6	--RDR 2--						
		Very loose to loose, brown PEAT; moist --RDR 1--	5		2	2 2 3	0.50 P	246
					3	0 1 1	< 0.25 P	518
			10		4	0 1 1	< 0.25 P	315
	874.1	Very soft, gray SILTY CLAY, little organic matter; moist --RDR 1--			5	2 1 2	< 0.25 P	60
	871.6	Medium stiff to stiff, gray CLAY LOAM, trace to little gravel; moist	15		6	3 3 4	0.66 B	12
					7	5 7 7	1.07 B	10
	864.6		20		8	10 14 14	1.15 B	13
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-17-2020** Complete Drilling: **11-17-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&JS** Logger: **T. Rothchild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT4-06

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 884.29 ft
North: 2057961.79 ft
East: 955639.28 ft
Station: 185+97.46
Offset: 79.23 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		15-inch thick, stiff, black SILTY CLAY, trace organic matter						
	883.0	--TOPSOIL--						
		Very loose to loose, dark brown to brown PEAT; moist --RDR 1--			1	3 2 3	1.50 P	50
			5		2	2 2 2	< 0.25 P	326
					3	0 1 1	0.49 B	669
			10		4	0 0 1	0.33 B	462
	873.8	Soft, gray SILTY CLAY, trace organic matter; moist --RDR 1--			5	1 1 1	0.25 P	46
	871.3	Stiff, gray CLAY LOAM, little gravel; moist --RDR 2--			6	2 2 3	1.25 P	9
			15		7	3 4 4	1.15 B	10
			20		8	5 4 4	1.39 B	11
	864.3	Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-30-2020** Complete Drilling: **11-30-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&KG** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT4-07

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 883.87 ft
North: 2057993.42 ft
East: 955599.58 ft
Station: 186+48.16
Offset: 76.71 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		15-inch, black SILTY CLAY, trace gravel; moist						
	882.6	--TOPSOIL--						
		Black and brown Organic SILTY CLAY; moist --RDR 2--			1	2 2 3	0.50 P	74
	879.6	Very soft, brown PEAT; moist --RDR 1--	5		2	2 2 2	NR	
					3	1 1 1	< 0.25 P	435
			10		4	0 1 1	0.41 B	265
	873.4	Soft, gray SILTY CLAY, little organic matter; moist --RDR 1 to 2--			5	0 1 1	0.33 B	49
	870.9	Soft, gray SILTY CLAY LOAM to CLAY LOAM, trace gravel; damp --RDR 2--	15		6	3 2 3	0.41 B	21
	868.4	Medium stiff to very stiff, gray CLAY LOAM, little to some gravel; moist --RDR 2 to 3--			7	6 7 9	0.82 B	8
	863.9		20		8	12 12 11	0.82 B	8
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-17-2020** Complete Drilling: **11-17-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&JS** Logger: **T. Rothchild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT4-08

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 884.55 ft
North: 2058047.23 ft
East: 955526.82 ft
Station: 187+38.32
Offset: 68.98 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	883.8	9-inch thick, black SILTY CLAY LOAM --TOPSOIL--						
		Stiff, black SILTY CLAY LOAM, trace organic matter; damp --RDR 2--			1	2 2 3	1.75 P	28
	880.8	Very soft to soft, dark brown to greenish and grayish brown, PEAT; damp --RDR 2--	5		2	2 2 2	< 0.25 P	378
					3	0 0 0	< 0.25 P	455
	875.8	Black, gray and green Organic SILTY CLAY --less than 0.5-in, sand seam; saturated-- --RDR 2--	10		4	0 1 0	0.50 P	69
	873.3	Stiff, gray SILTY CLAY LOAM; damp --sandy gravel seam; saturated-- --RDR 2--			5	1 4 8	1.72 B	14
	871.3	Loose to medium dense, gray SAND to SANDY LOAM, trace to little gravel; saturated --RDR 2--	15		6	6 3 3	NP	12
					7	7 5 4	NP	11
	864.6		20		8	10 10 12	NP	9
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **12-01-2020** Complete Drilling: **12-01-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **RH&J** Logger: **E. Greenwood** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **8.80 ft**
At Completion of Drilling: **--**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT4-09

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 884.14 ft
North: 2058079.14 ft
East: 955485.74 ft
Station: 187+90.24
Offset: 65.76 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		15-inch thick, black SILTY CLAY --TOPSOIL--						
	882.9	Medium stiff, brown Organic SILTY CLAY; damp --RDR 2--			1	3 2 3	0.50 P	69
	881.1	Very soft, brown PEAT; moist --RDR 1--	5		2	1 1 1	< 0.25 P	294
	878.6	Soft, gray SILTY CLAY, some organic matter; moist --RDR 1 to 2--			3	0 1 1	0.41 B	69
	876.1	Soft, gray SILTY CLAY LOAM, trace gravel; damp --RDR 2--	10		4	2 2 3	0.49 B	15
					5	4 5 9	0.25 P	16
	871.1	Stiff, gray CLAY LOAM to LOAM, little gravel; moist --RDR 2--	15		6	9 4 5	1.25 P	9
	868.6	Medium dense, gray LOAM, little gravel --RDR 2--			7	8 10 10	NP	11
	866.1	Stiff, gray CLAY LOAM to LOAM, little gravel; moist --RDR 3--	20		8	11 15 16	1.39 B	9
	864.1	Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-17-2020** Complete Drilling: **11-17-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&JS** Logger: **T. Rothchild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT4-10

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 883.19 ft
North: 2058107.41 ft
East: 955450.47 ft
Station: 188+35.38
Offset: 63.64 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		16-inch thick, black SILTY CLAY --TOPSOIL--						
	881.9	Loose, brown PEAT; moist --RDR 1--			1	2 2 3	< 0.25 P	162
	880.2	Soft, gray SILTY CLAY, trace organic matter; moist --RDR 1--	5		2	2 1 1	0.49 B	63
	877.7	Medium stiff, gray CLAY to SILTY CLAY , trace organic matter; moist --RDR 1--			3	2 2 4	0.98 B	35
	875.2	Soft, gray SILTY CLAY LOAM, trace gravel; moist --RDR 1--	10		4	3 4 4	0.49 B	16
	872.7	Medium stiff to stiff, gray LOAM to CLAY LOAM, trace to little gravel; moist --RDR 2--			5	3 4 5	0.50 P	12
			15		6	3 5 8	0.90 B	9
					7	8 10 12	1.48 B	10
	863.2		20		8	12 13 12	1.64 B	9
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **12-01-2020** Complete Drilling: **12-01-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&KG** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT4-11

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 883.40 ft
North: 2058137.64 ft
East: 955415.23 ft
Station: 188+81.81
Offset: 63.03 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		15-inch thick, black SILTY CLAY --TOPSOIL--						
	882.2	Very soft to medium stiff, black to gray Organic SILTY CLAY; moist --RDR 1--			1	2 2 2	0.50 P	68
			5		2	0 1 1	NR	
					3	0 1 1	0.16 B	57
	875.4	Very soft to soft, gray SILTY CLAY, trace organic matter; moist --RDR 1 to 2--	10		4	1 1 2	0.33 B	38
	872.9	Medium stiff to very stiff, gray Gravelly CLAY LOAM to LOAM; moist --RDR 2--			5	4 5 5	1.23 B	11
			15		6	6 7 9	NR	
					7	10 12 12	2.75 P	11
	863.4		20		8	8 10 11	0.98 B	9
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-17-2020** Complete Drilling: **11-17-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&JS** Logger: **T. Rothchild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **18.50 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT4-12

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 883.53 ft
North: 2058176.18 ft
East: 955371.56 ft
Station: 189+40.06
Offset: 63.06 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		18-inch thick, very soft, black, SILTY CLAY; moist --TOPSOIL--						
	882.0	Very soft to soft, brown to brown and gray, PEAT; moist --RDR 2--			1	2 1 2	0.25 P	119
			5		2	0 1 1	0.33 B	418
					3	1 2 1	< 0.25 P	268
	875.5	Soft, gray SILTY CLAY, trace organic matter; moist --RDR 2--	10		4	2 2 3	0.33 B	27
	873.0	Medium stiff to stiff, gray CLAY LOAM to LOAM, little to some gravel; moist --RDR 2--			5	4 6 7	0.75 P	10
			15		6	5 7 10	1.56 B	9
					7	6 7 11	1.39 B	9
	863.5		20		8	10 11 13	1.39 B	10
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **12-01-2020** Complete Drilling: **12-01-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&KG** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **3.00 ft**
At Completion of Drilling: **19.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT4-13

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 883.59 ft
North: 2058210.83 ft
East: 955323.71 ft
Station: 189+98.87
Offset: 57.42 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		15-inch thick, stiff, black SILTY CLAY LOAM, trace organic, trace gravel; moist						
	882.3	--TOPSOIL--						
		Very soft, brown PEAT; moist --RDR 1--			1	1 1 2	1.00 P	62
			5		2	0 0 0	< 0.25 P	314
	878.1	Very soft to soft, gray Organic SILTY CLAY; moist --RDR 1--			3	0 0 1	0.28 B	74
			10		4	0 1 1	0.41 B	58
	873.1	Very soft, gray SILTY CLAY LOAM, trace gravel; moist to wet --RDR 2--			5	10 8 7	< 0.25 P	32
	870.6	Soft to stiff, gray CLAY LOAM to LOAM, little gravel; moist --RDR 2--			6	3 3 4	0.49 B	10
			15		7	4 6 9	0.74 B	10
			20		8	7 7 11	1.31 B	11
	863.6	Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-17-2020** Complete Drilling: **11-17-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&JS** Logger: **T. Rothchild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **13.00 ft**
At Completion of Drilling: **19.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT4-14

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 887.20 ft
North: 2058244.77 ft
East: 955287.97 ft
Station: 190+48.12
Offset: 59.25 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	886.4	10-inch thick, dark brown SILTY CLAY LOAM --TOPSOIL--						
		Soft to stiff, brown CLAY LOAM, little gravel; moist --FILL-- --RDR 1--			1	3 2 1	1.00 P	15
	883.4	Black, SILTY CLAY, trace gravel --Buried TOPSOIL--	5		2	4 5 6	0.49 B	18
	881.7	Soft, brown PEAT; moist --RDR 1--			3	2 1 2	< 0.25 P	207
	879.2	Soft, gray SILTY CLAY, trace organic matter; moist --RDR 1--	10		4	1 1 2	0.49 B	62
					5	2 1 2	0.33 B	73
	874.2	Soft, gray SILTY CLAY LOAM, trace organic matter; moist --RDR 2--			6	4 13 15	0.25 B	32
	872.7	Soft to stiff, gray LOAM to CLAY LOAM, little gravel; moist --RDR 2--	15					
					7	10 14 17	0.41 B	10
	867.2	Boring terminated at 20.00 ft	20		8	6 6 6	1.56 B	8

GENERAL NOTES

Begin Drilling: **12-01-2020** Complete Drilling: **12-01-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&KG** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT4-15

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 888.87 ft
North: 2058278.30 ft
East: 955245.48 ft
Station: 191+02.17
Offset: 56.32 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	888.3	7-inch thick TOPSOIL						
		Medium stiff, brown CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--			1	1 2 2	0.90 B	13
	885.1	Medium stiff, organic SILTY CLAY LOAM; damp --Buried TOPSOIL-- --RDR 2--	5		2	1 1 1	0.50 P	48
	883.4	Medium stiff, gray SILTY CLAY LOAM to SILT, trace organic; damp --wood fragments-- --RDR 2--			3	0 1 1	0.98 B	49
	880.9	--L_L(%)=55, P_L(%)=30-- --%Gravel=0.9-- --%Sand=2.8-- --%Silt=75.2-- --%Clay=21.1-- --A-7-5 (29)--	10		4	1 2 4	0.82 B	24
	878.4	Medium stiff, gray SILTY CLAY LOAM, little gravel; damp to moist --RDR 2--						
		Soft, gray CLAY LOAM to LOAM, little gravel; moist to wet --RDR 2--			5	4 4 7	0.25 P	12
	875.9	Loose to medium dense, gray SANDY LOAM, some gravel; wet to saturated --RDR 2--	15		6	5 6 6	NP	10
					7	5 3 5	NP	12
	868.9		20		8	5 6 8	NP	10
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-18-2020** Complete Drilling: **11-18-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **14.00 ft**
At Completion of Drilling: **19.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT4-16

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 888.38 ft
North: 2058321.77 ft
East: 955213.03 ft
Station: 191+55.25
Offset: 67.48 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		18-inch thick, black SILTY CLAY --TOPSOIL--						
	886.9							
	886.6	Brown SAND; moist			1	2 2 1	1.00 P	72
		Medium stiff to stiff, brown and gray SILTY CLAY, trace to some organic matter; moist --RDR 1--			2	2 2 1	0.57 B	53
			5					
	882.9							
		Soft, gray CLAY LOAM, little gravel; moist --RDR 2--			3	2 3 4	0.41 B	23
					4	2 3 6	0.41 B	14
			10					
	877.9							
		Medium dense to dense, gray LOAM to CLAY LOAM, little gravel; moist --RDR 2--			5	14 15 16	0.49 B	13
					6	10 12 15	0.50 P	11
			15					
					7	11 14 15	0.82 B	8
					8	8 11 12	1.39 B	9
	868.4		20					
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **12-01-2020** Complete Drilling: **12-01-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **NC&KG** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT5-01

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 911.21 ft
North: 2055317.09 ft
East: 957568.72 ft
Station: 152+90.75
Offset: 27.48 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	910.5	9-inch thick, black SILTY CLAY LOAM, trace gravel; damp --TOPSOIL--						
		Very loose, brown SILTY LOAM, little gravel; moist --FILL--			1	1 0 1	NP	14
	908.2	Soft, black and brown CLAY LOAM, trace gravel; moist --FILL--	5		2	0 0 0	0.49 B	30
	905.7	Soft to medium stiff, black and gray, SILTY CLAY LOAM --RDR 2-- --organic matter--			3	0 1 2	0.74 B	24
			10		4	1 1 2	0.41 B	29
	900.7	Very soft, gray CLAY to SILTY CLAY, trace organic matter; damp --RDR 2--			5	0 1 2	0.16 B	37
	898.2	Medium stiff, gray SILTY CLAY LOAM; damp --RDR 2--	15		6	1 2 1	0.75 P	30
	895.7	Loose, gray SILTY LOAM; moist --RDR 2--			7	1 2 4	NP	24
	893.2	Medium dense, gray LOAM to SILTY LOAM, little to some gravel; damp --RDR 2--			8	6 7 8	NP	8
	891.2	Boring terminated at 20.00 ft	20					

GENERAL NOTES

Begin Drilling: **12-02-2020** Complete Drilling: **12-02-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT5-02

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 908.51 ft
North: 2055376.99 ft
East: 957561.61 ft
Station: 153+47.91
Offset: 46.62 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
908.0	6-inch thick, brown, SILTY CLAY LOAM; damp						
	Medium stiff to stiff, black and brown CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--			1	2 2 1	0.75 P	16
		5		2	2 2 1	1.39 B	23
902.2	Black SILTY LOAM; damp --Buried TOPSOIL--			3	2 1 1	0.74 B	21
901.3	Very soft to soft, gray Organic SILTY CLAY LOAM; damp --RDR 2--						
		10		4	0 0 0	< 0.25 P	136
				5	2 3 4	0.25 B	113
895.5	Brown coarse SAND; little gravel; saturated --RDR 2--			6	2 5 5	NP	16
894.5	Medium dense, brown SILTY LOAM, trace gravel; moist --RDR 2--	15					
893.0	Brown, fine to coarse SAND; little gravel; wet --RDR 2--			7	5 5 5	NP	14
892.0	Medium dense, gray SILTY LOAM, little gravel; moist --RDR 2--						
890.5	Very stiff, gray CLAY LOAM to LOAM, little gravel; moist --RDR 2--			8	11 8 8	3.00 P	9
888.5	Boring terminated at 20.00 ft	20					

GENERAL NOTES

Begin Drilling: **12-10-2020** Complete Drilling: **12-10-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **13.00 ft**
At Completion of Drilling: **7.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT5-03

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 907.10 ft
North: 2055459.99 ft
East: 957503.79 ft
Station: 154+47.62
Offset: 29.61 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
906.9	3-inch thick, black SILTY CLAY LOAM, trace gravel; damp to moist --TOPSOIL--		1	PUSH	0.50 P	13
904.6	Medium stiff, black and brown CLAY LOAM, trace gravel; wet --FILL--		2	PUSH	< 0.25 P	40
	Very soft, black and gray LOAM, trace organic matter; wet					
902.6	Medium stiff, black SILTY CLAY LOAM, some organic matter; moist	5	3	PUSH	0.75 P	43
901.4	--shell fragments--					
	Stiff, brown PEAT; moist		4	PUSH	1.50 P	422
900.1	Very soft, black and gray, CLAY LOAM to LOAM; saturated					
899.3	Very soft to medium stiff, gray to brownish gray Organic SILTY LOAM to SILT; moist to wet --shell fragments--		5	PUSH	0.75 P	117
		10				
	--L_L(%)=33, P_L(%)=18-- --%Gravel=0.0-- --%Sand=0.9-- --%Silt=80.8-- --%Clay=18.3-- --A-6 (15)--		6	PUSH	< 0.25 P	57
894.9	Gray SILTY LOAM, little gravel; moist		7	PUSH	NP	8
	--cave-in at 14.5 feet--	15	8	PUSH	NP	7
891.6	Gray, fine to very coarse SAND, little gravel; saturated					
890.6	Gray SILTY LOAM, trace gravel; moist		9	PUSH	NP	10
			10	PUSH	NP	12
887.1	Boring terminated at 20.00 ft	20				

GENERAL NOTES

Begin Drilling: **12-01-2020** Complete Drilling: **12-01-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **RR&MG** Logger: **E. Yim** Checked by: **C. Marin**
Drilling Method: **1" ID; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **4.00 ft**
At Completion of Drilling: **NA**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT5-04

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 903.29 ft
North: 2055499.37 ft
East: 957497.88 ft
Station: 154+85.78
Offset: 41.01 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	15-inch thick, brown LOAM; wet to moist		1	PUSH	0.50 P	33
902.0	Soft, dark brown SILTY CLAY LOAM to CLAY LOAM, trace gravel; wet					
900.8			2	PUSH	< 0.25 P	186
900.5	Black SAND, trace gravel; saturated					
	Very soft, brown to dark brown PEAT; wet					
	--wet sand lenses--	5	3	PUSH	< 0.25 P	43
	-shell fragments--					
			4	PUSH	< 0.25 P	159
894.7						
894.0	Very soft, gray Organic SILTY CLAY LOAM; wet					
	Gray, fine to medium SAND, trace gravel; saturated	10	5	PUSH	< 0.25 P	157
			6	PUSH	NP	16
889.3	--cave-in at 14 feet--					
	Gray SANDY GRAVEL; saturated		7	PUSH	NP	20
		15				
887.3			8	PUSH	NP	10
	Stiff, gray SILTY LOAM, trace gravel; damp to moist					
			9	PUSH	1.50 P	16
883.3		20	10	PUSH	1.50	12
	Boring terminated at 20.00 ft					

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
						P	
		25					
		30					
		35					
		40					

GENERAL NOTES

Begin Drilling: **12-01-2020** Complete Drilling: **12-01-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **RR&MG** Logger: **E. Yim** Checked by: **C. Marin**
Drilling Method: **1" ID; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **11.00 ft**
At Completion of Drilling: **0.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT5-05

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 905.88 ft
North: 2055581.30 ft
East: 957456.99 ft
Station: 155+77.32
Offset: 38.85 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
905.6	4-inch thick, brown SILTY CLAY LOAM --TOPSOIL--		1	PUSH	0.25 P	22
903.9	Brown CLAY LOAM, trace gravel; wet					
903.6	--FILL--		2	PUSH	0.57 B	30
902.9	Gray SANDY LOAM, little gravel; saturated					
902.3	Medium stiff, gray SILTY CLAY; wet					
	Gray SILTY LOAM; moist	5	3	PUSH	< 0.25 P	124
	Gray and brownish gray Organic CLAY LOAM; wet					
899.9	--shell fragments--		4	PUSH	< 0.25 P	28
899.1	Very soft, gray SILTY CLAY LOAM; wet					
	Gray, medium to very coarse SAND, trace gravel; saturated		5	PUSH	NP	10
897.1						
896.9	Gray SILTY LOAM, trace gravel; wet to saturated					
	Gray Gravelly SAND; saturated	10	6	PUSH	NP	10
	--cave-in at 11 feet--		7	PUSH	NP	12
891.6	Brown to gray LOAM, trace gravel; damp to saturated	15	8	PUSH	NP	7
			9	PUSH	NP	7
			10	PUSH	NP	12
885.9	Boring terminated at 20.00 ft	20				

GENERAL NOTES

Begin Drilling: **12-02-2020** Complete Drilling: **12-02-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **RR&MG** Logger: **E. Yim** Checked by: **C. Marin**
Drilling Method: **1" ID; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **2.00 ft**
At Completion of Drilling: **16.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG PT5-06

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 905.28 ft
North: 2055640.81 ft
East: 957441.67 ft
Station: 156+37.70
Offset: 50.30 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
904.5	9-inch thick, black SILTY CLAY LOAM; wet --TOPSOIL--		1	PUSH	0.67 B	38
902.5	Medium stiff to stiff, brown and gray SILTY CLAY; wet to moist --trace organic matter--		2	PUSH	1.00 P	23
901.5	Gray SILTY LOAM to LOAM, trace gravel; saturated					
900.5	Gray, SANDY LOAM, trace gravel; saturated		3	PUSH	NP	11
899.0	Gray SANDY GRAVEL; saturated	5				
	Brown LOAM, trace to little gravel; damp to wet		4	PUSH	NP	8
			5	PUSH	NP	10
		10	6	PUSH	NP	8
			7	PUSH	NP	7
		15	8	PUSH	NP	8
			9	PUSH	NP	8
885.3		20	10	PUSH	NP	8
	Boring terminated at 20.00 ft					

GENERAL NOTES

Begin Drilling: **12-02-2020** Complete Drilling: **12-02-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **RR&MG** Logger: **E. Yim** Checked by: **C. Marin**
Drilling Method: **1" ID; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **2.50 ft**
At Completion of Drilling: **1.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-01

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 930.74 ft
North: 2051859.08 ft
East: 957247.76 ft
Station: 117+49.71
Offset: 38.10 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Medium stiff, dark brown CLAY LOAM to LOAM, trace gravel; saturated			1	PUSH	0.50 P	44
		--trace organic matter--						
		--standing water at surface--						
		--Drainage Ditch sediment FILL--			2	PUSH	0.50 P	28
			5		3	PUSH	0.50 P	20
	925.5	Medium stiff, brown PEAT, few silt lenses; moist to wet			4	PUSH	0.57 B	243
	923.0	Medium stiff to stiff, gray, organic SILTY CLAY LOAM; wet			5	PUSH	0.57 B	66
			10		6	PUSH	1.05 B	64
	919.0	Soft, gray SILTY CLAY LOAM, trace gravel; moist to wet			7	PUSH	0.48 B	24
	917.0	Gray, medium SAND; saturated						
			15		8	PUSH	NP	18
	915.0	Gray, fine to coarse SANDY GRAVEL; saturated			9	PUSH	NP	18
					10	PUSH	NP	17
	910.7		20					
		Boring terminated at 20.00 ft						

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **11-30-2020** Complete Drilling: **11-30-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **RR&MG** Logger: **E. Yim** Checked by: **C. Marin**
Drilling Method: **1" ID; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **0.00 ft**
At Completion of Drilling: **0.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-02

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 929.70 ft
North: 2051938.21 ft
East: 957245.72 ft
Station: 118+28.85
Offset: 36.69 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Soft to medium stiff, black, gray and brown SILTY LOAM to LOAM, trace gravel and organic matter; saturated			1	PUSH	0.50 P	25
		--Drainage Ditch sediment FILL--						
		--L_L(%)=37, P_L(%)=20--						
	926.9	--%Gravel=7.6--			2	PUSH	0.25 P	39
		--%Sand=38.1--						
		--%Silt=49.1--						
		--%Clay=5.2--						
		--A-6 (7)--						
		Very soft (<0.25P) to medium stiff, black and gray to gray Organic SILTY CLAY to SILTY CLAY LOAM; moist to wet	5		3	PUSH	0.25 P	48
	922.7	--1.25P--			4	PUSH	0.48 B	32
		Medium stiff to stiff (1.25P), gray SILTY CLAY LOAM, trace gravel; moist			5	PUSH	0.48 B	19
		--trace organic matter--	10		6	PUSH	0.96 B	40
					7	PUSH	0.76 B	22
	915.5	Gray SILTY LOAM, trace gravel; damp to moist	15		8	PUSH	NP	16
	914.0	Gray, fine to coarse SANDY GRAVEL; saturated			9	PUSH	NP	9
	912.5	Gray SILTY LOAM, trace to little gravel; moist to saturated			10	PUSH	NP	18
	909.7	Boring terminated at 20.00 ft	20					

GENERAL NOTES

Begin Drilling: **11-30-2020** Complete Drilling: **11-30-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **RR&MG** Logger: **E. Yim** Checked by: **C. Marin**
Drilling Method: **1" ID; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **0.00 ft**
At Completion of Drilling: **0.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-03

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 934.03 ft
North: 2052012.70 ft
East: 957269.13 ft
Station: 119+03.15
Offset: 60.71 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
933.8	2.5-inch thick ASPHALT --PAVEMENT--						
	Very dense, brown SANDY GRAVEL; dry --FILL-- --RDR 3--			1	12 50/4"	NP	6
931.3	Stiff, black and brown SILTY CLAY LOAM, trace to little gravel; damp --RDR 2--	5		2	5 3 2	1.50 P	17
928.5	Loose, brown and gray, SILTY LOAM; saturated --sand seams-- --RDR 2--			3	8 6 1	NP	16
926.0	Loose, gray SANDY GRAVEL; saturated --RDR 2--	10		4	1 0 0	NP	22
				5	2 4 5	NP	11
921.0	Loose to medium dense, fine to medium SAND; saturated --RDR 2--	15		6	4 6 7	NP	18
				7	5 3 4	NP	19
		20		8	8 6 8	NP	21
				9	8 8 7	NP	17
911.0	Loose to medium dense, gray SILTY LOAM; saturated --RDR 2--	25		10	1 2 3	NP	19
				11	4 5 7	NP	21
906.0	Medium dense, gray SANDY LOAM, trace gravel; saturated --RDR 2--	30		12	7 8 7	NP	17
				13	6 7 7	NP	20
899.0	Boring terminated at 35.00 ft	35		14	8 7 7	NP	18
		40					

GENERAL NOTES

Begin Drilling: **12-01-2020** Complete Drilling: **12-01-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **RH&J** Logger: **E. Greenwood** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **5.50 ft**
At Completion of Drilling: **25.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-04

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 935.71 ft
North: 2051790.24 ft
East: 957197.84 ft
Station: 116+81.27
Offset: 12.37 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	16-inch thick ASPHALT --PAVEMENT--						
934.4	Medium dense to dense, brown and gray Gravelly SANDY LOAM; dry to damp --FILL-- --RDR 2--			1	14 15 18	NP	4
		5		2	12 8 11	NP	9
				3	8 10 10	NP	7
927.7	Medium stiff, brown and gray CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--	10		4	2 3 3	0.75 P	15
925.2	Loose, black PEAT; wet --RDR 1--			5	2 3 3	0.75 P	194
		15		6	2 1 2	1.64 B	273
920.2	Medium stiff, gray Organic SILTY CLAY; wet --RDR 1--			7	0 0 2	0.98 B	61
917.7	Medium stiff, gray CLAY, trace organic matter; moist --RDR 2--	20		8	1 2 3	0.66 B	29
915.2	Soft, gray CLAY LOAM to LOAM, trace gravel; damp to moist --RDR 2--			9	2 5 5	0.49 B	13
913.7	Gray SAND; saturated --RDR 2--						
912.7	Medium dense, gray SILTY LOAM to SILT; wet to saturated --RDR 2--	25		10	6 9 8	NP	16
				11	4 6 7	NP	17
		30		12	7 9 9	NP	21
905.2	Medium dense, gray Gravelly SAND; saturated --RDR 2--			13	5 5 5	NP	10
				14	6 5 6	NP	8
900.7	Boring terminated at 35.00 ft	35					
		40					

GENERAL NOTES

Begin Drilling: **07-17-2020** Complete Drilling: **07-17-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **22.00 ft**
At Completion of Drilling: **NA**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-04-ST

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 935.64 ft
North: 2051795.71 ft
East: 957196.78 ft
Station: 116+86.74
Offset: 13.39 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		16-inch thick ASPHALT --PAVEMENT--						
	934.3	--blind drilling--						
		--RDR 3-- --difficult drilling from 5 to 7 feet--	5					
			10					
			15					
	919.6	Soft, gray SILTY CLAY LOAM to SILT, little to some organic matter; wet --RDR 2-- --L_L(%)=66, P_L(%)=30-- --%Gravel=0.0-- --%Sand=0.6-- --%Silt=77.4-- --%Clay=22.0--			1	PUSH	0.25 P	
	917.6		20					
		--A-7-5 (43)-- Boring terminated at 18.00 ft	25					
			30					
			35					
			40					

GENERAL NOTES

Begin Drilling: **07-20-2020** Complete Drilling: **07-20-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-05

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 935.42 ft
North: 2051876.33 ft
East: 957197.78 ft
Station: 117+67.36
Offset: 11.74 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	16inch thick ASPHALT --PAVEMENT--						
934.1	Medium dense, black, brown and gray Gravelly SANDY LOAM; damp --FILL-- --RDR 2--			1	7 12 12	NP	6
931.4	Stiff, brown and gray, CLAY LOAM, little gravel --FILL-- --RDR 2--	5		2	10 7 5	1.25 P	18
929.9	Stiff, brown and gray, SILTY CLAY LOAM, little gravel --FILL-- --RDR 2--			3	5 3 2	1.25 P	18
927.4	Loose, black PEAT interbedded with Organic SILTY LOAM --RDR 2--	10		4	2 2 3	1.25 P	84
924.9	Medium stiff to stiff, gray, organic SILTY CLAY to SILTY CLAY LOAM; wet --RDR 1-- --organic content= 18.8%--			5	1 1 2	1.31 B	76
		15		6	1 1 1	0.90 B	57
	--interbedded black PEAT--			7	1 1 5	0.82 B	17
918.4	Medium stiff, gray CLAY to SILTY CLAY, trace organic matter; damp to wet --RDR 2--	20		8	3 2 3	0.50 P	21
912.4	Loose, gray SANDY GRAVEL; saturated --RDR 2--			9	3 3 4	0.66 B	19
		25		10	1 3 5	NP	9
909.9	Very soft, gray CLAY LOAM to LOAM, little gravel; damp --RDR 2--			11	3 3 3	< 0.25 P	15
906.2	Loose, gray, fine SAND; saturated --RDR 2--	30		12	2 3 3	NR	
				13	3 3 3	NP	21
902.4	Loose, gray Gravelly SAND, trace cobbles; saturated --RDR 2--	35		14	5 4 3	NP	
				15	21 5 3	NP	20
897.4	Dense, gray SILTY LOAM, little gravel; wet --RDR 2--			16	14 18 14	NP	10
895.4	Boring terminated at 40.00 ft	40					

GENERAL NOTES

Begin Drilling: **07-17-2020** Complete Drilling: **07-17-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **23.00 ft**
At Completion of Drilling: **NA**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-06

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 935.26 ft
North: 2051961.38 ft
East: 957198.00 ft
Station: 118+52.40
Offset: 10.84 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	15-inch thick, black ASPHALT --PAVEMENT--						
934.0	Medium dense, brown Gravelly SANDY LOAM; damp --FILL-- --RDR 2--			1	7 5 6	NP	9
932.0	Very loose to loose, brown, fine SAND, trace gravel; damp to moist --FILL-- --RDR 2--	5		2	4 2 2	NP	11
928.5	Soft, black and gray SILTY CLAY LOAM, trace organic matter; moist --Buried TOPSOIL--			3	2 1 1	0.41 B	23
927.8	Very loose to loose, brown and gray Gravelly SANDY LOAM; saturated --RDR 2--	10		4	1 0 1	NP	18
				5	3 3 3	NP	18
922.3	Medium dense, gray, medium SAND; saturated --RDR 2--	15		6	6 5 5	NP	14
919.8	Loose, gray Gravelly SAND; saturated --RDR 2--			7	2 1 3	NP	12
917.5	Medium dense to dense, gray, fine SAND to SANDY LOAM, trace gravel; saturated --RDR 2 to 3--	20		8	45 10 12	NP	12
		25		9	3 4 6	NP	14
				10	6 6 5	NP	20
				11	5 5 9	NP	20
		30		12	16 19 14	NP	21
904.8	Medium dense to dense, gray Gravelly SAND; saturated --RDR 2--			13	25 21 14	NP	10
900.3	Boring terminated at 35.00 ft	35		14	11 11 11	NP	8
		40					

GENERAL NOTES

Begin Drilling: **07-16-2020** Complete Drilling: **07-16-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **8.00 ft**
At Completion of Drilling: **NA**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-07

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 935.16 ft
North: 2052033.16 ft
East: 957196.16 ft
Station: 119+24.12
Offset: 12.15 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
934.2	12-inch thick ASPHALT --PAVEMENT--						
932.2	Medium dense, gray Gravelly SANDY LOAM; damp --FILL--			1	7 7 6	NP	7
929.7	Loose, gray Gravelly LOAM; damp --FILL-- --RDR 2--	5		2	4 3 3	NP	10
927.2	Black and gray CLAY LOAM, trace gravel; damp --RDR 2--			3	2 3 4	NA	12
920.4	Very loose to loose, gray, fine to coarse SAND, trace to little gravel; saturated --RDR 2--	10		4	0 1 1	NP	25
				5	1 1 0	NP	21
		15		6	1 1 4	NP	21
919.7	Gray SILTY LOAM; saturated						
	Medium dense, gray, LOAM to SANDY LOAM, trace gravel; saturated --RDR 2--			7	16 16 12	NP	19
		20		8	3 3 8	NP	19
912.2				9	4 5 6	NP	16
909.7	Loose, gray, fine SAND; saturated --RDR 2--	25		10	3 3 4	NP	15
	Loose to very dense, gray LOAM to SANDY LOAM, trace to little gravel; saturated --RDR 2--			11	4 6 6	NP	16
		30		12	3 4 5	NP	17
				13	7 9 9	NP	19
900.2		35		14	13 31 23	NP	16
	Boring terminated at 35.00 ft						
		40					

GENERAL NOTES

Begin Drilling: **07-16-2020** Complete Drilling: **07-16-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **8.50 ft**
At Completion of Drilling: **NA**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-08

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 910.85 ft
North: 2055355.67 ft
East: 957577.34 ft
Station: 153+21.93
Offset: 51.79 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
910.1	9-inch thick, brown, organic SILTY LOAM, little gravel; dry --TOPSOIL--						
	Hard, brown and black CLAY LOAM, little gravel; damp --FILL-- --RDR 2--			1	4 4 6	> 4.50 P	10
907.9	Loose, brown and black, SILTY LOAM, trace gravel --trace organic matter-- --FILL-- --RDR 2--	5		2	6 5 4	NP	12
905.4	Very soft, black SILTY CLAY, trace organic matter --Buried TOPSOIL-- --RDR 2--			3	3 3 4	NA	25
902.9	Soft, gray Gravelly LOAM to CLAY LOAM; wet --RDR 2--	10		4	2 2 3	0.25 P	20
	--L_L(%)=33, P_L(%)=13-- --%Gravel=16.6-- --%Sand=35.2-- --%Silt=33.2-- --%Clay=15.1-- --A--6 (5)--			5	5 3 3	0.41 B	23
896.9	Very soft to medium stiff, gray SILT to SILTY LOAM; damp to wet --RDR 2--	15		6	3 3 3	0.74 B	10
	--L_L(%)=24, P_L(%)=18-- --%Gravel=0.0-- --%Sand=14.7-- --%Silt=78.0-- --%Clay=7.2-- --A-4 (3)--			7	0 0 2	0.16 B	23
892.9	Gray Gravelly SANDY LOAM; saturated --RDR 3--			8	3 2 0	0.50 P	47
891.9	Medium stiff, gray CLAY to SILTY	20					
890.4	CLAY, trace organic matter; damp --RDR 2--						
	Very stiff, gray Gravelly CLAY LOAM; damp --RDR 2--			9	3 5 9	2.75 P	8
887.9	Medium dense to dense, gray SILTY LOAM to LOAM, little to some gravel; moist to wet --RDR 2--	25		10	9 15 13	NP	8
				11	27 13 14	NP	6
		30		12	15 18 23	NP	7
				13	13 18 22	NP	8
875.9		35		14	7 18 19	NP	8
	Boring terminated at 35.00 ft	40					

GENERAL NOTES

Begin Drilling: **07-22-2020** Complete Drilling: **07-22-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **18.00 ft**
At Completion of Drilling: **NA**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-09

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 911.85 ft
North: 2055445.82 ft
East: 957571.72 ft
Station: 154+05.90
Offset: 85.06 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
911.3	7-inch thick, black SILTY CLAY LOAM --TOPSOIL--					
	Stiff to very stiff, black, brown, and gray CLAY LOAM, trace gravel; damp --FILL-- --RDR 2-- --brick fragments--		1	3 5 5	3.00 P	23
		5	2	2 5 8	1.56 B	22
			3	4 4 4	2.30 B	17
		10	4	1 2 1	1.31 B	13
901.4	Stiff, black, dark brown to brown, PEAT --RDR 2--		5	3 2 1	1.00 P	263
898.9	Medium stiff to stiff, black and gray Organic SILTY CLAY; damp --RDR 2--		6	1 1 1	1.48 B	99
897.4	Gray SILTY CLAY; moist	15				
895.5	Medium dense, gray Gravelly SANDY LOAM ; wet to saturated --RDR 2-- --L_L(%)=NP, P_L(%)=NP-- --%Gravel=33.2-- --%Sand=48.4-- --%Silt=17.9--		7	3 7 9	0.50 P	14
		20	8	6 8 7	NP	11
	--%Clay=0.6-- --A-1-b (0)-- --RDR 3 to 4-- --some to frequent rig chatter, 20.0 to 21.0 feet-- --possible cobbles--		9	9 11 10	NP	11
888.9	--cave-in at 20 feet-- Medium dense, gray, SAND to SANDY LOAM, trace to little gravel; saturated --RDR 2--	25	10	7 11 9	NP	8
			11	7 7 9	NP	8
882.9	Medium dense, gray SANDY GRAVEL; saturated --RDR 2--	30	12	6 10 11	NP	8
	--RDR 3 to 4-- --some to frequent rig chatter, 30.0 to 31.0 feet-- --possible cobbles--		13	9 13 13	NP	8
878.9	Medium dense to dense, gray SAND, trace to little gravel; wet to saturated --RDR 3--	35	14	9 8 9	NP	9
		40	15	10 13 16	NP	7

GENERAL NOTES

Begin Drilling: **12-07-2020** Complete Drilling: **12-07-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **E. Greenwood** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **6.30 ft**
At Completion of Drilling: **NA**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-09

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 911.85 ft
North: 2055445.82 ft
East: 957571.72 ft
Station: 154+05.90
Offset: 85.06 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--RDR 3 to 4-- --some to frequent rig chatter, 33.0 to 48.0 feet-- --possible cobbles--						
			45		16	10 11 11	NP	7
			50		17	11 15 19	NP	8
	861.9	Boring terminated at 50.00 ft						
			55					
			60					

GENERAL NOTES

Begin Drilling: **12-07-2020** Complete Drilling: **12-07-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **E. Greenwood** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **6.30 ft**
At Completion of Drilling: **NA**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-10

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 908.75 ft
North: 2055499.09 ft
East: 957525.09 ft
Station: 154+73.94
Offset: 65.52 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
908.2	6-inch thick, black SILTY CLAY LOAM --TOPSOIL--					
	Stiff to very stiff, gray, brown and black SILTY CLAY LOAM to CLAY LOAM, trace to little gravel; damp --FILL-- --RDR 2--		1	4 9 5	1.89 B	17
		5	2	5 6 8	2.95 B	22
903.2	Soft, black and gray CLAY LOAM to SILTY CLAY LOAM, little gravel; damp --RDR 1-- --L_L(%)=43, P_L(%)=14-- --%Gravel=10.8-- --%Sand=28.9-- --%Silt=42.0-- --%Clay=18.3-- --A-7-6 (14)--		3	1 1 1	0.49 B	29
900.7						
899.2	Soft black SILTY CLAY LOAM, some organic matter; damp	10	4	2 2 3	< 0.25 B	72
897.6	Brown and black PEAT; damp --RDR 1--					
	Very soft to soft, gray and black SILTY CLAY LOAM, trace to some organic matter; damp --RDR 1--		5	1 1 1	< 0.25 B	151
		15	6	0 0 2	0.25 B	49
893.2	Loose, gray SILTY LOAM, little gravel; damp --RDR 2--		7	4 3 2	NP	12
890.7	Medium dense to dense, gray SANDY GRAVEL to Gravelly SANDY LOAM; saturated --RDR 2-3--	20	8	7 7 7	NP	12
883.2	Medium dense, gray LOAM to SILTY LOAM, little to some gravel; damp to moist --RDR 2--	25	9	7 7 7	NP	8
			10	14 13 17	NP	14
			11	10 11 15	NP	8
		30	12	17 13 15	NP	7
878.2	Medium dense to dense, gray SILTY LOAM, little gravel; damp --RDR 2--		13	8 8 13	NP	9
873.7		35	14	7 15 19	NP	7
	Boring terminated at 35.00 ft					
		40				

GENERAL NOTES

Begin Drilling: **12-03-2020** Complete Drilling: **12-03-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **18.00 ft**
At Completion of Drilling: **29.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-10-ST

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 909.17 ft
North: 2055504.32 ft
East: 957524.05 ft
Station: 154+79.12
Offset: 66.80 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	908.5	8-inch thick TOPSOIL						
		--Drilled without sampling to 6 feet--						
		--RDR 4-- --frequent rig chatter, 1.5 to 6.0 feet-- --possible cobbles--	5					
	903.2	Stiff, brown and gray, SILTY CLAY LOAM			1	PUSH	3.00 P	
	901.2	Very soft, black PEAT			2	PUSH	< 0.25 P	
	899.2	Very stiff, dark brown PEAT	10		3	PUSH	2.75 P	
	897.2	Boring terminated at 12.00 ft	15					
			20					

GENERAL NOTES

Begin Drilling: **12-07-2020** Complete Drilling: **12-07-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **E. Greenwood** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **NA**
At Completion of Drilling: **NA**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-11

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 908.62 ft
North: 2055556.41 ft
East: 957493.92 ft
Station: 155+39.08
Offset: 61.68 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
908.4	3-inch thick black SILTY CLAY LOAM --TOPSOIL--						
	Medium stiff to very stiff, brown, gray, and black CLAY LOAM, little to some gravel; damp --FILL-- --RDR 2--			1	6 7 6	1.31 B	17
		5		2	4 4 3	2.21 S	14
902.2	Loose, black SILTY LOAM; damp --Buried TOPSOIL--			3	3 3 4	0.50 P	12
900.6	Soft, gray SILTY CLAY, little organic matter; damp --RDR 2--	10		4	0 1 1	0.41 B	78
898.1	Loose, gray SANDY LOAM; moist to wet --RDR 2--			5	3 2 6	NP	16
895.6	Medium dense to dense, gray SILTY LOAM, little to some gravel; damp to moist --RDR 2-3--	15		6	5 6 9	NP	10
				7	15 18 17	NP	12
		20		8	4 8 10	NP	8
		25		9	8 10 11	NP	7
				10	34 15 18	NR	
				11	12 16 18	NP	7
		30		12	20 18 12	NP	7
				13	13 13 13	NP	8
		35		14	13 13 16	NP	7
873.6	Boring terminated at 35.00 ft						
		40					

GENERAL NOTES

Begin Drilling: **12-03-2020** Complete Drilling: **12-03-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **13.00 ft**
At Completion of Drilling: **34.75 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-12

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 908.45 ft
North: 2055622.06 ft
East: 957468.47 ft
Station: 156+09.32
Offset: 66.58 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
907.9	7-inch thick, dark brown SILTY CLAY LOAM --TOPSOIL--						
	Stiff, dark brown and brown SILTY CLAY LOAM, trace gravel; damp to moist --FILL-- --RDR 2--			1	4 4 5	1.50 P	14
904.7	Stiff, black SILTY CLAY, trace gravel; moist --Buried TOPSOIL-- --RDR 2--	5		2	2 2 3	1.00 P	44
903.0	Soft to medium stiff, gray SILTY CLAY LOAM to SILTY LOAM, trace to little gravel; moist --RDR 2--			3	2 1 1	0.82 B	24
	--trace organic matter--	10		4	4 5 6	0.33 B	24
898.0	--wet spoon--						
	Stiff, gray SILTY LOAM, little gravel; moist --RDR 2--			5	4 8 7	1.15 B	10
895.5	Medium dense, brown LOAM, some gravel; moist --RDR 2--	15		6	10 8 6	NP	9
893.0	Medium stiff to very stiff, gray CLAY LOAM, little to some gravel; moist --RDR 2 to 3--			7	4 5 5	0.82 B	8
		20		8	4 3 4	0.66 B	8
	--some rig chatter--			9	7 6 6	1.23 B	8
		25		10	7 7 9	2.13 B	9
883.0	Medium dense, gray LOAM, little gravel; moist --RDR 2--			11	7 9 11	NP	10
880.5	Stiff, gray CLAY LOAM to LOAM, little gravel; moist --RDR 2--	30		12	4 7 11	1.23 B	9
				13	4 8 7	1.97 B	9
		35		14	7 7 8	0.82 B	7
871.0				15	5 6 9	1.48 B	8
	Boring terminated at 37.50 ft	40					

GENERAL NOTES

Begin Drilling: **12-04-2020** Complete Drilling: **12-04-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **10.50 ft**
At Completion of Drilling: **36.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-13

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 908.86 ft
North: 2055671.45 ft
East: 957440.31 ft
Station: 156+66.00
Offset: 62.11 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
908.4	6-inch thick, brown SILTY CLAY LOAM --TOPSOIL--						
	Stiff, dark brown, black to gray, SILTY CLAY, trace gravel; damp --FILL-- --RDR 2--			1	3 4 4	1.00 P	16
		5		2	2 3 3	1.64 B	26
903.4	Loose, gray GRAVELLY LOAM; wet --RDR 2--			3	4 1 5	NR	
		10		4	5 4 5	NP	17
898.4	Medium stiff to stiff, gray CLAY LOAM, little gravel; moist --RDR 2 to 3--			5	5 7 6	0.90 B	9
		15		6	5 7 7	1.31 B	11
				7	13 20 14	NR	
		20		8	8 16 13	0.75 P	4
888.4	Dense, gray LOAM, little gravel; moist --RDR 2--			9	12 21 11	NP	10
885.9	Medium stiff to very stiff, gray CLAY LOAM to LOAM, little gravel; moist --RDR 2--	25		10	11 12 14	0.50 P	7
				11	9 11 10	0.90 B	8
		30		12	6 10 11	0.57 B	7
				13	8 12 10	2.54 B	8
873.9	Boring terminated at 35.00 ft	35		14	6 7 10	2.21 B	8
		40					

GENERAL NOTES

Begin Drilling: **12-04-2020** Complete Drilling: **12-04-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **5.50 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-14

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 892.88 ft
North: 2058208.55 ft
East: 955199.42 ft
Station: 190+90.61
Offset: 26.47 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
892.1	9-inch thick, black SILTY CLAY LOAM, trace gravel; damp --TOPSOIL--						
	Medium dense, brown and black SILTY LOAM, little gravel; damp --FILL--			1	5 8 9	NP	5
889.9	Medium stiff to hard, brown, gray and black SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--	5		2	5 3 4	5.17 S	14
	--trace organic matter--			3	3 2 2	0.82 B	21
883.6	Medium stiff, black SILTY CLAY LOAM; damp --Buried TOPSOIL--	10		4	1 1 3	NP	66
881.4	Medium stiff, gray SILTY CLAY LOAM, trace gravel and organic matter; damp			5	2 2 2	0.66 B	21
879.9	Loose to dense, gray LOAM to SILTY LOAM, little gravel; damp to wet --RDR 2-3--	15		6	2 2 3	NP	12
				7	2 2 4	NP	9
		20		8	3 5 5	NP	9
	--rig chatter--	25		9	24 5 5	NP	8
				10	4 5 5	NP	9
				11	5 5 6	NP	9
		30		12	4 4 5	NP	9
				13	8 13 10	NP	9
		35		14	6 7 8	NP	9
				15	8 14 15	NP	8
852.9	Boring terminated at 40.00 ft	40		16	13 18 14	NP	8

GENERAL NOTES

Begin Drilling: **12-01-2020** Complete Drilling: **12-01-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **20.50 ft**
At Completion of Drilling: **25.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-15

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 896.67 ft
North: 2058275.73 ft
East: 955145.19 ft
Station: 191+75.71
Offset: 11.92 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		14-inch thick ASPHALT --PAVEMENT--						
	895.5	Stiff to very stiff, brown SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--			1	5 5 5	3.00 P	18
			5		2	2 3 3	2.00 P	19
					3	2 4 3	1.75 P	23
			10		4	2 3 3	1.50 P	20
	886.2	Stiff, black SILTY CLAY LOAM, trace organic matter; damp --Buried TOPSOIL--			5	4 5 6	1.50 P	33
	883.7	Medium stiff, gray SILTY CLAY; damp --RDR 1-- --L_L(%)=45, P_L(%)=17-- --%Gravel=0.1-- --%Sand=0.8-- --%Silt=76.4-- --%Clay=22.7-- --A-7-6 (30)--	15		6	1 1 2	0.82 B	38
	881.2	Loose, brown and gray SILTY LOAM; moist to wet --RDR 1--			7	2 2 2	NP	12
	878.7	Soft to medium stiff, gray LOAM, little gravel; damp --RDR 1-- --L_L(%)=15, P_L(%)=12--	20		8	3 2 2	< 0.25 P	9

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--%Gravel=14.6-- --%Sand=39.2-- --%Silt=38.7-- --%Clay=7.6-- --A-4 (0)--			9	1 2 4	0.74 B	9
	873.7	Medium dense to dense, gray LOAM to SILTY LOAM, little to some gravel; damp to wet --RDR 2-3--	25		10	5 6 6	NP	10
					11	6 6 6	NP	8
			30		12	7 9 11	NP	9
					13	7 10 15	NP	7
		--rig chatter; possible cobbles--	35		14	17 25 17	NP	9
			40		15	11 13 15	NP	8

GENERAL NOTES

Begin Drilling: **11-30-2020** Complete Drilling: **11-30-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **17.00 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-15

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 896.67 ft
North: 2058275.73 ft
East: 955145.19 ft
Station: 191+75.71
Offset: 11.92 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--rig chatter; possible cobbles--						
	851.7		45		16	9 10 13	NP	8
		Boring terminated at 45.00 ft						
			50					
			55					
			60					

GENERAL NOTES

Begin Drilling: **11-30-2020** Complete Drilling: **11-30-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **17.00 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-16

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 890.77 ft
North: 2058299.62 ft
East: 955066.78 ft
Station: 192+50.33
Offset: 45.84 LT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Stiff to very stiff, black and brown, SILTY CLAY LOAM, trace gravel; dry to damp --FILL-- --RDR 2 to 3-- --little organic matter-- --wood fragments--		1	5 3 3	1.50 P	13
5				2	2 3 3	2.50 P	16
	885.5	Stiff, brown CLAY LOAM, trace gravel; damp --RDR 2--		3	4 4 4	1.07 B	11
	883.0	Medium dense, gray SANDY LOAM to LOAM, little gravel; damp to moist --RDR 2 to 3--		4	3 5 6	NP	11
10				5	5 8 8	NP	9
15		--L_L(%)=NP, P_L(%)=NP-- --%Gravel=12.9-- --%Sand=48.8-- --%Silt=37.4-- --%Clay=0.9-- --A-4 (0)-- --wet spoon--		6	6 9 9	NP	9
				7	5 7 7	NP	10
20				8	6 5 6	NP	10
				9	8 8 11	NP	10
25				10	5 7 7	NP	9
				11	6 8 8	NP	8
	861.5	Medium dense, gray, medium SAND; saturated --RDR 2--		12	5 5 5	NP	16
30				13	3 6 8	NP	15
	857.8	Medium dense, gray LOAM to SANDY LOAM, little gravel; moist --RDR 2--		14	6 7 8	NP	10
35	855.8	Boring terminated at 35.00 ft					
40							

GENERAL NOTES

Begin Drilling: **12-02-2020** Complete Drilling: **12-02-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **29.25 ft**
At Completion of Drilling: **29.25 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-17

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 893.78 ft
North: 2058363.07 ft
East: 955002.22 ft
Station: 193+39.61
Offset: 41.62 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
893.1	8-inch thick, black SILTY CLAY LOAM --TOPSOIL--					
	Stiff, brown SILTY CLAY LOAM, trace gravel; damp --RDR 2--		1	2 3 4	1.97 B	19
890.8	Medium dense, brown SILTY LOAM, little gravel; damp --RDR 2--	5	2	5 6 8	NP	9
			3	6 8 13	NP	8
885.8	Very dense, black and gray, fine SAND, little gravel; damp --RDR 2-3-- --hard drilling--	10	4	50/6"	NP	3
883.8	medium dense, gray and brown LOAM to SILTY LOAM, little to some gravel; damp to moist --RDR 2-3--		5	9 14 14	NP	10
		15	6	10 9 6	NP	9
			7	11 17 14	NP	10
875.8	Medium dense, gray SANDY LOAM, trace gravel; moist --RDR 2--	20	8	5 8 11	NP	10
873.3	Medium dense, gray LOAM to SILTY LOAM, little to some gravel; damp to moist --RDR 2-- --L_L(%)=NP, P_L(%)=NP-- --%Gravel=15.4-- --%Sand=41.8-- --%Silt=40.7-- --%Clay=2.1-- --A-4 (0)--		9	7 8 9	NP	9
		25	10	7 9 10	NP	9
			11	6 9 6	NP	9
		30	12	7 8 10	NP	9
			13	9 10 11	NP	9
858.8		35	14	8 8 10	NP	9
	Boring terminated at 35.00 ft					
		40				

GENERAL NOTES

Begin Drilling: **12-01-2020** Complete Drilling: **12-01-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-18

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 899.63 ft
North: 2058417.51 ft
East: 954947.70 ft
Station: 194+15.04
Offset: 40.39 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
899.3	4-inch thick, black SILTY CLAY LOAM --TOPSOIL--					
897.6	Stiff, brown SILTY CLAY LOAM, trace gravel and organic matter; damp --RDR 2--		1	3 3 8	1.80 B	19
	Medium dense, brown LOAM, trace to little gravel; damp --RDR 2-3--	5	2	8 11 10	NP	7
			3	8 10 9	NP	11
		10	4	7 8 6	NP	14
			5	7 12 11	NP	8
886.6	Very stiff, brown and gray CLAY LOAM, trace gravel; damp --RDR 2--	15	6	3 5 7	2.62 B	11
884.1	Medium dense, brown to gray LOAM, little gravel; damp to wet --RDR 2-3--		7	10 11 10	NP	9
		20	8	5 10 7	NP	10
		25	9	7 7 6	NP	9
			10	2 5 7	NP	10
			11	4 4 6	NP	9
		30	12	5 7 7	NP	9
	--wet spoon recovery--					
			13	7 6 7	NP	10
864.6		35	14	6 7 5	NP	9
	Boring terminated at 35.00 ft					
		40				

GENERAL NOTES

Begin Drilling: **11-30-2020** Complete Drilling: **11-30-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20D50A (87%)**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **30.50 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-19

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 904.17 ft
North: 2058477.53 ft
East: 954900.63 ft
Station: 194+89.53
Offset: 32.94 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
903.4	9-inch thick, black to brown, SILTY CLAY; damp --TOPSOIL--					
	Hard, brown CLAY LOAM to LOAM, trace gravel; damp --RDR 2--		1	4 6 7	4.51 S	15
		5	2	4 4 6	3.85 S	12
898.7	Medium dense, brown, SILTY LOAM, trace gravel; damp --RDR 2 to 3--		3	4 6 11	NP	15
896.2	Stiff, brown CLAY LOAM to LOAM, trace to little gravel; damp --RDR 2 to 3--	10	4	6 6 7	1.64 B	19
	--L_L(%)=17, P_L(%)=11-- --%Gravel=4.2-- --%Sand=32.7-- --%Silt=44.5-- --%Clay=18.6-- --A-4 (0)--		5	9 6 5	1.89 B	13
889.7	Medium dense, brown LOAM to CLAY LOAM, trace gravel; damp --clay seams--	15	6	5 5 6	1.31 B	14
			7	6 7 7	NP	12
886.2	Very stiff, gray CLAY LOAM to SILTY LOAM, trace gravel; damp --RDR 2--	20	8	6 8 8	2.05 B	12
883.7	Loose to medium dense, brown to brown and gray LOAM to CLAY LOAM, little gravel; damp to moist --RDR 2 to 3--		9	5 8 9	NP	10
		25	10	5 5 6	NP	12
			11	5 5 7	NP	11
		30	12	4 3 4	NP	11
873.7	Medium dense, gray SAND to SANDY LOAM, trace to little gravel; moist --RDR 2--		13	3 8 5	NP	10
			14	6 7 5	NP	10
869.2	Boring terminated at 35.00 ft	35				
		40				

GENERAL NOTES

Begin Drilling: **11-25-2020** Complete Drilling: **11-25-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **1" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-20

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 901.42 ft
North: 2058545.84 ft
East: 954833.23 ft
Station: 195+83.56
Offset: 38.70 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
900.8	8-inch thick, black SILTY CLAY LOAM; damp --TOPSOIL--					
	Very stiff, black and brown, SILTY CLAY LOAM, trace organic matter; damp --RDR 2--		1	3 4 4	0.75 P	27
897.7	Loose, brown SANDY LOAM, trace to little gravel; saturated --RDR 2--	5	2	2 4 5	NP	11
895.9	Stiff, brown SILTY CLAY LOAM to CLAY LOAM; damp --RDR 2--		3	4 4 4	1.31 B	18
893.4	Medium dense, brown LOAM; saturated --sand seam; saturated--	10	4	5 7 10	NP	19
			5	27 26 22	NR	
	--little gravel-- --cobble fragments--	15	6	10 11 17	NP	16
885.9	Medium dense to dense, brown SAND, trace to little gravel; wet --RDR 2--		7	16 17 20	NP	8
		20	8	8 8 11	NP	11
	--cobble fragments--		9	6 9 15	NP	8
	--RDR 2 to 3-- --some rig chatter, 22.5 to 23.5 feet--	25	10	8 16 14	NP	9
875.9	Loose, gray LOAM, trace gravel and cobbles; saturated --RDR 2--		11	4 3 4	NP	8
		30	12	4 3 5	NP	9
870.9	Medium dense, gray SAND to SANDY LOAM, trace gravel and cobbles; saturated --RDR 2--		13	4 5 5	NP	9
866.4	Boring terminated at 35.00 ft	35	14	5 6 8	NP	7
		40				

GENERAL NOTES

Begin Drilling: **12-01-2020** Complete Drilling: **12-01-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **RH&J** Logger: **E. Greenwood** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **3.75 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-21

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 907.34 ft
North: 2059891.45 ft
East: 954599.53 ft
Station: 209+94.03
Offset: 44.33 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		10-inch thick TOPSOIL						
	906.5	Stiff, brown and orange SILT to SILTY LOAM, trace gravel; wet --RDR 2--			1	2 1 3	1.75 P	24
		--L_L(%)=18, P_L(%)=14-- --%Gravel=1.6-- --%Sand=8.9-- --%Silt=78.9-- --%Clay=10.6-- --A-4 (0)--			2	2 1 1	1.80 B	20
	903.1	Stiff, brown SILTY CLAY LOAM to CLAY LOAM, trace to little gravel; damp to moist --RDR 2--	5		3	4 4 9	1.50 P	17
	898.3	Stiff, brown CLAY LOAM, little gravel; damp --RDR 3--	10		4	3 6 7	1.72 B	13
					5	10 14 21	1.75 P	9
			15		6	11 15 19	1.48 B	15
	891.8	Dense, brown LOAM, little gravel; damp --RDR 2--			7	10 19 21	NP	8
	887.3		20		8	16 20 21	NP	6
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-19-2020** Complete Drilling: **11-19-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG RWB-22

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 908.39 ft
North: 2059986.16 ft
East: 954604.42 ft
Station: 210+83.48
Offset: 49.23 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		10-inch thick TOPSOIL						
	907.6							
		Very stiff, brown and orange, SILTY CLAY, trace gravel; damp to moist --RDR 2--			1	2 3 4	2.21 B	22
	905.4							
		Medium stiff, brown LOAM to SILTY LOAM, little gravel; moist --RDR 2--	5		2	2 1 3	1.25 P	16
		--L_L(%)=18, P_L(%)=11-- --%Gravel=0.6-- --%Sand=33.1-- --%Silt=53.7-- --%Clay=12.6-- --A-4 (1)--			3	2 2 1	0.98 B	14
			10		4	2 2 3	0.82 B	26
					5	2 3 6	0.57 B	20
	895.4							
		Stiff, brown SILTY CLAY LOAM; damp --RDR 2--	15		6	4 4 8	1.00 P	32
	892.9							
		Stiff, brown CLAY LOAM, some gravel; damp --RDR 2--			7	9 18 25	1.97 B	15
	890.4							
		Dense, brown LOAM, little gravel; damp --RDR 2--			8	15 21 24	NP	12
	888.4		20					
		Boring terminated at 20.00 ft						

GENERAL NOTES

Begin Drilling: **11-19-2020** Complete Drilling: **11-19-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-01

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 938.91 ft
North: 2049464.22 ft
East: 957192.32 ft
Station: 93+55.37
Offset: 36.65 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	938.7	2-inch thick, brown SILTY CLAY --TOPSOIL--						
	938.2	Very stiff, brown CLAY LOAM; damp			1	4 14 14 9	2.00 P	12
	937.4	Medium dense, gray and brown SANDY GRAVEL; damp --RDR 2--						
		Medium stifft to stiff, dark brown Gravelly LOAM to CLAY LOAM; damp --RDR 2-- --L_L(%)=32, P_L(%)=15-- --%Gravel=26.3-- --%Sand=33.8-- --%Silt=31.2-- --%Clay=8.7-- --A-6 (3)--			2	6 5 3 5	1.50 P	14
			5		3	2 4 5 7	0.82 B	13
	932.7	Medium dense to dense, brown Gravelly SAND; damp to moist --RDR 2--			4	5 7 12 28	NP	6
					5	25 22 19 15	NP	4
	928.9		10					
		Boring terminated at 10.00 ft						
			15					

GENERAL NOTES

Begin Drilling: **07-21-2020** Complete Drilling: **07-21-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-02

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 944.50 ft
North: 2049813.85 ft
East: 957265.89 ft
Station: 97+04.40
Offset: 39.74 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
944.2	4-inch thick, black GRAVEL						
943.8	5-inch thick, brown SILTY CLAY --Buried TOPSOIL--			1	5 4 8 5	NP	7
943.0	Medium dense, brown LOAM, trace gravel; damp --RDR 2--						
	Medium dense to dense Gravelly SAND; damp --RDR 2 to 4--			2	4 6 7 4	NP	6
		5		3	10 14 13 15	NP	3
				4	18 13 13 15	NP	3
				5	5 22 26 25	NP	2
934.5		10					
	Boring terminated at 10.00 ft						
		15					

GENERAL NOTES

Begin Drilling: **07-10-2020** Complete Drilling: **07-10-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18CME55T [85%]**
Driller: **A&K** Logger: **M. Rojo** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-03

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 947.97 ft
North: 2050409.01 ft
East: 957260.77 ft
Station: 102+99.58
Offset: 39.42 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	947.9	0.5-inch thick GRAVEL						
	947.4	Medium stiff, brown CLAY LOAM, trace gravel; damp						
		Medium dense to dense, brown Gravelly SANDY LOAM; damp			1	11 13 11 17	0.50 P	13
		--RDR 2--						
		--%Gravel=51.5--						
		--%Sand=34.4--						
		--%Silt=12.6--			2	10 12 12 12	NP	5
		--%Clay=1.5--						
		--A-1-b (0)--						
			5		3	11 16 17 17	NP	8
					4	12 19 20 20	NP	4
					5	13 22 22 20	NP	4
	938.0		10					
		Boring terminated at 10.00 ft						
			15					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **07-10-2020** Complete Drilling: **07-10-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18CME55T [85%]**
Driller: **A&K** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-04

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 944.78 ft
North: 2050764.68 ft
East: 957196.19 ft
Station: 106+55.76
Offset: 22.29 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	944.0	9-inch thick ASPHALT --PAVEMENT--						
	943.4	8-inch thick CONCRETE --PAVEMENT--						
	943.1	3-inch thick, brown and gray, SANDY GRAVEL; dry --BASE COURSE--						
		Medium dense to dense, brown, medium SAND; damp --FILL-- --RDR 2 to 3--			1	8, 13, 14, 12	NP	4
			5		2	10, 18, 19, 24	NP	5
	938.3	Dense to very dense, brown to gray Gravelly SANDY LOAM; damp --RDR 2--			3	17, 18, 20, 19	NP	5
			10		4	12, 24, 27, 20	NP	6
	932.8				5	16, 17, 17, 18	NP	7
		Boring terminated at 12.00 ft						
			15					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **07-20-2020** Complete Drilling: **07-20-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-05

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 941.44 ft
North: 2050964.87 ft
East: 957240.98 ft
Station: 108+55.58
Offset: 24.11 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		20-inch thick ASPHALT --PAVEMENT--						
	939.6	Medium dense to dense, brown to gray Gravelly SANDY LOAM; damp --FILL-- --RDR 2--			1	24 13 12 14	NP	7
			5		2	7 13 24 13	NP	7
	936.2	Stiff to medium stiff, black SILTY CLAY LOAM, trace to some organic matter; moist --Buried TOPSOIL-- --RDR 2--			3	2 2 3 4	0.90 B	22
	932.7	Stiff, gray SILTY CLAY to SILTY CLAY LOAM --trace organic matter-- --RDR 2--	10		4	1 2 3 3	1.15 B	25
		--L_L(%)=55, P_L(%)=19-- --%Gravel=0.0-- --%Sand=2.1-- --%Silt=70.0-- --%Clay=27.9-- --A-7-6 (39)--			5	1 2 2 3	1.48 B	29
	929.4	Boring terminated at 12.00 ft						
			15					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **07-20-2020** Complete Drilling: **07-20-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-06

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 939.00 ft
North: 2051330.64 ft
East: 957191.20 ft
Station: 112+21.74
Offset: 22.72 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	938.8	2-inch thick, brown SILTY CLAY LOAM --TOPSOIL-- --RDR 2--			1	4 6 5 6	3.28 B	12
		Stiff to very stiff, brown CLAY LOAM, trace gravel; dry to damp --RDR 2--			2	4 3 4 7	1.23 B	12
			5		3	3 4 4 3	1.23 B	16
	932.8 932.5	Very soft, brown LOAM to CLAY LOAM			4	3 3 50/5"	0.16 B	17
		Loose to medium dense, brown Gravelly SANDY LOAM; damp to saturated --RDR 2-- --possible cobbles--			5	3 4 4 3	NP	12
			10		6	5 5 10 8	NP	13
	927.0	Boring terminated at 12.00 ft						
			15					

GENERAL NOTES

Begin Drilling: **07-21-2020** Complete Drilling: **07-21-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **10.00 ft**
At Completion of Drilling: **10.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-07

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 937.43 ft
North: 2051618.35 ft
East: 957237.63 ft
Station: 115+09.06
Offset: 26.03 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
937.3	2-inch thick, black SILTY CLAY LOAM						
937.0	--TOPSOIL--						
	3-inch thick, gray SANDY GRAVEL; damp			1	10 12 8 8	2.00 P	11
	Medium stiff to very stiff, brown CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--			2	3 3 4 5	0.50 P	11
932.9							
932.7	Brown Gravelly SANDY LOAM; wet --FILL--	5		3	2 1 1 1	0.90 B	21
	Brown SILTY CLAY, trace gravel; damp --FILL-- --RDR 2--			4	1 1 1 2	0.41 B	27
930.8	Soft, black SILTY CLAY; damp --Buried TOPSOIL--						
929.2	--sand lenses--						
	Soft, gray CLAY to SILTY CLAY, trace organic matter; moist --RDR 1--	10		5	0 1 1 2	0.25 B	25
927.1	Loose, gray and brown, medium SAND; wet --clay seams; wet--			6	1 3 2 2	NP	17
925.9	Loose to medium dense, gray SILT to SILTY LOAM; saturated --RDR 2--			7	2 3 4 3	NP	21
	--sand lenses--	15		8	3 5 5 2	NP	20
921.4	Boring terminated at 16.00 ft						

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **07-21-2020** Complete Drilling: **07-21-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **12.00 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-08

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 934.10 ft
North: 2052247.13 ft
East: 957230.40 ft
Station: 121+39.11
Offset: 16.16 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		22-inch thick ASPHALT --PAVEMENT--						
	932.3							
	931.9	Stiff, black and brown, SILTY CLAY LOAM, trace gravel --FILL-- --RDR 2--			1	5 3 6 3	NP	17
	930.4	Loose, gray and brown, SANDY GRAVEL; dry --FILL--						
		Loose, brown, medium SAND; wet to saturated --RDR 2--	5		2	1 2 2 2	NP	19
	928.1							
		Medium stiff to stiff, brown and gray, SILTY CLAY LOAM to SILTY LOAM, trace gravel; moist --RDR 2-- --sand lens; wet--			3	4 4 4 4	1.72 B	20
					4	1 2 4 4	0.75 P	20
		--cave-in--	10					
	923.1	Medium dense, gray Gravelly SAND; saturated --RDR 2--			5	3 5 7 4	NR	
					6	11 5 5 5	NP	
	920.1							
		Boring terminated at 14.00 ft	15					

GENERAL NOTES

Begin Drilling: **07-23-2020** Complete Drilling: **07-23-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **9.00 ft**
At Completion of Drilling: **9.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-09

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 933.29 ft
North: 2052508.67 ft
East: 957214.20 ft
Station: 123+97.77
Offset: 24.36 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
933.0	3-inch thick, brown SILTY CLAY LOAM --TOPSOIL-- --RDR 2--		1	4 5 3 3	3.50 P	12
931.8	Very stiff, brown CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--		2	2 3 2 2	0.41 B	14
929.7	Soft, brown and black, SILTY CLAY LOAM, trace gravel; damp --sand seams-- --RDR 2--		3	2 1 1 2	0.50 P	34
927.8	Medium stiff, black and brown LOAM, trace gravel; moist --RDR 2-- --sand seams; wet-- --L_L(%)=32, P_L(%)=17-- --%Gravel=4.8-- --%Sand=41.1-- --%Silt=43.2-- --%Clay=10.9-- --A-6 (5)--	5	4	3 6 7 13	0.82 B	18
925.8	Medium stiff, gray CLAY LOAM, trace gravel; moist --RDR 2--		5	14 13 13 12	NP	14
923.0	Medium dense, gray Gravelly SANDY LOAM; wet --RDR 2--	10	6	10 8 8 7	NP	14
921.3	Gray SILT, few clay lamination; moist --RDR 2--					
	Boring terminated at 12.00 ft	15				

GENERAL NOTES

Begin Drilling: **07-21-2020** Complete Drilling: **07-21-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **10.00 ft**
At Completion of Drilling: **8.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-10

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 931.47 ft
North: 2052834.87 ft
East: 957331.44 ft
Station: 127+40.06
Offset: 33.84 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
931.3	2-inch thick, brown SILTY CLAY LOAM --TOPSOIL--						
	Very loose to medium dense, brown LOAM, trace gravel; damp --FILL--			1	3 7 5 3	NP	7
	--RDR 2--			2	2 2 1 2	NP	8
928.0	Soft, gray CLAY to CLAY LOAM, trace organic matter; moist --RDR 2--	5		3	2 1 1 1	0.25 P	20
924.6	Gray CLAY LOAM, trace gravel; damp --sand lenses--			4	1 2 8 8	0.49 B	27
	--driving shoe blocked by cobble--			5	8 10 11 10	NR	
922.5	Medium dense, coarse SAND; saturated --silt lenses--	10					
920.8	Gray SILTY LOAM, trace gravel; saturated --RDR 2--			6	8 13 8 6	NP	10
919.5	Boring terminated at 12.00 ft	15					

GENERAL NOTES

Begin Drilling: **07-21-2020** Complete Drilling: **07-21-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **10.00 ft**
At Completion of Drilling: **7.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-11

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 929.90 ft
North: 2053086.93 ft
East: 957319.78 ft
Station: 129+81.38
Offset: 41.03 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
929.7	3-inch thick, brown SILTY CLAY LOAM --TOPSOIL--			1	5 7 7 7	NP	3
928.4	Medium dense, brown Gravelly SAND; damp --RDR 2--						
	Soft, brown CLAY LOAM, trace gravel; damp --RDR 2--			2	3 1 1 1	0.41 B	18
926.4	Very soft, brown LOAM, few gravel and trace organic matter; wet --RDR 1-- --L_L(%)=30, P_L(%)=18-- --%Gravel=7.7-- --%Sand=36.9-- --%Silt=43.4-- --%Clay=11.9-- --A-6 (4)--	5		3	2 1 3 1	0.08 B	26
924.4	Very soft, gray CLAY to SILTY CLAY; moist --RDR 1-- --silt lenses; wet-- --trace organic matter--			4	0 1 1 1	< 0.25 P	28
921.0	Medium dense, gray, medium to coarse SAND, little gravel; wet to saturated --RDR 2--	10		5	0 1 8 20	< 0.25 P	32
				6	2 11 13 7	NP	17
917.9	Boring terminated at 12.00 ft	15					

GENERAL NOTES

Begin Drilling: **07-21-2020** Complete Drilling: **07-21-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **12.00 ft**
At Completion of Drilling: **6.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-12

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 929.15 ft
North: 2053377.10 ft
East: 957480.99 ft
Station: 133+04.26
Offset: 35.99 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	928.8	4-inch thick, dark gray SILTY LOAM; dry						
	928.5	--TOPSOIL--						
		Medium dense, brown Gravelly SAND; dry			1	3 6 4 3	0.75 P	17
		--FILL--						
		--RDR 2--						
		Medium stiff to stiff, black and brown CLAY LOAM, little gravel; damp			2	3 4 3 3	1.00 P	17
	926.2	--FILL--						
		--RDR 2--						
		Medium stiff, black SILTY CLAY						
		--Buried TOPSOIL--						
	924.2	--RDR 2--	5		3	1 1 1 1	0.57 B	77
		Very soft to soft, gray SILTY CLAY LOAM; moist						
		--some organic matter--						
		--RDR 1--						
		--gravel lens; wet--			4	0 1 0 0	0.49 B	58
		--L_L(%)=61, P_L(%)=30--						
		--%Gravel=0.0--						
		--%Sand=2.2--						
		--%Silt=74.9--						
		--%Clay=22.9--						
		--A-7-5 (37)--			5	0 0 0 1	0.41 B	62
			10					
					6	0 0 0 0	< 0.25 P	70
	916.4							
		Medium dense, gray, medium to coarse SAND; saturated			7	1 8 8 6	NP	17
		--RDR 2--						
	915.2	Boring terminated at 14.00 ft						
			15					

GENERAL NOTES

Begin Drilling: **07-22-2020** Complete Drilling: **07-22-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **12.75 ft**
At Completion of Drilling: **13.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-13

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 927.54 ft
North: 2053676.79 ft
East: 957499.86 ft
Station: 135+97.95
Offset: 26.63 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
927.3	3-inch thick, brown SILTY CLAY LOAM --TOPSOIL-- Very stiff, brown CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--		1	3 5 5 3	2.00 P	11
925.0	Loose, brown, medium SAND; moist --RDR 2--		2	2 4 5 6	NP	8
923.8	Medium dense, brown, interbedded SAND and SILT; wet --RDR 2--	5	3	4 6 7 7	NP	20
922.0	Brown, medium SAND; saturated --RDR 2--					
921.1						
921.0	Gray CLAY LOAM; wet					
920.8	SAND; wet		4	6 8 5 5	0.50 P	17
	Medium stiff, gray SILTY CLAY LOAM; wet --silt lamination-- --RDR 2--					
919.2	Medium dense, gray Gravelly SANDY LOAM; saturated --RDR 2--		5	3 4 9 7	NP	14
917.5		10				
	Boring terminated at 10.00 ft					
		15				

GENERAL NOTES

Begin Drilling: **07-22-2020** Complete Drilling: **07-22-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **6.00 ft**
At Completion of Drilling: **7.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-14

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 925.15 ft
North: 2053859.36 ft
East: 957650.73 ft
Station: 138+14.42
Offset: 69.44 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Stiff, black SILTY CLAY LOAM; damp --TOPSOIL-- --RDR 2--			1	1 2 2 3	1.50 P	36
	922.8	Loose to medium dense, brown SANDY GRAVEL; moist to saturated --RDR 2--			2	2 4 2 1	NP	8
			5		3	3 5 5 4	NP	9
					4	5 6 5 7	NP	15
					5	3 5 6 2	NP	15
	915.1		10					
		Boring terminated at 10.00 ft						
			15					

GENERAL NOTES

Begin Drilling: **11-20-2020** Complete Drilling: **11-20-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **E. Greenwood** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **5.50 ft**
At Completion of Drilling: **9.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-15

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 924.89 ft
North: 2054248.11 ft
East: 957709.77 ft
Station: 142+04.04
Offset: 22.15 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	924.1	9-inch thick, black, organic SILTY LOAM --TOPSOIL--			1	6 10 9 8	NP	7
		Medium dense, brown Gravelly SAND; damp --FILL-- --RDR 2--			2	17 8 5 2	NP	6
	921.4	Loose, black, brown and gray Gravelly LOAM; damp --RDR 2--	5		3	5 3 3 3	NP	8
	918.6	Gray SAND; saturated			4	2 3 4 4	NP	10
	918.1	Loose, gray SILTY LOAM, little gravel; moist --RDR 2--						
	916.9	Medium stiff, gray CLAY LOAM, some gravel; damp --RDR 2--			5	4 4 8 11	0.82 B	8
	915.1	Medium dense, gray Gravelly SILTY LOAM; damp --RDR 2--	10		6	4 7 14 15	NP	11
	912.9	Boring terminated at 12.00 ft	15					

GENERAL NOTES

Begin Drilling: **07-20-2020** Complete Drilling: **07-20-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **6.25 ft**
At Completion of Drilling: **10.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-16

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 921.86 ft
North: 2054555.16 ft
East: 957702.01 ft
Station: 145+08.37
Offset: 27.25 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	921.6	3-inch thick, gray Gravelly SILTY LOAM; dry --FILL--			1	10 9 7 9	NP	2
	920.4	Medium dense, brown Gravelly SAND; damp --FILL--						
		Loose to medium dense, brown Gravelly LOAM; moist to saturated --RDR 2--			2	11 9 9 9	NP	9
			5		3	9 3 1 2	NP	10
					4	2 3 2 2	NP	12
	913.6	Stiff, brown and gray CLAY LOAM, little gravel; damp --RDR 2--			5	2 2 5 5	1.72 B	12
	911.9		10					
		Boring terminated at 10.00 ft						
			15					

GENERAL NOTES

Begin Drilling: **07-15-2020** Complete Drilling: **07-15-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **6.00 ft**
At Completion of Drilling: **8.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-17

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 919.40 ft
North: 2054833.77 ft
East: 957726.23 ft
Station: 147+86.07
Offset: 16.71 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		20-inch thick ASPHALT --PAVEMENT--						
	917.7	Medium stiff, black, brown, and gray CLAY LOAM, little gravel; damp --FILL-- --RDR 2--			1	9 3 3 2	0.57 B	21
	914.7	Very soft to stiff, black SILTY CLAY LOAM, trace organic matter --Buried TOPSOIL-- --RDR 2--	5		2	2 3 2 3	1.50 P	22
	912.4	Medium stiff, black and gray CLAY to SILTY CLAY, trace organic matter; moist --RDR 2--			3	0 0 0 0	< 0.25 P	19
	909.9	Stiff, gray SILTY CLAY LOAM, little gravel; damp --RDR 2--	10		4	2 2 2 2	0.90 B	28
	907.4				5	0 2 3 4	1.15 B	14
		Boring terminated at 12.00 ft	15					

GENERAL NOTES

Begin Drilling: **07-20-2020** Complete Drilling: **07-20-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-18

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 914.96 ft
North: 2055144.64 ft
East: 957583.90 ft
Station: 151+27.21
Offset: 31.44 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	914.2	9-inch thick, dark brown SILTY LOAM; dry --TOPSOIL--			1	3 4 6 7	NP	12
	913.5	Medium dense, black, gray and brown CLAY LOAM, little gravel; damp --RDR 2--			2	6 3 3 3	0.50 P	12
		Very loose to loose, gray Gravelly LOAM; damp to moist --RDR 2-- --L_L(%)=NP, P_L(%)=NP-- --%Gravel=18.8-- --%Sand=40.5-- --%Silt=33.8-- --%Clay=7.0-- --A-4 (0)--	5		3	2 2 1 2	0.25 P	15
					4	1 2 3 4	0.25 B	15
	905.2				5	3 3 5 7	0.41 B	11
		Stiff, gray SILTY LOAM, little gravel; moist --RDR 2--	10		6	3 5 6 6	1.72 B	9
	903.0	Boring terminated at 12.00 ft						
			15					

GENERAL NOTES

Begin Drilling: **07-15-2020** Complete Drilling: **07-15-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-19

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 910.69 ft
North: 2055417.11 ft
East: 957508.88 ft
Station: 154+06.65
Offset: 15.97 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		19-inch thick ASPHALT --PAVEMENT--						
	909.1	Medium stiff to very stiff, gray and black, SILTY CLAY LOAM, little gravel --trace organic matter-- --FILL-- --RDR 2--			1	9 4 5 3	2.38 B	19
		--gray and black--	5		2	1 2 2 2	0.98 B	23
	902.7				3	2 2 4 5	1.07 B	22
		Medium stiff, black SILTY CLAY LOAM --Buried TOPSOIL--			4	3 3 4 4	0.50 P	24
	901.4	Medium stiff, gray Organic SILTY CLAY; moist --RDR 1-- --organic content= 13.8%--	10		5	1 2 2 2	0.82 B	84
	898.9	Very soft, gray CLAY to SILTY CLAY, little organic matter; moist --RDR 1--			6	0 1 1 2	< 0.25 P	29
	896.9	Loose, gray, fine to medium SAND; saturated --RDR 2--	15		7	0 1 5 11	NP	15
	894.7	Boring terminated at 16.00 ft						

GENERAL NOTES

Begin Drilling: **07-20-2020** Complete Drilling: **07-20-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **14.00 ft**
At Completion of Drilling: **15.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-19-ST

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 910.64 ft
North: 2055422.06 ft
East: 957506.89 ft
Station: 154+11.98
Offset: 16.27 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		16-inch thick ASPHALT --PAVEMENT--						
	909.3	--blind drilling--						
			5					
	901.6	Very soft to soft, gray SILTY LOAM to SILTY CLAY LOAM; little organic matter; damp --RDR 2--	10		1	PUSH	0.25 P	
		--L_L(%)=69, P_L(%)=40-- --%Gravel=0.4-- --%Sand=5.1-- --%Silt=74.7-- --%Clay=19.8-- --A-7-5 (35)--			2	PUSH	< 0.25 P	
	897.6	Boring terminated at 13.00 ft						
			15					

GENERAL NOTES

Begin Drilling: **07-21-2020** Complete Drilling: **07-21-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-20

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 910.66 ft
North: 2055634.94 ft
East: 957341.62 ft
Station: 156+74.94
Offset: 42.74 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	909.9	9-inch thick, black SILTY LOAM, little gravel; dry --TOPSOIL--						
		Medium dense, brown, SILTY LOAM to SILTY CLAY LOAM; dry to damp --RDR 2--			1	4 6 8 9	NP	9
					2	9 8 8 6	NP	8
	906.9	Medium stiff (0.5P), black and gray SILTY CLAY LOAM, trace gravel; damp --RDR 2--	5		3	4 5 5 5	NA	14
	904.4	Loose, gray Gravelly SAND; wet --RDR 2 to 3--			4	5 4 5 4	NP	13
	903.2	Medium dense, gray SILTY LOAM to SILTY CLAY LOAM, little gravel; moist --RDR 2--			5	6 10 15 14	NP	8
	900.7	Boring terminated at 10.00 ft	10					
			15					

GENERAL NOTES

Begin Drilling: **07-29-2020** Complete Drilling: **07-29-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-21

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 912.89 ft
North: 2055967.89 ft
East: 957260.27 ft
Station: 160+10.87
Offset: 25.27 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		21-inch thick ASPHALT --PAVEMENT--						
	911.1	Stiff, black and brown CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--			1	7 5 3 2	0.57 B	12
	909.9	Medium stiff, black CLAY LOAM; damp --Buried TOPSOIL--						
	909.0	Soft to medium stiff, brown and gray CLAY LOAM to LOAM, trace to little gravel; damp --RDR 2-- --RDR 3--	5		2	2 3 5 5	0.25 P	10
					3	3 7 15 11	0.90 B	9
			10		4	9 11 12 12	0.98 S	8
	902.4	Dense, brown SILTY LOAM, little gravel; moist --RDR 2--			5	13 14 33 26	0.49 S	8
	900.9	Boring terminated at 12.00 ft	15					

GENERAL NOTES

Begin Drilling: **07-23-2020** Complete Drilling: **07-23-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Rojo** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-22

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 914.43 ft
North: 2056177.08 ft
East: 957086.43 ft
Station: 162+74.14
Offset: 43.07 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		9-inch thick, medium stiff, black, organic SILTY CLAY LOAM, trace gravel				5 11 13 14		
	913.7	--TOPSOIL--			1		NP	5
		Medium dense, brown Gravelly SAND to SANDY LOAM; damp --RDR 2--			2	9 10 10 12	NP	8
	910.4	Medium dense, brown SANDY LOAM to LOAM, little gravel; moist --RDR 2-- --L_L(%)=NP, P_L(%)=NP-- --%Gravel=14.0-- --%Sand=45.5-- --%Silt=36.9-- --%Clay=3.6-- --A-4 (0)--	5		3	12 11 11 12	0.90 S	9
	908.4	Soft to stiff, brown LOAM to CLAY LOAM, little gravel; damp --RDR 2--			4	10 10 10 15	1.23 B	9
					5	41 50/5"	NR	
			10		6	16 9 11 13	0.49 S	8
					7	11 14 17 18	1.15 B	8
	900.4	Boring terminated at 14.00 ft	15					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **07-27-2020** Complete Drilling: **07-27-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **NA**
At Completion of Drilling: **NA**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-23

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 916.14 ft
North: 2056509.09 ft
East: 957025.31 ft
Station: 165+97.41
Offset: 48.67 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Stiff, black SILTY CLAY LOAM --TOPSOIL--						
	915.4	Medium dense, brown and gray LOAM --RDR 2--			1	2 6 6 6	NP	9
	914.4	Medium stiff, brown CLAY LOAM, trace gravel; damp --RDR 2--			2	4 4 4 6	0.98 S	12
	912.3	Loose to medium dense, brown SANDY LOAM ; damp --RDR 2--	5		3	4 4 3 6	NP	9
					4	7 10 12 9	NP	14
	908.6	Medium stiff, brown CLAY LOAM to LOAM, trace gravel; damp to moist --RDR 2--			5	6 9 10 13	0.90 B	14
			10					
	905.6	Medium dense, brown SANDY LOAM; moist to saturated --RDR 2--			6	7 12 12 16	NP	19
	904.1	Boring terminated at 12.00 ft						
			15					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **07-29-2020** Complete Drilling: **07-29-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **11.00 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-24

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 910.74 ft
North: 2056724.17 ft
East: 956795.55 ft
Station: 169+01.45
Offset: 28.81 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	910.2	6-inch thick, dark brown SILTY LOAM; dry --TOPSOIL--			1	7 11 11 9	NP	5
	908.9	Medium dense, black and brown SILTY LOAM, little gravel; dry --FILL--						
		Loose to medium dense, brown, coarse SAND; damp --RDR 2--			2	9 6 4 4	NP	3
			5		3	3 2 2 1	NP	4
	904.0	Very soft to soft, brown CLAY LOAM to LOAM, trace gravel; wet to saturated --RDR 2--			4	2 1 0 2	0.41 B	14
				▽	5	2 2 1 1	< 0.25 P	13
	901.2	Stiff, brown SILTY LOAM to CLAY LOAM, trace gravel; damp --RDR 2--	10	▼	6	2 2 4 5	1.23 B	11
	898.7	Boring terminated at 12.00 ft	15					

GENERAL NOTES

Begin Drilling: **07-21-2020** Complete Drilling: **07-21-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽: **9.00 ft**
At Completion of Drilling ▼: **10.00 ft**
Time After Drilling: **NA**
Depth to Water ▼: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-25

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 907.14 ft
North: 2057002.84 ft
East: 956653.59 ft
Station: 172+05.86
Offset: 40.71 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	906.9	3-inch thick, brown SILTY CLAY LOAM						
	906.6	--TOPSOIL--						
		Brown SANDY GRAVEL; dry			1	4 9 6 2	2.00 P	14
		Medium stiff to very stiff, brown CLAY LOAM to LOAM, trace gravel; damp						
		--RDR 2--			2	2 4 2 4	1.72 B	22
		--L_L(%)=33, P_L(%)=12--						
		--%Gravel=5.5--						
		--%Sand=35.6--	5		3	2 2 2 3	0.66 B	20
		--%Silt=44.7--						
	901.6	--%Clay=14.2--						
		--A-6 (9)--						
		Soft to medium dense, brown LOAM to CLAY LOAM, trace gravel; moist						
		--RDR 2--			4	5 7 6 5	0.41 B	10
					5	2 5 10 7	0.16 B	9
	897.1		10					
		Boring terminated at 10.00 ft						
			15					

GENERAL NOTES

Begin Drilling: **07-22-2020** Complete Drilling: **07-22-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-26

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 899.98 ft
North: 2057154.64 ft
East: 956388.13 ft
Station: 175+01.98
Offset: 31.20 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	899.2	9-inch thick, black SILTY LOAM; dry --TOPSOIL--			1	4 4 5 6	NP	9
	898.1	Loose, brown LOAM, little gravel; dry --RDR 2--						
	896.5	Very stiff, brown SILTY CLAY LOAM to SILTY LOAM, trace gravel; damp --RDR 2 to 3--			2	4 4 4 4	2.75 P	14
	894.1	Soft, brown LOAM to CLAY LOAM, trace gravel; damp --RDR 2--	5		3	3 3 5 5	0.49 S	10
	888.0	Medium stiff to stiff, brown CLAY LOAM to LOAM, little gravel; damp to moist --RDR 2 to 3--			4	13 14 12 10	1.50 P	10
			10		5	8 9 10 12	0.57 B	10
					6	3 9 10 10	1.23 B	10
		Boring terminated at 12.00 ft	15					

GENERAL NOTES

Begin Drilling: **07-29-2020** Complete Drilling: **07-29-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-27

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 889.96 ft
North: 2057411.79 ft
East: 956213.11 ft
Station: 178+03.31
Offset: 46.01 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
889.6	4-inch thick, brown SILTY CLAY LOAM --TOPSOIL--			1	2 3 5 4	2.00 P	12
	Loose, brown SANDY LOAM; damp --FILL-- --RDR 2--						
887.4	Stiff, black SILTY CLAY, trace organic matter; damp --RDR 2--			2	4 4 1 3	1.00 P	25
885.1	Medium stiff, gray CLAY LOAM, trace gravel; moist --RDR 2--	5		3	2 2 4 3	1.39 B	23
				4	2 3 3 4	0.66 B	15
882.0	Stiff, brown to gray LOAM, trace gravel; damp to wet --RDR 2--			5	7 5 5 5	NP	9
880.5	Soft to stiff, gray CLAY LOAM to LOAM, trace to little gravel; saturated --RDR 2--	10		6	1 1 2 3	0.25 B	15
				7	2 2 4 5	0.82 B	10
		15		8	9 7 5 7	1.07 B	9
874.0	Boring terminated at 16.00 ft						

GENERAL NOTES

Begin Drilling: **07-22-2020** Complete Drilling: **07-22-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **10.00 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-28

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 887.79 ft
North: 2057544.72 ft
East: 955945.66 ft
Station: 180+91.85
Offset: 31.09 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	887.5	3-inch thick, brown SILTY CLAY LOAM --TOPSOIL--			1	3 8 6 4	NA	10
	886.3	Brown CLAY LOAM, trace gravel; dry --FILL-- --RDR 2--						
		Very soft to soft, gray LOAM to CLAY LOAM, trace to little gravel; moist --RDR 2--			2	3 0 0 0	0.50 P	18
			5		3	0 0 0 0	NA	
		--sand seams--			4	2 3 2 2	0.25 B	10
	878.5	Gray SILTY LOAM; moist --RDR 2--	10		5	1 1 1 1	0.16 B	10
	877.1	Stiff, gray CLAY LOAM to LOAM, trace gravel; moist --RDR 2--			6	2 4 7 5	1.18 B	9
	875.8	Boring terminated at 12.00 ft						
			15					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **07-23-2020** Complete Drilling: **07-23-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-28-ST

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 887.77 ft
North: 2057545.41 ft
East: 955945.31 ft
Station: 180+92.57
Offset: 30.81 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	885.8	Stiff, gray CLAY LOAM, little gravel; moist --RDR 2--			1	PUSH	NA	
			5		2	PUSH	1.50 B	
	881.8	Boring terminated at 6.00 ft						
			10					
			15					

GENERAL NOTES

Begin Drilling: **07-23-2020** Complete Drilling: **07-23-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-29

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 886.32 ft
North: 2057809.99 ft
East: 955769.57 ft
Station: 183+99.35
Offset: 51.49 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	8-inch thick TOPSOIL					
885.6	Medium stiff to hard, brown to black and brown CLAY LOAM, trace to some gravel; dry to damp --FILL-- --RDR 2--		1	2 4 6 5	4.25 P	13
883.8	Brown SANDY GRAVEL; wet to saturated --RDR 2-- --gasoline odor--		2	4 4 2 1	0.50 P	23
883.1	Very soft to medium stiff, black to dark gray and green Organic SILTY CLAY, few peat lenses --RDR 2--	5	3	1 1 1 2	0.50 P	98
			4	0 1 1 2	< 0.25 P	52
			5	1 1 2 3	< 0.25 P	77
876.4	Dark gray SILTY LOAM, trace gravel; saturated	10	6	1 1 2 3	< 0.25 P	14
875.3	Very soft, gray CLAY LOAM to LOAM, trace gravel; damp to moist --RDR 2-- --silty loam seams--		7	0 2 2 2	< 0.08 B	15
871.4	Medium dense, gray SANDY LOAM, trace to little gravel; saturated	15	8	5 5 6 5	< 0.08 B	24
	--RDR 2--		9	8 10 7 7	NP	9
			10	5 4 6 7	NP	9
866.3	Boring terminated at 20.00 ft	20				
		25				
		30				

GENERAL NOTES

Begin Drilling: **11-16-2020** Complete Drilling: **11-16-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **E. Greenwood** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **2.50 ft**
At Completion of Drilling: **19.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-30

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 884.20 ft
North: 2057990.43 ft
East: 955569.22 ft
Station: 186+68.95
Offset: 54.40 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	10-inch TOPSOIL					
883.4	Stiff to very stiff, black LOAM to CLAY LOAM, trace organic, trace to little gravel; damp --FILL-- --RDR 2--		1	2 3 4 4	0.75 P	10
881.5	Very loose to loose, gray SANDY GRAVEL; wet to saturated --RDR 2--		2	2 4 5 6	1.00 P	16
879.4	Very soft to medium stiff, dark brown and gray PEAT, organic matter; wet --organic odor-- --RDR 1--	5	3	3 1 0 0	0.50 P	121
			4	0 0 0 1	< 0.25 P	429
			5	0 0 1 1	< 0.25 P	393
		10	6	0 0 0 1	< 0.25 P	109
871.6	Very loose, dark gray Organic SILTY LOAM; wet		7	0 0 0 3	NP	143
870.5	Medium stiff, gray CLAY LOAM, trace to little gravel; moist --RDR 2--	15	8	1 1 3 3	0.82 B	22
			9	2 2 2 7	0.74 B	12
866.2	Medium dense, gray LOAM to SILTY LOAM; wet --RDR 2--		10	6 5 5 8	NP	9
864.2	Boring terminated at 20.00 ft	20				
		25				
		30				

GENERAL NOTES

Begin Drilling: **11-16-2020** Complete Drilling: **11-16-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **E. Greenwood** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **2.75 ft**
At Completion of Drilling: **NA**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-31

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 890.35 ft
North: 2058186.74 ft
East: 955303.68 ft
Station: 189+97.97
Offset: 26.11 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
890.0	4-inch thick, brown SILTY CLAY LOAM --TOPSOIL-- --RDR 2-- Medium stiff to stiff, brown CLAY LOAM, trace gravel; damp --FILL-- --RDR 2-- --sand seams at 2 feet--			1	3 4 2 3	1.07 B	10
				2	2 1 2 2	0.57 B	15
887.1	Soft, black and brown Gravelly LOAM to CLAY LOAM; damp --FILL-- --RDR 1-- --L_L(%)=39, P_L(%)=16-- --%Gravel=18.9-- --%Sand=30.5-- --%Silt=37.2-- --%Clay=13.4-- --A-6 (8)--	5		3	2 0 1 1	0.25 B	23
884.1							
883.6	Brown, medium SAND; wet			4	1 1 2 1	0.50 P	28
	Medium stiff, gray SILTY CLAY; moist --RDR 2-- --disturbed sample--						
881.9	Stiff, black and brown Organic SILTY CLAY LOAM; wet --RDR 1--	10		5	0 1 3 4	1.00 P	75
879.9	Very loose, brown and green PEAT and MUCK; saturated --RDR 1--			6	2 1 1 2	1.07 B	220
877.4	Medium stiff, gray, Organic SILTY CLAY LOAM; damp --RDR 1--			7	0 2 2 1	0.74 B	50
876.1	Soft, gray CLAY to SILTY CLAY ; damp --trace organic matter-- --RDR 1--	15		8	0 2 3 2	0.41 B	28
872.9	Stiff, gray SILTY CLAY LOAM; damp --RDR 2--			9	0 0 1 3	0.25 B	26
872.0	Medium dense, coarse SAND, little gravel; wet --RDR 2--	20		10	3 10 8 6	1.48 B	14
868.6	Soft, gray CLAY LOAM, trace gravel; moist --RDR 2--			11	2 4 7	0.41 B	12
865.4	Boring terminated at 25.00 ft	25					
		30					

GENERAL NOTES

Begin Drilling: **07-23-2020** Complete Drilling: **07-23-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **8.50 ft**
At Completion of Drilling: **22.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-32

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 900.87 ft
North: 2058352.98 ft
East: 955052.00 ft
Station: 192+96.64
Offset: 15.59 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		19-inch thick ASPHALT --PAVEMENT--						
	899.3	Medium stiff to stiff, brown and gray CLAY LOAM, trace to little gravel; damp --FILL-- --RDR 2--			1	5 5 5 6	1.50 P	18
			5		2	2 3 4 5	1.15 B	22
					3	3 4 4 4	0.66 B	17
	893.1	Soft to stiff, brown and gray SILTY LOAM, trace gravel; damp --RDR 2--			4	3 4 4 6	0.49 S	18
			10		5	2 3 7 10	1.07 S	10
	888.9	Boring terminated at 12.00 ft						
			15					

GENERAL NOTES

Begin Drilling: **07-23-2020** Complete Drilling: **07-23-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Rojo** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-33

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 900.76 ft
North: 2058600.24 ft
East: 954854.99 ft
Station: 196+11.64
Offset: 12.61 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
900.2	7-inch thick ASPHALT --PAVEMENT--						
899.3	10-inch thick CONCRETE						
899.1	3-inch thick, gray SANDY GRAVEL; dry --BASE COURSE--						
898.5	3-inch thick, medium stiff, black SILTY CLAY LOAM -- Buried TOPSOIL--			1	4 3 4 6	0.82 B	14
	Medium stiff, brown and red to brown CLAY LOAM to LOAM, trace gravel; damp --RDR 2--	5		2	7 11 10 13	NA	11
894.8	Medium dense, brown SILTY LOAM, trace gravel; moist --RDR 2--			3	5 8 5 6	NP	10
892.8	Soft to medium stiff, brown CLAY LOAM to SILTY LOAM, trace gravel; moist --RDR 2--	10		4	6 6 4 3	0.41 B	11
889.5				5	3 3 4 9	0.50 P	16
889.3	Brown, medium SAND; wet						
888.8	Loose, brown SILTY LOAM; saturated --RDR 2--						
	Boring terminated at 12.00 ft	15					

GENERAL NOTES

Begin Drilling: **07-23-2020** Complete Drilling: **07-23-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **11.50 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-34

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 896.99 ft
North: 2058802.51 ft
East: 954655.78 ft
Station: 198+91.15
Offset: 26.48 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	896.5	6-inch thick, black SILTY CLAY LOAM; dry --TOPSOIL--			1	3 4 6 5	NP	10
		Medium dense, brown and black LOAM to SANDY LOAM, trace gravel; damp --RDR 2--			2	5 5 6 9	0.82 S	10
		--L_L(%)=15, P_L(%)=11-- --%Gravel=10.3-- --%Sand=44.2-- --%Silt=38.5-- --%Clay=7.0-- --A-4 (0)--	5		3	6 9 9 9	1.50 P	10
	891.7	Soft to stiff, brown CLAY LOAM to LOAM, trace gravel; damp --RDR 2--			4	7 7 7 7	1.15 B	15
	887.5	Very stiff, brown CLAY LOAM to SILTY LOAM, trace gravel; damp --RDR 2--	10		5	6 6 6 7	0.33 B	14
		--sandy loam lens; moist--			6	4 9 9 10	2.05 B	13
	885.0	Boring terminated at 12.00 ft	15					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **08-07-2020** Complete Drilling: **08-07-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-35

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 899.24 ft
North: 2059106.96 ft
East: 954602.42 ft
Station: 201+97.66
Offset: 33.43 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		10-inch thick, stiff, black SILTY CLAY, trace gravel; damp						
	898.4	--TOPSOIL--						
		Very stiff, brown and orange to brown, SILTY CLAY, trace gravel; damp			1	2 1 3 3	1.25 P	24
		--RDR 2--			2	5 3 5 6	2.50 P	18
			5		3	5 6 7 11	3.61 B	15
					4	5 5 5 5	3.28 B	14
	891.0							
		Stiff, brown CLAY LOAM, trace gravel; moist						
		--RDR 2--			5	3 5 6 7	1.00 P	14
	889.2		10					
		Boring terminated at 10.00 ft						
			15					

GENERAL NOTES

Begin Drilling: **11-19-2020** Complete Drilling: **11-19-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-36

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 897.56 ft
North: 2059377.89 ft
East: 954534.59 ft
Station: 204+75.31
Offset: 21.77 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	897.0	7-inch thick, very stiff, black SILTY CLAY LOAM; dry --TOPSOIL--						
		Very stiff, brown and black CLAY LOAM to SILTY CLAY LOAM, trace gravel; dry to damp --RDR 2--			1	3 6 5 4	3.25 P	11
	894.1				2	4 3 4 5	2.05 B	18
		Medium dense, brown and black, LOAM, little gravel; damp --RDR 2--	5		3	5 7 8 4	NP	8
	891.6							
		Medium dense, brown and gray SANDY LOAM; wet to saturated --RDR 2--			4	6 6 6 6	NP	22
					5	6 8 10 12	NP	18
	887.6		10					
		Boring terminated at 10.00 ft	15					

GENERAL NOTES

Begin Drilling: **08-07-2020** Complete Drilling: **08-07-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **9.00 ft**
At Completion of Drilling: **9.75 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-37

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 899.33 ft
North: 2059694.77 ft
East: 954569.10 ft
Station: 207+92.13
Offset: 13.32 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		12-inch thick ASPHALT --PAVEMENT--						
	898.3	Stiff to very stiff, brown and gray SILTY CLAY LOAM, trace gravel; damp --RDR 2--			1	15 3 3 4	1.89 B	21
					2	3 5 5 4	2.13 B	19
			5		3	4 4 5 6	1.75 P	19
	892.8	Medium stiff, brown LOAM to CLAY LOAM, little gravel; damp --RDR 2--			4	7 6 4 5	0.82 B	14
	890.8	Very soft (<0.25P) to medium stiff, brown CLAY LOAM to SILTY LOAM; moist --RDR 2-- --silty loam lenses; moist--	10		5	2 2 2 3	0.82 B	20
	887.8	Very loose to medium dense, brown, fine to medium SAND; wet to saturated --RDR 2--			6	1 1 1 1	NP	23
					7	3 5 8 10	NP	13
	884.3	Boring terminated at 15.00 ft	15					

GENERAL NOTES

Begin Drilling: **08-07-2020** Complete Drilling: **08-07-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **13.00 ft**
At Completion of Drilling: **14.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-38

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 907.72 ft
North: 2059977.43 ft
East: 954543.76 ft
Station: 210+74.84
Offset: 11.49 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		12-inch thick ASPHALT --PAVEMENT--						
	906.7	Very stiff, brown SILTY CLAY; damp --RDR 2--			1	3 3 4 4	2.46 B	22
	905.0	Soft, brown SILTY LOAM to CLAY LOAM, trace gravel; damp --RDR 2--			2	2 2 4 4	0.33 B	13
		--L_L(%)=20, P_L(%)=12-- --%Gravel=2.9-- --%Sand=28.2-- --%Silt=52.8-- --%Clay=16.1-- --A-4 (2)--	5		3	3 5 5 5	0.33 B	13
	901.0	Stiff, brown CLAY to SILTY CLAY; damp --RDR 2--			4	3 4 4 5	1.48 B	27
	899.1	Medium stiff to stiff, brown SILTY LOAM, trace gravel; moist --RDR 2--	10		5	4 4 6 9	0.66 S	16
					6	7 8 9 15	1.00 P	15
	894.7	Boring terminated at 13.00 ft	15					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **07-28-2020** Complete Drilling: **07-28-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **A&J** Logger: **M. Rojo** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-39

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 911.90 ft
North: 2060254.35 ft
East: 954566.74 ft
Station: 213+51.71
Offset: 11.99 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		2-inch thick ASPHALT --PAVEMENT--						
	910.9	Stiff, brown SILTY CLAY LOAM, trace gravel; damp --RDR 2--			1	6 5 5 5	1.56 B	20
	909.2	Very stiff, brown CLAY LOAM, trace gravel; damp --RDR 2--			2	3 5 5 6	2.00 P	16
	907.2	Stiff, brown and gray, SILTY CLAY LOAM --RDR 2--	5		3	4 5 5 7	1.48 B	18
	904.7	Medium dense, brown SILTY LOAM, trace gravel; damp --RDR 2--			4	4 7 8 9	NP	10
	901.9	Stiff, brown LOAM to CLAY LOAM, trace gravel; damp --RDR 2--	10		5	7 8 11 12	1.07 S	11
	900.9	Boring terminated at 11.00 ft						
			15					

GENERAL NOTES

Begin Drilling: **08-07-2020** Complete Drilling: **08-07-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-40

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 907.68 ft
North: 2060566.89 ft
East: 954514.26 ft
Station: 216+64.35
Offset: 39.90 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		10-inch tick ASPHALT --PAVEMENT--						
	906.9	Medium dense to dense, brown SILTY LOAM to LOAM, trace to little gravel; damp --RDR 2--			1	7 8 11 13	NP	7
					2	10 18 18 19	NP	9
			5		3	9 20 21 21	NP	9
					4	10 14 14 14	NP	9
	898.7	Stiff, brown SILTY CLAY LOAM, little gravel; damp --RDR 2--	10		5	3 9 17 19	1.72 S	9
	897.7	Medium dense, brown SILTY LOAM, little gravel; damp --RDR 2--						
	896.7	Boring terminated at 11.00 ft	15					

GENERAL NOTES

Begin Drilling: **07-28-2020** Complete Drilling: **07-28-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-41

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 942.73 ft
North: 2052220.02 ft
East: 956794.60 ft
Station: 203+57.42
Offset: 12.92 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	942.3	5-inch thick ASPHALT --PAVEMENT--						
	941.8	6-inch thick, brown SANDY GRAVEL --SUB-BASE--						
		Stiff, brown SILTY CLAY LOAM, trace gravel; damp			1	7 3 3 4	1.64 B	21
	940.2	--FILL--						
		Medium dense, brown SILTY LOAM, trace gravel; damp --FILL--			2	2 5 7 6	NP	10
	938.5	Soft to medium stiff, brown CLAY LOAM to LOAM, trace to some gravel; damp --RDR 1--	5		3	3 7 5 8	0.74 B	10
					4	5 8 5 6	0.66 B	9
			10		5	3 4 5 8	0.82 B	10
					6	3 5 6 7	0.41 B	9
	929.7	Medium dense, brown SILTY LOAM, trace gravel; damp			7	4 11 14 20	NP	10
	927.7		15					
		Boring terminated at 15.00 ft						

GENERAL NOTES

Begin Drilling: **11-30-2020** Complete Drilling: **11-30-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-42

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 935.55 ft
North: 2052130.95 ft
East: 957155.99 ft
Station: 120+20.58
Offset: 53.43 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
934.9	8-inch thick, black SILTY CLAY LOAM --TOPSOIL--		1	6 2 6 9	NP	8
933.8	Loose, brown, medium to coarse SAND; damp --RDR 2--					
	Medium stiff to stiff, brown LOAM to CLAY LOAM, trace gravel; damp --RDR 2-- --L_L(%)=27, P_L(%)=14-- --%Gravel=9.2-- --%Sand=43.9-- --%Silt=35.3-- --%Clay=11.7-- --A-6 (3)--	5	2	4 7 3 5	0.66 B	14
			3	2 3 2 6	1.00 P	14
929.8	Very loose to medium dense, gray Gravelly SANDY LOAM; moist to saturated --few clay lenses-- --RDR 2--		4	3 5 4 6	NP	18
		10	5	1 1 1 1	NP	24
			6	3 6 6 3	NP	15
923.6	Boring terminated at 12.00 ft	15				

GENERAL NOTES

Begin Drilling: **07-10-2020** Complete Drilling: **07-10-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18CME55T [85%]**
Driller: **A&K** Logger: **M. Rojo** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **10.00 ft**
At Completion of Drilling: **7.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-43

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 940.35 ft
North: 2053799.20 ft
East: 956836.11 ft
Station: 169+71.43
Offset: 12.09 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	940.0	4-inch thick, gray SANDY GRAVEL						
	939.4	--RDR 2--						
		8-inch thick ASPHALT			1	7 45 6 2	1.50 P	22
		Stiff to very stiff, gray to brown, SILTY CLAY, trace gravel; damp --RDR 2--			2	2 1 2 4	2.00 P	23
			5		3	2 3 3 6	1.31 B	23
	934.6	Medium dense, brown CLAY LOAM to LOAM, trace gravel; damp to moist --RDR 2--			4	6 6 6 6	0.25 B	9
					5	3 3 6 9	0.33 B	9
			10		6	2 7 6 7	0.33 B	10
					7	6 5 10 11	1.39 B	9
	926.4	Boring terminated at 14.00 ft						
			15					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **07-22-2020** Complete Drilling: **07-22-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-44

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 931.61 ft
North: 2053344.55 ft
East: 957141.89 ft
Station: 175+15.62
Offset: 51.68 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	12-inch thick, black SILTY CLAY LOAM			1 3 4 3		
930.6	--TOPSOIL--		1		2.00 P	6
930.0	Loose, brown SANDY GRAVEL; dry					
	--RDR 2--					
	Stiff to very stiff, black and brown CLAY LOAM, trace gravel; damp			2 4 3 3		
	--FILL--		2		2.21 B	21
	--RDR 2--					
927.2						
926.8	Brown SANDY GRAVEL; saturated	5	3	0 0 1 1	1.50 P	23
	Stiff, black SILTY CLAY LOAM, trace gravel; damp					
925.4	--Buried TOPSOIL--					
	--RDR 2--					
	Very loose, black SILTY LOAM; saturated		4	0 0 0 1	NP	24
	--RDR 1--					
923.9						
	Very soft, black and greenish gray Organic SILTY CLAY; damp to moist			0 0 0 1		
	--RDR 1--		5		< 0.25 P	73
		10				
			6	0 0 0 0	< 0.25 P	65
	--few PEAT lenses--		7	0 0 0 2	< 0.25 P	44
		15				
916.6	Very soft, greenish gray CLAY to SILTY CLAY, trace organic matter; moist		8	1 6 3 5	< 0.25 P	32

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	--RDR 2--			2 4 5 7		
			9		< 0.25 P	28
				3 6 7 17		
912.4			10		< 0.25 P	19
	Medium dense, gray Gravelly SAND; saturated	20				
	--RDR 2--			7 9 6 5		
			11		NP	10
				7 8 7 9		
			12		NP	24
907.6						
	Boring terminated at 24.00 ft					
		25				
		30				

GENERAL NOTES

Begin Drilling: **11-20-2020** Complete Drilling: **11-20-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **E. Greenwood** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **4.50 ft**
At Completion of Drilling: **16.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-45

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 931.33 ft
North: 2053094.24 ft
East: 957471.23 ft
Station: 179+19.86
Offset: 35.86 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Medium dense, brown, organic SILTY LOAM, trace gravel; dry --TOPSOIL--			1	3 7 11 8	NP	6
	930.1	Soft, black, brown and gray Gravelly SILTY LOAM to LOAM; damp --FILL-- --RDR 2--			2	9 6 7 7	0.75 P	16
		--L_L(%)=29, P_L(%)=17-- --%Gravel=25.2-- --%Sand=28.6-- --%Silt=38.0-- --%Clay=8.2-- --A-6 (2)--	5		3	2 2 2 3	0.25 B	19
					4	2 1 2 3	0.57 B	17
	922.6	Soft, gray CLAY LOAM to SILTY LOAM, trace gravel; moist --RDR 2--	10		5	2 5 5 5	0.49 B	18
	919.3				6	1 4 5 6	1.07 B	16
		Boring terminated at 12.00 ft	15					

GENERAL NOTES

Begin Drilling: **07-15-2020** Complete Drilling: **07-15-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **10.00 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-46

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 940.19 ft
North: 2052765.10 ft
East: 957696.12 ft
Station: 183+16.30
Offset: 5.94 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	939.4	10-inch thick ASPHALT --PAVEMENT--						
	938.9	Very stiff, black and brown CLAY LOAM, little gravel; damp --FILL--						
		Stiff to very stiff, brown CLAY to SILTY CLAY; damp --RDR 2--			1	3 4 3 4	2.0P	23
					2	3 3 5 8	2.30 B	26
			5					
	934.2	Loose to medium dense, brown Gravelly SANDY LOAM; damp to moist --RDR 2--			3	6 6 4 5	1.80 B	24
					4	6 10 8 12	NP	14
			10		5	6 13 12 11	NP	10
	929.2	Boring terminated at 11.00 ft						
			15					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **08-06-2020** Complete Drilling: **08-06-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-47

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 925.35 ft
North: 2053945.27 ft
East: 958062.86 ft
Station: 142+56.26
Offset: 12.18 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		11-inch thick ASPHALT --PAVEMENT--						
	924.4	Medium dense, brown, medium SAND, some gravel; damp --FILL-- --RDR 3--			1	10 16 8 5	NP	4
	922.6	Medium stiff, brown and gray SILTY CLAY LOAM, trace gravel; damp --RDR 2-- --L_L(%)=40, P_L(%)=14-- --%Gravel=4.4-- --%Sand=19.4-- --%Silt=54.6-- --%Clay=21.3-- --A-6 (18)--			2	5 3 3 3	1.75 P	34
	921.1	Medium dense, brown and gray, fine SAND to SANDY LOAM, trace gravel; moist --RDR 2--	5		3	5 7 11 10	NP	14
	918.6	Medium dense, gray SILTY LOAM to SILT, trace gravel; moist to wet --RDR 2 to 3--			4	5 7 13 10	NP	18
	915.9	--frequent rig chatter, 9.0 to 10.0 feet-- --possible cobbles--	10		5	3 8 12 10	1.64 B	22
	914.4	Stiff, gray SILTY CLAY LOAM, trace gravel; damp --RDR 2 to 3--						
		Boring terminated at 11.00 ft	15					

GENERAL NOTES

Begin Drilling: **08-06-2020** Complete Drilling: **08-06-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-48

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 910.85 ft
North: 2056571.70 ft
East: 956527.21 ft
Station: 110+97.34
Offset: 17.45 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		12-inch thick ASPHALT --PAVEMENT--						
	909.9							
		9-inch thick, loose, brown Gravelly SAND; damp --AGGREGATE BASE--						
	909.1				1	7 6 2 2	1.50 P	28
		Stiff, brown and gray SILTY CLAY LOAM, trace gravel; damp --RDR 2--						
					2	3 4 5 5	1.07 B	22
	906.0		5					
		Stiff, brown CLAY LOAM to LOAM, little gravel; damp --RDR 2--			3	4 7 7 9	1.07 B	9
					4	7 13 11 13	1.48 B	9
			10		5	9 10 10 10	2.30 B	11
	899.9							
		Boring terminated at 11.00 ft						
			15					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **08-06-2020** Complete Drilling: **08-06-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-49

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 912.88 ft
North: 2056594.03 ft
East: 956824.68 ft
Station: 113+94.78
Offset: 5.26 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	912.1	9-inch thick ASPHALT --PAVEMENT--						
	911.4	9-inch thick, brown Gravelly SAND; damp --FILL--						
		Medium stiff to very stiff, brown SILTY CLAY LOAM, trace gravel; damp --RDR 2--			1	8 3 4 5	2.05 B	21
	909.1	Medium dense, brown SILTY LOAM, trace gravel; dry to damp --RDR 2--	5		2	3 3 4 7	0.74 S	18
	907.4	Medium dense, brown Gravelly SAND; dry to damp --RDR 2 to 3-- --frequent rig chatter, 6.5 to 11.0 feet-- --possible cobbles--			3	4 9 12 13	NP	7
	904.4				4	14 18 12 15	NP	5
		Medium stiff to very stiff, brown LOAM to CLAY LOAM, little gravel; damp --RDR 2 to 3--	10		5	9 13 11 12	0.74 S	9
	899.9				6	10 11 10 15	2.21 B	9
		Boring terminated at 13.00 ft	15					

GENERAL NOTES

Begin Drilling: **08-06-2020** Complete Drilling: **08-06-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-50

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 913.76 ft
North: 2056550.25 ft
East: 957241.28 ft
Station: 118+11.43
Offset: 37.99 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		12-inch thick, black organic SILTY LOAM				3 4 7 5		
	912.8	--TOPSOIL--			1		3.25 P	13
		Very stiff, brown and gray to brown CLAY LOAM, trace gravel; damp						
		--RDR 2--				4 4 4 4		
		--L_L(%)=38, P_L(%)=14--						
		--%Gravel=6.5--			2		2.54 B	18
		--%Sand=32.2--						
	910.0	--%Silt=36.3--						
		--%Clay=25.0--						
		--A-6 (12)--						
		Medium dense, brown SANDY LOAM; damp	5		3	4 6 8 8	NP	13
		--RDR 2--						
	907.8							
		Stiff to very stiff, brown SILTY CLAY LOAM to CLAY LOAM, trace gravel; damp to moist				7 9 11 13		
		--RDR 2--			4		2.71 B	16
						7 10 9 10		
					5		1.48 B	16
	903.8		10					
		Boring terminated at 10.00 ft						
			15					

GENERAL NOTES

Begin Drilling: **07-29-2020** Complete Drilling: **07-29-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-51

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 888.77 ft
North: 2057630.58 ft
East: 955538.31 ft
Station: 108+76.99
Offset: 9.74 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
888.3	6-inch thick ASPHALT --PAVEMENT--						
887.5	Loose, brown SANDY GRAVEL; dry to damp						
887.3	--BASE COURSE--						
	Stiff (1.5P), black SILTY CLAY LOAM			1	7 4 3 4	0.25 B	13
886.0	--Buried TOPSOIL--						
	Soft, brown CLAY LOAM, trace gravel; damp --RDR 2--						
884.8	Loose, brown SILTY LOAM, little gravel; damp --RDR 2--	5		2	1 3 3 4	NP	14
	Loose to medium dense, brown and gray, fine SAND; saturated --RDR 2--			3	3 4 11 12	0.66 S	10
882.8	Medium dense, brown to gray SILTY LOAM, trace to little gravel; moist --RDR 2 to 3--			4	23 14 12 13	NP	10
		10		5	8 10 10 8	NP	10
877.8	Boring terminated at 11.00 ft						
		15					

GENERAL NOTES

Begin Drilling: **07-23-2020** Complete Drilling: **07-23-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Rojo** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **4.00 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-52

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 887.59 ft
North: 2057745.27 ft
East: 955729.65 ft
Station: 183+86.50
Offset: 23.45 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
887.3	3-inch thick, brown SILTY CLAY LOAM --TOPSOIL--		1	3 4 5 6	NP	3
886.1	Loose, brown SANDY GRAVEL, trace gravel; dry --FILL-- --RDR 2--		2	3 3 5 5	0.50 P	20
884.3	Medium stiff, brown SILTY CLAY; damp --RDR 2--		3	1 1 2 2	0.50 P	44
882.1	Medium stiff, black and gray SILTY LOAM, trace organic matter; damp --RDR 2-- --L_L(%)=44, P_L(%)=22-- --%Gravel=9.9-- --%Sand=25.4-- --%Silt=49.1-- --%Clay=15.7-- --A-7-6 (13)--	5	4	0 0 2 3	< 0.25 B	29
879.2	Soft, gray CLAY to SILTY CLAY; damp --RDR 2-- --sand pockets; wet--		5	4 7 5 5	NP	10
877.6	Medium dense, gray LOAM to SANDY LOAM, trace gravel; damp --RDR 2--	10				
	Boring terminated at 10.00 ft	15				

GENERAL NOTES

Begin Drilling: **07-23-2020** Complete Drilling: **07-23-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-53

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 887.49 ft
North: 2058039.83 ft
East: 955904.84 ft
Station: 203+96.44
Offset: 24.72 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Brown SANDY LOAM --TOPSOIL-- --RDR 2--			1	2 4 4 14	NP	9
	886.2	Medium dense, brown LOAM, trace gravel; dry to damp --FILL-- --RDR 2--			2	6 13 10 8	NP	8
	882.5		5		3	4 4 3 3	1.64 B	22
	881.7	Stiff, black SILTY CLAY LOAM; damp --Buried TOPSOIL--						
		Soft to medium stiff, brown CLAY LOAM; moist --RDR 2--			4	1 0 1 1	0.25 B	22
	878.5	Very loose to medium dense, gray LOAM to CLAY LOAM, trace gravel; moist --RDR 2--	10		5	0 0 0 1	0.50 P	14
					6	1 2 0 5	0.75 B	9
					7	1 0 4 5	0.33 B	9
			15		8	6 6 6 7	0.82 B	9
	871.5	Boring terminated at 16.00 ft						

GENERAL NOTES

Begin Drilling: **07-23-2020** Complete Drilling: **07-23-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-54

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 902.03 ft
North: 2058686.29 ft
East: 954242.77 ft
Station: 62+87.86
Offset: 14.68 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	901.5	6-inch thick, brown SILTY CLAY LOAM						
	901.4	--FILL--			1	3 4 3 1	3.00 P	12
		2-inch thick Crushed Brick --FILL--						
		Stiff to very stiff, brown CLAY LOAM, trace gravel; damp --RDR 2--			2	2 2 3 7	1.64 B	13
	898.5	Medium dense, brown, LOAM to CLAY LOAM, trace gravel; moist --RDR 2--	5		3	5 7 10 8	0.57 B	9
	896.5	Soft to stiff, brown CLAY LOAM to LOAM, trace gravel; damp to moist --RDR 2--			4	3 4 5 4	0.57 B	11
			10		5	6 6 4 4	NA	13
					6	3 3 6 11	0.41 B	13
					7	1 3 6 8	1.07 B	11
	888.0	Boring terminated at 14.00 ft	15					

GENERAL NOTES

Begin Drilling: **07-24-2020** Complete Drilling: **07-24-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-55

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 898.40 ft
North: 2058868.89 ft
East: 954485.98 ft
Station: 65+90.50
Offset: 15.46 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	897.9	6-inch thick ASPHALT --PAVEMENT--						
	897.2	9-inch thick CONCRETE --PAVEMENT--						
		Stiff, brown and gray CLAY to SILTY CLAY, trace organic matter; damp --RDR 2--			1	2 2 3 3	1.15 B	30
			5		2	2 4 5 6	1.31 B	23
	892.7	Soft, black, brown and gray CLAY LOAM to LOAM, trace gravel; damp --RDR 2--			3	2 4 3 3	0.41 B	14
	890.7	Soft, brown and gray, CLAY LOAM, trace gravel; moist --RDR 2--			4	3 3 3 4	0.41 B	19
			10		5	2 3 4 4	0.33 B	20
	886.4	Medium dense, brown and gray LOAM to CLAY LOAM, trace gravel; moist to wet --RDR 2--			6	7 12 12 10	0.25 P	17
		--sand and silt seams; moist--	15		7	8 8 12 17	1.31 S	17
	882.4	Boring terminated at 16.00 ft						

GENERAL NOTES

Begin Drilling: **07-28-2020** Complete Drilling: **07-28-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **A&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **14.00 ft**
At Completion of Drilling: **13.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-56

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 898.54 ft
North: 2059101.86 ft
East: 954686.86 ft
Station: 68+96.04
Offset: 20.13 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	898.3	3-inch thick, brown SILTY CLAY LOAM						
	897.8	--TOPSOIL--						
		Brown SAND; damp			1	4 6 2 4	1.64 B	13
		Soft to stiff, brown LOAM to CLAY LOAM, trace gravel; damp --RDR 2--			2	3 3 3 2	1.00 P	14
		--L_L(%)=26, P_L(%)=12-- --%Gravel=8.6-- --%Sand=29.9-- --%Silt=44.2-- --%Clay=17.3-- --A-6 (5)--	5		3	2 2 2 3	0.57 B	19
		--sand seam; moist--			4	2 1 3 3	0.41 B	12
	890.8	Medium stiff, brown SILTY CLAY LOAM; damp --silt lamination-- --RDR 2--			5	2 2 2 3	0.98 B	28
			10					
	888.0	Medium dense, brown SILTY LOAM; wet to saturated --RDR 2--			6	4 6 9 8	NP	21
	886.5	Boring terminated at 12.00 ft						
			15					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)

GENERAL NOTES

Begin Drilling: **07-24-2020** Complete Drilling: **07-24-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **11.00 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SGB-57

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 898.13 ft
North: 2059297.93 ft
East: 954972.58 ft
Station: 72+41.23
Offset: 18.45 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
897.9	3-inch thick ASPHALT --PAVEMENT--					
897.1	10-inch thick CONCRETE --PAVEMENT--					
896.6	5-inch thick SANDY GRAVEL --AGGREGATE BASE--					
	Stiff to very stiff, brown SILTY CLAY LOAM, trace gravel; damp --RDR 2--		1	5 3 4 4	1.23 B	20
		5	2	6 4 5 5	2.13 B	19
891.1	Soft, brown SILTY LOAM; wet --RDR 2--		3	3 4 5 5	0.25 B	19
890.1	Medium dense, brown Gravelly SAND; wet --RDR 2--		4	11 13 9 10	1.72 S	12
888.9	Stiff, brown CLAY LOAM to LOAM, trace gravel; damp --RDR 2--	10				
888.1	Boring terminated at 10.00 ft					
		15				

GENERAL NOTES

Begin Drilling: **07-28-2020** Complete Drilling: **07-28-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18D25A [85%]**
Driller: **A&J** Logger: **M. Rojo** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG TSB-01

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 945.73 ft
North: 2050027.97 ft
East: 957152.62 ft
Station: 99+19.42
Offset: 71.80 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
945.5	3-inch thick, brown SILTY CLAY LOAM --TOPSOIL--					
	Medium dense, brown Gravelly SAND; damp --RDR 2--		1	7 10 9	NP	5
942.7	Soft to medium stiff, brown CLAY LOAM to LOAM, trace to little gravel; damp --RDR 2--	5	2	3 10 9	0.50 P	10
			3	13 9 9	0.25 P	9
		10	4	10 19 15	NA	9
			5	6 19 18	0.25 P	9
932.7	Very dense, brown Gravelly SAND; damp --RDR 2--	15	6	12 32 29	NP	5
	--silt and clay lamination--					
929.1	Brown SILT; saturated --RDR 2--		7	8 10 9	NP	22
927.7	Dense, brown Gravelly SAND; saturated --RDR 2--	20	8	3 12 21	NP	16
925.7	Boring terminated at 20.00 ft					

GENERAL NOTES

Begin Drilling: **07-09-2020** Complete Drilling: **07-09-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18CME55T [85%]**
Driller: **A&K** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **16.00 ft**
At Completion of Drilling: **17.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG TSB-02

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 947.98 ft
North: 2050170.08 ft
East: 957317.80 ft
Station: 100+60.20
Offset: 94.52 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	947.7	3-inch thick, brown SILTY CLAY LOAM --TOPSOIL--						
		Medium dense to dense, brown Gravelly SAND; damp --RDR 2--			1	10 20 23	NP	4
			5		2	15 17 19	NP	4
					3	11 11 14	NR	
	940.0	Medium stiff to stiff, brown LOAM to CLAY LOAM, trace gravel; damp --RDR 2--	10		4	10 19 17	1.50 P	8
					5	7 11 14	0.82 B	9
	935.0	Dense to very dense, brown Gravelly SAND; damp to saturated --RDR 2--	15		6	10 36 50/5"	NP	4
					7	22 32 22	NP	3
					8	10 19 24	NP	9
	928.0	Boring terminated at 20.00 ft	20					

GENERAL NOTES

Begin Drilling: **07-09-2020** Complete Drilling: **07-09-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **18CME55T [85%]**
Driller: **A&K** Logger: **I. Nenn** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **18.50 ft**
At Completion of Drilling: **18.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG TSB-03

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 913.66 ft
North: 2056543.64 ft
East: 956918.37 ft
Station: 166+80.53
Offset: 26.59 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
912.7	12-inch thick, brown SILTY LOAM; damp --TOPSOIL--						
	Stiff, brown and gray to brown CLAY LOAM, little gravel; damp --FILL-- --RDR 2 to 3--			1	6 5 6	1.25 P	10
	--cobble in driving shoe--	5		2	11 3 5	1.00 P	19
908.2	Brown Gravelly SANDY LOAM; damp to moist						
906.9	--FILL-- Medium stiff, brown, CLAY LOAM to LOAM, trace gravel; damp --FILL-- --RDR 2--			3	8 5 5	0.90 B	17
		10		4	6 7 7	0.66 B	10
903.2	Soft to stiff, brown to brown and gray LOAM to CLAY LOAM, little gravel; moist to wet --RDR 2--			5	5 9 12	0.41 B	10
		15		6	5 13 13	0.33 B	10
				7	5 9 11	1.15 B	9
		20		8	5 9 8	0.41 B	9
		25		9	3 3 5	0.49 B	8
				10	5 7 6	0.57 B	8
				11	13 7 7	0.82 B	8
885.7	Medium dense, gray Gravelly SANDY LOAM; wet --RDR 2-- --cave-in--	30		12	4 5 10	NP	8
				13	2 5 6	NP	10
880.7	Very stiff, gray CLAY LOAM, trace gravel; damp --RDR 2--			14	6 5 6	2.25 P	15
878.7	Boring terminated at 35.00 ft	35					
		40					

GENERAL NOTES

Begin Drilling: **07-21-2020** Complete Drilling: **07-21-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **30.00 ft**
At Completion of Drilling: **30.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG TSB-04

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 911.53 ft
North: 2056652.86 ft
East: 956970.35 ft
Station: 167+45.31
Offset: 75.17 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	12-inch thick, brown SILTY LOAM; dry						
910.5	--TOPSOIL--						
	Stiff to very stiff, brown to brown and red, CLAY to CLAY LOAM, trace gravel --RDR 2--			1	4 4 6	3.50 P	10
		5		2	2 3 4	1.48 B	15
904.5	Brown SANDY LOAM; wet to saturated --RDR 2--			3	3 3 3	1.97 B	14
902.3	Medium stiff to very stiff, brown, CLAY LOAM to LOAM, little gravel; moist --RDR 2 to 3--	10		4	3 3 3	0.74 B	14
				5	5 9 20	2.21 S	11
897.3	Medium stiff, gray LOAM to CLAY LOAM, little gravel; moist --RDR 2--	15		6	6 11 11	NR	
				7	5 5 3	0.66 B	8
		20		8	4 4 6	0.57 B	8
				9	5 6 8	0.49 B	9
		25		10	4 8 8	0.25 B	8
886.0	Medium dense, gray Gravelly SANDY LOAM; wet to saturated --RDR 2--			11	10 9 12	NP	9
	--frequent rig chatter, 27.5 to 31.5 feet-- --possible cobbles--	30		12	5 8 8	NP	19
880.0	Hard, gray CLAY LOAM, trace gravel; damp --RDR 2--			13	5 7 7	> 4.50 P	14
878.5	Medium dense, gray Gravelly SAND; saturated --RDR 2--			14	6 11 15	NP	21
876.5	Boring terminated at 35.00 ft	35					
		40					

GENERAL NOTES

Begin Drilling: **07-22-2020** Complete Drilling: **07-22-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **17D50T [81%]**
Driller: **R&J** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **27.50 ft**
At Completion of Drilling: **NA**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG TSB-05

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 898.40 ft
North: 2058929.21 ft
East: 954635.32 ft
Station: 200+12.22
Offset: 13.79 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	12-inch thick, black SILTY CLAY LOAM						
897.4	--TOPSOIL--						
	Medium stiff to very stiff, brown CLAY LOAM, trace gravel; damp to moist --RDR 2--			1	2 2 8	2.25 P	14
		5		2	5 4 6	1.48 B	14
				3	4 3 4	0.74 B	14
		10		4	3 4 3	2.13 B	17
886.7	medium stiff, gray LOAM to CLAY LOAM; moist --RDR 2--			5	5 4 5	2.13 B	23
		15		6	3 4 5	0.98 B	10
882.7							
882.2	Brown SAND; wet						
	Medium dense, gray SILTY LOAM; moist --RDR 2--			7	7 6 4	NP	19
880.4							
	Soft to stiff, gray CLAY LOAM to LOAM, trace to little gravel; moist --RDR 2--	20		8	2 2 2	0.74 B	13
		25		9	3 4 3	0.49 B	10
		25		10	3 4 4	0.66 B	11
				11	4 6 4	0.49 B	10
		30		12	3 2 4	0.41 B	11
865.9	Boring terminated at 32.50 ft			13	4 5 20	0.98 B	10
		35					
		40					

GENERAL NOTES

Begin Drilling: **11-19-2020** Complete Drilling: **11-19-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **15.78 ft**
At Completion of Drilling: **18.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG TSB-06

WEI Job No.: 1100-15-01

Client: **AECOM**
Project: **IL 47 from US 14 to IL 120**
Location: **McHenry County**

Datum: NAVD 88
Elevation: 898.64 ft
North: 2059033.21 ft
East: 954542.26 ft
Station: 201+38.63
Offset: 41.07 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
898.1	7-inch thick, brown LOAM --TOPSOIL--						
896.1	Stiff, brown SILTY CLAY LOAM, trace gravel; damp --RDR 2--			1	6 3 3	1.64 B	19
893.1	Soft, brown CLAY LOAM, trace gravel; damp --RDR 2--	5		2	0 0 1	0.41 B	23
888.1	Loose to medium dense, brown LOAM to CLAY LOAM, trace gravel; damp --RDR 2--			3	2 3 4	0.16 B	12
		10		4	3 5 6	1.07 B	11
880.6	Soft to stiff, brown to gray SILTY LOAM to SILTY CLAY LOAM, trace gravel; damp to moist --RDR 2--			5	3 5 5	0.82 B	21
	--L_L(%)=18, P_L(%)=11-- --%Gravel=6.3-- --%Sand=22.3-- --%Silt=56.2-- --%Clay=15.3-- --A+4 (2)--	15		6	4 2 7	0.66 B	25
				7	1 2 3	0.33 B	22
	Loose to medium dense, gray LOAM to SILTY LOAM, trace gravel; damp --RDR 2--	20		8	5 10 15	NP	12
		25		9	1 1 3	< 0.25 P	11
				10	1 1 2	< 0.25 P	11
				11	1 5 4	0.82 B	9
		30		12	2 2 4	0.16 B	10
				13	4 5 4	0.16 S	9
		35		14	1 2 2	0.16 B	10
858.6		40		15	3 9 10	2.05 B	10

Boring terminated at 40.00 ft

GENERAL NOTES

Begin Drilling: **07-24-2020** Complete Drilling: **07-24-2020**
Drilling Contractor: **Wang Testing Services** Drill Rig: **GEOPROBE**
Driller: **A&J** Logger: **M. Rojo** Checked by: **C. Marin**
Drilling Method: **3.25" ID HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **33.50 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

APPENDIX B

Illinois Department of Transportation

Summary Report on Pavement, Base and Subbase Design

State Job Number: D-91-022-14 Project: IL 47 Route: FAP 326

Section: 104-WRS-8(13) City or County: McHenry Date: 09/13/2023

ADT: _____ Year: _____ Design Period: _____ Class Highway: _____

Passenger Cars Per Day: _____ Trucks S.U. Per Day: _____ Trucks M.U. Per Day: _____

Pavement Structure: _____

Type Surface Course: _____ Thickness: _____

Type Base Course: _____ Thickness: _____

Type Subbase Material: _____ Thickness: _____

Sta. to Sta.	93+61.8 to 209+17.8	+ to +	+ to +	+ to +
*Sta. of Test	118+28.85			
*Drainage Class	Poor			
*Ave. Frost Penetration	45 to 60 in.			
Illinois Textural Classification	Silty Loam			
Classification and Group Index (AASHTO M 145)	A-6 (7)			
*Percent Silt (AASHTO T 88)	49.1			
*Illinois Bearing Ratio (%)				
Std. Dry Density (IL Mod. AASHTO T 99)				
Optimum Moisture (IL Mod AASHTO T 99)				

* Indicates worst condition within the above station limits.

Remarks: _____

STATE OF ILLINOIS
Department of Transportation

Wang Engineering

SOIL TEST DATA

PROJECT
1100-15-01

ROUTE
IL 47 from US 14 to IL 120

SECTION
IL 47 (93+62 to 209+18)

COUNTY
McHenry County

Lab. No.	SGB-01 No.2	SGB-03 No.2	PT2-02 No.2	PT1-03 No.3	RWB-02 No.2	SGB-09 No.3
Station ft)	093+55.37	102+99.58	115+22.36	116+78.70	118+28.85	123+97.77
Offset (ft)	36.65 LT	39.42 RT	27.88 LT	45.06 RT	36.69 RT	24.36 LT
Depth (ft)	2	2	3.5	6	2	4
AASHTO M 145 Classification and Group Index	A-6 (3)	A-1-b (0)	A-2-6 (0)	A-4 (0)	A-6 (7)	A-6 (5)
Illinois Textural Classification (Illinois Method)	Gravelly Loam	Gravelly Sandy Loam	Gravelly Sandy Loam	Silty Loam	Silty Loam	Loam
Gradation--Passing 1" Sieve %		99.4				
--"-- 3/4" Sieve %	100	89.6	100		100.0	100
--"-- 1/2" Sieve %	98.6	83.0	94.3	100.0	97.0	97.6
--"-- No.4 Sieve %	86.6	62.7	85.1	99.1	94.8	97.0
--"-- No.10 Sieve %	73.7	48.5	74.6	98.3	92.4	95.2
--"-- No.40 Sieve %	58.1	32.9	58.7	94.1	85.3	91.2
--"-- No.100 Sieve %	44.0	18.4	40.9	80.7	65.3	67.9
--"-- No.200 Sieve %	39.9	14.1	34.9	74.9	54.3	54.2
Sand % (AASHTO T 88)	33.8	34.4	39.7	23.5	38.1	41.1
Silt % (AASHTO T 88)	31.2	12.6	26.7	59.6	49.1	43.2
Clay % (AASHTO T 88)	8.7	1.5	8.1	15.3	5.2	10.9
Liquid limit % (AASHTO T 89)	32.0	0.0	24.0	0.0	37.0	32.0
Plasticity index % (AASHTO T 90)	17.0	0.0	11.0	0.0	17.0	14.0
IBR % (Illinois Method)						
Standard Dry Density % (AASHTO T 99)						
Optimum Moisture % (AASHTO T 99)						
Subgrade Support Rating	POOR	GRANULAR	POOR	POOR	POOR	POOR
Insitu Moisture % (AASHTO T 99)	14	5	15	110	39	34

STATE OF ILLINOIS
Department of Transportation

SOIL TEST DATA

SECTION
IL 47 (93+62 to 209+18)

Lab. No.	SGB-11 No.3	SGB-12 No.4	SGB-18 No.3	RWB-10 No.3	SGB-22 No.3	SGB-25 No.3
Station ft)	129+81.38	133+04.26	151+27.21	154+73.94	162+74.14	172+05.86
Offset (ft)	41.03 LT	35.99 RT	31.44 LT	65.52 RT	43.07 LT	40.71 RT
Depth (ft)	4	6	4.0	6.0	4.0	4.0
AASHTO M 145 Classification and Group Index	A-6 (4)	A-7-5 (37)	A-4 (0)	A-7-6 (14)	A-4 (0)	A-6 (9)
Illinois Textural Classification (Illinois Method)	Loam	Silty Clay Loam	Gravelly Loam	Clay Loam	Sandy Loam	Loam
Gradation--Passing 1" Sieve %						
--"-- 3/4" Sieve %			100.0			
--"-- 1/2" Sieve %	100.0		97.1	100.0	100.0	100.0
--"-- No.4 Sieve %	95.9		89.9	94.1	94.6	97.0
--"-- No.10 Sieve %	92.3	100.0	81.2	89.2	86.0	94.5
--"-- No.40 Sieve %	82.2	99.1	66.0	82.9	72.2	88.0
--"-- No.100 Sieve %	60.3	98.6	47.0	66.1	50.1	66.8
--"-- No.200 Sieve %	55.3	97.8	40.7	60.3	40.5	58.9
Sand % (AASHTO T 88)	36.9	2.2	40.5	28.9	45.5	35.6
Silt % (AASHTO T 88)	43.4	74.9	33.8	42.0	36.9	44.7
Clay % (AASHTO T 88)	11.9	22.9	7.0	18.3	3.6	14.2
Liquid limit % (AASHTO T 89)	30.0	61.0	23	43	0	33
Plasticity index % (AASHTO T 90)	12.0	31.0	7	29	0	22
IBR % (Illinois Method)						
Standard Dry Density % (AASHTO T 99)						
Optimum Moisture % (AASHTO T 99)						
Subgrade Support Rating	POOR	POOR	POOR	POOR	POOR	POOR
Insitu Moisture % (AASHTO T 99)	26	58	15	29	9	20

STATE OF ILLINOIS
Department of Transportation

SOIL TEST DATA

SECTION
IL 47 (93+62 to 209+18)

Lab. No.	PT3-01 No.2	PT3-05 No.2	PT3-10 No.2	SGB-31 No.3	PT4-15 No.3	PT3-13 No.1
Station ft)	183+23.98	185+98.13	188+70.92	189+97.97	191+02.17	191+06.39
Offset (ft)	30.80 RT	26.37 RT	30.68 RT	26.11 RT	56.32 RT	28.69 RT
Depth (ft)	3.5	3.5	3.5	4.0	6.0	1.0
AASHTO M 145 Classification and Group Index	A-7-6 (16)	A-4 (0)	A-6 (9)	A-6 (8)	A-7-5 (29)	A-6 (6)
Illinois Textural Classification (Illinois Method)	Silty Loam	Gravelly Loam	Clay Loam	Gravelly Loam	Silty Clay Loam	Loam
Gradation--Passing 1" Sieve %		99.4		99.7		
--"-- 3/4" Sieve %		89.3		94.2		
--"-- 1/2" Sieve %	100.0	89.3	100.0	92.6	100.0	100.0
--"-- No.4 Sieve %	96.8	83.3	97.8	88.5	99.9	97.0
--"-- No.10 Sieve %	92.7	76.8	96.7	81.1	99.1	91.5
--"-- No.40 Sieve %	86.7	63.5	89.2	71.2	98.1	74.6
--"-- No.100 Sieve %	72.4	47.6	73.3	56.4	97.0	58.0
--"-- No.200 Sieve %	66.9	42.7	66.8	50.7	96.3	50.9
Sand % (AASHTO T 88)	25.8	34.0	29.9	30.5	2.8	40.6
Silt % (AASHTO T 88)	50.8	35.2	46.1	37.2	75.2	36.0
Clay % (AASHTO T 88)	16.1	7.5	20.7	13.4	21.1	14.9
Liquid limit % (AASHTO T 89)	50	0	35	39	55	35
Plasticity index % (AASHTO T 90)	26	0	17	22	25	19
IBR % (Illinois Method)						
Standard Dry Density % (AASHTO T 99)						
Optimum Moisture % (AASHTO T 99)						
Subgrade Support Rating	POOR	POOR	POOR	POOR	POOR	POOR
Insitu Moisture % (AASHTO T 99)	27	50	19	23	49	26

STATE OF ILLINOIS
Department of Transportation

SOIL TEST DATA

SECTION
IL 47 (93+62 to 209+18)

Lab. No.	PT3-13 No.3	SGB-34 No.3	SGB-38 No.3
Station ft)	191+06.39	198+91.15	210+74.84
Offset (ft)	28.69 RT	26.48 LT	11.49 LT
Depth (ft)	6.0	4.0	5.0
AASHTO M 145 Classification and Group Index	A-6 (17)	A-4 (0)	A-4 (2)
Illinois Textural Classification (Illinois Method)	Silty Clay Loam	Loam	Silty Loam
Gradation--Passing 1" Sieve %			
--"-- 3/4" Sieve %			
--"-- 1/2" Sieve %	100.0	100.0	100.0
--"-- No.4 Sieve %	99.7	95.1	99.2
--"-- No.10 Sieve %	97.7	89.7	97.1
--"-- No.40 Sieve %	92.2	76.8	90.4
--"-- No.100 Sieve %	80.8	55.5	77.1
--"-- No.200 Sieve %	76.2	45.5	68.9
Sand % (AASHTO T 88)	21.5	44.2	28.2
Silt % (AASHTO T 88)	52.4	38.5	52.8
Clay % (AASHTO T 88)	23.8	7.0	16.1
Liquid limit % (AASHTO T 89)	40	15	20
Plasticity index % (AASHTO T 90)	25	4	8
IBR % (Illinois Method)			
Standard Dry Density % (AASHTO T 99)			
Optimum Moisture % (AASHTO T 99)			
Subgrade Support Rating	POOR	POOR	POOR
Insitu Moisture % (AASHTO T 99)	23	10	13

STATE OF ILLINOIS
Department of Transportation

Wang Engineering

SOIL TEST DATA

PROJECT
1100-15-01

ROUTE
IL 47 from US 14 to IL 120

SECTION
Southview Drive (203+55 to 209+18)

COUNTY
McHenry County

Lab. No.	SGB-42 No.2
Station ft)	120+20.58
Offset (ft)	53.43 LT
Depth (ft)	2
AASHTO M 145 Classification and Group Index	A-6 (3)
Illinois Textural Classification (Illinois Method)	Loam
Gradation--Passing 1" Sieve %	
--"-- 3/4" Sieve %	
--"-- 1/2" Sieve %	100.0
--"-- No.4 Sieve %	96.6
--"-- No.10 Sieve %	90.8
--"-- No.40 Sieve %	77.4
--"-- No.100 Sieve %	54.6
--"-- No.200 Sieve %	46.9
Sand % (AASHTO T 88)	43.9
Silt % (AASHTO T 88)	35.3
Clay % (AASHTO T 88)	11.7
Liquid limit % (AASHTO T 89)	27.0
Plasticity index % (AASHTO T 90)	12.0
IBR % (Illinois Method)	
Standard Dry Density % (AASHTO T 99)	
Optimum Moisture % (AASHTO T 99)	
Subgrade Support Rating	POOR
Insitu Moisture % (AASHTO T 99)	14

2/26/2021

STATE OF ILLINOIS
Department of Transportation

SOIL TEST DATA

PROJECT
1100-15-01

ROUTE
IL 47 from US 14 to IL 120

SECTION
Lake Avenue (169+47 to 188+19)

COUNTY
McHenry County

Lab. No.	SGB-45 No.3
Station ft)	179+19.86
Offset (ft)	35.86 LT
Depth (ft)	4
AASHTO M 145 Classification and Group Index	A-6 (2)
Illinois Textural Classification (Illinois Method)	Gravelly Silty Loam
Gradation--Passing 1" Sieve %	99.5
--"-- 3/4" Sieve %	91.5
--"-- 1/2" Sieve %	86.3
--"-- No.4 Sieve %	80.3
--"-- No.10 Sieve %	74.8
--"-- No.40 Sieve %	67.1
--"-- No.100 Sieve %	52.5
--"-- No.200 Sieve %	46.2
Sand % (AASHTO T 88)	28.6
Silt % (AASHTO T 88)	38.0
Clay % (AASHTO T 88)	8.2
Liquid limit % (AASHTO T 89)	29.0
Plasticity index % (AASHTO T 90)	12.0
IBR % (Illinois Method)	
Standard Dry Density % (AASHTO T 99)	
Optimum Moisture % (AASHTO T 99)	
Subgrade Support Rating	POOR
Insitu Moisture % (AASHTO T 99)	19

2/26/2021

STATE OF ILLINOIS
Department of Transportation

SOIL TEST DATA

PROJECT
1100-15-01

ROUTE
IL 47 from US 14 to IL 120

SECTION
McConnell Road (135+00 to 142+59)

COUNTY
McHenry County

Lab. No.	SGB-47 No.2
Station ft)	142+56.26
Offset (ft)	12.18 RT
Depth (ft)	3
AASHTO M 145 Classification and Group Index	A-6 (18)
Illinois Textural Classification (Illinois Method)	Silty Clay Loam
Gradation--Passing 1" Sieve %	
--"-- 3/4" Sieve %	
--"-- 1/2" Sieve %	100.0
--"-- No.4 Sieve %	99.3
--"-- No.10 Sieve %	95.6
--"-- No.40 Sieve %	91.5
--"-- No.100 Sieve %	79.8
--"-- No.200 Sieve %	75.9
Sand % (AASHTO T 88)	19.7
Silt % (AASHTO T 88)	54.6
Clay % (AASHTO T 88)	21.3
Liquid limit % (AASHTO T 89)	40.0
Plasticity index % (AASHTO T 90)	27.0
IBR % (Illinois Method)	
Standard Dry Density % (AASHTO T 99)	
Optimum Moisture % (AASHTO T 99)	
Subgrade Support Rating	POOR
Insitu Moisture % (AASHTO T 99)	34

2/26/2021

STATE OF ILLINOIS
Department of Transportation

SOIL TEST DATA

ROUTE
IL 47 from US 14 to IL 120

PROJECT
1100-15-01

SECTION
South Street/Country Club Road (111+00 to 118+18)

COUNTY
McHenry County

Lab. No.	SGB-50 No.2
Station ft)	118+11.43
Offset (ft)	37.99 RT
Depth (ft)	2
AASHTO M 145 Classification and Group Index	A-6 (12)
Illinois Textural Classification (Illinois Method)	Clay Loam
Gradation--Passing 1" Sieve %	
--"-- 3/4" Sieve %	100
--"-- 1/2" Sieve %	96.6
--"-- No.4 Sieve %	95.3
--"-- No.10 Sieve %	93.5
--"-- No.40 Sieve %	88.4
--"-- No.100 Sieve %	70.0
--"-- No.200 Sieve %	61.3
Sand % (AASHTO T 88)	32.2
Silt % (AASHTO T 88)	36.3
Clay % (AASHTO T 88)	25.0
Liquid limit % (AASHTO T 89)	38.0
Plasticity index % (AASHTO T 90)	24.0
IBR % (Illinois Method)	
Standard Dry Density % (AASHTO T 99)	
Optimum Moisture % (AASHTO T 99)	
Subgrade Support Rating	POOR
Insitu Moisture % (AASHTO T 99)	18

2/26/2021

STATE OF ILLINOIS
Department of Transportation

Wang Engineering

SOIL TEST DATA

PROJECT
1100-15-01

ROUTE
IL 47 from US 14 to IL 120

SECTION
Judd Street/Irving Avenue (108+72 to 204+26)

COUNTY
McHenry County

Lab. No.	SGB-52 No.3
Station ft)	183+86.50
Offset (ft)	23.45 LT
Depth (ft)	4
AASHTO M 145 Classification and Group Index	A-7-6 (13)
Illinois Textural Classification (Illinois Method)	Silty Loam
Gradation--Passing 1" Sieve %	
--"-- 3/4" Sieve %	
--"-- 1/2" Sieve %	100.0
--"-- No.4 Sieve %	96.2
--"-- No.10 Sieve %	90.1
--"-- No.40 Sieve %	80.4
--"-- No.100 Sieve %	69.4
--"-- No.200 Sieve %	64.8
Sand % (AASHTO T 88)	25.4
Silt % (AASHTO T 88)	49.1
Clay % (AASHTO T 88)	15.7
Liquid limit % (AASHTO T 89)	44.0
Plasticity index % (AASHTO T 90)	23.0
IBR % (Illinois Method)	
Standard Dry Density % (AASHTO T 99)	
Optimum Moisture % (AASHTO T 99)	
Subgrade Support Rating	POOR
Insitu Moisture % (AASHTO T 99)	44

2/26/2021

STATE OF ILLINOIS
Department of Transportation

Wang Engineering

SOIL TEST DATA

ROUTE
IL 47 from US 14 to IL 120

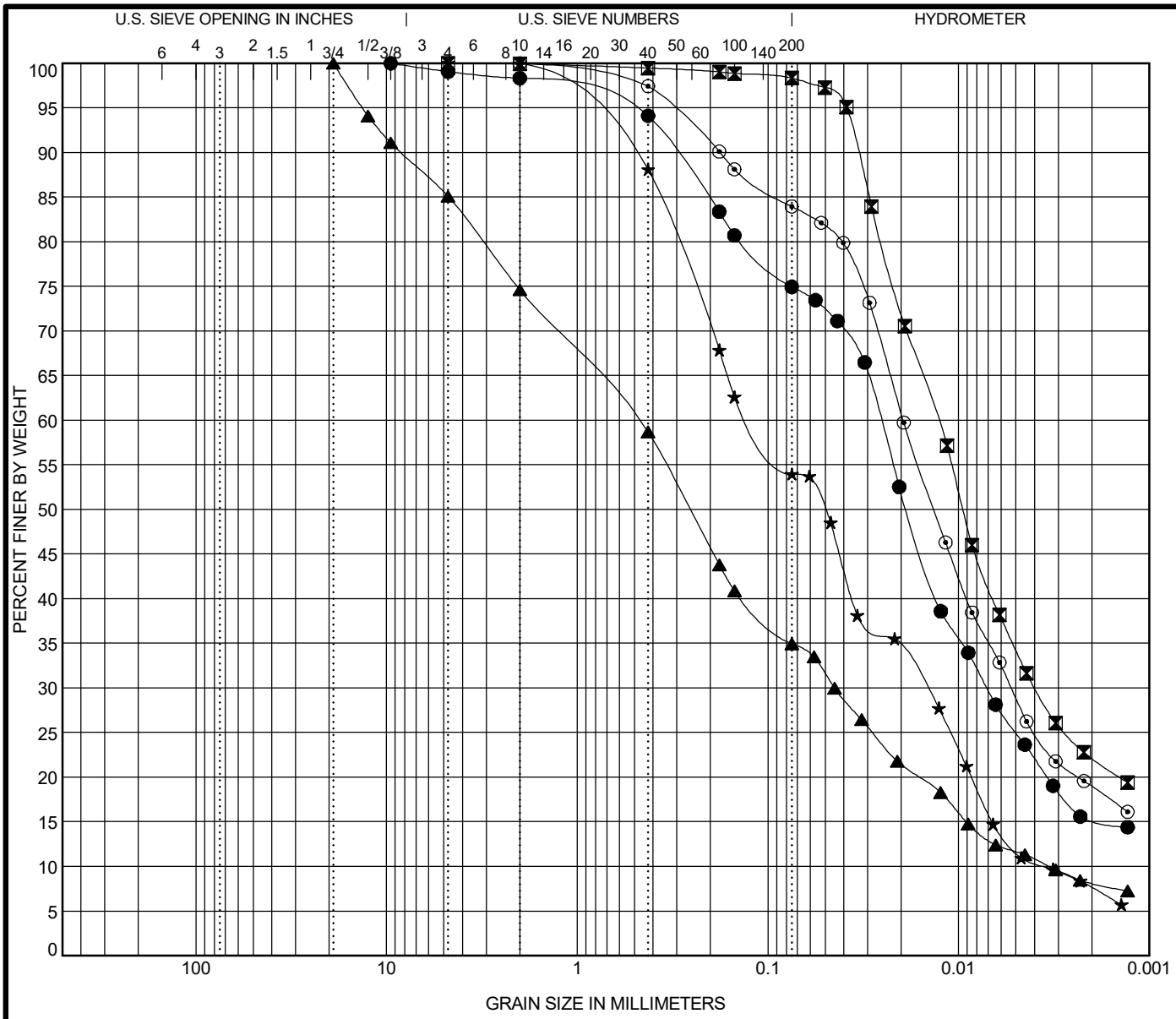
PROJECT
1100-15-01

SECTION
IL 120 (62+62 to 72+58)

COUNTY
McHenry County

Lab. No.	SGB-56 No.3
Station ft)	68+96.04
Offset (ft)	20.13 LT
Depth (ft)	4
AASHTO M 145 Classification and Group Index	A-6 (5)
Illinois Textural Classification (Illinois Method)	Loam
Gradation--Passing 1" Sieve %	
--"-- 3/4" Sieve %	
--"-- 1/2" Sieve %	100.0
--"-- No.4 Sieve %	96.8
--"-- No.10 Sieve %	91.4
--"-- No.40 Sieve %	82.8
--"-- No.100 Sieve %	67.5
--"-- No.200 Sieve %	61.5
Sand % (AASHTO T 88)	29.9
Silt % (AASHTO T 88)	44.2
Clay % (AASHTO T 88)	17.3
Liquid limit % (AASHTO T 89)	26.0
Plasticity index % (AASHTO T 90)	14.0
IBR % (Illinois Method)	
Standard Dry Density % (AASHTO T 99)	
Optimum Moisture % (AASHTO T 99)	
Subgrade Support Rating	POOR
Insitu Moisture % (AASHTO T 99)	19

APPENDIX C



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

	Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
●	PT1-03#3	6.0 ft	**Silty Loam**	**NP**	**NP**	**NP**		
⊠	PT1-04#6	13.5 ft	**Silty Clay Loam**	**65**	**29**	**36**		
▲	PT2-02#2	3.5 ft	**Gravelly Sandy Loam**	**24**	**13**	**11**	**1.23**	**142.59**
★	PT2-07#5	8.0 ft	**Loam**	**NP**	**NP**	**NP**	**0.51**	**34.50**
⊙	PT2-07#6	10.0 ft	**Silty Loam**	**60**	**24**	**36**		

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	PT1-03#3	6.0 ft	**9.5**	**0.026**	**0.007**		**1.7**	**23.5**	**59.6**	**15.3**
⊠	PT1-04#6	13.5 ft	**4.75**	**0.013**	**0.004**		**0.0**	**1.6**	**76.2**	**22.2**
▲	PT2-02#2	3.5 ft	**19**	**0.483**	**0.045**	**0.003**	**25.4**	**39.7**	**26.7**	**8.1**
★	PT2-07#5	8.0 ft	**4.75**	**0.122**	**0.015**	**0.004**	**0.0**	**46.0**	**46.3**	**7.6**
⊙	PT2-07#6	10.0 ft	**2**	**0.02**	**0.005**		**0.0**	**16.1**	**65.0**	**18.9**

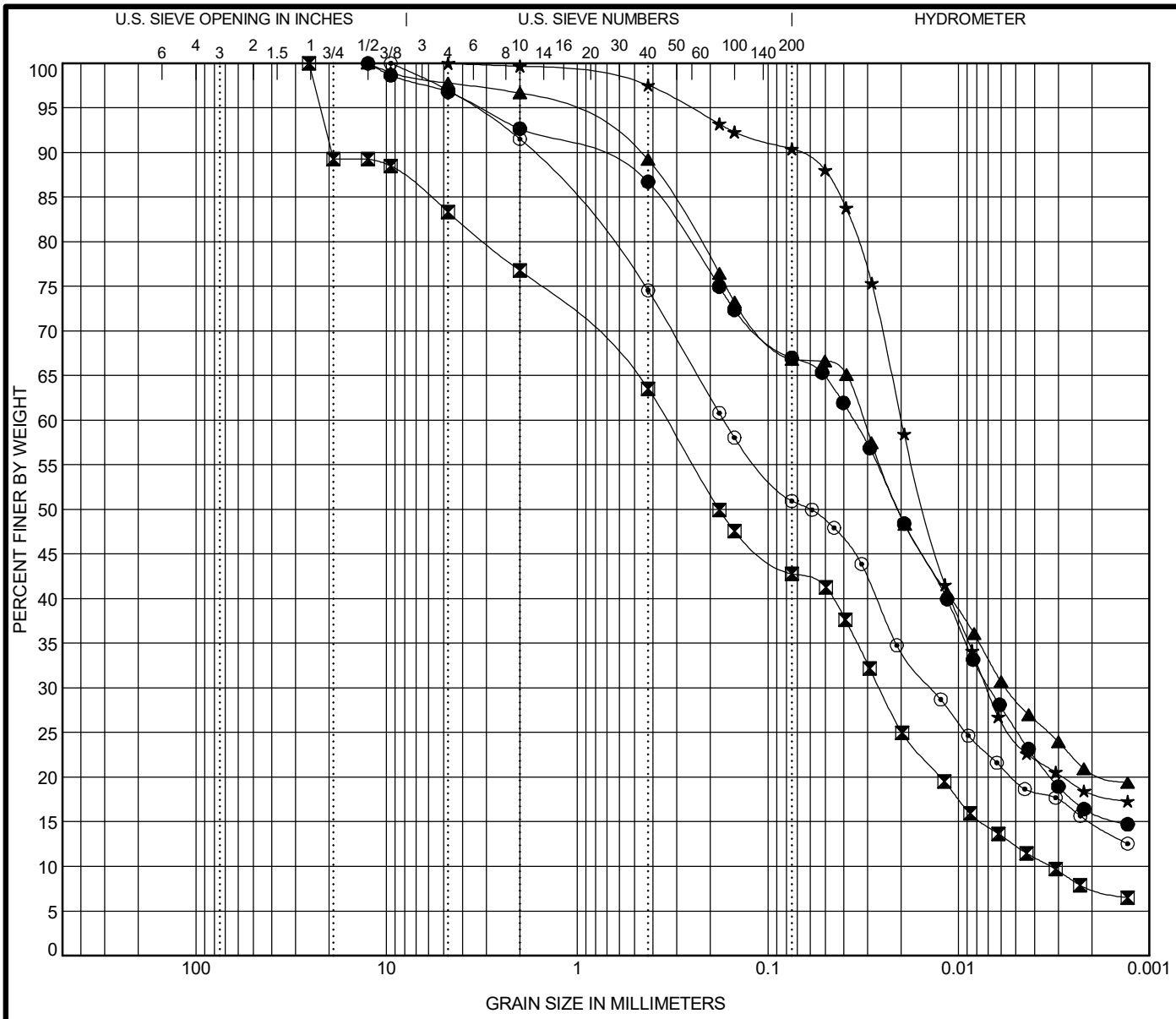
WEI SINCE 1982
Wang Engineering
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

GRAIN SIZE DISTRIBUTION

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

	Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
●	PT3-01#2	3.5 ft	**Silty Loam**	**50**	**24**	**26**		
⊠	PT3-05#2	3.5 ft	**Gravelly Loam**	**NP**	**NP**	**NP**	**0.60**	**102.76**
▲	PT3-10#2	3.5 ft	**Clay Loam**	**35**	**18**	**17**		
★	PT3-10#5	11.0 ft	**Silty Loam**	**43**	**24**	**19**		
⊙	PT3-13#1	1.0 ft	**Loam**	**35**	**16**	**19**		

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	PT3-01#2	3.5 ft	**12.5**	**0.036**	**0.007**		**7.3**	**25.8**	**50.8**	**16.1**
⊠	PT3-05#2	3.5 ft	**25.4**	**0.34**	**0.026**	**0.003**	**23.2**	**34.0**	**35.2**	**7.5**
▲	PT3-10#2	3.5 ft	**12.5**	**0.032**	**0.006**		**3.3**	**29.9**	**46.1**	**20.7**
★	PT3-10#5	11.0 ft	**4.75**	**0.02**	**0.007**		**0.3**	**9.3**	**72.1**	**18.2**
⊙	PT3-13#1	1.0 ft	**9.5**	**0.171**	**0.014**		**8.5**	**40.6**	**36.0**	**14.9**

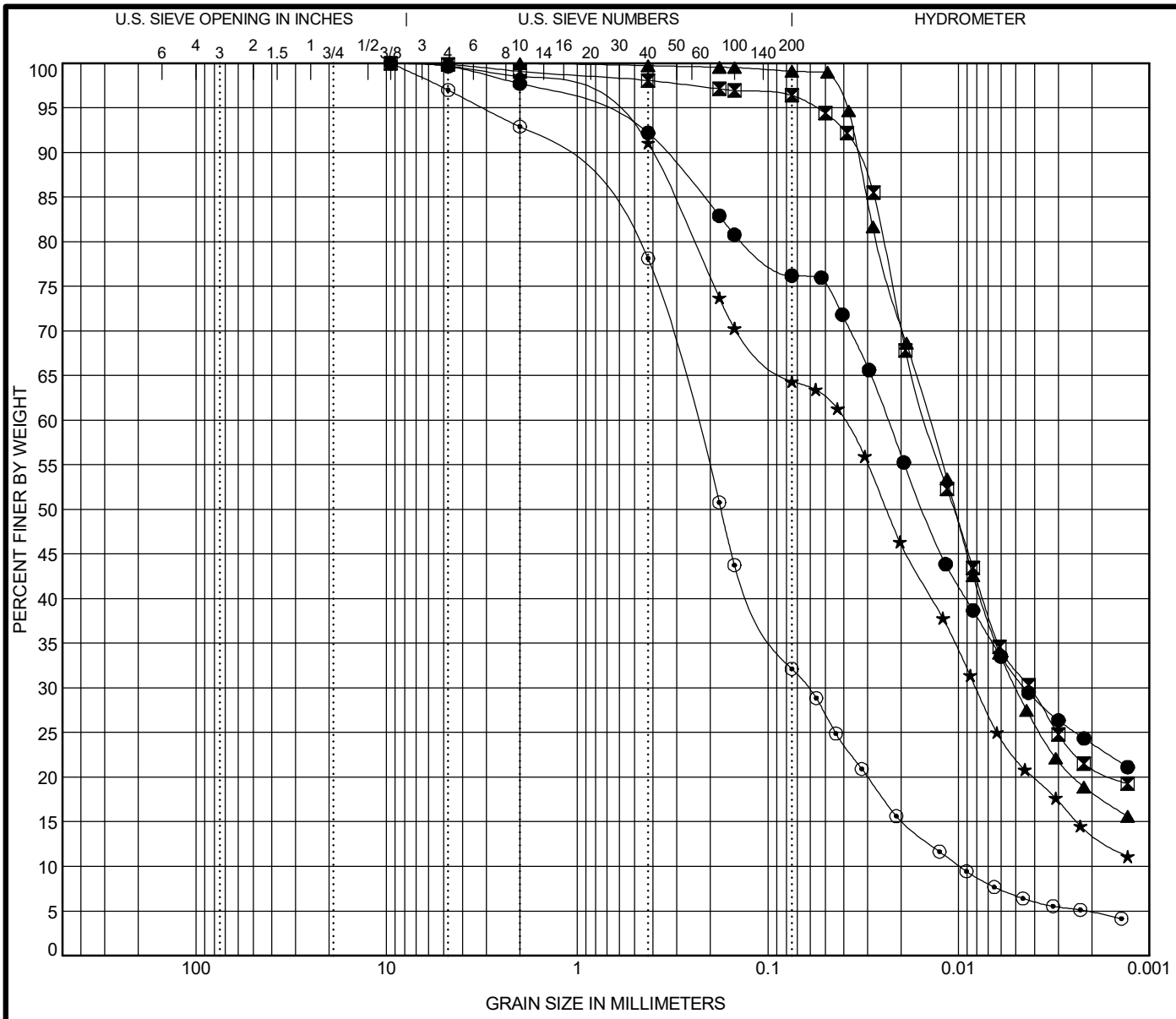
WEI SINCE 1982
Wang Engineering
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

GRAIN SIZE DISTRIBUTION

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

	Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
●	PT3-13#3	6.0 ft	**Silty Clay Loam**	**40**	**15**	**25**		
⊠	PT4-15#3	6.0 ft	**Silty Clay Loam**	**55**	**30**	**25**		
▲	PT5-03#6	10.0 ft	**Silt**	**33**	**18**	**15**		
★	RR-01#2	3.5 ft	**Silty Loam**	**NP**	**NP**	**NP**		
⊙	RR-01#3	6.0 ft	**Sandy Loam**	**NP**	**NP**	**NP**	**1.61**	**24.34**

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	PT3-13#3	6.0 ft	**9.5**	**0.024**	**0.004**		**2.3**	**21.5**	**52.4**	**23.8**
⊠	PT4-15#3	6.0 ft	**9.5**	**0.015**	**0.004**		**0.9**	**2.8**	**75.2**	**21.1**
▲	PT5-03#6	10.0 ft	**4.75**	**0.014**	**0.005**		**0.0**	**0.9**	**80.8**	**18.3**
★	RR-01#2	3.5 ft	**9.5**	**0.04**	**0.008**		**1.5**	**34.3**	**50.6**	**13.7**
⊙	RR-01#3	6.0 ft	**9.5**	**0.24**	**0.062**	**0.01**	**7.1**	**60.9**	**27.1**	**4.8**

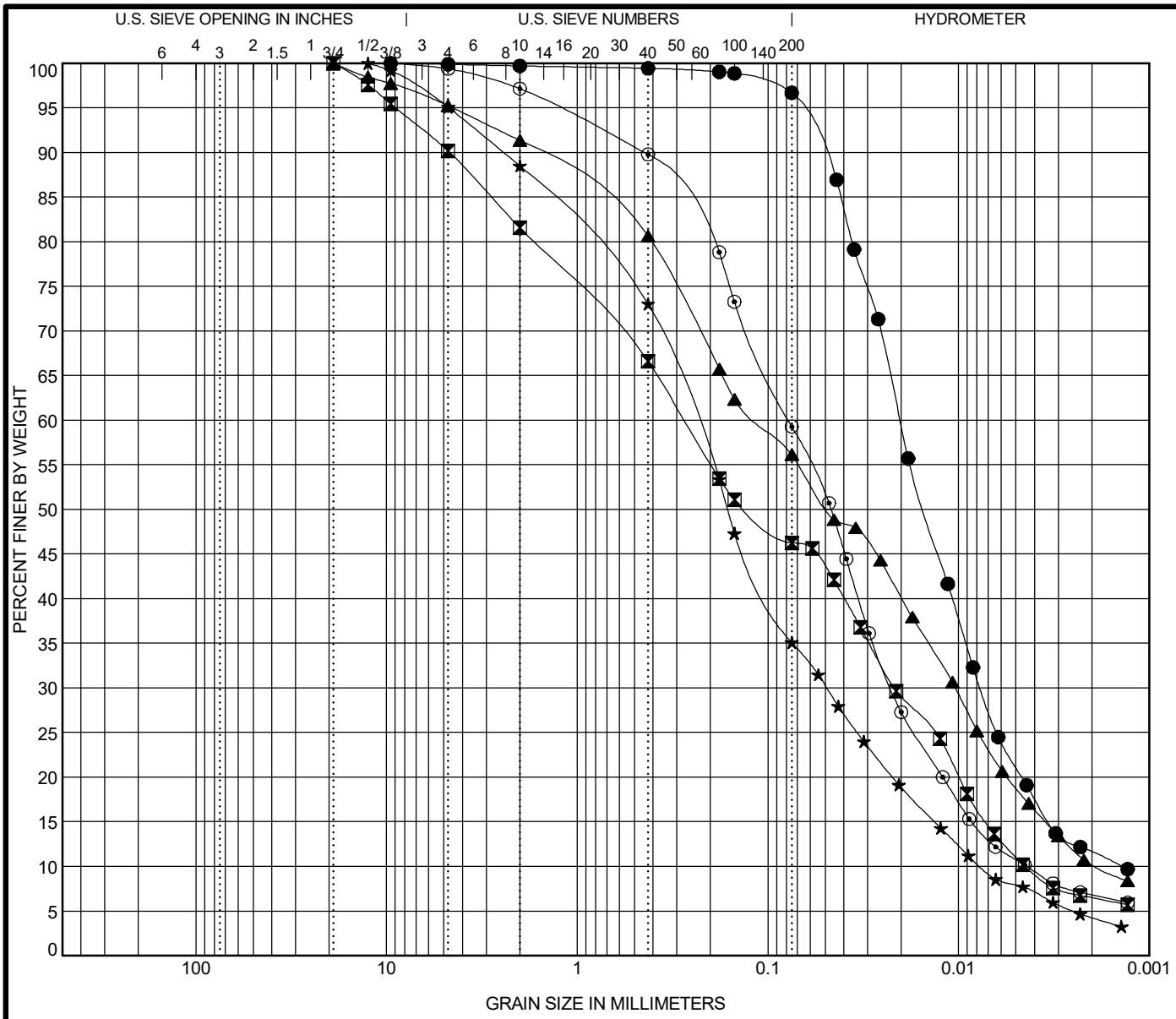
WEI
SINCE 1982
Wang Engineering
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

GRAIN SIZE DISTRIBUTION

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

	Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
●	RR-01#7	16.0 ft	**Silt**	**21**	**16**	**5**	**2.08**	**14.53**
⊠	RR-01#10	23.5 ft	**Gravelly Loam**	**17**	**12**	**5**	**0.38**	**61.59**
▲	RR-01-HA#2	2.0 ft	**Loam**	**NP**	**NP**	**NP**	**0.50**	**61.73**
★	RR-01-HA#4	6.0 ft	**Sandy Loam**	**NP**	**NP**	**NP**	**1.31**	**31.37**
⊙	RR-01-HA#7	12.0 ft	**Silty Loam**	**NP**	**NP**	**NP**	**1.49**	**17.72**

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	RR-01#7	16.0 ft	**9.5**	**0.02**	**0.008**	**0.001**	**0.3**	**3.3**	**84.9**	**11.6**
⊠	RR-01#10	23.5 ft	**19**	**0.276**	**0.022**	**0.004**	**18.4**	**35.4**	**39.7**	**6.5**
▲	RR-01-HA#2	2.0 ft	**19**	**0.115**	**0.01**	**0.002**	**8.6**	**35.4**	**45.6**	**10.3**
★	RR-01-HA#4	6.0 ft	**12.5**	**0.24**	**0.049**	**0.008**	**11.5**	**53.6**	**30.7**	**4.3**
⊙	RR-01-HA#7	12.0 ft	**9.5**	**0.078**	**0.023**	**0.004**	**2.8**	**38.1**	**52.2**	**6.8**

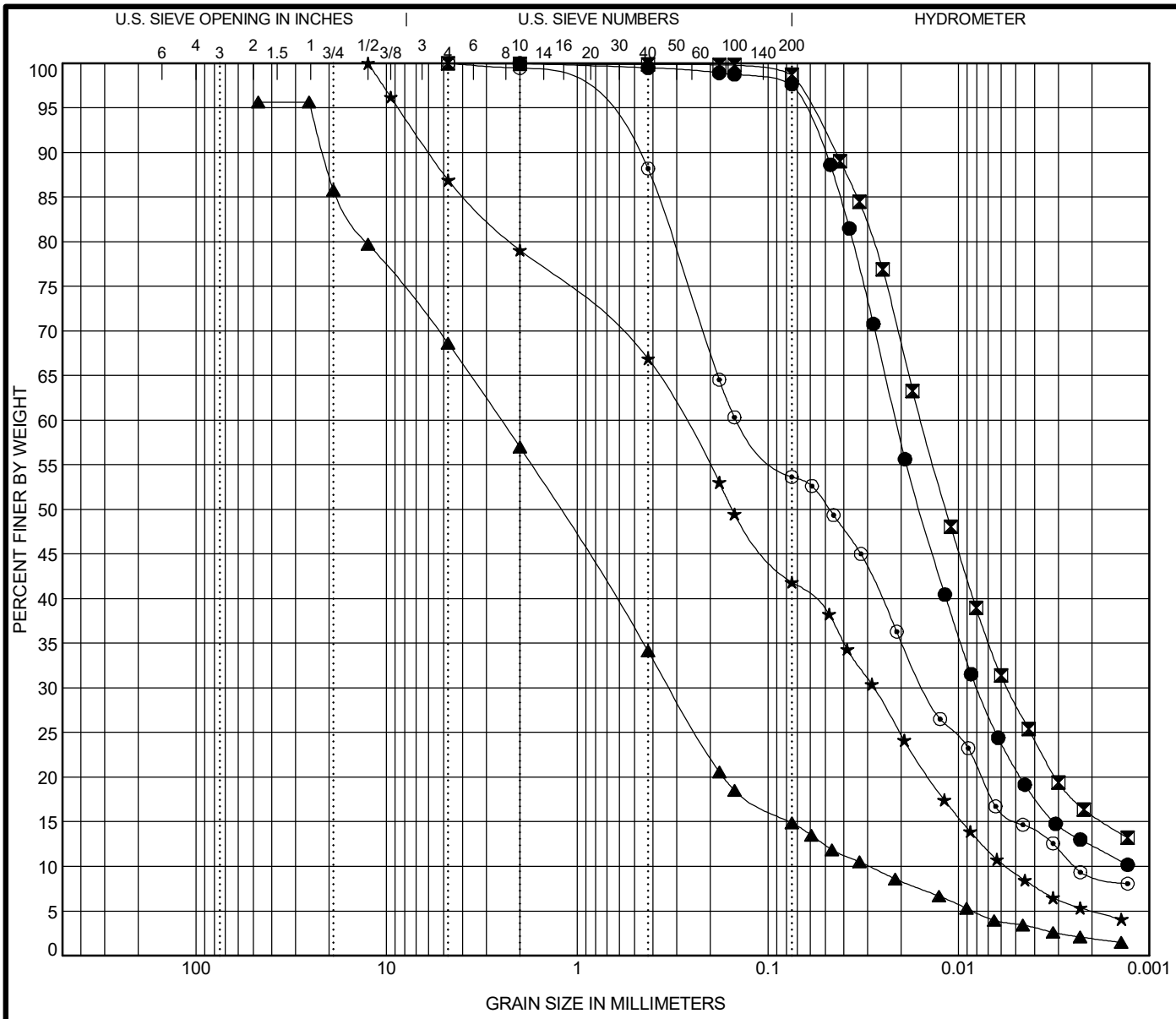
WEI SINCE 1982
Wang Engineering
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

GRAIN SIZE DISTRIBUTION

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

	Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
●	RR-02#3	6.0 ft	**Silt**	**24**	**17**	**7**		
⊠	RR-02#7	16.0 ft	**Silt**	**24**	**17**	**7**		
▲	RR-02#10	23.5 ft	**Gravelly Sandy Loam**	**NP**	**NP**	**NP**	**1.44**	**84.42**
★	RR-02-HA#5	8.0 ft	**Gravelly Loam**	**NP**	**NP**	**NP**	**0.49**	**49.19**
⊙	RR-02-HA#6	10.0 ft	**Loam**	**26**	**17**	**9**	**0.64**	**58.91**

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	RR-02#3	6.0 ft	**2**	**0.021**	**0.008**		**0.0**	**2.6**	**85.1**	**12.3**
⊠	RR-02#7	16.0 ft	**4.75**	**0.016**	**0.006**		**0.1**	**1.4**	**82.7**	**15.8**
▲	RR-02#10	23.5 ft	**47.09**	**2.502**	**0.327**	**0.03**	**43.0**	**42.2**	**12.9**	**1.9**
★	RR-02-HA#5	8.0 ft	**12.5**	**0.277**	**0.028**	**0.006**	**20.9**	**37.3**	**36.8**	**5.0**
⊙	RR-02-HA#6	10.0 ft	**4.75**	**0.145**	**0.015**	**0.002**	**0.5**	**45.9**	**44.6**	**9.0**

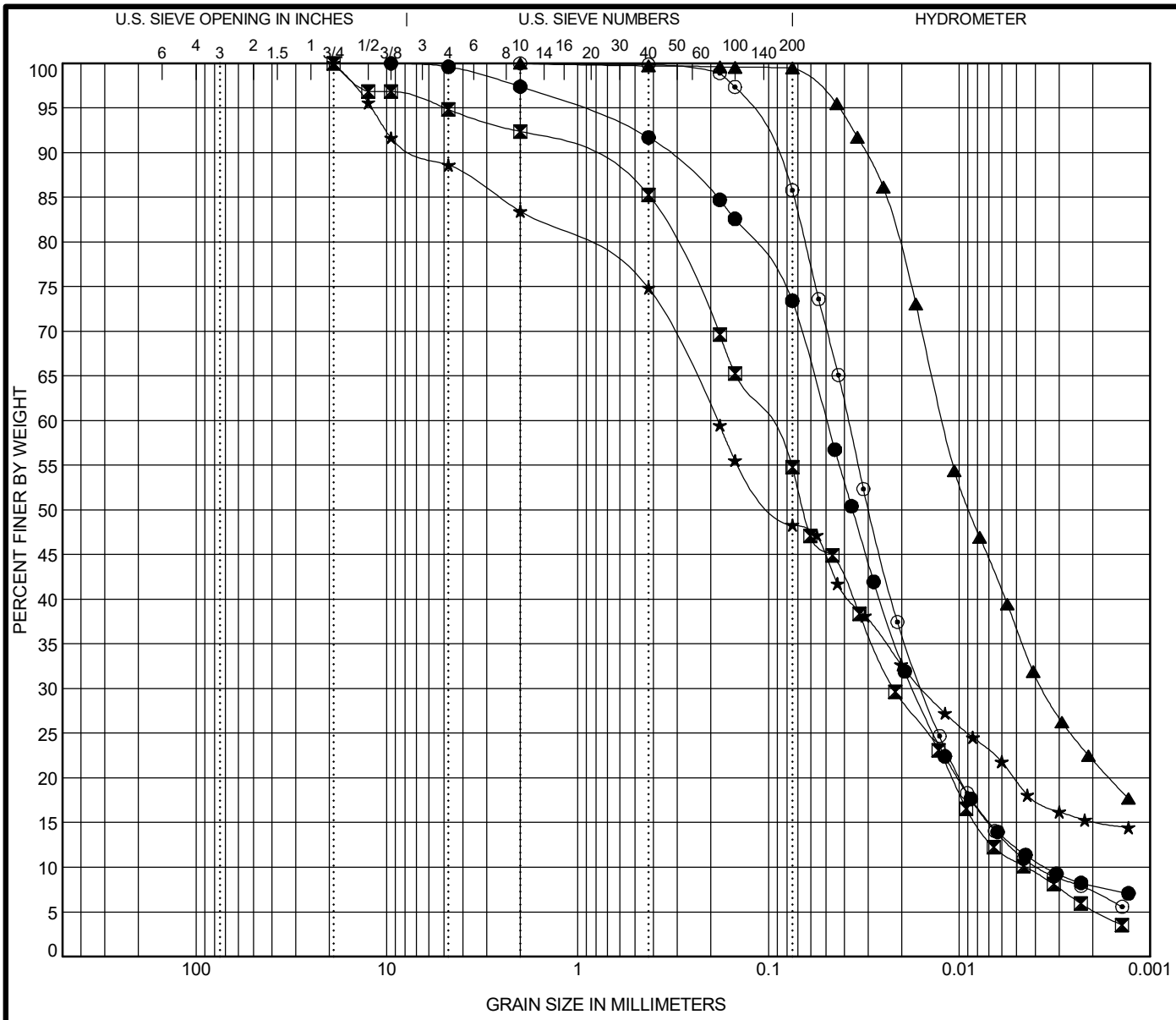
WEI SINCE 1982
Wang Engineering
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

GRAIN SIZE DISTRIBUTION

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

	Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
●	RR-02-HA#7	12.0 ft	**Silty Loam**	**NP**	**NP**	**NP**	**1.75**	**14.05**
⊠	RWB-02#2	2.0 ft	**Silty Loam**	**37**	**20**	**17**	**1.03**	**23.54**
▲	RWB-04-ST#1	16.0 ft	**Silty Clay Loam**	**66**	**30**	**36**		
★	RWB-08#5	11.0 ft	**Gravelly Loam**	**33**	**13**	**20**		
⊙	RWB-08#7	16.0 ft	**Silty Loam**	**24**	**18**	**6**	**1.67**	**9.86**

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	RR-02-HA#7	12.0 ft	**9.5**	**0.05**	**0.018**	**0.004**	**2.6**	**24.4**	**65.0**	**8.0**
⊠	RWB-02#2	2.0 ft	**19**	**0.106**	**0.022**	**0.004**	**7.6**	**38.1**	**49.1**	**5.2**
▲	RWB-04-ST#1	16.0 ft	**2**	**0.012**	**0.004**		**0.0**	**0.6**	**77.4**	**22.0**
★	RWB-08#5	11.0 ft	**19**	**0.185**	**0.016**		**16.6**	**35.2**	**33.2**	**15.1**
⊙	RWB-08#7	16.0 ft	**2**	**0.038**	**0.016**	**0.004**	**0.0**	**14.7**	**78.0**	**7.2**

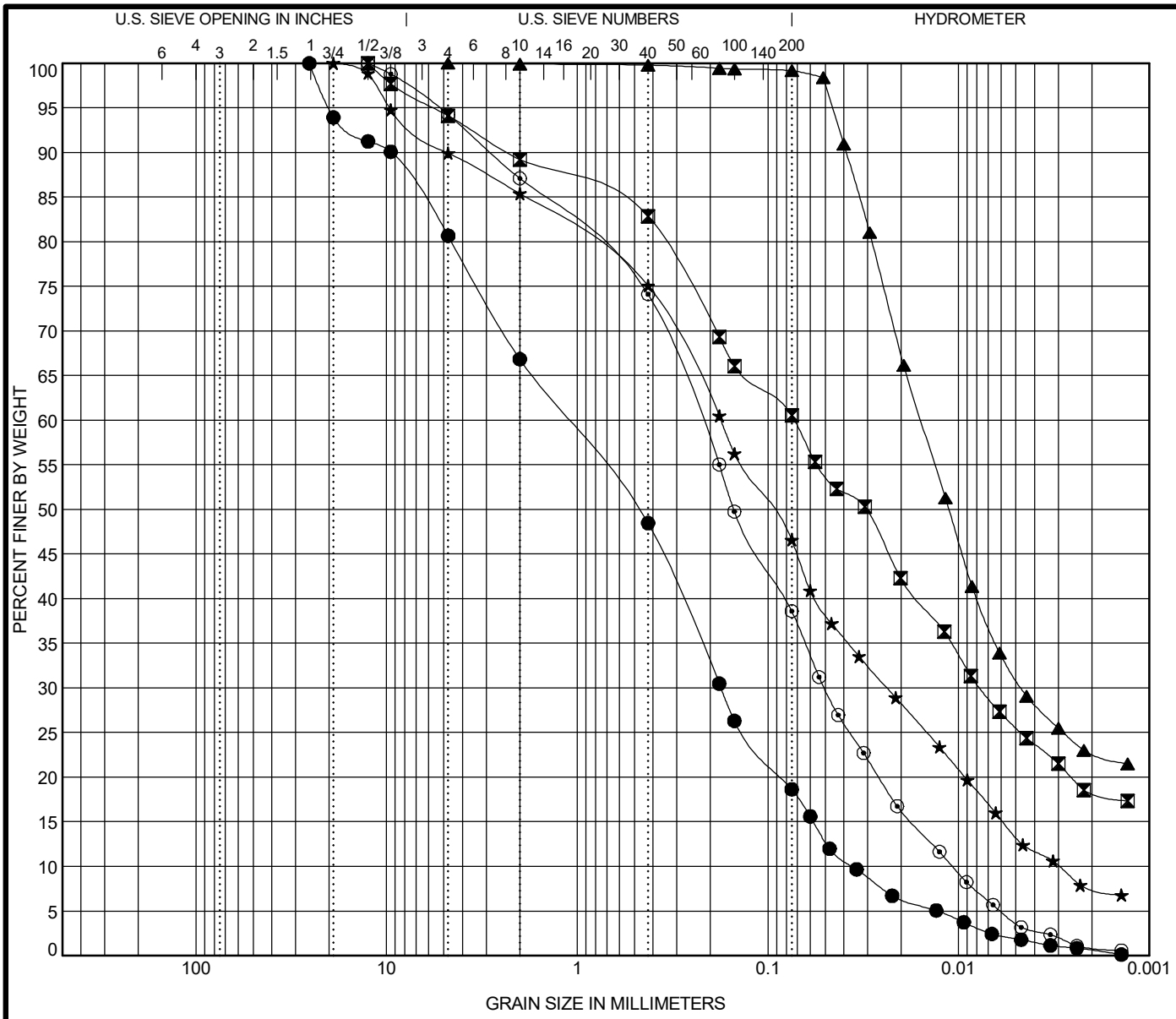
WEI SINCE 1982
Wang Engineering
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

GRAIN SIZE DISTRIBUTION

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

	Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
●	RWB-09#8	18.5 ft	**Gravelly Sandy Loam**	**NP**	**NP**	**NP**	**0.77**	**31.24**
⊠	RWB-10#3	6.0 ft	**Clay Loam**	**43**	**14**	**29**		
▲	RWB-15#6	13.5 ft	**Silty Clay Loam**	**45**	**17**	**28**		
★	RWB-15#8	18.5 ft	**Loam**	**15**	**12**	**3**	**1.08**	**59.35**
⊙	RWB-16#6	13.5 ft	**Sandy Loam**	**NP**	**NP**	**NP**	**1.05**	**20.88**

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	RWB-09#8	18.5 ft	**25.4**	**1.124**	**0.176**	**0.036**	**33.2**	**48.4**	**17.9**	**0.6**
⊠	RWB-10#3	6.0 ft	**12.5**	**0.073**	**0.008**		**10.8**	**28.9**	**42.0**	**18.3**
▲	RWB-15#6	13.5 ft	**4.75**	**0.016**	**0.005**		**0.1**	**0.8**	**76.4**	**22.7**
★	RWB-15#8	18.5 ft	**19**	**0.176**	**0.024**	**0.003**	**14.6**	**39.2**	**38.7**	**7.6**
⊙	RWB-16#6	13.5 ft	**12.5**	**0.225**	**0.05**	**0.011**	**12.9**	**48.8**	**37.4**	**0.9**

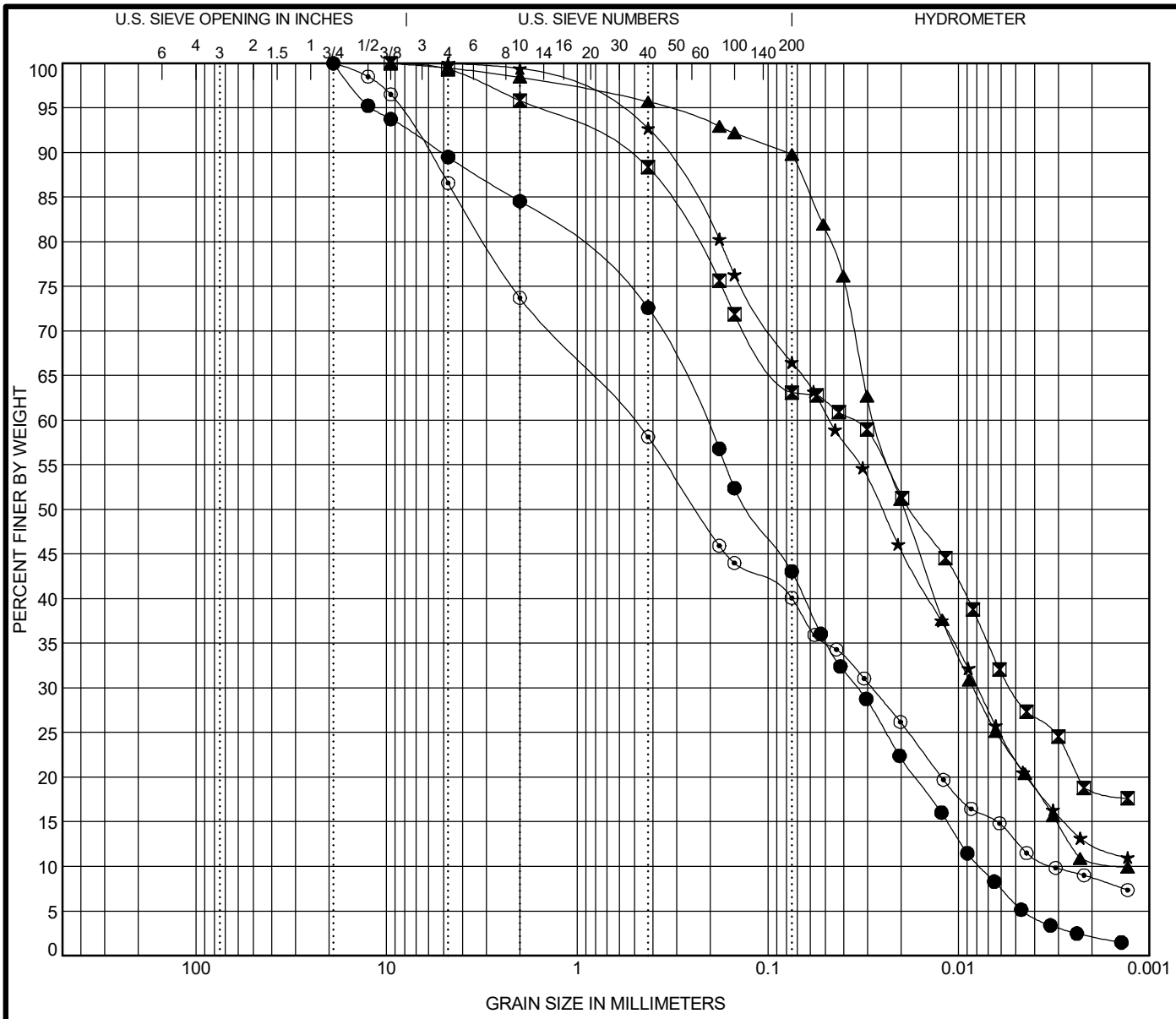
WEI SINCE 1982
Wang Engineering
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

GRAIN SIZE DISTRIBUTION

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

	Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
●	RWB-17#9	21.0 ft	**Gravelly Loam**	**NP**	**NP**	**NP**	**0.69**	**27.66**
⊠	RWB-19#5	11.0 ft	**Loam**	**17**	**11**	**6**		
▲	RWB-21#2	3.5 ft	**Silt**	**18**	**14**	**4**	**1.85**	**19.97**
★	RWB-22#3	6.0 ft	**Silty Loam**	**18**	**11**	**7**		
⊙	SGB-01#2	2.0 ft	**Gravelly Loam**	**32**	**15**	**17**	**0.49**	**159.17**

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	RWB-17#9	21.0 ft	**19**	**0.214**	**0.034**	**0.008**	**15.4**	**41.8**	**40.7**	**2.1**
⊠	RWB-19#5	11.0 ft	**9.5**	**0.036**	**0.005**		**4.2**	**32.7**	**44.5**	**18.6**
▲	RWB-21#2	3.5 ft	**9.5**	**0.028**	**0.008**	**0.001**	**1.6**	**8.9**	**78.9**	**10.6**
★	RWB-22#3	6.0 ft	**4.75**	**0.047**	**0.008**		**0.6**	**33.1**	**53.7**	**12.6**
⊙	SGB-01#2	2.0 ft	**19**	**0.512**	**0.028**	**0.003**	**26.3**	**33.8**	**31.2**	**8.7**

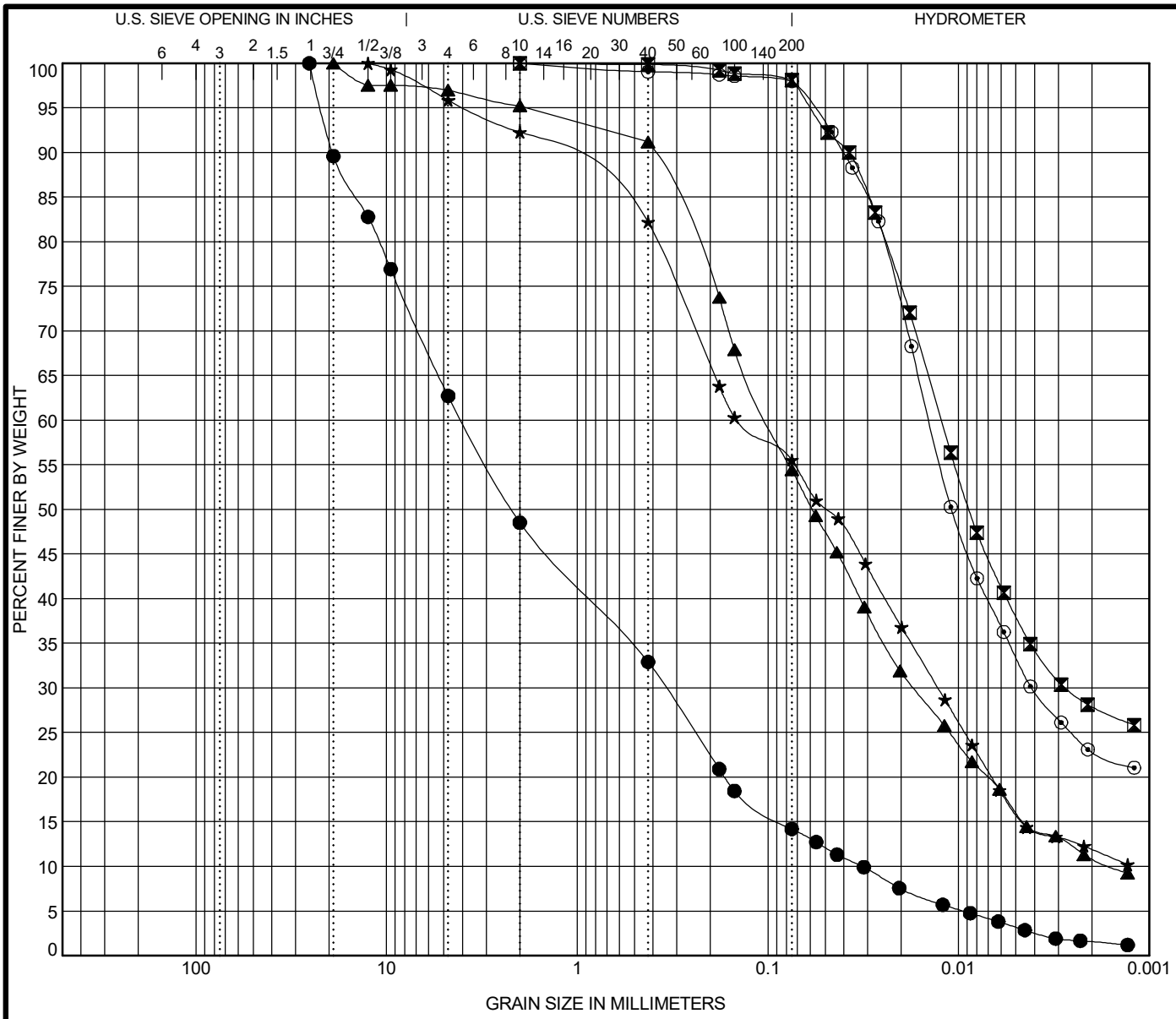
WEI SINCE 1982
Wang Engineering
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

GRAIN SIZE DISTRIBUTION

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

	Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
●	SGB-03#2	2.0 ft	**Gravelly Sandy Loam**	**NP**	**NP**	**NP**	**0.92**	**125.45**
⊠	SGB-05#4	8.0 ft	**Silty Clay Loam**	**55**	**19**	**36**		
▲	SGB-09#3	4.0 ft	**Loam**	**32**	**17**	**15**	**1.87**	**63.41**
★	SGB-11#3	4.0 ft	**Loam**	**30**	**18**	**12**		
⊙	SGB-12#4	6.0 ft	**Silty Clay Loam**	**61**	**30**	**31**		

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	SGB-03#2	2.0 ft	**25.4**	**4.025**	**0.345**	**0.032**	**51.5**	**34.4**	**12.6**	**1.5**
⊠	SGB-05#4	8.0 ft	**2**	**0.012**	**0.003**		**0.0**	**2.1**	**70.0**	**27.9**
▲	SGB-09#3	4.0 ft	**19**	**0.1**	**0.017**	**0.002**	**4.8**	**41.1**	**43.2**	**10.9**
★	SGB-11#3	4.0 ft	**12.5**	**0.143**	**0.013**		**7.7**	**36.9**	**43.4**	**11.9**
⊙	SGB-12#4	6.0 ft	**2**	**0.014**	**0.004**		**0.0**	**2.2**	**74.9**	**22.9**

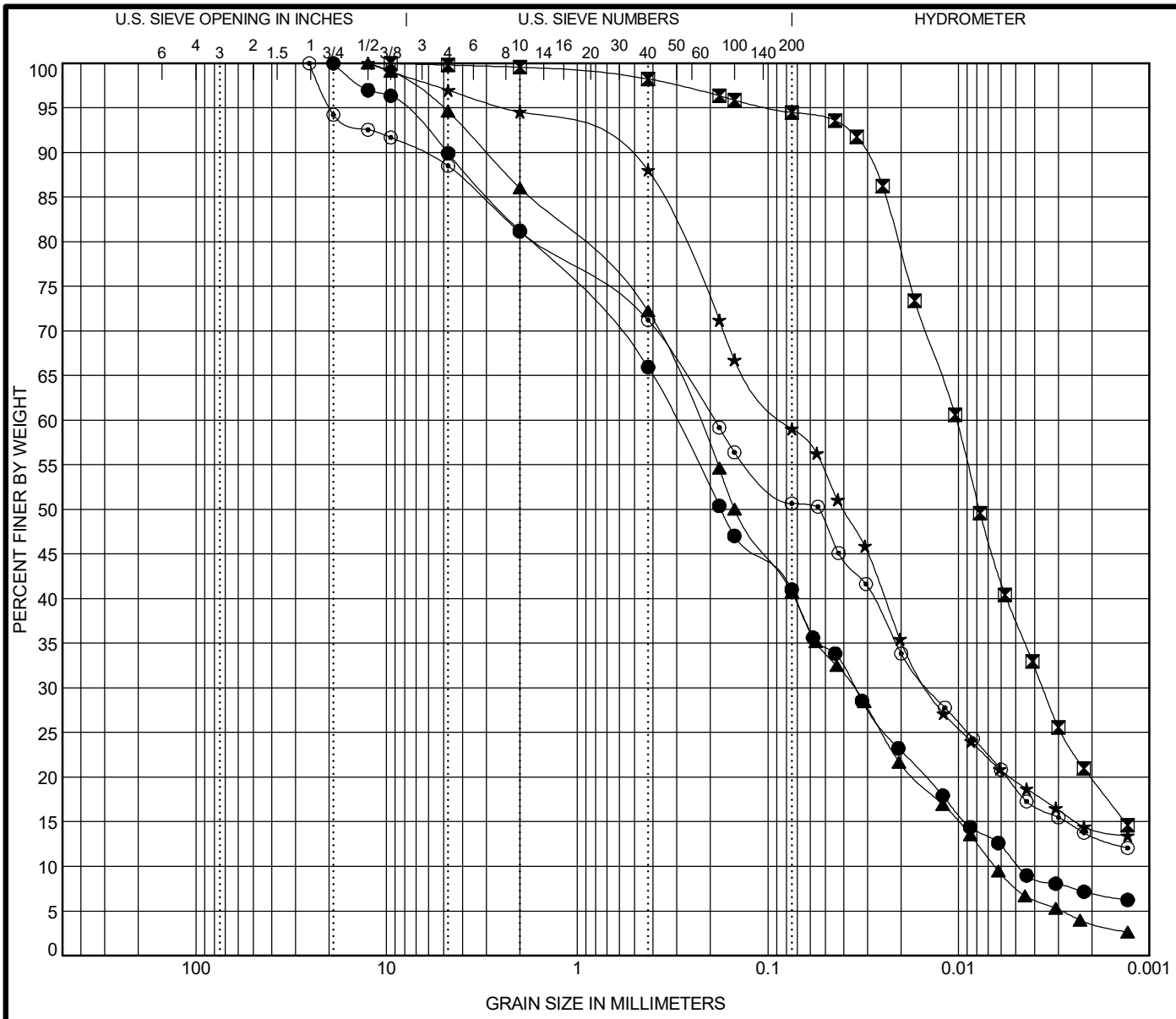
WEI SINCE 1982
Wang Engineering
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

GRAIN SIZE DISTRIBUTION

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification			IDH Classification	LL	PL	PI	Cc	Cu
●	SGB-18#3	4.0 ft	**Gravelly Loam**	**23**	**16**	**7**	**0.83**	**63.14**
⊠	SGB-19-ST#2	11.0 ft	**Silty Loam**	**69**	**40**	**29**		
▲	SGB-22#3	4.0 ft	**Sandy Loam**	**NP**	**NP**	**NP**	**0.84**	**36.20**
★	SGB-25#3	4.0 ft	**Loam**	**33**	**12**	**21**		
⊙	SGB-31#3	4.0 ft	**Gravelly Loam**	**39**	**16**	**23**		

Specimen Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	SGB-18#3	4.0 ft	**19**	**0.306**	**0.035**	**0.005**	**18.8**	**40.5**	**33.8**	**7.0**
⊠	SGB-19-ST#2	11.0 ft	**9.5**	**0.01**	**0.004**		**0.4**	**5.1**	**74.7**	**19.8**
▲	SGB-22#3	4.0 ft	**12.5**	**0.234**	**0.036**	**0.006**	**14.0**	**45.5**	**36.9**	**3.6**
★	SGB-25#3	4.0 ft	**12.5**	**0.082**	**0.014**		**5.5**	**35.6**	**44.7**	**14.2**
⊙	SGB-31#3	4.0 ft	**25.4**	**0.191**	**0.014**		**18.9**	**30.5**	**37.2**	**13.4**

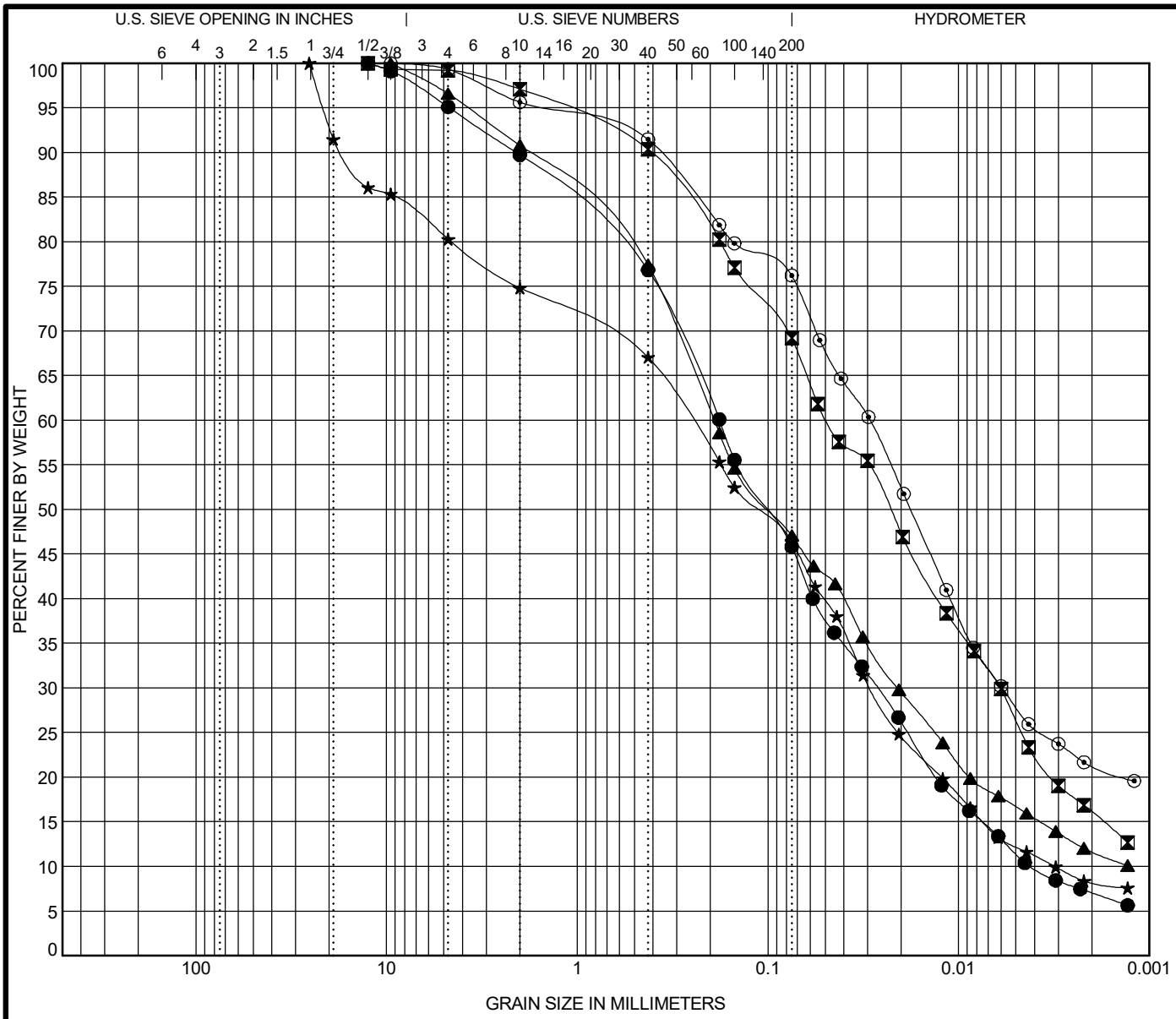
WEI SINCE 1982
Wang Engineering
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

GRAIN SIZE DISTRIBUTION

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

	Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
●	SGB-34#3	4.0 ft	**Loam**	**15**	**11**	**4**	**0.96**	**43.00**
⊠	SGB-38#3	5.0 ft	**Silty Loam**	**20**	**12**	**8**		
▲	SGB-42#2	2.0 ft	**Loam**	**27**	**14**	**13**		
★	SGB-45#3	4.0 ft	**Gravelly Silty Loam**	**29**	**17**	**12**	**1.05**	**80.62**
⊙	SGB-47#2	3.0 ft	**Silty Clay Loam**	**40**	**14**	**26**		

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	SGB-34#3	4.0 ft	**12.5**	**0.179**	**0.027**	**0.004**	**10.3**	**44.2**	**38.5**	**7.0**
⊠	SGB-38#3	5.0 ft	**12.5**	**0.049**	**0.006**		**2.9**	**28.2**	**52.8**	**16.1**
▲	SGB-42#2	2.0 ft	**9.5**	**0.192**	**0.021**		**9.2**	**43.9**	**35.3**	**11.7**
★	SGB-45#3	4.0 ft	**25.4**	**0.253**	**0.029**	**0.003**	**25.2**	**28.6**	**38.0**	**8.2**
⊙	SGB-47#2	3.0 ft	**9.5**	**0.029**	**0.006**		**4.4**	**19.7**	**54.6**	**21.3**

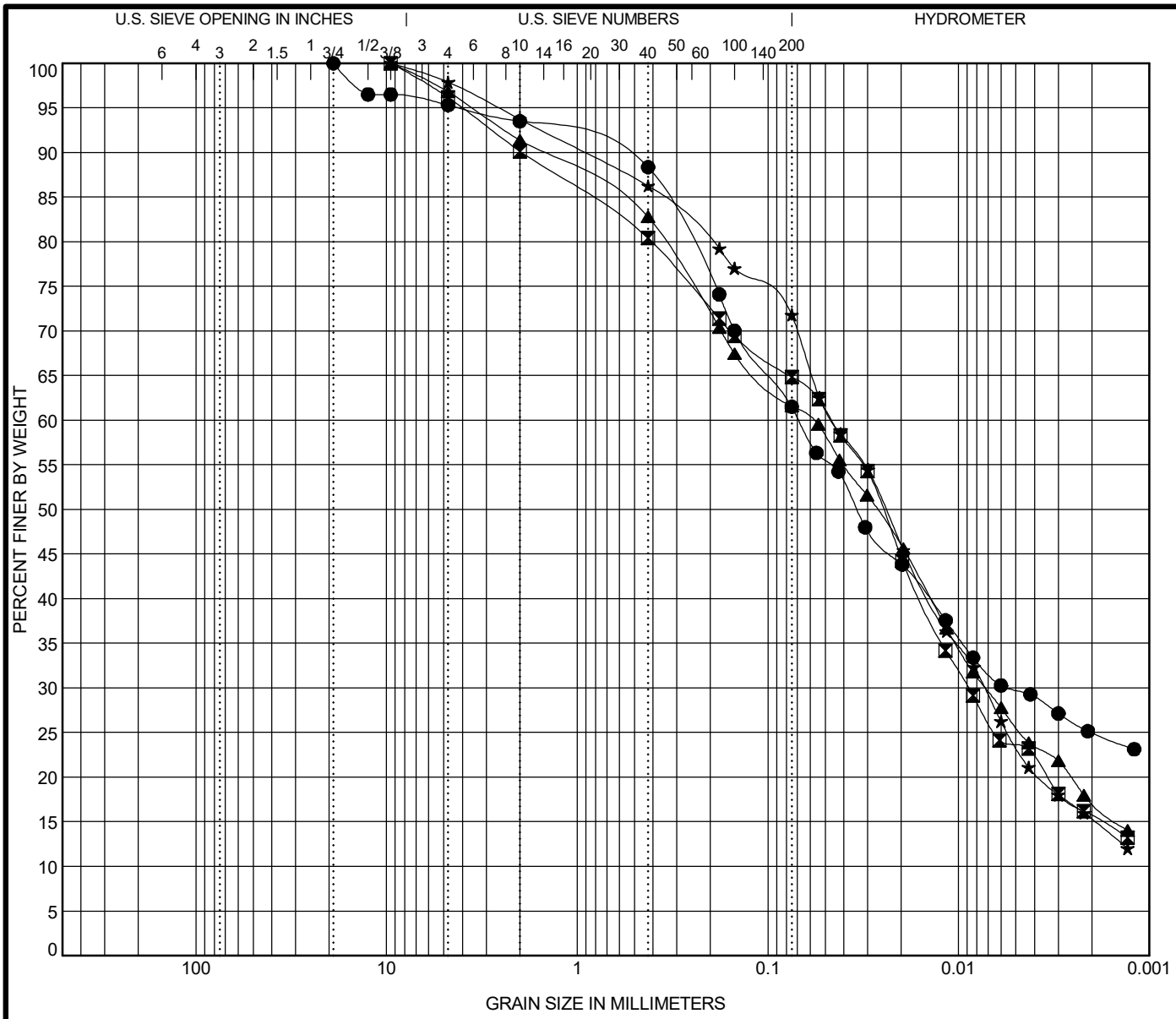
WEI
SINCE 1982
Wang Engineering
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

GRAIN SIZE DISTRIBUTION

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

	Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
●	SGB-50#2	2.0 ft	**Clay Loam**	**38**	**14**	**24**		
⊠	SGB-52#3	4.0 ft	**Silty Loam**	**44**	**22**	**22**		
▲	SGB-56#3	4.0 ft	**Loam**	**26**	**12**	**14**		
★	TSB-06#6	13.5 ft	**Silty Loam**	**18**	**11**	**7**		

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	SGB-50#2	2.0 ft	**19**	**0.069**	**0.005**		**6.5**	**32.2**	**36.3**	**25.0**
⊠	SGB-52#3	4.0 ft	**9.5**	**0.046**	**0.009**		**9.9**	**25.4**	**49.1**	**15.7**
▲	SGB-56#3	4.0 ft	**9.5**	**0.059**	**0.007**		**8.6**	**29.9**	**44.2**	**17.3**
★	TSB-06#6	13.5 ft	**9.5**	**0.046**	**0.007**		**6.3**	**22.3**	**56.2**	**15.3**

WEI SINCE 1982

Wang Engineering
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

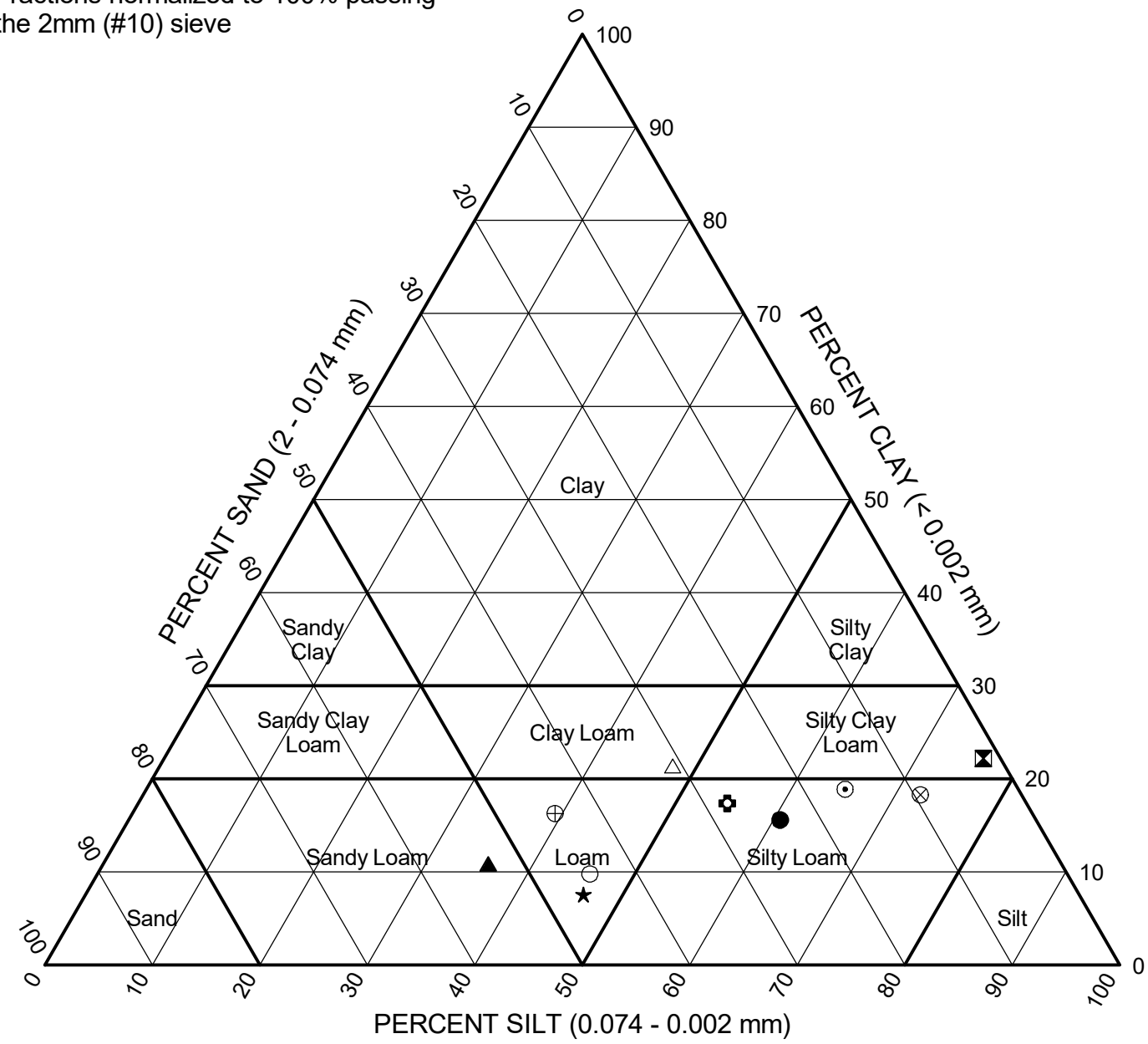
GRAIN SIZE DISTRIBUTION

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01

Fractions normalized to 100% passing the 2mm (#10) sieve



	Sample	Depth (ft)	Sand (%)	Silt (%)	Clay (%)	Classification		
						IL DOT	AASHTO	ASTM
●	PT1-03#3	6.0	23.9	60.6	15.6	Silty Loam	A-4 (0)	ML
⧗	PT1-04#6	13.5	1.6	76.2	22.2	Silty Clay Loam	A-7-6 (42)	CH
▲	PT2-02#2	3.5	53.2	35.8	10.9	Gravelly Sandy Loam	A-2-6 (0)	SC
★	PT2-07#5	8.0	46.0	46.3	7.6	Loam	A-4 (0)	ML
⊙	PT2-07#6	10.0	16.1	65.0	18.9	Silty Loam	A-7-6 (33)	CH
✿	PT3-01#2	3.5	27.8	54.8	17.4	Silty Loam	A-7-6 (16)	CH
○	PT3-05#2	3.5	44.3	45.8	9.8	Gravelly Loam	A-4 (0)	SM
△	PT3-10#2	3.5	30.9	47.7	21.4	Clay Loam	A-6 (9)	CL
⊗	PT3-10#5	11.0	9.3	72.3	18.3	Silty Loam	A-7-6 (19)	CL
⊕	PT3-13#1	1.0	44.4	39.3	16.3	Loam	A-6 (6)	CL

WEI SINCE 1982

Wang Engineering, Inc.
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

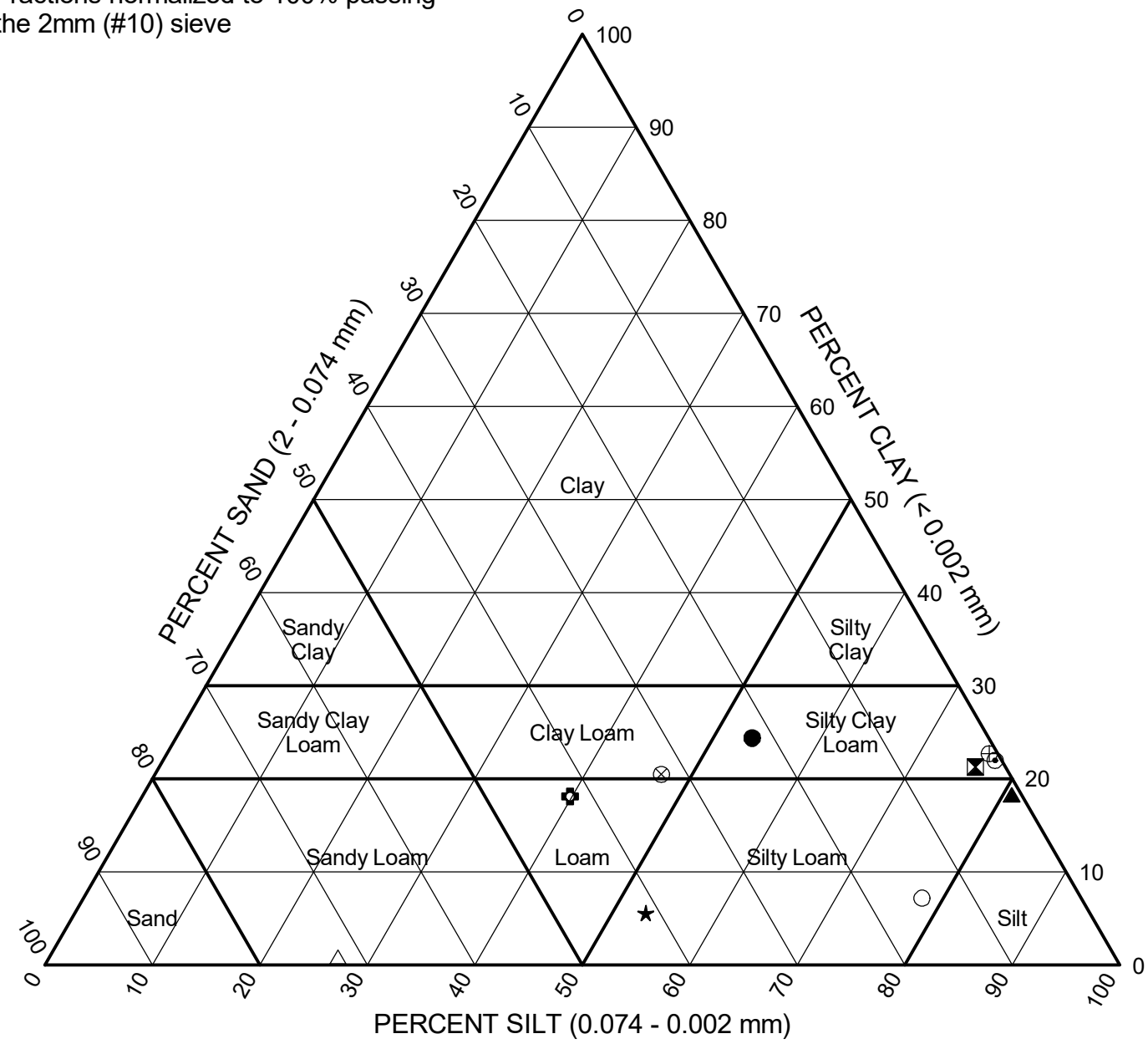
IDH Textural Classification Chart

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01

Fractions normalized to 100% passing the 2mm (#10) sieve



	Sample	Depth (ft)	Sand (%)	Silt (%)	Clay (%)	Classification		
						IL DOT	AASHTO	ASTM
●	PT3-13#3	6.0	22.0	53.6	24.4	Silty Clay Loam	A-6 (17)	CL
⊠	PT4-15#3	6.0	2.8	75.9	21.3	Silty Clay Loam	A-7-5 (29)	MH
▲	PT5-03#6	10.0	0.9	80.8	18.3	Silt	A-6 (15)	CL
★	RWB-02#2	2.0	41.2	53.1	5.6	Silty Loam	A-6 (7)	CL
⊙	RWB-04-ST#1	16.0	0.6	77.4	22.0	Silty Clay Loam	A-7-5 (43)	CH
✿	RWB-08#5	11.0	42.2	39.8	18.1	Gravelly Loam	A-6 (5)	SC
○	RWB-08#7	16.0	14.7	78.0	7.2	Silty Loam	A-4 (3)	CL-ML
△	RWB-09#8	18.5	72.5	26.8	0.9	Gravelly Sandy Loam	A-1-b (0)	SM
⊗	RWB-10#3	6.0	32.4	47.1	20.5	Clay Loam	A-7-6 (14)	CL
⊕	RWB-15#6	13.5	0.8	76.5	22.7	Silty Clay Loam	A-7-6 (30)	CL

WEI SINCE 1982

Wang Engineering, Inc.
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

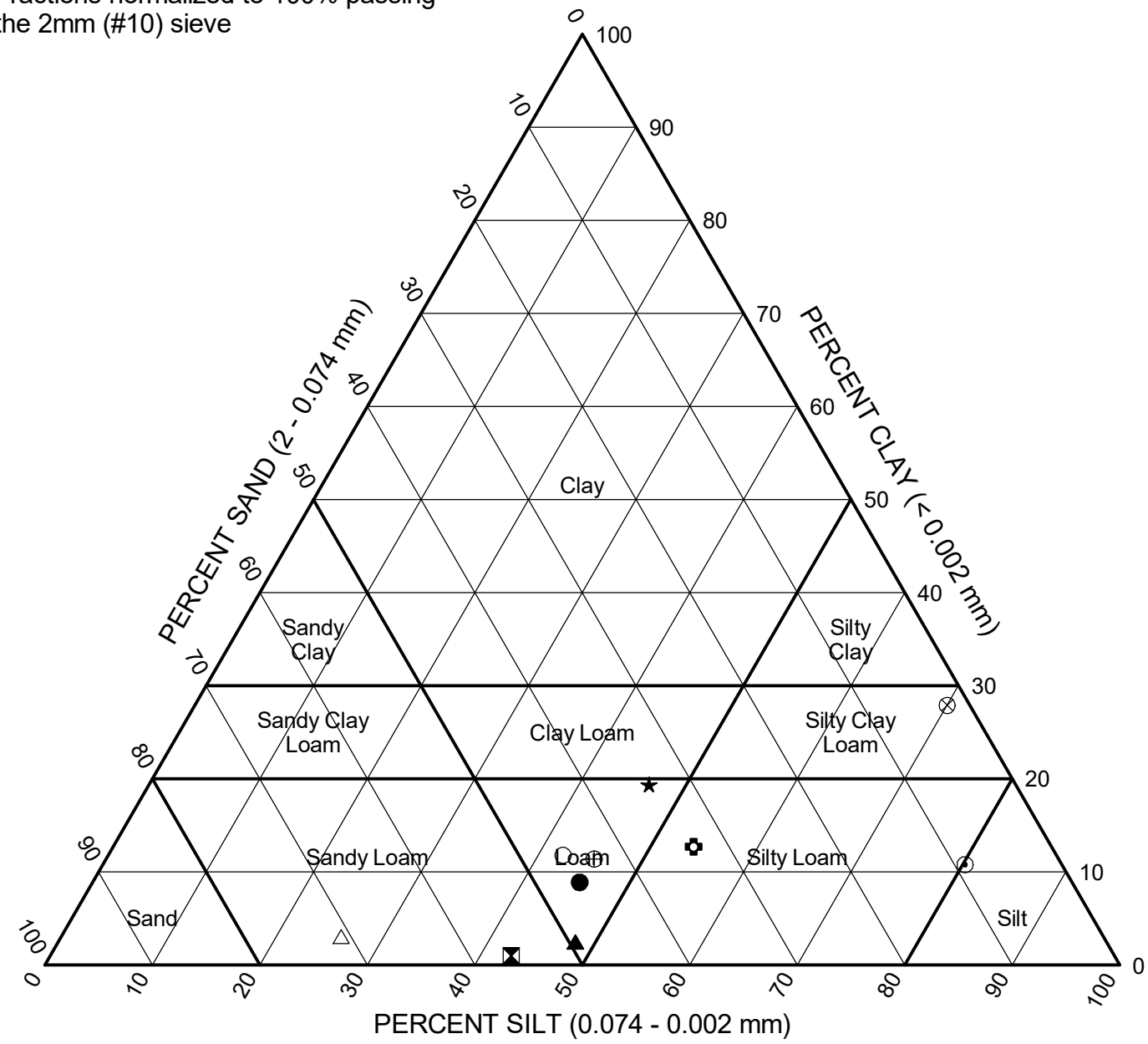
IDH Textural Classification Chart

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01

Fractions normalized to 100% passing the 2mm (#10) sieve



	Sample	Depth (ft)	Sand (%)	Silt (%)	Clay (%)	Classification		
						IL DOT	AASHTO	ASTM
●	RWB-15#8	18.5	45.9	45.3	8.9	Loam	A-4 (0)	SM
⧗	RWB-16#6	13.5	56.0	42.9	1.0	Sandy Loam	A-4 (0)	SM
▲	RWB-17#9	21.0	49.4	48.1	2.5	Gravelly Loam	A-4 (0)	SM
★	RWB-19#5	11.0	34.1	46.5	19.4	Loam	A-4 (0)	CL-ML
⊙	RWB-21#2	3.5	9.0	80.2	10.8	Silt	A-4 (0)	CL-ML
✿	RWB-22#3	6.0	33.3	54.0	12.7	Silty Loam	A-4 (1)	CL-ML
○	SGB-01#2	2.0	45.9	42.3	11.8	Gravelly Loam	A-6 (3)	SC
△	SGB-03#2	2.0	70.9	26.0	3.1	Gravelly Sandy Loam	A-1-b (0)	SM
⊗	SGB-05#4	8.0	2.1	70.0	27.9	Silty Clay Loam	A-7-6 (39)	CH
⊕	SGB-09#3	4.0	43.2	45.4	11.4	Loam	A-6 (5)	CL

WEI SINCE 1982

Wang Engineering, Inc.
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

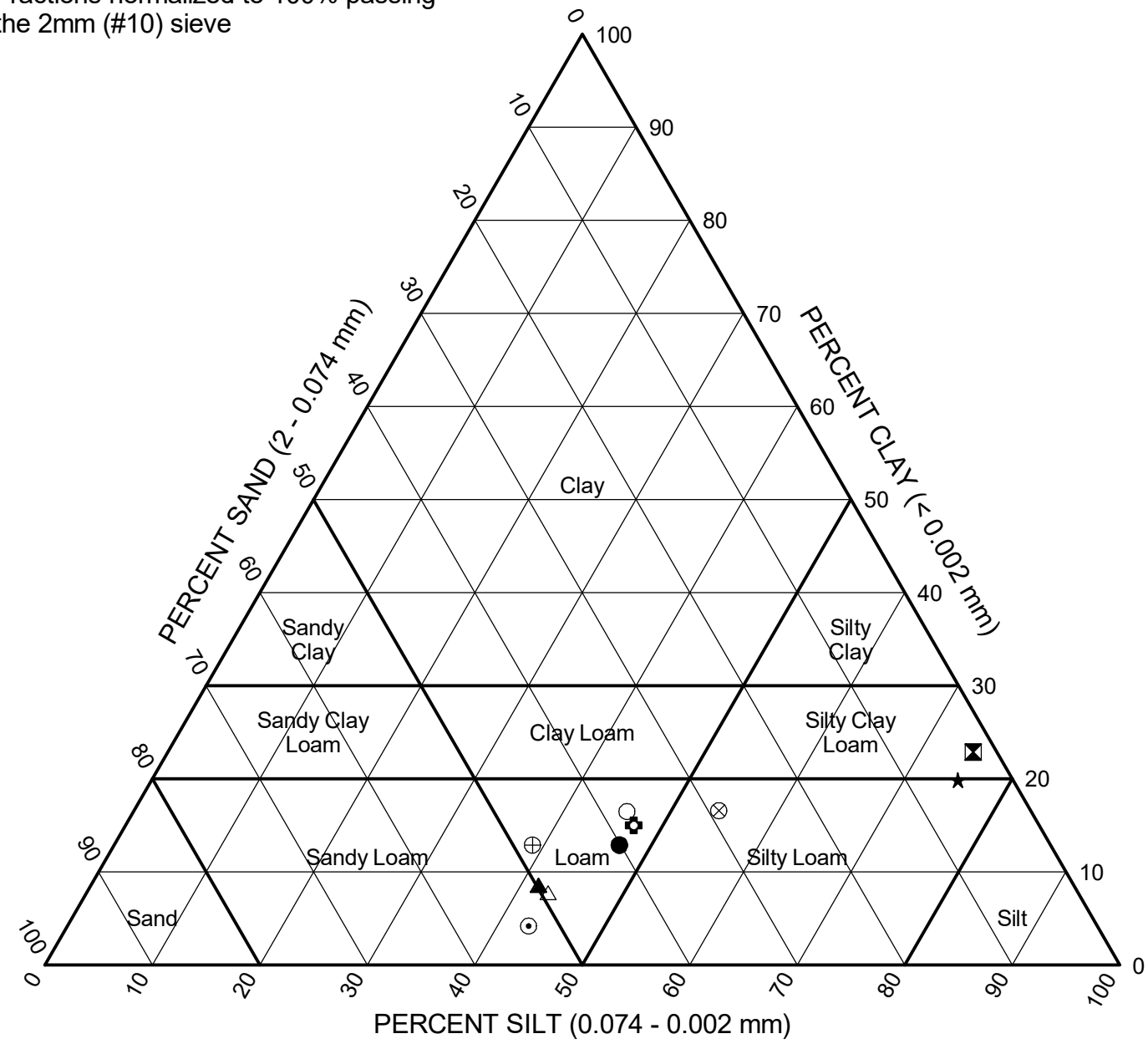
IDH Textural Classification Chart

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01

Fractions normalized to 100% passing the 2mm (#10) sieve



	Sample	Depth (ft)	Sand (%)	Silt (%)	Clay (%)	Classification		
						IL DOT	AASHTO	ASTM
●	SGB-11#3	4.0	40.0	47.0	12.9	Loam	A-6 (4)	CL
⊠	SGB-12#4	6.0	2.2	74.9	22.9	Silty Clay Loam	A-7-5 (37)	CH
▲	SGB-18#3	4.0	49.9	41.6	8.6	Gravelly Loam	A-4 (0)	SC-SM
★	SGB-19-ST#2	11.0	5.1	75.0	19.9	Silty Loam	A-7-5 (35)	MH
⊙	SGB-22#3	4.0	52.9	42.9	4.2	Sandy Loam	A-4 (0)	SM
✿	SGB-25#3	4.0	37.7	47.3	15.0	Loam	A-6 (9)	CL
○	SGB-31#3	4.0	37.6	45.9	16.5	Gravelly Loam	A-6 (8)	CL
△	SGB-34#3	4.0	49.3	42.9	7.8	Loam	A-4 (0)	SC-SM
⊗	SGB-38#3	5.0	29.0	54.4	16.6	Silty Loam	A-4 (2)	CL
⊕	SGB-42#2	2.0	48.3	38.9	12.9	Loam	A-6 (3)	SC

WEI SINCE 1982

Wang Engineering, Inc.
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

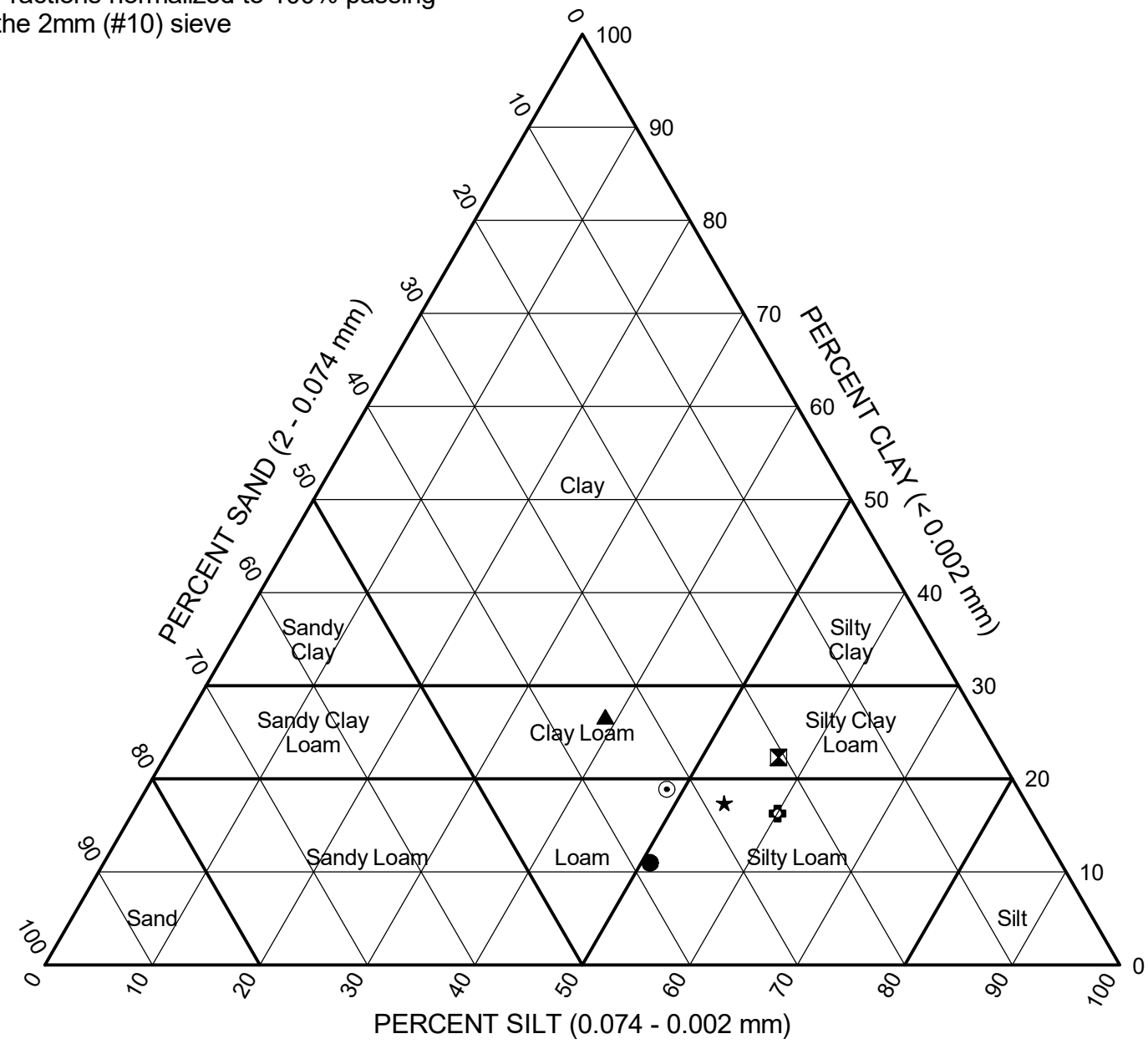
IDH Textural Classification Chart

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01

Fractions normalized to 100% passing the 2mm (#10) sieve



	Sample	Depth (ft)	Sand (%)	Silt (%)	Clay (%)	Classification		
						IL DOT	AASHTO	ASTM
●	**SGB-45#3**	**4.0**	**38.2**	**50.8**	**11.0**	**Gravelly Silty Loam**	**A-6 (2)**	**SC**
⧗	**SGB-47#2**	**3.0**	**20.6**	**57.1**	**22.3**	**Silty Clay Loam**	**A-6 (18)**	**CL**
▲	**SGB-50#2**	**2.0**	**34.4**	**38.8**	**26.7**	**Clay Loam**	**A-6 (12)**	**CL**
★	**SGB-52#3**	**4.0**	**28.2**	**54.5**	**17.4**	**Silty Loam**	**A-7-6 (13)**	**CL**
⊙	**SGB-56#3**	**4.0**	**32.7**	**48.4**	**18.9**	**Loam**	**A-6 (5)**	**CL**
✿	**TSB-06#6**	**13.5**	**23.8**	**60.0**	**16.3**	**Silty Loam**	**A-4 (2)**	**CL-ML**

WEI SINCE 1982

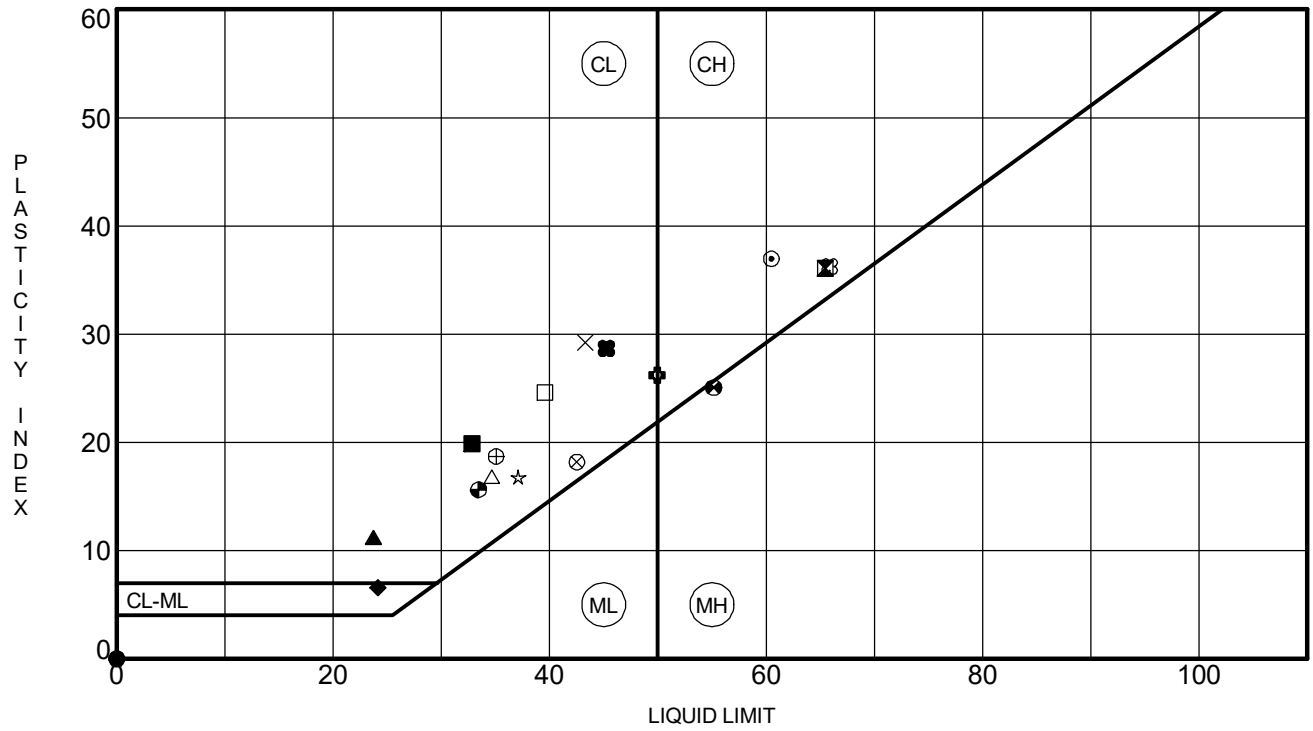
Wang Engineering, Inc.
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

IDH Textural Classification Chart

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01



	Specimen Identification		LL	PL	PI	Fines	IDH Classification
●	PT1-03#3	6.0 ft	NP	NP	NP	75	Silty Loam
⊠	PT1-04#6	13.5 ft	65	29	36	98	Silty Clay Loam
▲	PT2-02#2	3.5 ft	24	13	11	35	Gravelly Sandy Loam
★	PT2-07#5	8.0 ft	NP	NP	NP	54	Loam
⊙	PT2-07#6	10.0 ft	60	24	36	84	Silty Loam
✿	PT3-01#2	3.5 ft	50	24	26	67	Silty Loam
○	PT3-05#2	3.5 ft	NP	NP	NP	43	Gravelly Loam
△	PT3-10#2	3.5 ft	35	18	17	67	Clay Loam
⊗	PT3-10#5	11.0 ft	43	24	19	90	Silty Loam
⊕	PT3-13#1	1.0 ft	35	16	19	51	Loam
□	PT3-13#3	6.0 ft	40	15	25	76	Silty Clay Loam
⊛	PT4-15#3	6.0 ft	55	30	25	96	Silty Clay Loam
◕	PT5-03#6	10.0 ft	33	18	15	99	Silt
☆	RWB-02#2	2.0 ft	37	20	17	55	Silty Loam
⊠	RWB-04-ST#1	16.0 ft	66	30	36	99	Silty Clay Loam
■	RWB-08#5	11.0 ft	33	13	20	48	Gravelly Loam
◆	RWB-08#7	16.0 ft	24	18	6	86	Silty Loam
◇	RWB-09#8	18.5 ft	NP	NP	NP	19	Gravelly Sandy Loam
╳	RWB-10#3	6.0 ft	43	14	29	61	Clay Loam
⊠	RWB-15#6	13.5 ft	45	17	28	99	Silty Clay Loam

WEI SINCE 1982

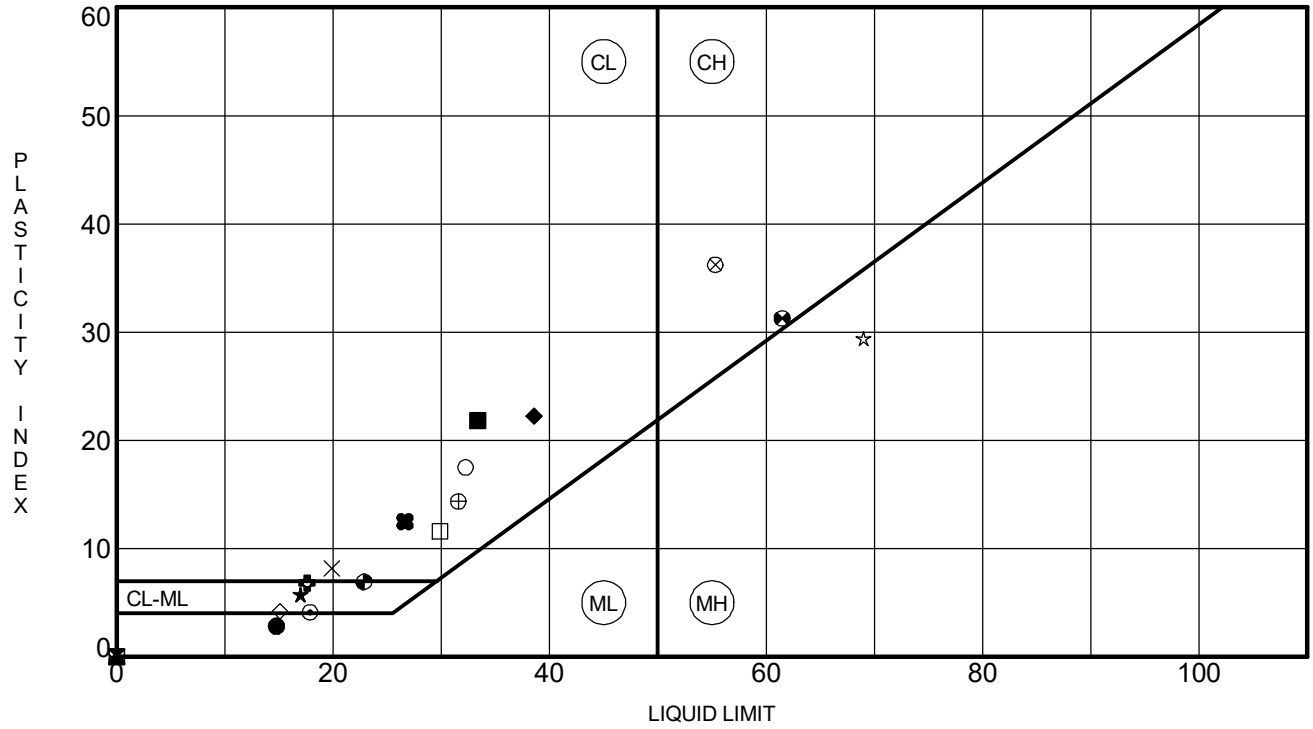
Wang Engineering, Inc.
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

ATTERBERG LIMITS' RESULTS

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01



	Specimen Identification		LL	PL	PI	Fines	IDH Classification
●	RWB-15#8	18.5 ft	15	12	3	47	Loam
⊠	RWB-16#6	13.5 ft	NP	NP	NP	39	Sandy Loam
▲	RWB-17#9	21.0 ft	NP	NP	NP	43	Gravelly Loam
★	RWB-19#5	11.0 ft	17	11	6	63	Loam
⊙	RWB-21#2	3.5 ft	18	14	4	90	Silt
✿	RWB-22#3	6.0 ft	18	11	7	66	Silty Loam
○	SGB-01#2	2.0 ft	32	15	17	40	Gravelly Loam
△	SGB-03#2	2.0 ft	NP	NP	NP	14	Gravelly Sandy Loam
⊗	SGB-05#4	8.0 ft	55	19	36	98	Silty Clay Loam
⊕	SGB-09#3	4.0 ft	32	17	15	54	Loam
□	SGB-11#3	4.0 ft	30	18	12	56	Loam
⊞	SGB-12#4	6.0 ft	61	30	31	98	Silty Clay Loam
◕	SGB-18#3	4.0 ft	23	16	7	41	Gravelly Loam
☆	SGB-19-ST#2	11.0 ft	69	40	29	94	Silty Loam
✠	SGB-22#3	4.0 ft	NP	NP	NP	41	Sandy Loam
■	SGB-25#3	4.0 ft	33	12	21	59	Loam
◆	SGB-31#3	4.0 ft	39	16	23	51	Gravelly Loam
◇	SGB-34#3	4.0 ft	15	11	4	46	Loam
╳	SGB-38#3	5.0 ft	20	12	8	69	Silty Loam
✖	SGB-42#2	2.0 ft	27	14	13	47	Loam

WEI SINCE 1982

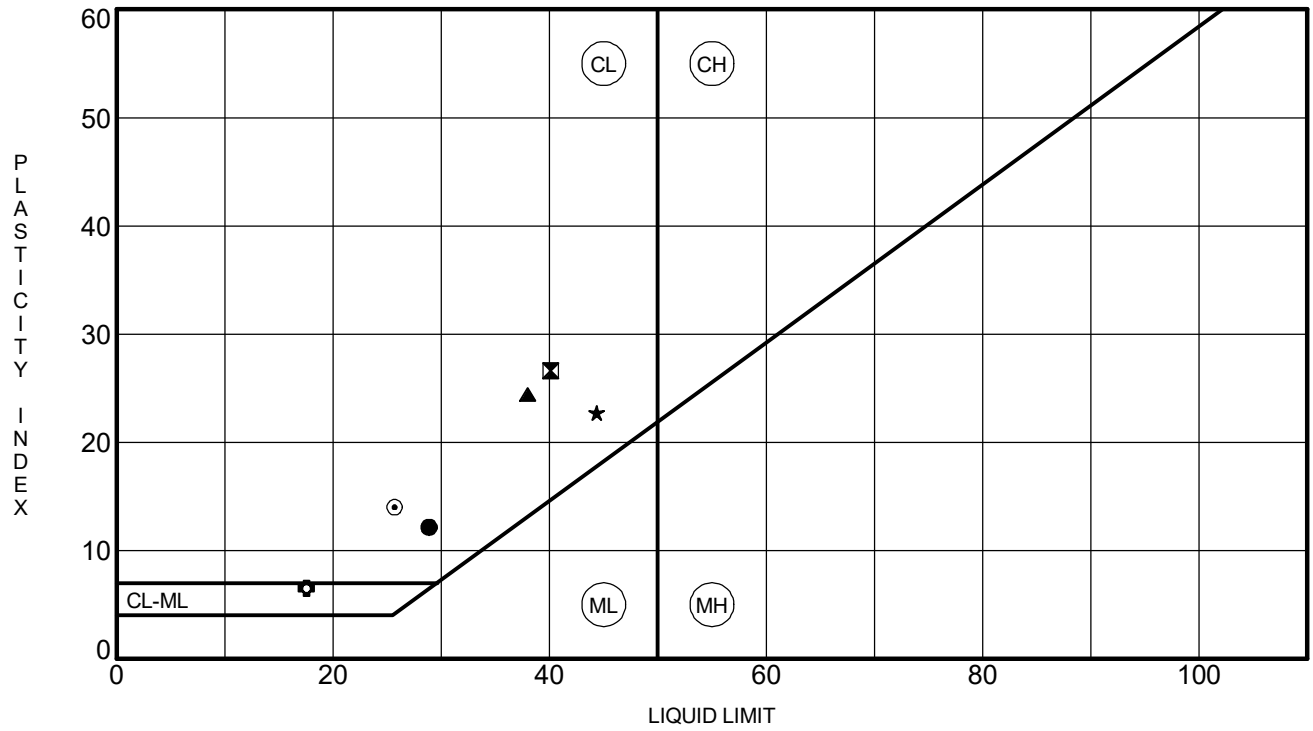
Wang Engineering, Inc.
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

ATTERBERG LIMITS' RESULTS

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01



	Specimen Identification		LL	PL	PI	Fines	IDH Classification
●	SGB-45#3	4.0 ft	29	17	12	46	Gravelly Silty Loam
⊠	SGB-47#2	3.0 ft	40	14	26	76	Silty Clay Loam
▲	SGB-50#2	2.0 ft	38	14	24	62	Clay Loam
★	SGB-52#3	4.0 ft	44	22	22	65	Silty Loam
⊙	SGB-56#3	4.0 ft	26	12	14	62	Loam
✿	TSB-06#6	13.5 ft	18	11	7	72	Silty Loam

WEI SINCE 1982

Wang Engineering, Inc.
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

ATTERBERG LIMITS' RESULTS

Project: IL 47 from US 14 to IL 120

Location: McHenry County

Number: 1100-15-01

1145 North Main Street
Lombard, Illinois 60148
Phone (630) 953-9928
www.wangeng.com

ORGANIC CONTENT in SOILS by LOSS on IGNITION

ASTM D 2974, Method C

Client: AECOM
Project: IL 47
WEI Job: 1100-15-01
Type/Condition: ss
Testing Furnace Temp °C.: 440

Analyst Name: L. Varzaru
Date Received: Various
Date Tested: 1/7/2021

Sample No./ Depth	PT2-05 ss#5 (8-10ft.)				
wet soil + tare	78.48				
Dry Soil + Tare	48.17				
Tare Mass	41.36				
w (%)	445				
Dry Soil + Tare	48.17				
Ash+ Tare	42.19				
Tare Mass	41.36				
Ash Content (%)	12				
Organic Content (%)	87.8				

Prepeared By:_____

Reviwed By:_____

1145 North Main Street
Lombard, Illinois 60148
Phone (630) 953-9928
www.wangeng.com

ORGANIC CONTENT in SOILS by LOSS on IGNITION

ASTM D 2974, Method C

Client: AECOM
Project: IL 47
WEI Job: 1100-15-01
Type/Condition: ss
Testing Furnace Temp °C.: 440

Analyst Name: C. Iordache
Date Received: Various
Date Tested: 9/10/2020

Sample No./ Depth	RWB-05 ss#5 (11-12.5ft.)	SGB-19 ss#5 (10-12ft.)			
wet soil + tare	73.3	90.43			
Dry Soil + Tare	56.05	66.69			
Tare Mass	41.89	43.04			
w (%)	122	100			
Dry Soil + Tare	56.05	66.69			
Ash+ Tare	53.39	63.42			
Tare Mass	41.89	43.04			
Ash Content (%)	81	86			
Organic Content (%)	18.8	13.8			

Prepeared By:_____

Reviwed By:_____

Wang Engineering

1145 North Main Street
Lombard, Illinois 60148
Phone (630) 953-9928
www.wangeng.com

ONE-DIMENSIONAL CONSOLIDATION TEST

AASHTO T 216 / ASTM D 2435

Project: **IL Route 47**
Client: **Illinois Department of Transportation**
Soil Sample ID: **Boring RWB-04ST, 16 to 18 feet**
Sample Description: **Dark Gray ORG CLAY**

Tested by: **M. Snider**
Prepared by: **M. Snider**
Test date: **8/24/2020**
WEI: **1100-15-01**

Initial sample height =	1.049	in	Ring diameter =	2.493	in
Initial sample mass =	133.15	g	Ring mass =	109.43	g
Initial water content =	64.06%		Initial sample and ring mass =	242.58	g
Initial dry unit weight =	60.39	pcf	Tare mass =	13.52	g
Initial void ratio =	1.686		Final ring and sample mass =	220.11	g
Initial degree of saturation =	98.76%		Mass of wet sample and tare =	124.19	g
			Mass of dry sample and tare =	94.68	g
Final sample mass =	110.67	g	Initial dial reading =	0.01000	in
Final dry sample mass =	81.16	g	Final dial reading =	0.36938	in
Final water content =	36.36%		LL =		%
Final dry unit weight =	91.87	pcf	PL =		%
Final void ratio =	0.766		% Sand =		
Final degree of saturation =	100.00%		% Silt =		
Estimated specific gravity =	2.60		% Clay =		
			In-Situ Vertical Effective Stress =	1400	psf

Compression and Swelling Indices

Compression index C_c =	0.851	
Field corrected C_c =	0.941	
Swelling index C_s =	0.066	

Preconsolidation pressure,s_C

Casagrande Method =	1586	psf
Over-Consolidation Ratio (OCR) =	1.13	

Load number	Vertical stress psf	Dial reading in	System deflection in	Vertical strain %	Void ratio	C_v ft^2/day	Cae %	Elapsed time min
1	100.0	0.01223	0.00010	0.22	1.680	N/A	N/A	720
2	200.0	0.01740	0.00023	0.73	1.667	0.0518	0.23	720
3	500.0	0.03361	0.00058	2.31	1.624	0.0610	0.43	720
4	1000.0	0.05446	0.00090	4.32	1.570	0.0512	0.44	720
5	2000.0	0.09038	0.00135	7.79	1.477	0.0294	1.37	480
6	4000.0	0.17935	0.00193	16.33	1.248	0.0080	4.51	480
7	8000.0	0.27883	0.00253	25.87	0.991	0.0048	3.00	1440
8	16000.0	0.36255	0.00324	33.92	0.775	0.0050	4.39	480
9	32000.0	0.42910	0.00413	40.35	0.603	0.0045	4.18	480
10	8000.0	0.42034	0.00295	39.40	0.628	N/A	N/A	480
11	2000.0	0.41803	0.00198	39.09	0.636	N/A	N/A	480
12	500.0	0.39096	0.00123	36.43	0.708	N/A	N/A	480

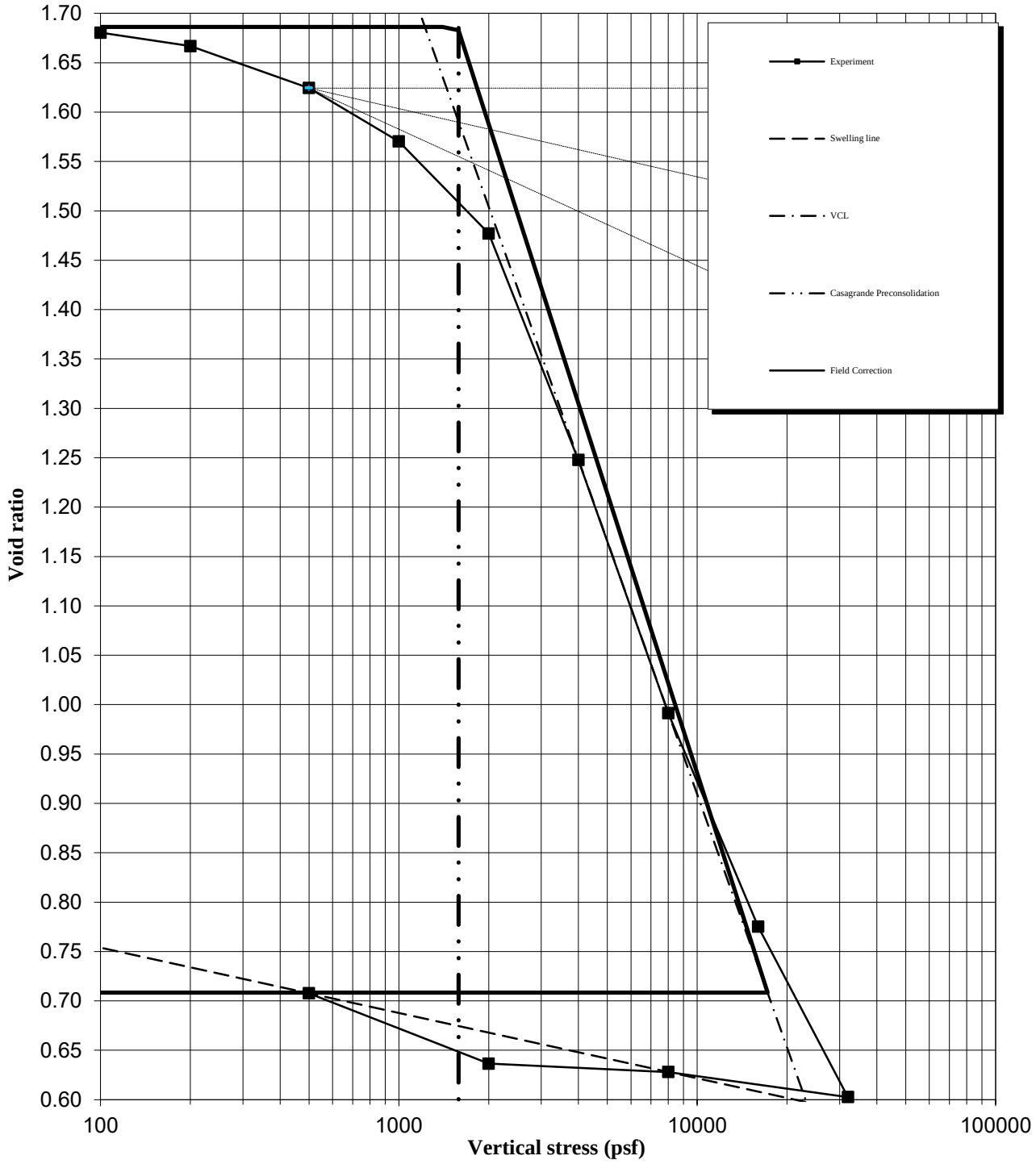
Prepared by: _____ Date: _____

Checked by: _____ Date: _____

1145 North Main Street
Lombard, Illinois 60148
Phone (630) 953-9928
www.wangeng.com

CONSOLIDATION CURVE

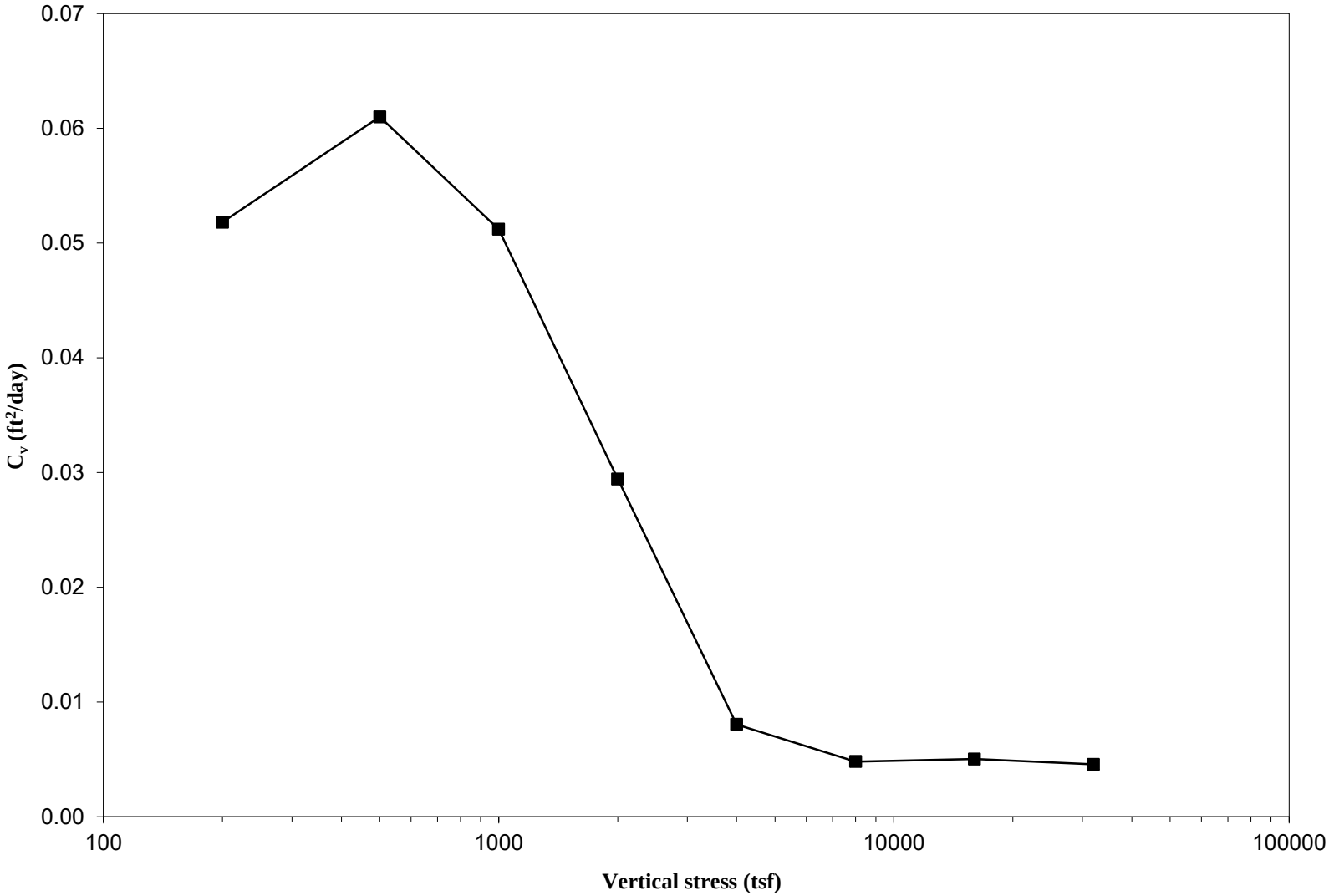
Sample RWB-04ST, 16 to 18 feet



Wang Engineering
1145 North Main Street
Lombard, Illinois 60148
Phone (630) 953-9928
www.wangeng.com

CONSOLIDATION COEFFICIENT (C_v) vs. VERTICAL STRESS

Sample RWB-04ST, 16 to 18 feet



AASHTO R18

Wang Engineering

1145 North Main Street
Lombard, Illinois 60148
Phone (630) 953-9928
www.wangeng.com

ONE-DIMENSIONAL CONSOLIDATION TEST

AASHTO T 216 / ASTM D 2435

Project: **IL Route 47**
Client: **Illinois Department of Transportation**
Soil Sample ID: **Boring SGB-19ST, 11 to 13 feet**
Sample Description: **Dark Gray ORG SILT**

Tested by: **M. Snider**
Prepared by: **M. Snider**
Test date: **8/24/2020**
WEI: **1100-15-01**

Initial sample height =	0.993	in	Ring diameter =	2.499	in
Initial sample mass =	124.59	g	Ring mass =	109.82	g
Initial water content =	77.53%		Initial sample and ring mass =	234.41	g
Initial dry unit weight =	54.90	pcf	Tare mass =	14.30	g
Initial void ratio =	1.955		Final ring and sample mass =	211.22	g
Initial degree of saturation =	103.11%		Mass of wet sample and tare =	115.59	g
			Mass of dry sample and tare =	84.48	g
Final sample mass =	101.29	g	Initial dial reading =	0.01000	in
Final dry sample mass =	70.18	g	Final dial reading =	0.36704	in
Final water content =	44.33%		LL =		%
Final dry unit weight =	85.73	pcf	PL =		%
Final void ratio =	0.893		% Sand =		
Final degree of saturation =	100.00%		% Silt =		
Estimated specific gravity =	2.60		% Clay =		
			In-Situ Vertical Effective Stress =	1300	psf

Compression and Swelling Indices

Compression index C_c =	1.107	
Field corrected C_c =	1.251	
Swelling index C_s =	0.076	

Preconsolidation pressure,s_C

Casagrande Method =	2779	psf
Over-Consolidation Ratio (OCR) =	2.14	

Load number	Vertical stress psf	Dial reading in	System deflection in	Vertical strain %	Void ratio	C_v ft²/day	Cae %	Elapsed time min
1	100.0	0.01106	0.00010	0.12	1.952	N/A	N/A	720
2	200.0	0.01862	0.00023	0.89	1.929	0.2117	0.23	720
3	500.0	0.04322	0.00058	3.40	1.854	0.2950	0.25	720
4	1000.0	0.06275	0.00090	5.40	1.795	0.2848	0.17	720
5	2000.0	0.08571	0.00135	7.76	1.726	0.2120	0.63	480
6	4000.0	0.11810	0.00193	11.08	1.628	0.2187	0.44	480
7	8000.0	0.22951	0.00253	22.36	1.294	0.1346	1.73	480
8	16000.0	0.33046	0.00324	32.60	0.992	0.0964	1.49	480
9	32000.0	0.39098	0.00413	38.78	0.809	0.0963	1.27	480
10	8000.0	0.39964	0.00295	39.54	0.787	N/A	N/A	480
11	2000.0	0.38868	0.00198	38.33	0.822	N/A	N/A	480
12	500.0	0.37068	0.00123	36.45	0.878	N/A	N/A	480

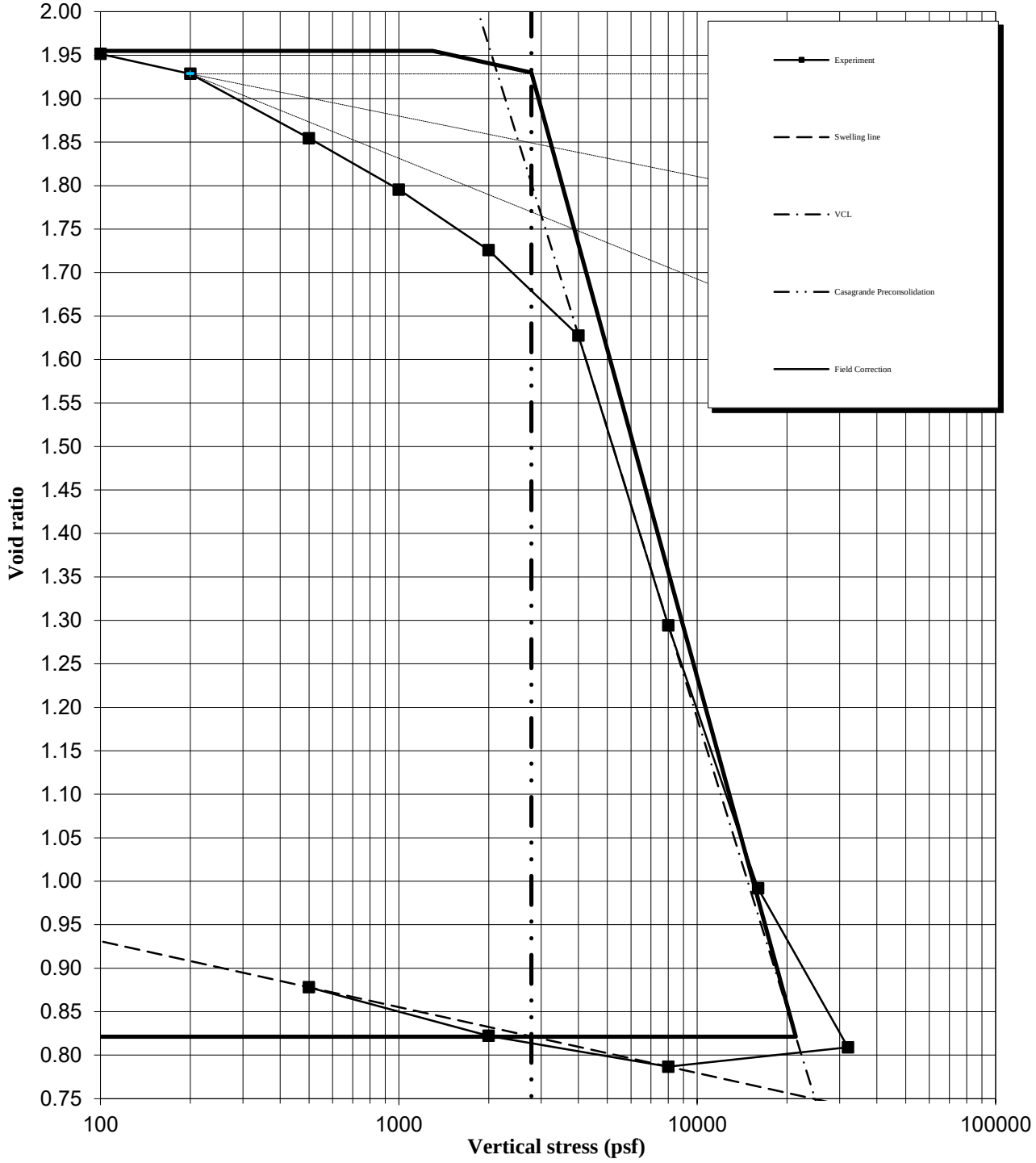
Prepared by: _____ Date: _____

Checked by: _____ Date: _____

1145 North Main Street
Lombard, Illinois 60148
Phone (630) 953-9928
www.wangeng.com

CONSOLIDATION CURVE

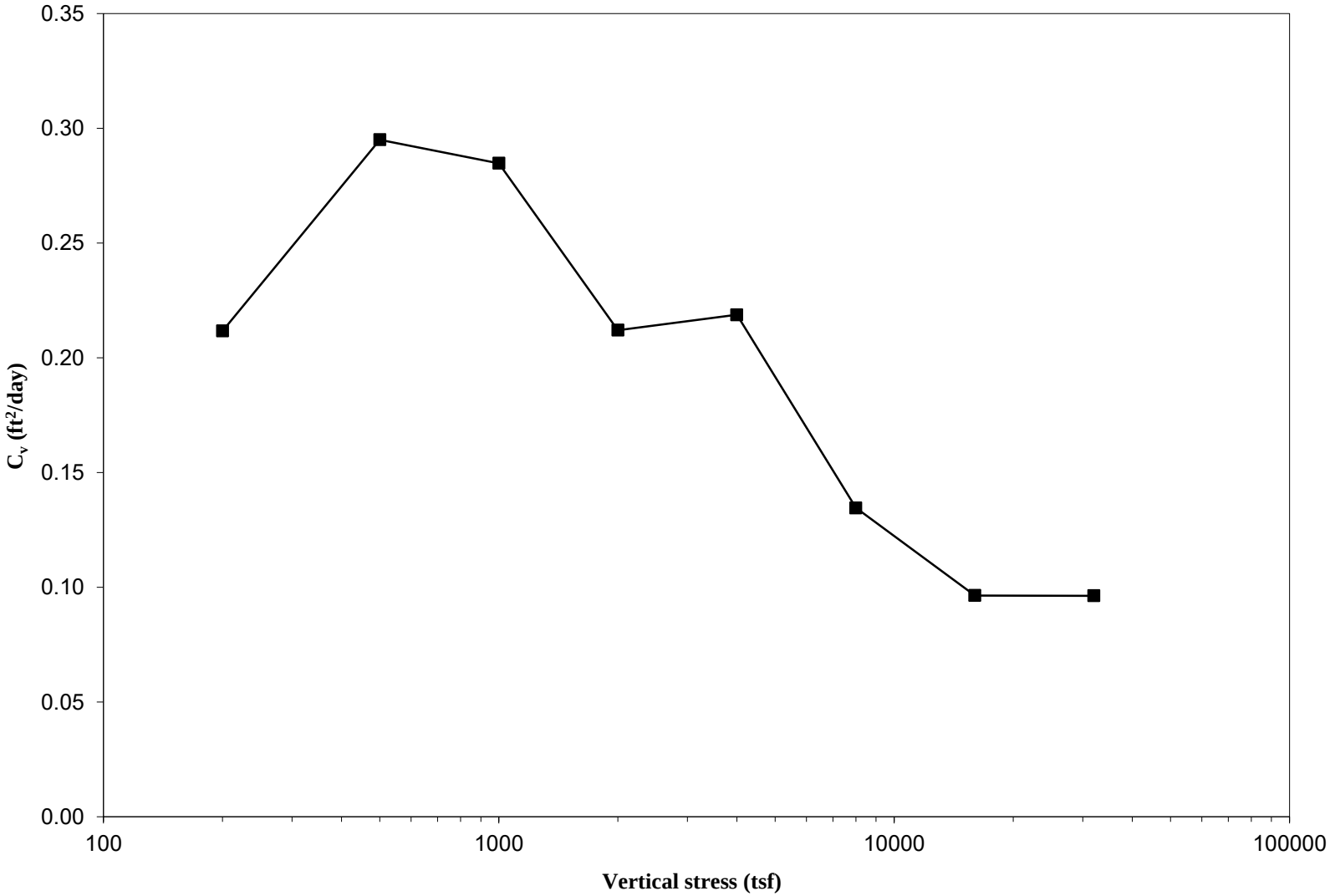
Sample SGB-19ST, 11 to 13 feet



Wang Engineering
1145 North Main Street
Lombard, Illinois 60148
Phone (630) 953-9928
www.wangeng.com

CONSOLIDATION COEFFICIENT (C_v) vs. VERTICAL STRESS

Sample SGB-19ST, 11 to 13 feet



AASHTO R18

Wang Engineering

1145 North Main Street
Lombard, Illinois 60148
Phone (630) 953-9928
www.wangeng.com

ONE-DIMENSIONAL CONSOLIDATION TEST

AASHTO T 216 / ASTM D 2435

Project: Illinois Route 47
Client: AECOM
Soil Sample ID: Boring PT-04-12, ST#2, 5 to 7 feet
Sample Description: Brown PEAT

Tested by: M. Snider
Prepared by: M. Snider
Test date: 7/19/2021
WEI: 1100-15-01

Initial sample height =	1.035	in	Ring diameter =	2.500	in
Initial sample mass =	92.34	g	Ring mass =	109.82	g
Initial water content =	307.14%		Initial sample and ring mass =	202.16	g
Initial dry unit weight =	17.01	pcf	Tare mass =	13.42	g
Initial void ratio =	6.337		Final ring and sample mass =	161.71	g
Initial degree of saturation =	96.93%		Mass of wet sample and tare =	65.20	g
			Mass of dry sample and tare =	36.10	g
Final sample mass =	51.78	g	Initial dial reading =	0.01000	in
Final dry sample mass =	22.68	g	Final dial reading =	0.57836	in
Final water content =	128.31%		LL=	NP	%
Final dry unit weight =	37.73	pcf	PL=	NP	%
Final void ratio =	2.308		% Sand=	n.a.	%
Final degree of saturation =	100.00%		% Silt=	n.a.	%
Estimated specific gravity =	2.00		% Clay=	n.a.	%
			Estimated In-Situ Vertical Stress=	150	psf

Compression and Swelling Indices

Compression index C_c =	4.716		**Preconsolidation pressure,σ_C**		
Field corrected C_c =	4.872		Casagrande Method =	405	psf
Swelling index C_s =	0.799		**Estimated Overconsolidation Ratio=**	2.70	

Load number	Vertical stress	Dial reading	System deflection	Vertical strain	Void ratio	C_v	Cae	Elapsed time
	psf	in	in	%		ft^2/day	%	min
1	50.0	0.01503	0.00005	0.49	6.301	N/A	N/A	720
2	100.0	0.02090	0.00010	1.06	6.259	N/A	N/A	1500
3	200.0	0.04850	0.00023	3.74	6.063	0.0699	0.79	900
4	500.0	0.13392	0.00058	12.03	5.455	0.0298	5.16	1500
5	1000.0	0.33388	0.00090	31.38	4.035	0.0030	9.83	1440
6	2000.0	0.48658	0.00135	46.18	2.949	0.0020	10.04	1500
7	4000.0	0.61639	0.00193	58.77	2.025	0.0012	5.93	960
8	8000.0	0.61824	0.00253	59.01	2.007	0.0336	0.09	1500
9	2000.0	0.60734	0.00135	57.84	2.093	N/A	N/A	1500
10	500.0	0.54024	0.00058	51.29	2.574	N/A	N/A	1800
11	1000.0	0.55059	0.00090	52.32	2.498	N/A	N/A	1440
12	2000.0	0.58211	0.00135	55.41	2.272	N/A	N/A	900
13	4000.0	0.61744	0.00193	58.88	2.017	0.0030	2.11	1500
14	8000.0	0.61866	0.00253	59.05	2.004	0.0390	0.01	1200
15	16000.0	0.62147	0.00324	59.39	1.980	0.0417	0.03	480
16	32000.0	0.62713	0.00413	60.02	1.933	0.0418	0.12	1400
17	8000.0	0.62007	0.00295	59.23	1.991	N/A	N/A	1400
18	2000.0	0.61764	0.00198	58.90	2.016	N/A	N/A	480
19	500.0	0.56715	0.00123	53.95	2.379	N/A	N/A	1800

Prepared by: _____ Date: _____

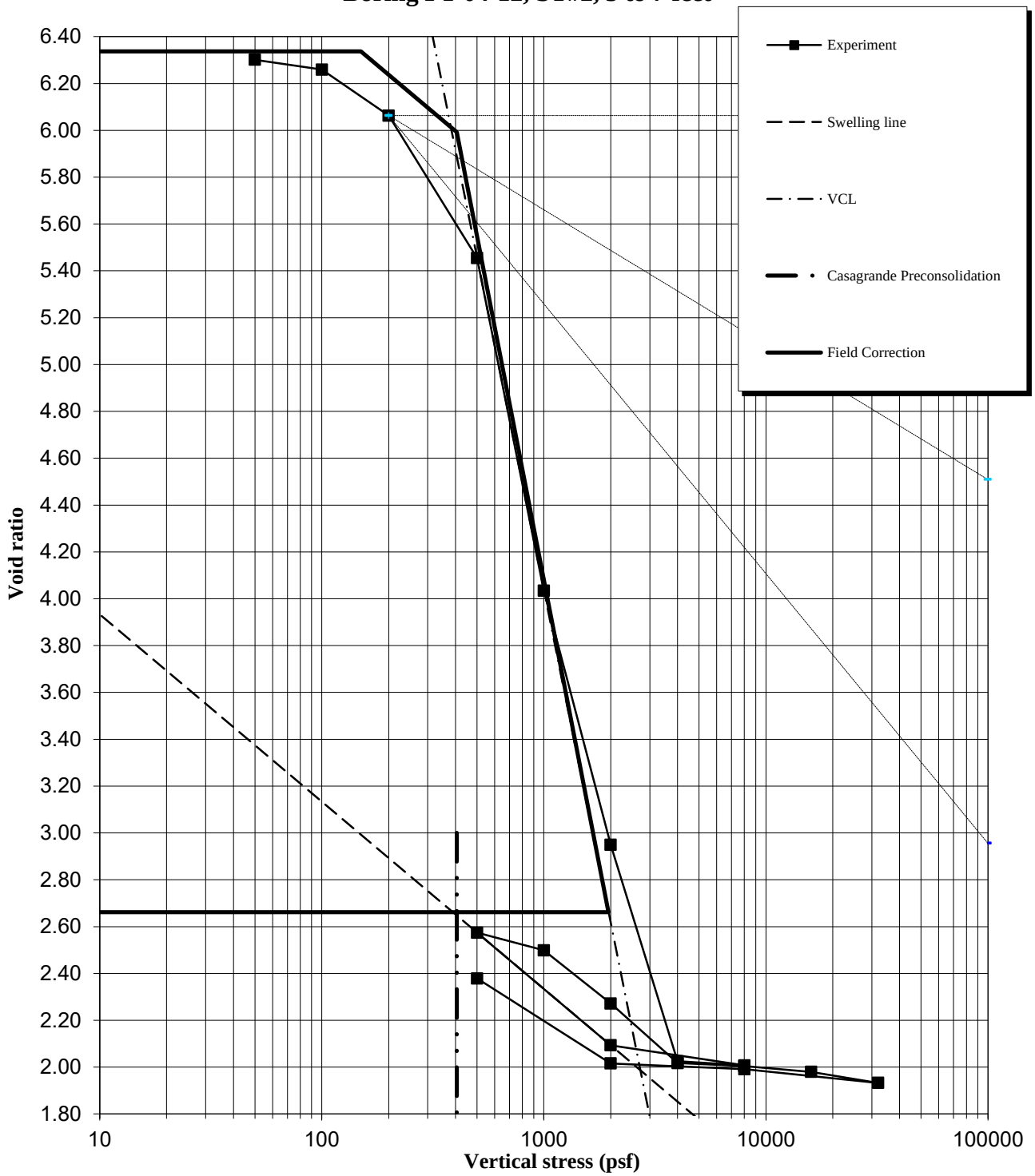
Checked by: _____ Date: _____

AASHTO ACCREDITATION PROGRAM

1145 North Main Street
Lombard, Illinois 60148
Phone (630) 953-9928
www.wangeng.com

CONSOLIDATION CURVE

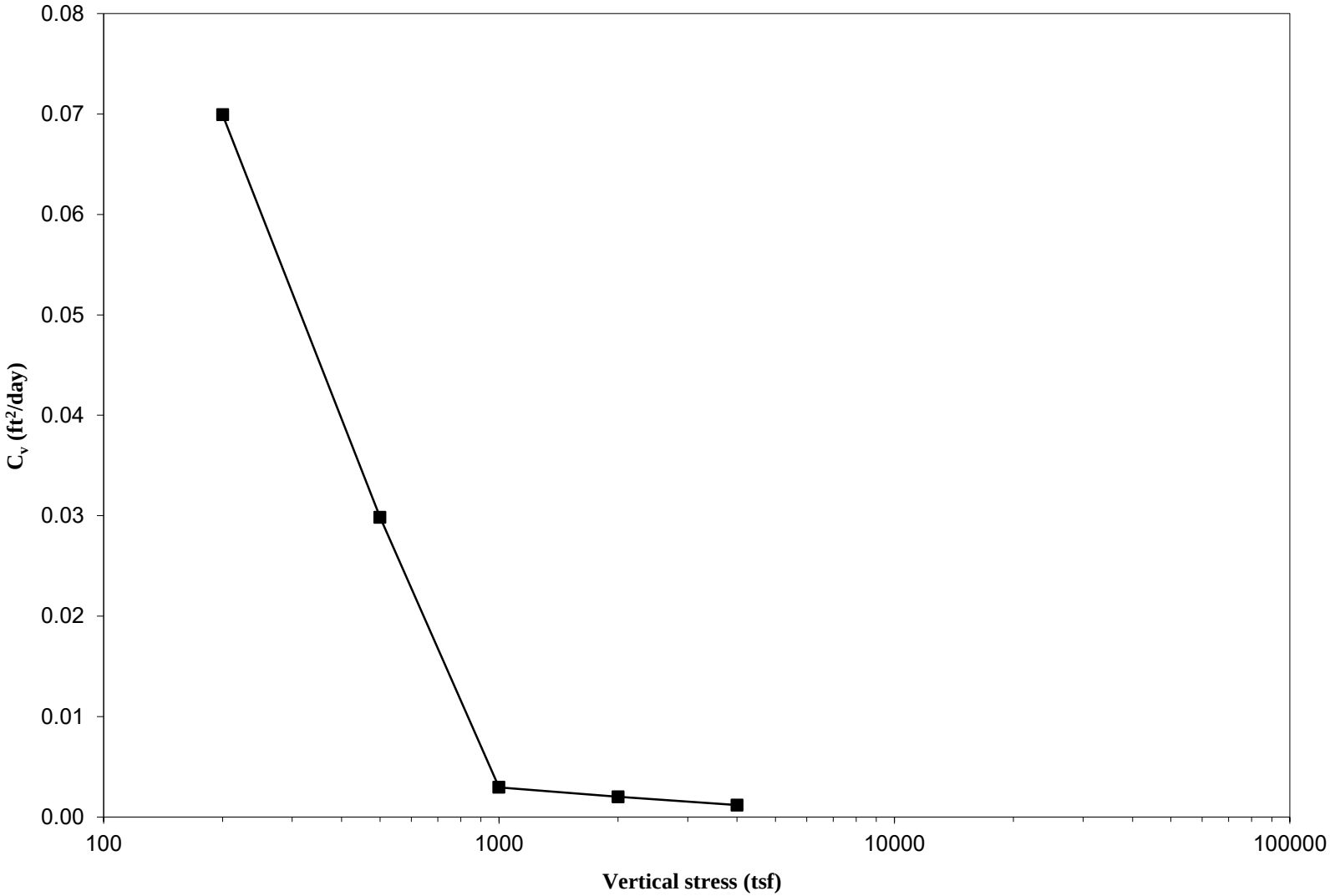
Boring PT-04-12, ST#2, 5 to 7 feet



1145 North Main Street
Lombard, Illinois 60148
Phone (630) 953-9928
www.wangeng.com

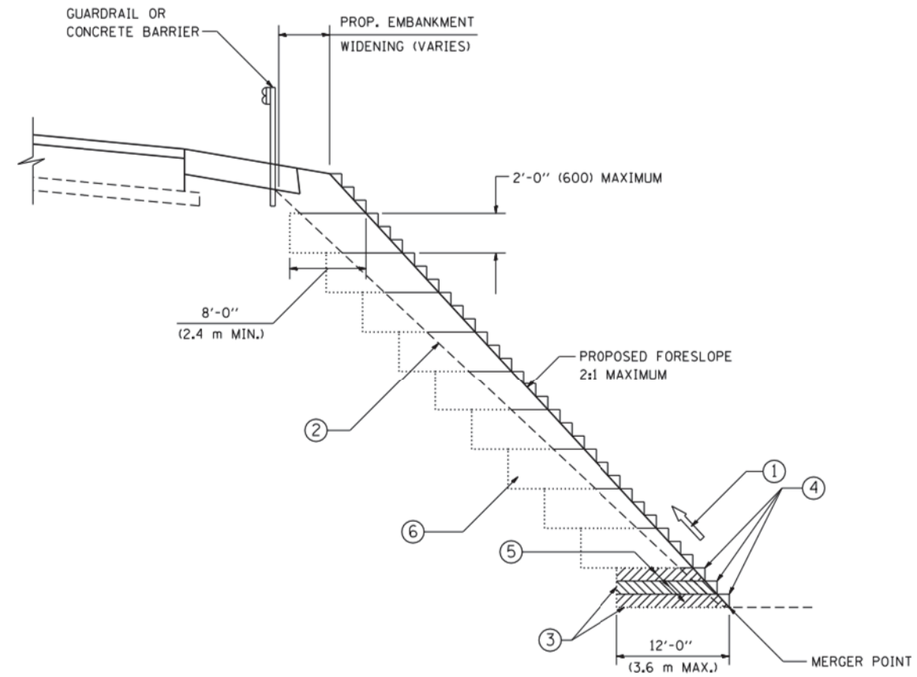
CONSOLIDATION COEFFICIENT (C_v) vs. VERTICAL STRESS

Boring PT-04-12, ST#2, 5 to 7 feet



AASHTO R18

APPENDIX D



TYPICAL BENCHING DETAIL FOR EMBANKMENT

NOTES:

1. CONSTRUCT SUCCEEDING BENCH CUTS AND EMBANKMENT PLACEMENT AND COMPACTION FROM BOTTOM TO TOP IN STAIRSTEP FASHION.
2. EXISTING FORESLOPE PREPARED IN ACCORDANCE WITH ARTICLE 205.03 OF THE STANDARD SPECIFICATIONS.
3. BENCH CUT EXISTING SLOPE TYPICAL FOR EACH STEP.
4. TRIM TO FINAL SLOPE.
5. EQUAL 8-INCH (200) LIFTS OF EMBANKMENT COMPACTED IN ACCORDANCE WITH ARTICLE 205.05 OF THE STANDARD SPECIFICATIONS.
6. EXCAVATION OF BENCH CUTS WITHIN EXISTING EMBANKMENT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC METER OR CUBIC YARD FOR "EARTH EXCAVATION". THIS PRICE WILL INCLUDE ALL LABOR AND MATERIAL, NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
7. SLOPES SHALL BE BENCHED ACCORDING TO THIS DETAIL WHEN THE SLOPE IS STEEPER THAN 4:1 AND THE HEIGHT IS GREATER THAN 5' (1.5 m).

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = W:\diststd\22x34\bd51.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED -
		DRAWN - CADD	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - S.E.B.	REVISED -
	PLOT DATE = 1/4/2008	DATE - 06-16-04	REVISED -

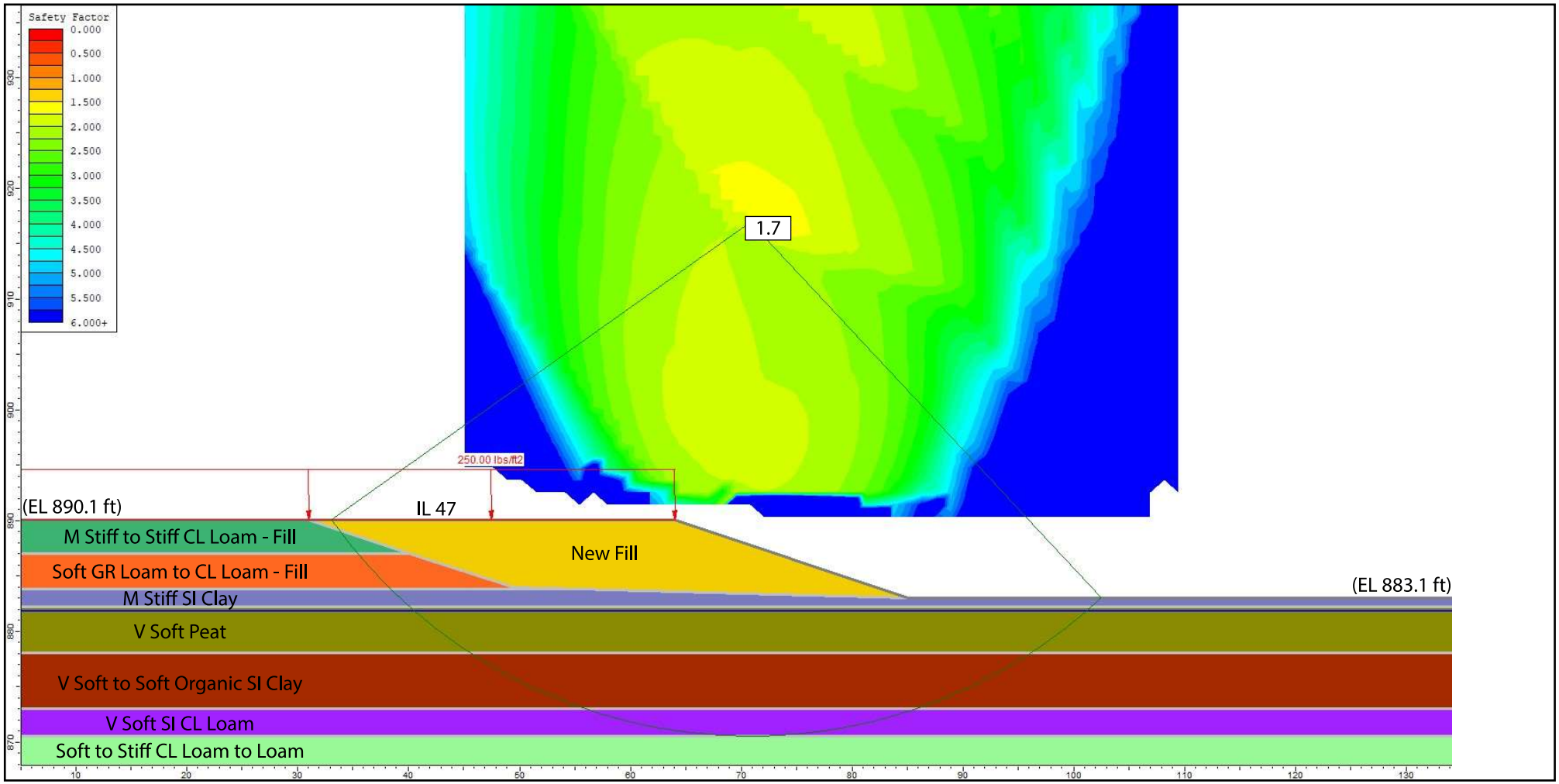
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BENCHING DETAIL
FOR EMBANKMENT WIDENING

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
326	105-N-2(15)	MCHENRY	473	380
	BD-51	**CONTRACT NO.** 62B43		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

APPENDIX E



Undrained Analysis, Sta.190+00, Ref Borings: SGB-31 and PT4-13

Layer ID	Description	Total Unit Weight (pcf)	Undrained Cohesion (psf)	Undrained Friction Angle (degrees)
1	New Fill	125	1000	0
2	M Stiff to Stiff CL Loam - Fill	115	800	0
3	Soft GR Loam to CL Loam - Fill	110	250	0
4	M Stiff SI Clay	115	500	0
5	V Soft Peat	40	250	0
6	V Soft to Soft Organic SI Clay	110	300	0
7	V Soft SI CL Loam	110	250	0
8	Soft to Stiff CL Loam to Loam	110	800	0

GLOBAL STABILITY: IL 47, US 14 to IL 120
McHENRY COUNTY, ILLINOIS

SCALE: GRAPHICAL

APPENDIX E-1

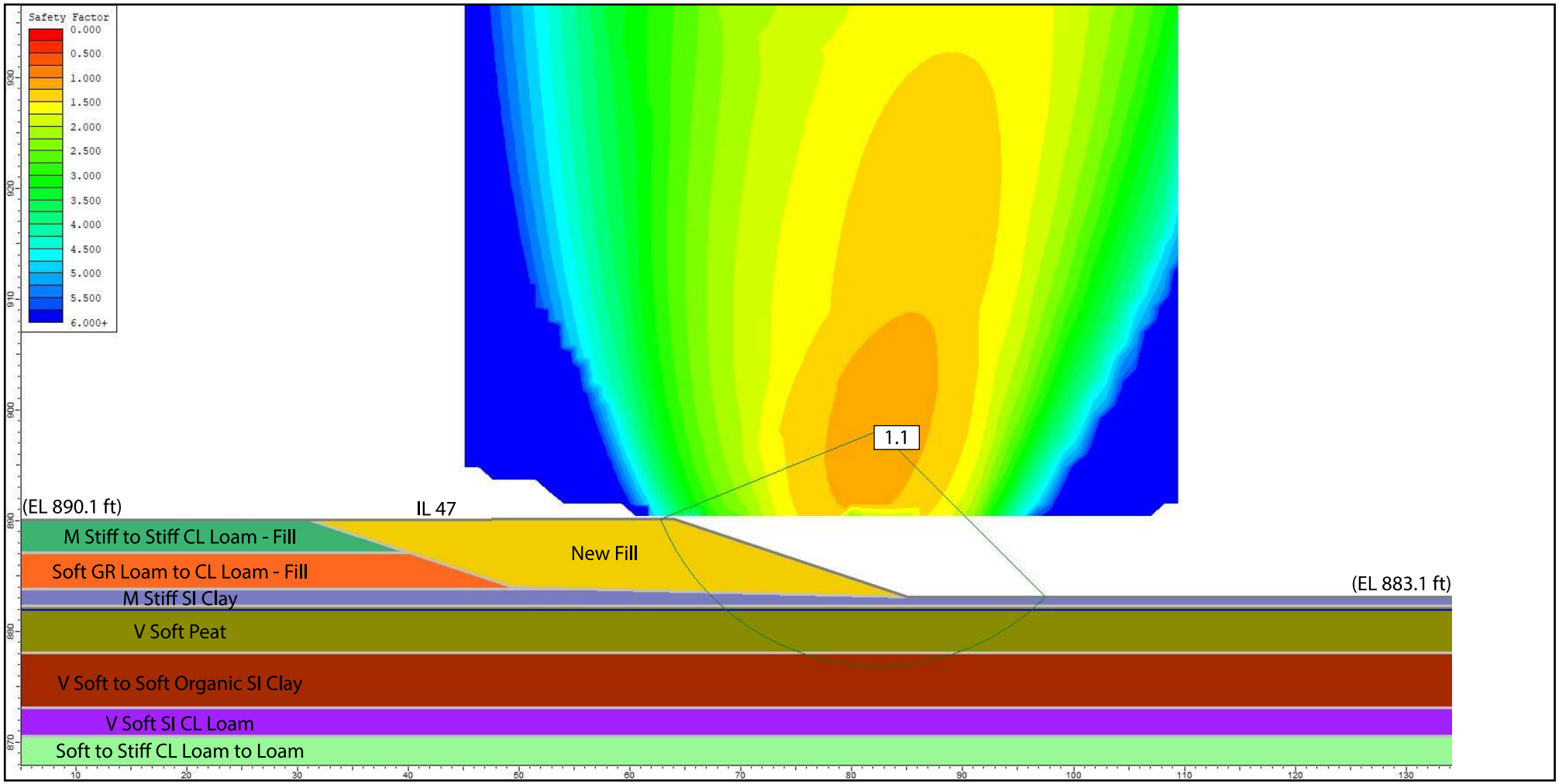
DRAWN BY: D You
CHECKED BY: A. Kurnia

Wang Engineering
A Terracon Company

1145 N. Main Street
Lombard, IL 60148
www.wangeng.com

FOR AECOM

1100-15-01



Drained Analysis, Sta.190+00, Ref Borings: SGB-31 and PT4-13

Layer ID	Description	Total Unit Weight (pcf)	Drained Cohesion (psf)	Drained Friction Angle (degrees)
1	New Fill	125	100	30
2	M Stiff to Stiff CL Loam - Fill	115	0	28
3	Soft GR Loam to CL Loam - Fill	110	0	26
4	M Stiff SI Clay	115	0	27
5	V Soft Peat	40	0	20
6	V Soft to Soft Organic SI Clay	110	0	25
7	V Soft SI CL Loam	110	0	25
8	Soft to Stiff CL Loam to Loam	110	0	27

GLOBAL STABILITY: IL 47, US 14 to IL 120
McHENRY COUNTY, ILLINOIS

SCALE: GRAPHICAL

APPENDIX E-2

DRAWN BY: D You
CHECKED BY: A. Kurnia

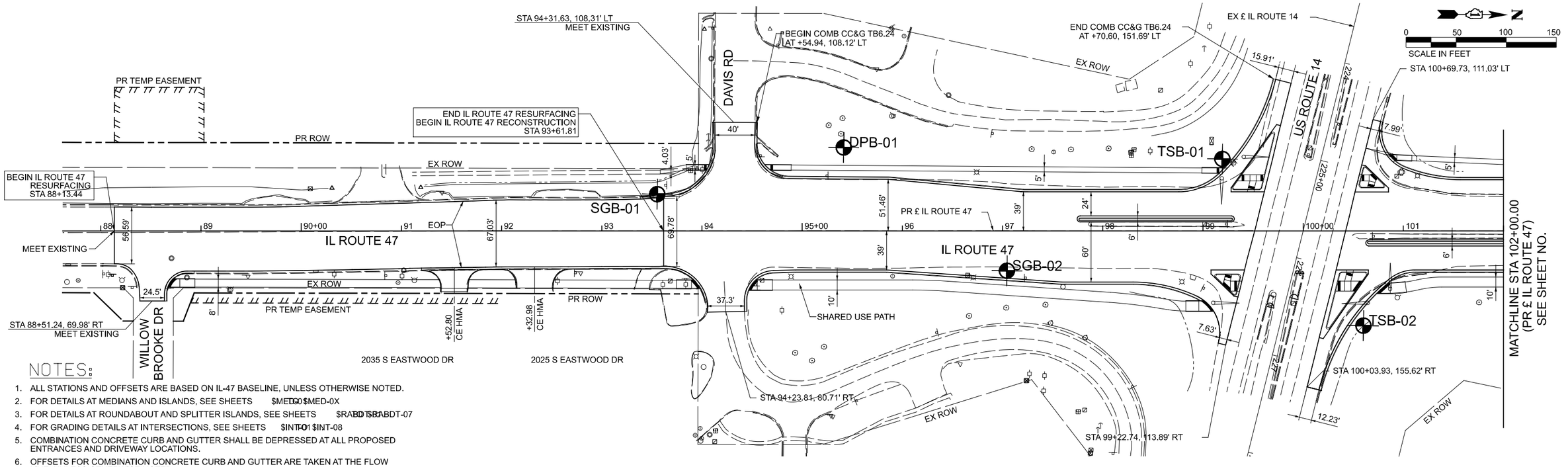
Wang Engineering
A Terracon Company

1145 N. Main Street
Lombard, IL 60148
www.wangeng.com

FOR AECOM

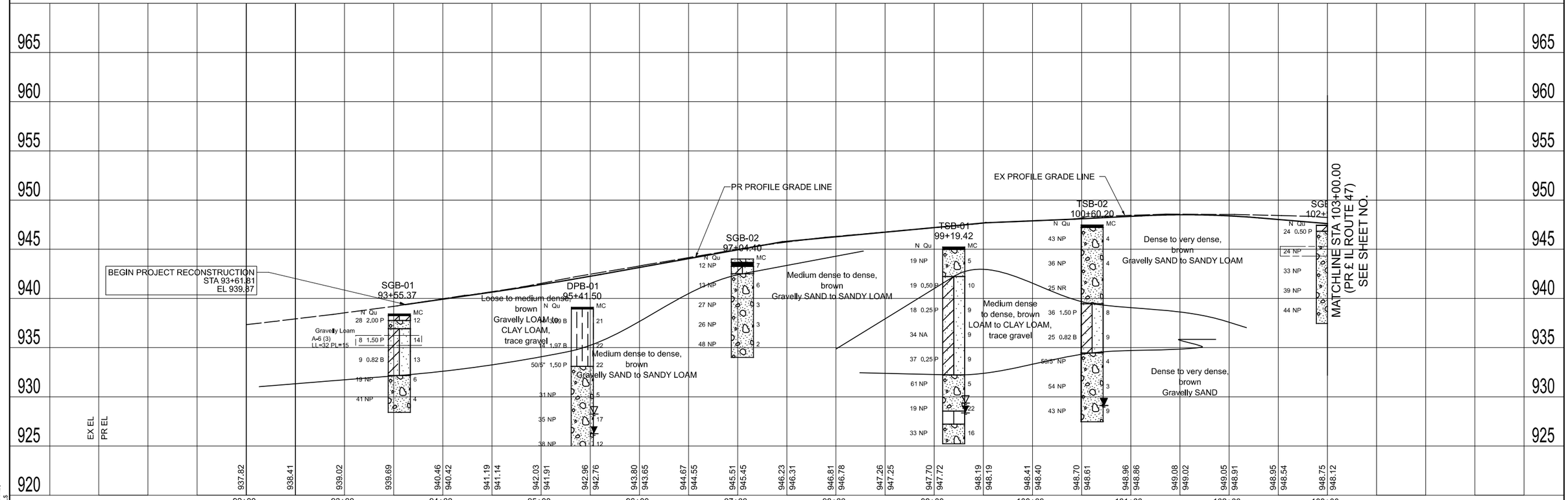
1100-15-01

APPENDIX F



NOTES:

1. ALL STATIONS AND OFFSETS ARE BASED ON IL-47 BASELINE, UNLESS OTHERWISE NOTED.
2. FOR DETAILS AT MEDIANS AND ISLANDS, SEE SHEETS $MEDG-01 $MED-0X
3. FOR DETAILS AT ROUNDABOUT AND SPLITTER ISLANDS, SEE SHEETS $RABD-01 $RABDT-07
4. FOR GRADING DETAILS AT INTERSECTIONS, SEE SHEETS $INTG-01 $INT-08
5. COMBINATION CONCRETE CURB AND GUTTER SHALL BE DEPRESSED AT ALL PROPOSED ENTRANCES AND DRIVEWAY LOCATIONS.
6. OFFSETS FOR COMBINATION CONCRETE CURB AND GUTTER ARE TAKEN AT THE FLOW LINE, UNLESS OTHERWISE NOTED.



AECOM 303 EAST WACKER DRIVE, SUITE 1400 CHICAGO, IL 60601-5276 PHONE: (312) 373-7700 FAX: (312) 373-6800	USER NAME = $USER$	DESIGNED - OPS	REVISED -
		DRAWN - JTN	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - TJW	REVISED -
	PLOT DATE = $DATE$	DATE - $DATE	REVISED -

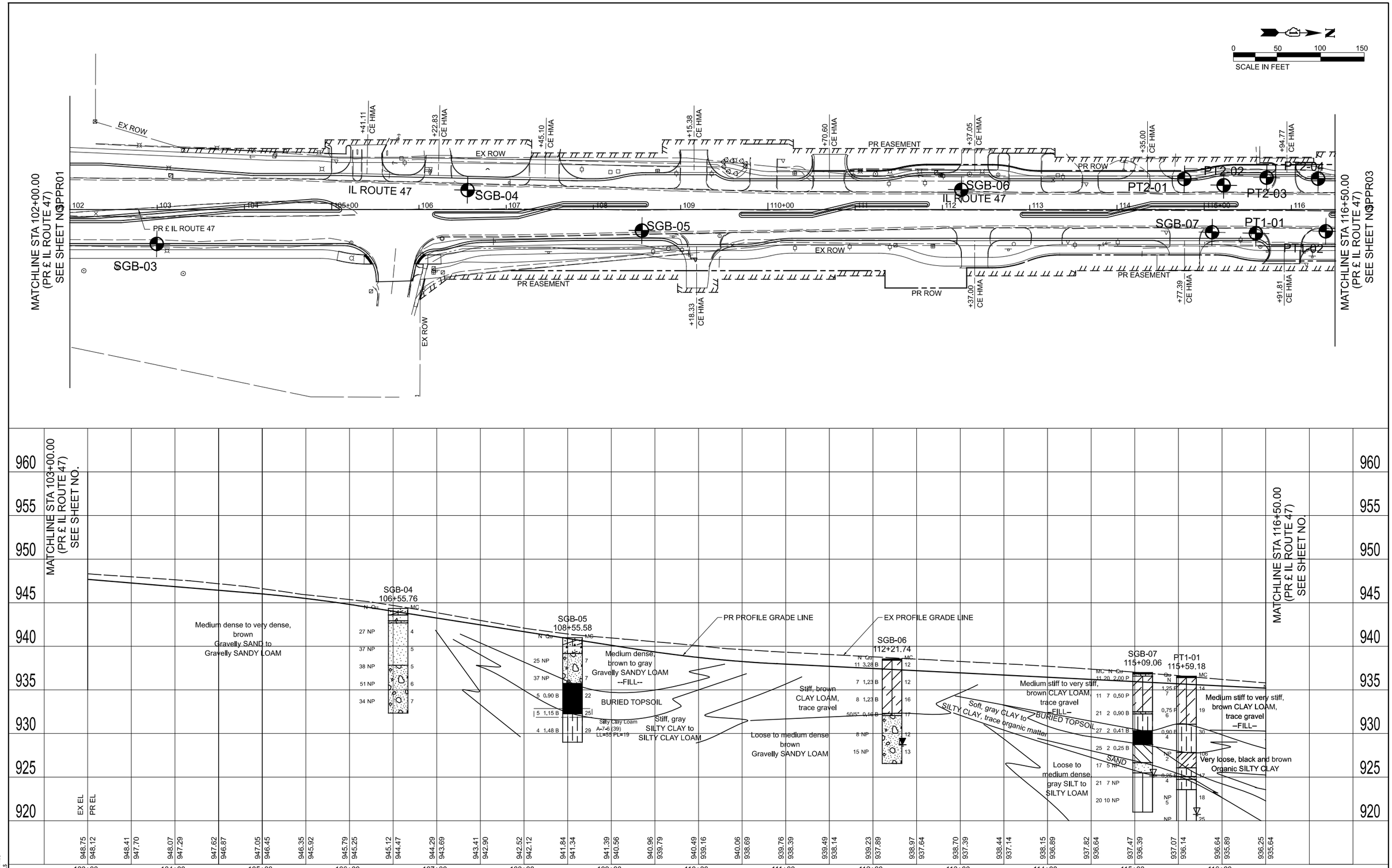
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL-47 PLAN AND PROFILE

SCALE: 1"=50' | SHEET 1 OF $PPR-T SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	(104 & 105) WRS-9(13)	MCHENRY	17	1
		CONTRACT NO. 60X17		
		ILLINOIS	FED. AID PROJECT	

MODEL: $MODELNAME$
FILE NAME: $FILE$



PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK NO.
BY
DATE

MODEL: $MODELNAME$
FILE NAME: $FILE1$

AECOM
303 EAST WACKER DRIVE, SUITE 1400
CHICAGO, IL 60601-5276
PHONE: (312) 373-7700 FAX: (312) 373-6800

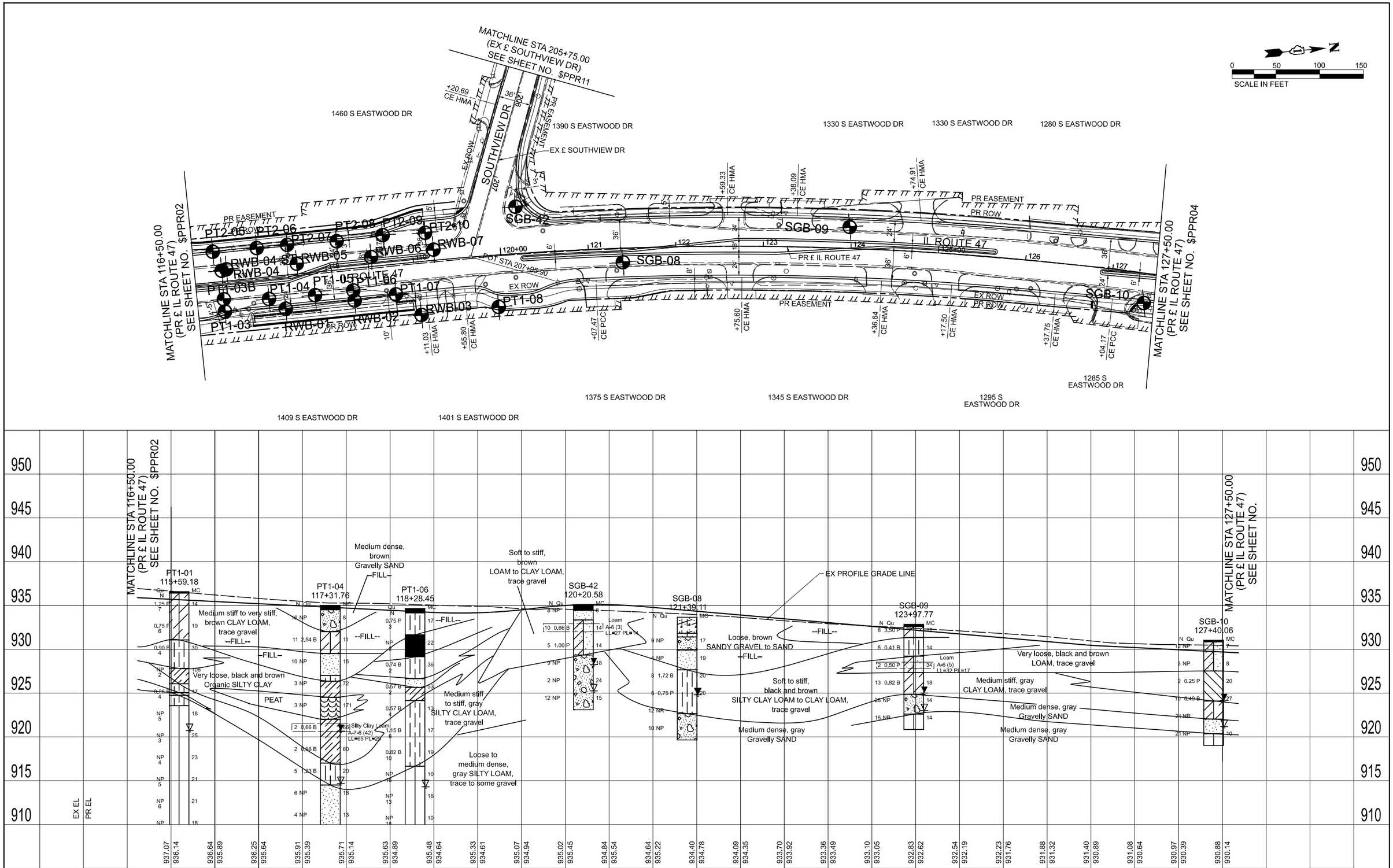
USER NAME = $USER$	DESIGNED - OPS	REVISED -
	DRAWN - JTN	REVISED -
PLOT SCALE = $SCALE$	CHECKED - TJW	REVISED -
PLOT DATE = $DATE$	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL-47 PLAN AND PROFILE

SCALE: 1"=50' | SHEET 2 OF $PPR-T SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	(104 & 105) WRS-9(13)	MCHENRY	17	2
		CONTRACT NO. 60X17		
		ILLINOIS	FED. AID PROJECT	



PLAN	BY	DATE
SURVEYED		
PLOTTED		
ALIGNMENT CHECKED		
RT. OF WAY CHECKED		
CADD FILE NAME		
NOTE BOOK NO.		

PROFILE	BY	DATE
SURVEYED		
PLOTTED		
GRADES CHECKED		
BLK. NOTED		
STRUCTURE NOTATNS CHKD		
NOTE BOOK NO.		

MODEL: $MODELNAME$
FILE NAME: $FILE1$

AECOM
303 EAST WACKER DRIVE, SUITE 1400
CHICAGO, IL 60601-5276
PHONE: (312) 373-7700 FAX: (312) 373-6800

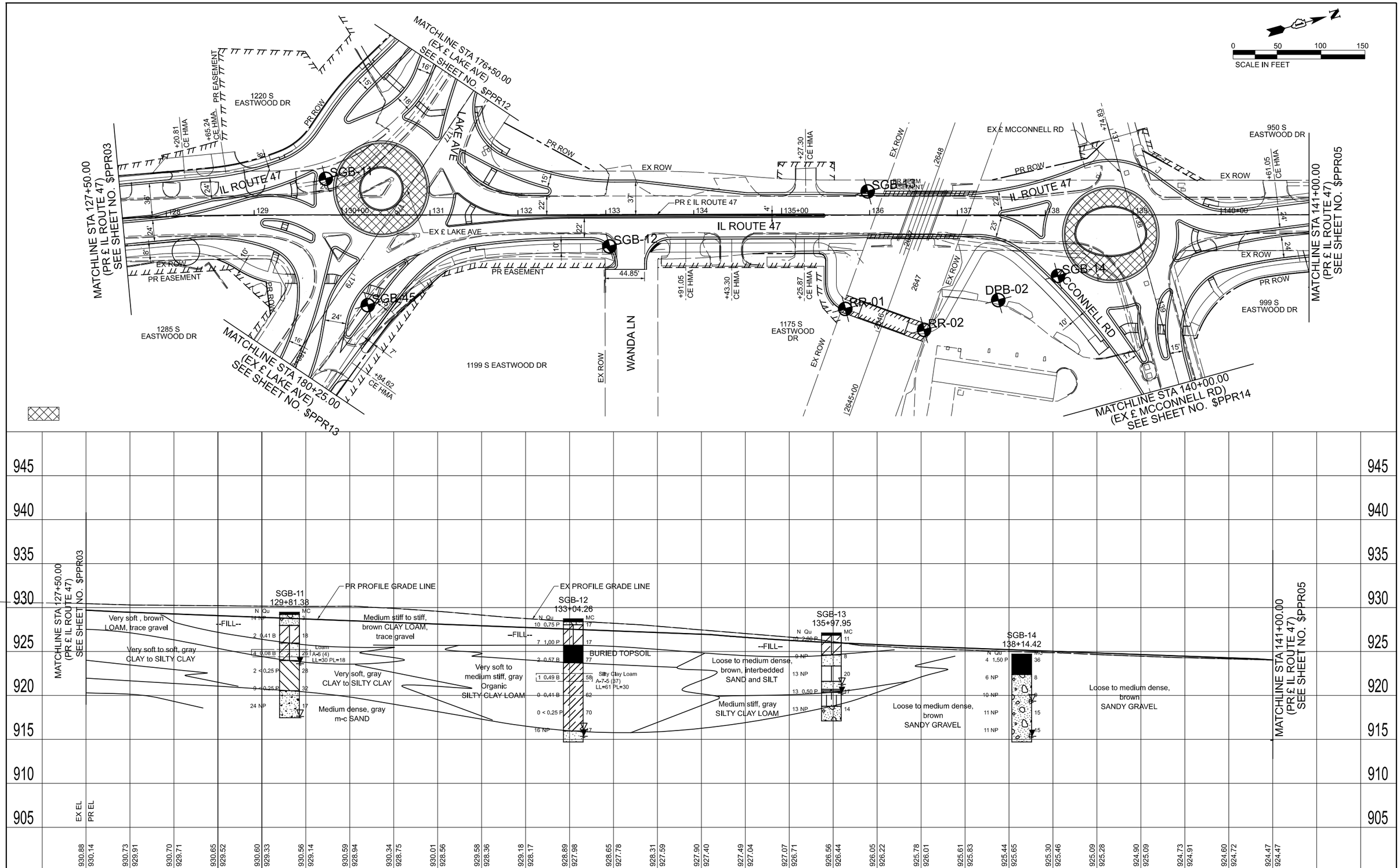
USER NAME = $USER$	DESIGNED - OPS	REVISED -	
	DRAWN - JTN	REVISED -	
PLOT SCALE = $SCALE$	CHECKED - TJW	REVISED -	
PLOT DATE = $DATE$	DATE - $DATE	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL-47 PLAN AND PROFILE

SCALE: 1"=50' | SHEET 3 OF $PPR-T SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	(104 & 105) WRS-9(13)	MCHENRY	17	3
		CONTRACT NO. 60X17		
		ILLINOIS	FED. AID PROJECT	



MODEL: $MODELNAME$
FILE NAME: $FILE$

AECOM
303 EAST WACKER DRIVE, SUITE 1400
CHICAGO, IL 60601-5276
PHONE: (312) 373-7700 FAX: (312) 373-6800

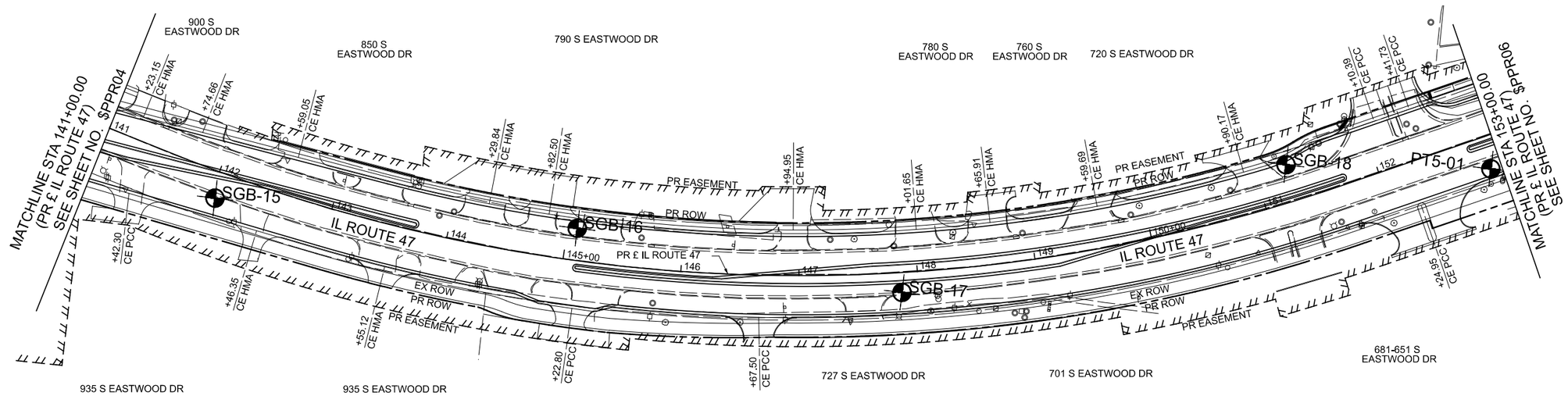
USER NAME = $USER$	DESIGNED - OPS	REVISED -	
	DRAWN - JTN	REVISED -	
PLOT SCALE = $SCALE$	CHECKED - TJW	REVISED -	
PLOT DATE = $DATE$	DATE - $DATE	REVISED -	

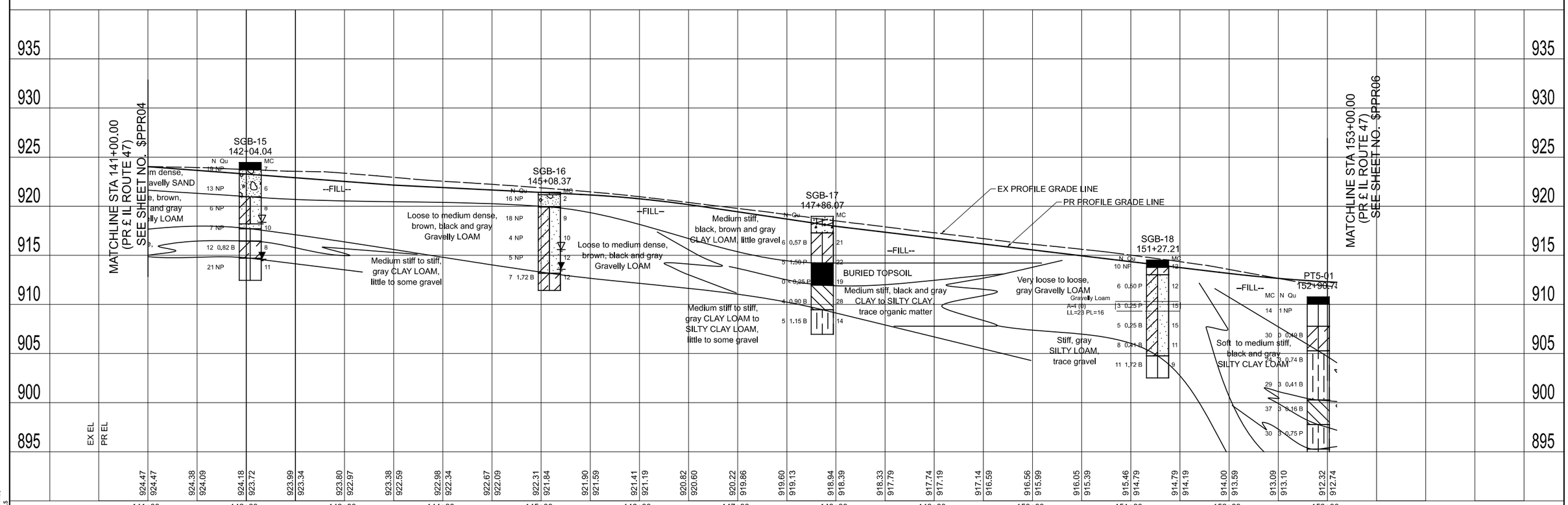
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL-47 PLAN AND PROFILE

SCALE: 1"=50' | SHEET 4 OF $PPR-T SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	(104 & 105) WRS-9(13)	MCHENRY	17	4
		CONTRACT NO. 60X17		
		ILLINOIS	FED. AID PROJECT	





PLAN	BY	DATE
SURVEYED		
PLOTTED		
ALIGNMENT CHECKED		
RT. OF WAY CHECKED		
CADD FILE NAME		
NOTE BOOK NO.		

PROFILE	BY	DATE
SURVEYED		
PLOTTED		
GRADES CHECKED		
BLK. NOTED		
STRUCTURE NOTATNS CHKD		
NOTE BOOK NO.		

MODEL: $MODELNAME$
FILE NAME: $FILEL$

AECOM
303 EAST WACKER DRIVE, SUITE 1400
CHICAGO, IL 60601-5276
PHONE: (312) 373-7700 FAX: (312) 373-6800

USER NAME = $USER$	DESIGNED - OPS	REVISED -	
	DRAWN - JTN	REVISED -	
PLOT SCALE = $SCALE$	CHECKED - MJE	REVISED -	
PLOT DATE = $DATE$	DATE - $DATE	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

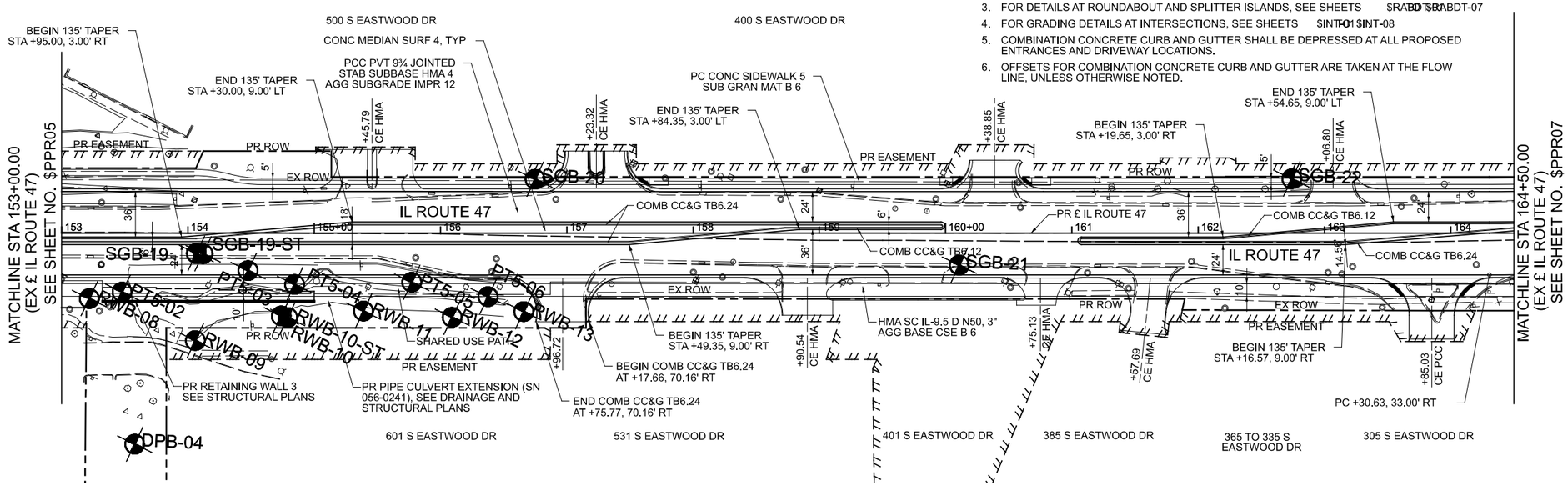
IL-47 PLAN AND PROFILE

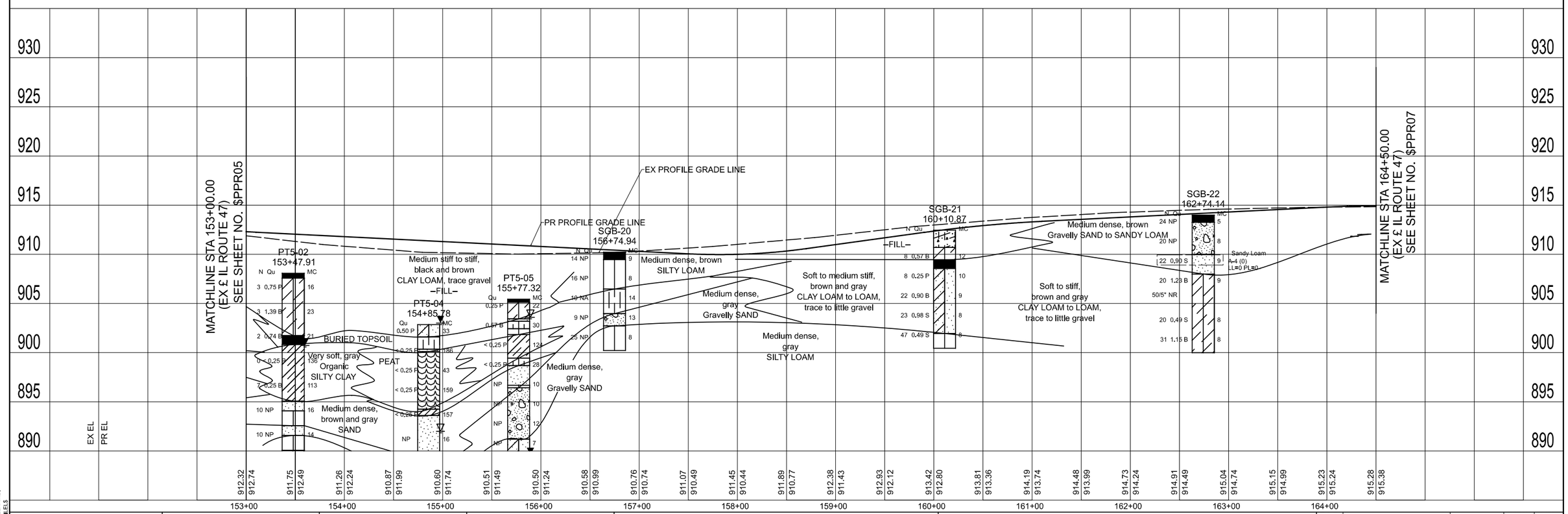
SCALE: 1"=50' | SHEET 5 OF $PPR-$SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	(104 & 105) WRS-9(13)	MCHENRY	17	5
		CONTRACT NO. 60X17		
		ILLINOIS	FED. AID PROJECT	

NOTES:

1. ALL STATIONS AND OFFSETS ARE BASED ON IL-47 BASELINE, UNLESS OTHERWISE NOTED.
2. FOR DETAILS AT MEDIANS AND ISLANDS, SEE SHEETS $MED-01 $MED-0X
3. FOR DETAILS AT ROUNDABOUT AND SPLITTER ISLANDS, SEE SHEETS $RABD-01 $RABDT-07
4. FOR GRADING DETAILS AT INTERSECTIONS, SEE SHEETS $INT-01 $INT-08
5. COMBINATION CONCRETE CURB AND GUTTER SHALL BE DEPRESSED AT ALL PROPOSED ENTRANCES AND DRIVEWAY LOCATIONS.
6. OFFSETS FOR COMBINATION CONCRETE CURB AND GUTTER ARE TAKEN AT THE FLOW LINE, UNLESS OTHERWISE NOTED.





USER NAME = $USER$	DESIGNED - OPS	REVISED -	
	DRAWN - JTN	REVISED -	
PLOT SCALE = $SCALE$	CHECKED - TJW	REVISED -	
PLOT DATE = $DATE$	DATE - $DATE	REVISED -	

AECOM
303 EAST WACKER DRIVE, SUITE 1400
CHICAGO, IL 60601-5276
PHONE: (312) 373-7700 FAX: (312) 373-6800

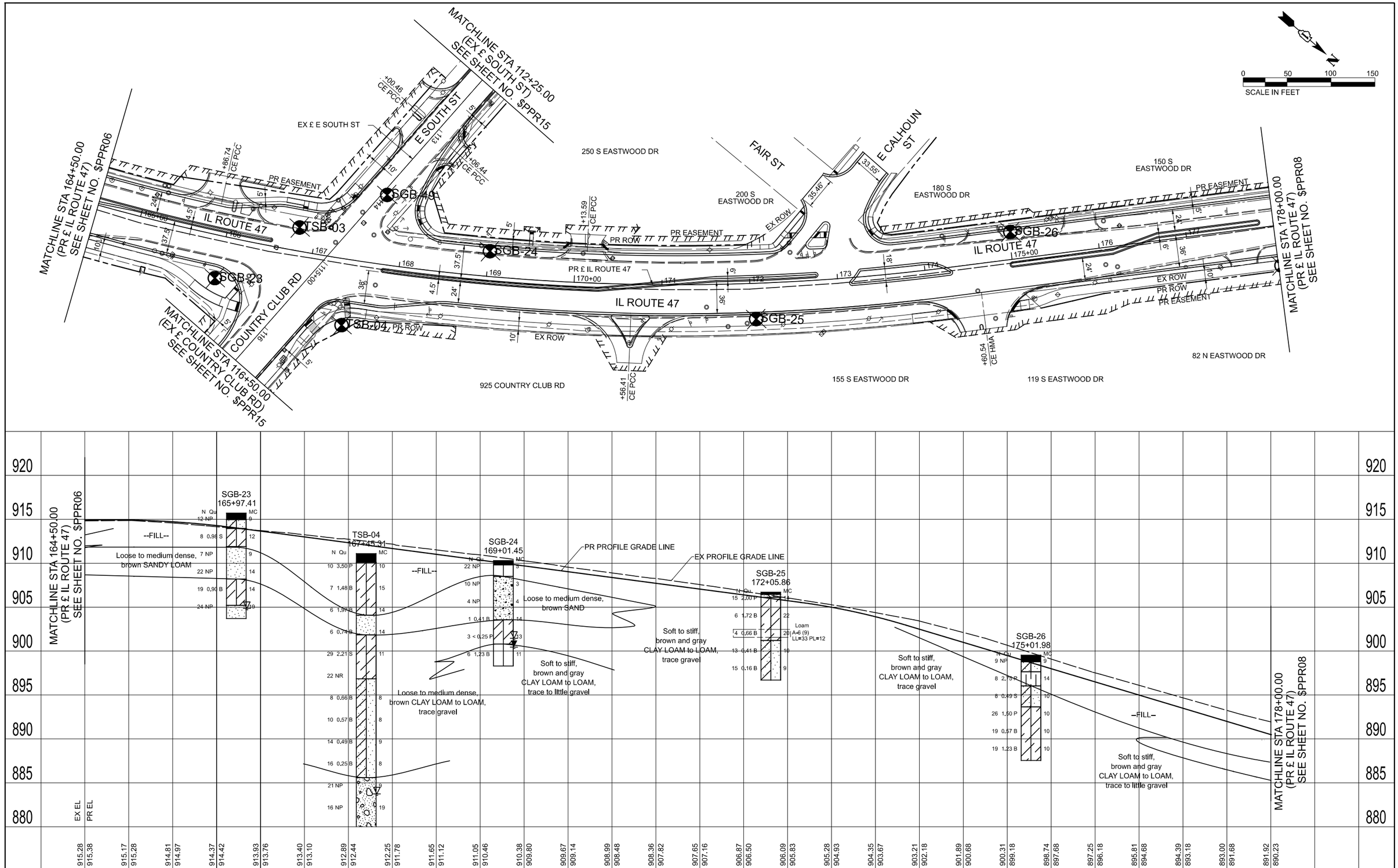
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL-47 PLAN AND PROFILE

SCALE: 1"=50' | SHEET 6 OF $PPR-T SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	(104 & 105) WRS-9(13)	MCHENRY	17	6
		CONTRACT NO. 60X17		
		ILLINOIS	FED. AID PROJECT	

MODEL: $MODELNAME$
FILE NAME: $FILEL$



PLAN	BY	DATE
SURVEYED		
PLOTTED		
ALIGNMENT CHECKED		
RT. OF WAY CHECKED		
CADD FILE NAME		
NOTE BOOK NO.		

PROFILE	BY	DATE
SURVEYED		
PLOTTED		
GRADES CHECKED		
BLK. NOTED		
STRUCTURE NOTATNS CHKD		
NOTE BOOK NO.		

MODEL: $MODELNAME$
FILE NAME: $FILEL$

AECOM
303 EAST WACKER DRIVE, SUITE 1400
CHICAGO, IL 60601-5276
PHONE: (312) 373-7700 FAX: (312) 373-6800

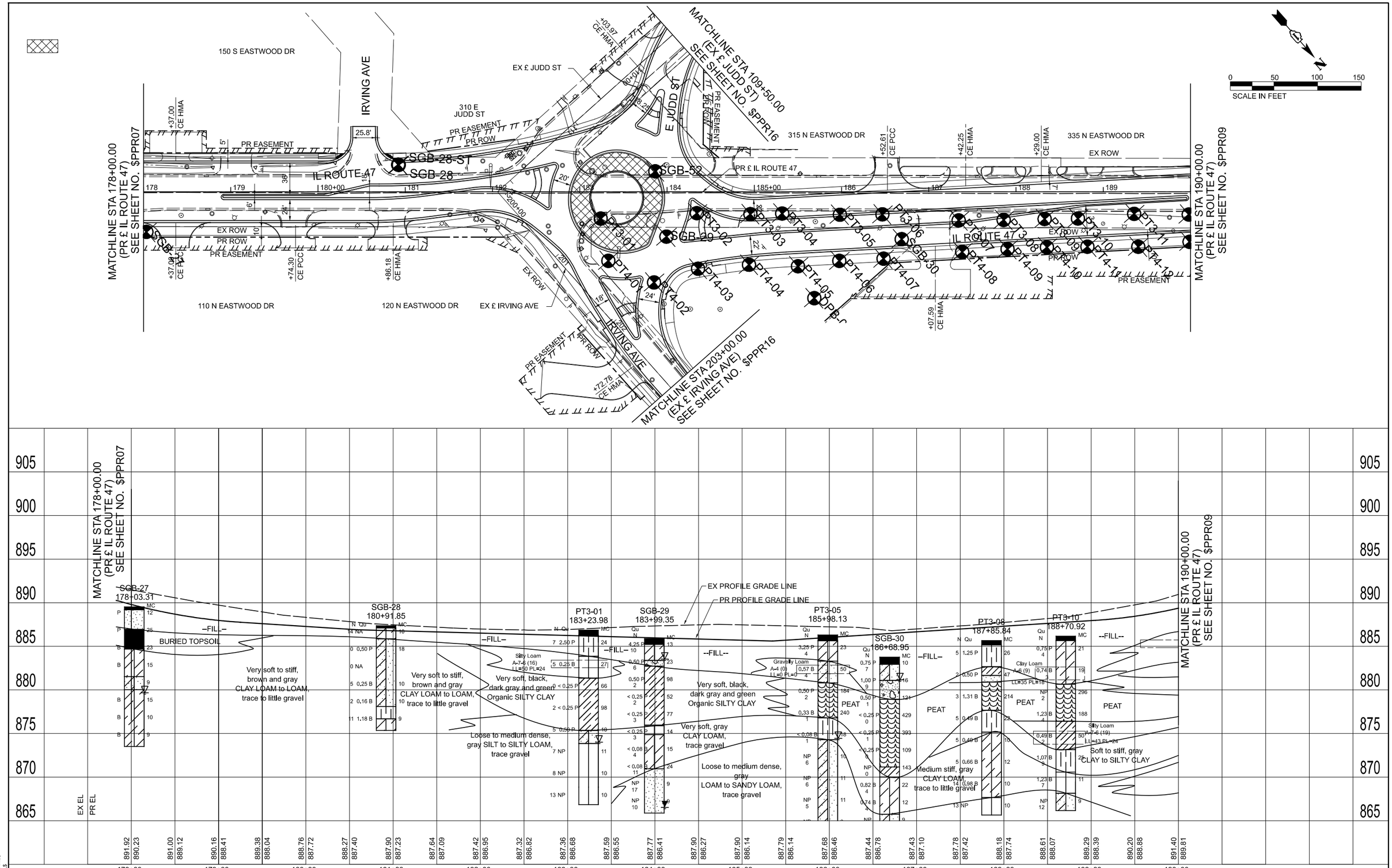
USER NAME = $USER$	DESIGNED - OPS	REVISED -	
	DRAWN - JTN	REVISED -	
PLOT SCALE = $SCALE$	CHECKED - TJW	REVISED -	
PLOT DATE = $DATE$	DATE - $DATE	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL-47 PLAN AND PROFILE

SCALE: 1"=50' | SHEET 7 OF $PPR-T SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	(104 & 105) WRS-9(13)	MCHENRY	17	7
		CONTRACT NO. 60X17		
		ILLINOIS	FED. AID PROJECT	



PLAN	BY	DATE
SURVEYED		
PLOTTED		
ALIGNMENT CHECKED		
RT. OF WAY CHECKED		
CADD FILE NAME		
NOTE BOOK NO.		

PROFILE	BY	DATE
SURVEYED		
PLOTTED		
GRADES CHECKED		
BLK. NOTED		
STRUCTURE NOTATNS CHKD		
NOTE BOOK NO.		

MODEL: $MODELNAME$
FILE NAME: $FILE$

AECOM
303 EAST WACKER DRIVE, SUITE 1400
CHICAGO, IL 60601-5276
PHONE: (312) 373-7700 FAX: (312) 373-6800

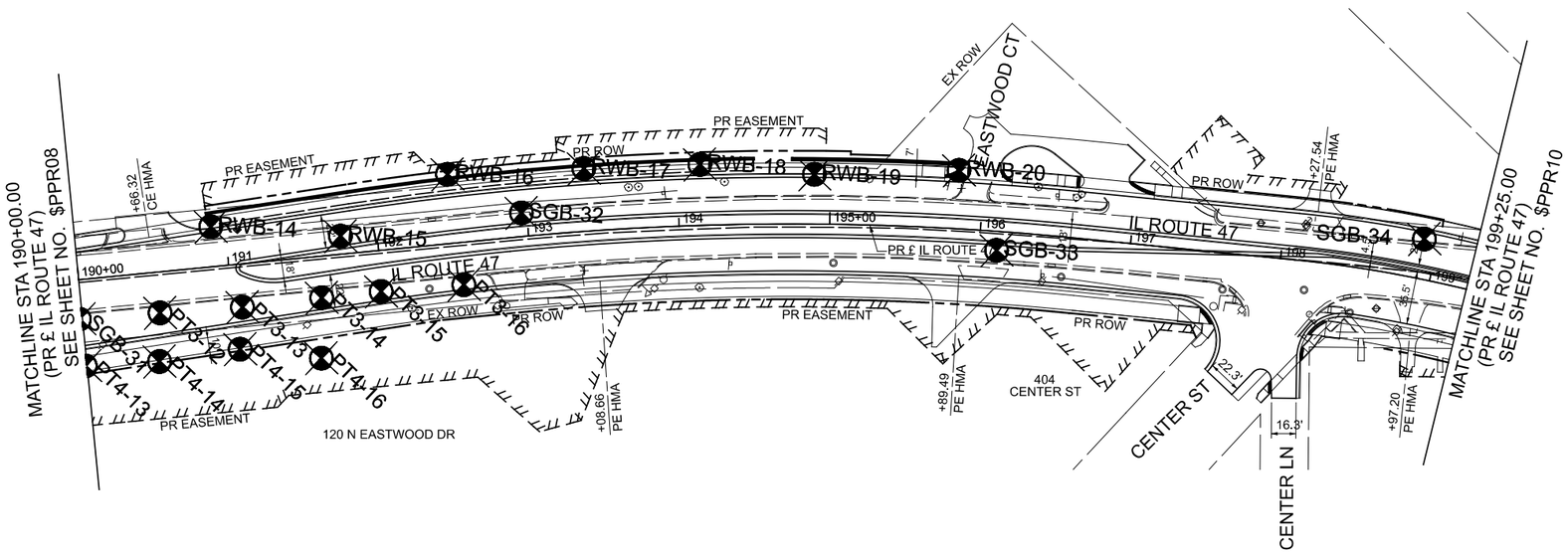
USER NAME = $USER$	DESIGNED - OPS	REVISED -
	DRAWN - JTN	REVISED -
PLOT SCALE = $SCALE$	CHECKED - TJW	REVISED -
PLOT DATE = $DATE$	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

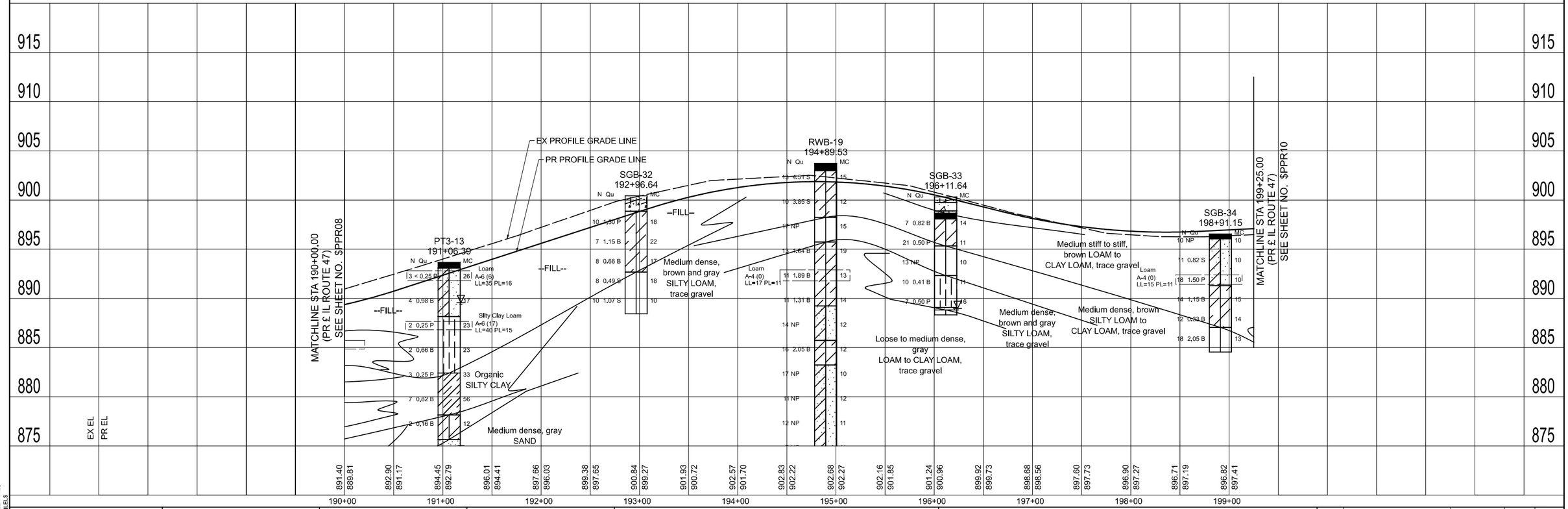
IL-47 PLAN AND PROFILE

SCALE: 1"=50' | SHEET 8 OF $PPR-T SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	(104 & 105) WRS-9(13)	MCHENRY	17	8
		CONTRACT NO. 60X17		
		ILLINOIS	FED. AID PROJECT	



0 50 100 150
SCALE IN FEET



PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

MODEL: $MODELNAME$
FILE NAME: $FILE$

AECOM
303 EAST WACKER DRIVE, SUITE 1400
CHICAGO, IL 60601-5276
PHONE: (312) 373-7700 FAX: (312) 373-6800

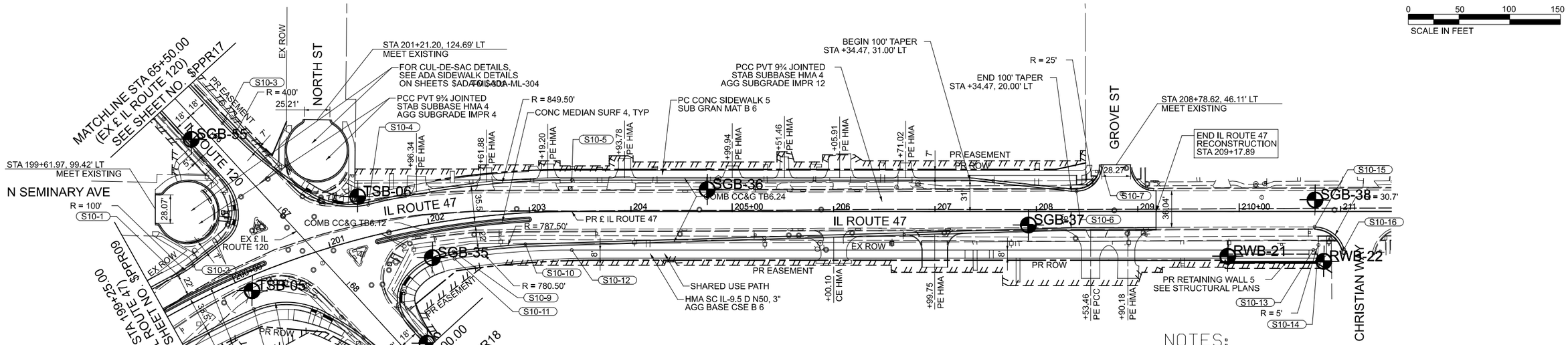
USER NAME = $USER$	DESIGNED - OPS	REVISED -
	DRAWN - JTN	REVISED -
PLOT SCALE = $SCALE$	CHECKED - TJW	REVISED -
PLOT DATE = $DATE$	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL-47 PLAN AND PROFILE

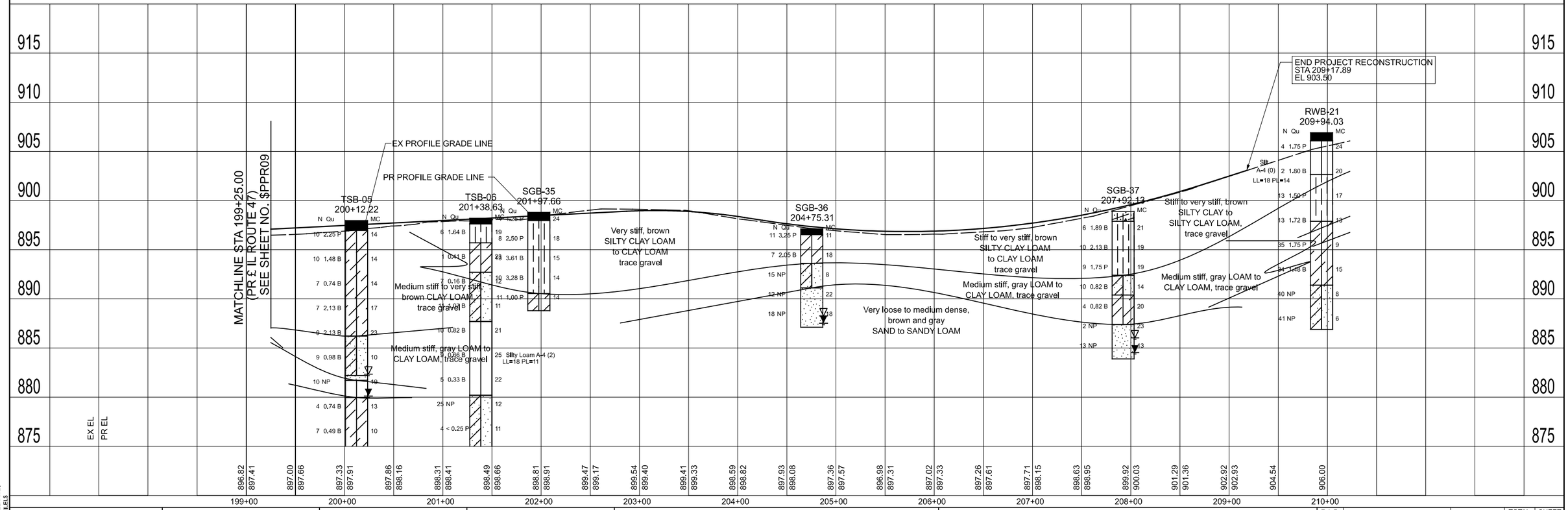
SCALE: 1"=50' | SHEET 9 OF $PPR-T SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	(104 & 105) WRS-9(13)	MCHENRY	17	9
		CONTRACT NO. 60X17		
		ILLINOIS	FED. AID PROJECT	



NOTES:

1. ALL STATIONS AND OFFSETS ARE BASED ON IL-47 BASELINE, UNLESS OTHERWISE NOTED.
2. FOR DETAILS AT MEDIANS AND ISLANDS, SEE SHEETS $MED01 & $MED-0X
3. FOR DETAILS AT ROUNDABOUT AND SPLITTER ISLANDS, SEE SHEETS $RAB01 & $RABDT-07
4. FOR GRADING DETAILS AT INTERSECTIONS, SEE SHEETS $INT-01 & $INT-08
5. COMBINATION CONCRETE CURB AND GUTTER SHALL BE DEPRESSED AT ALL PROPOSED ENTRANCES AND DRIVEWAY LOCATIONS.
6. OFFSETS FOR COMBINATION CONCRETE CURB AND GUTTER ARE TAKEN AT THE FLOW LINE, UNLESS OTHERWISE NOTED.



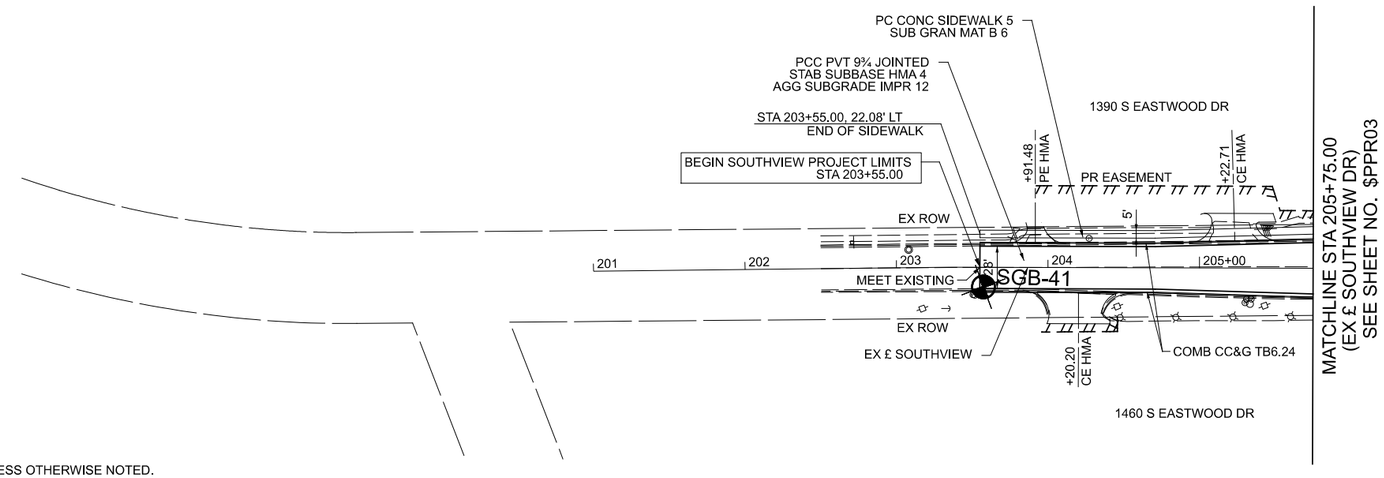
AECOM 303 EAST WACKER DRIVE, SUITE 1400 CHICAGO, IL 60601-5276 PHONE: (312) 373-7700 FAX: (312) 373-6800	USER NAME = $USER$	DESIGNED - OPS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IL-47 PLAN AND PROFILE
		DRAWN - JTN	REVISED -		
	PLOT SCALE = $SCALE$	CHECKED - TJW	REVISED -		
	PLOT DATE = $DATE$	DATE - $DATE	REVISED -		SCALE: 1"=50' SHEET 10 OF $PPR-T SHEETS STA. TO STA.

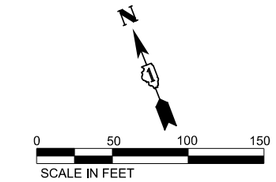
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	(104 & 105) WRS-9(13)	MCHENRY	17	$PPR10
CONTRACT NO. 60X17				
ILLINOIS	FED. AID PROJECT			

PLAN: SURVEYED, PLOTTED, ALIGNMENT CHECKED, RT. OF WAY CHECKED, CADD FILE NAME; NOTE BOOK NO.; BY; DATE

PROFILE: SURVEYED, PLOTTED, GRADES CHECKED, B.M. NOTED, STRUCTURE NOTATNS CHKD; NOTE BOOK NO.; BY; DATE

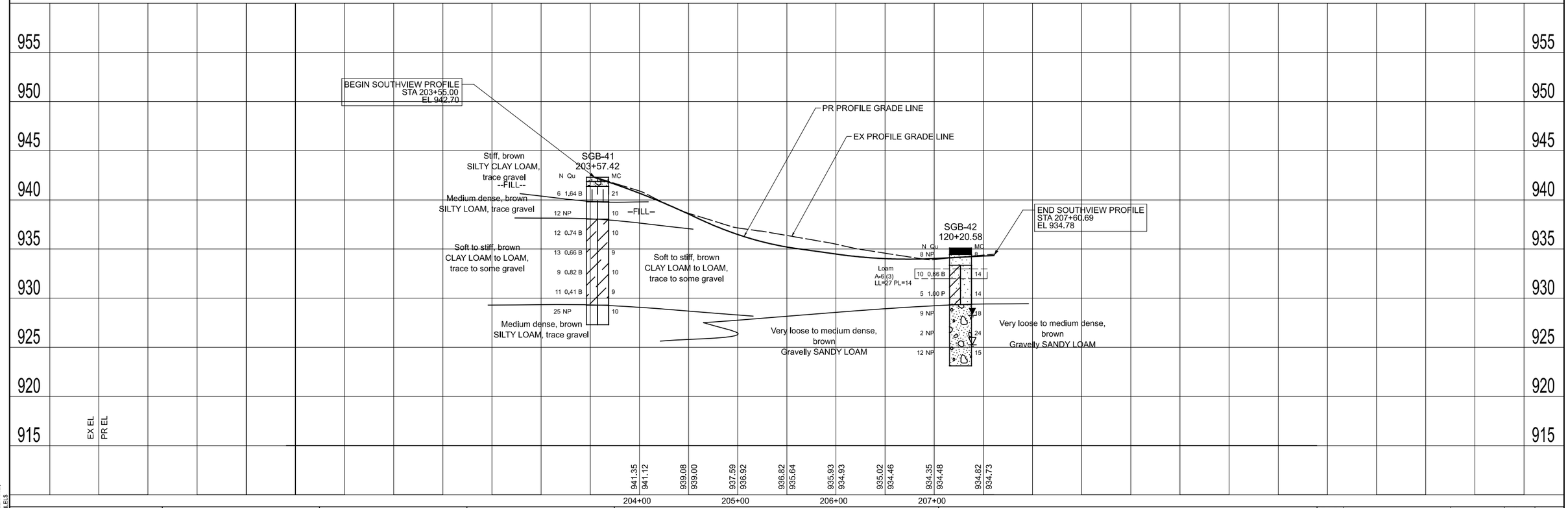
MODEL: $MODELNAME$
FILE NAME: $FILE$





NOTES:

1. ALL STATIONS AND OFFSETS ARE BASED ON SOUTHVIEW BASELINE, UNLESS OTHERWISE NOTED.
2. FOR DETAILS AT ROUNDABOUT AND SPLITTER ISLANDS, SEE SHEETS $RABDT-01 TO $RABDT-07
3. FOR GRADING DETAILS AT INTERSECTIONS, SEE SHEETS $INT-01 TO $INT-08
4. COMBINATION CONCRETE CURB AND GUTTER SHALL BE DEPRESSED AT ALL PROPOSED ENTRANCES AND DRIVEWAY LOCATIONS.
5. OFFSETS FOR COMBINATION CONCRETE CURB AND GUTTER ARE TAKEN AT THE FLOW LINE, UNLESS OTHERWISE NOTED.



PLAN		BY	DATE
NOTE BOOK NO. ____	SURVEYED		
	PLOTTED		
	ALIGNMENT CHECKED		
	RT. OF WAY CHECKED		
	CADD FILE NAME		

PROFILE		BY	DATE
NOTE BOOK NO. ____	SURVEYED		
	PLOTTED		
	GRADES CHECKED		
	B.M. NOTED		
	STRUCTURE NOTATNS CHKD		

MODEL: $MODELNAME$
FILE NAME: $FILEL$

AECOM
303 EAST WACKER DRIVE, SUITE 1400
CHICAGO, IL 60601-5276
PHONE: (312) 373-7700 FAX: (312) 373-6800

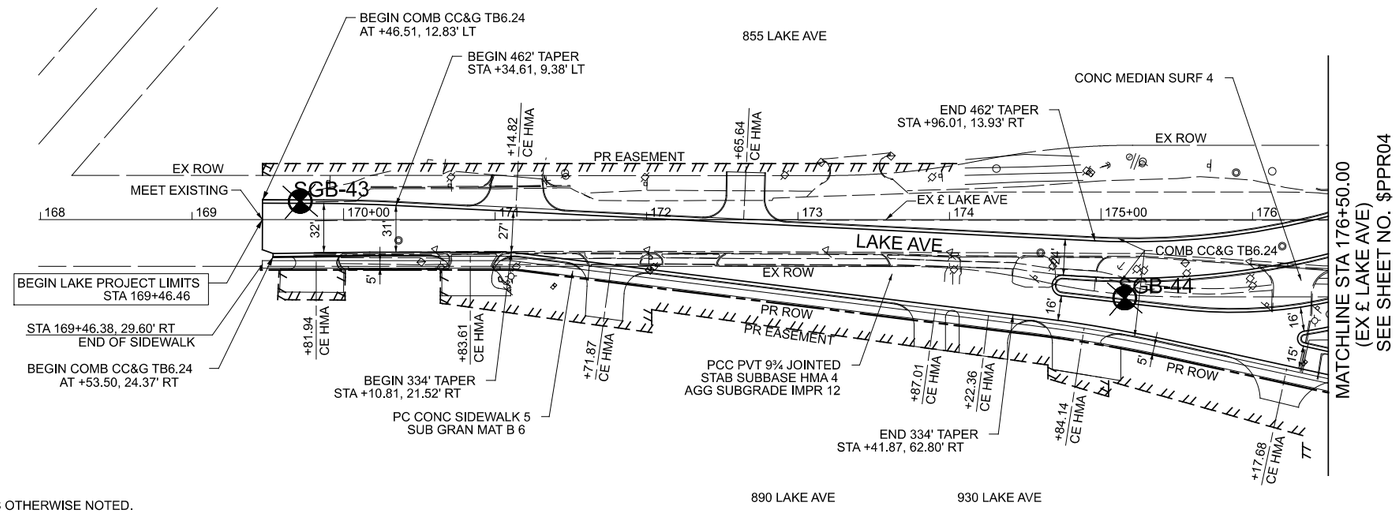
USER NAME = $USER$	DESIGNED - CRH	REVISED -
	DRAWN - JTN	REVISED -
PLOT SCALE = $SCALE$	CHECKED - TJW	REVISED -
PLOT DATE = $DATE$	DATE - $DATE	REVISED -

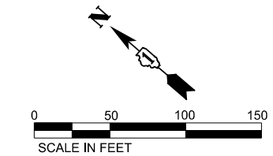
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTHVIEW DRIVE PLAN AND PROFILE

SCALE: 1"=50' | SHEET 13 OF $PPR-T SHEETS | STA. TO STA.

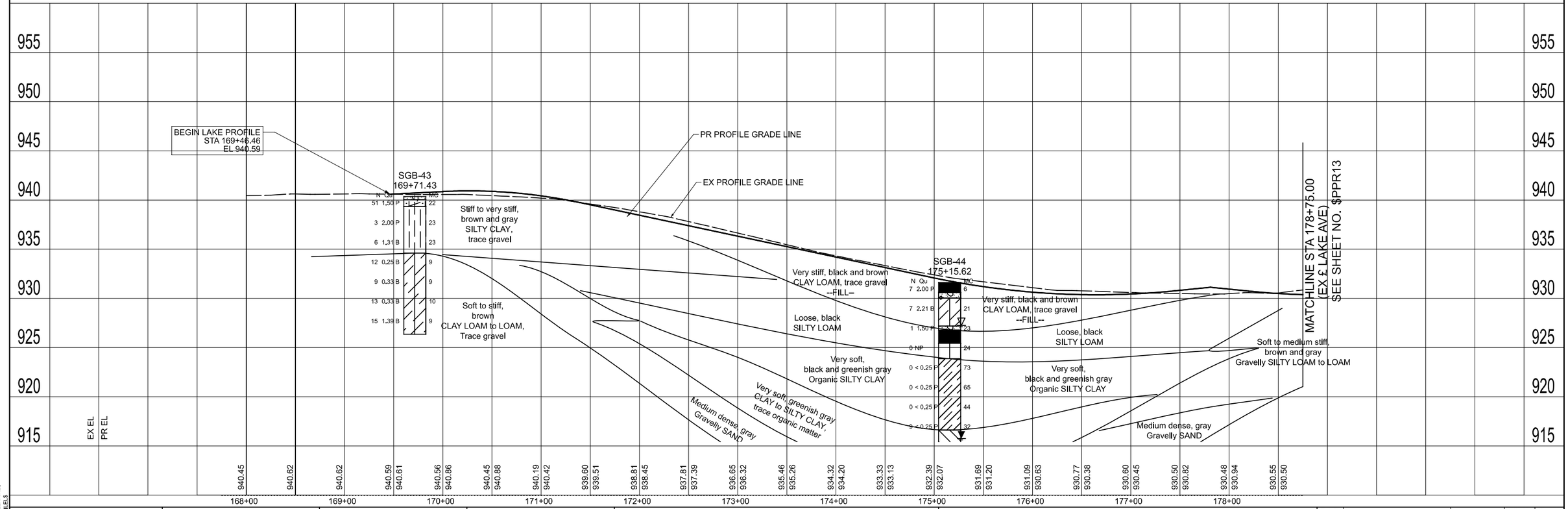
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	(104 & 105) WRS-9(13)	MCHENRY	17	SPPR11
		CONTRACT NO. 60X17		
		ILLINOIS	FED. AID PROJECT	





NOTES:

1. ALL STATIONS AND OFFSETS ARE BASED ON LAKE BASELINE, UNLESS OTHERWISE NOTED.
2. FOR DETAILS AT ROUNDABOUT AND SPLITTER ISLANDS, SEE SHEETS $RABDT-01 TO $RABDT-07
3. FOR GRADING DETAILS AT INTERSECTIONS, SEE SHEETS $INT-01 TO $INT-08
4. COMBINATION CONCRETE CURB AND GUTTER SHALL BE DEPRESSED AT ALL PROPOSED ENTRANCES AND DRIVEWAY LOCATIONS.
5. OFFSETS FOR COMBINATION CONCRETE CURB AND GUTTER ARE TAKEN AT THE FLOW LINE, UNLESS OTHERWISE NOTED.



PLAN		BY	DATE
NOTE BOOK NO.	SURVEYED		
	PLOTTED		
	ALIGNMENT CHECKED		
	RT. OF WAY CHECKED		
	CADD FILE NAME		

PROFILE		BY	DATE
NOTE BOOK NO.	SURVEYED		
	PLOTTED		
	GRADES CHECKED		
	B.M. NOTED		
	STRUCTURE NOTATNS CHKD		

MODEL: $MODELNAME$
FILE NAME: $FILEL$

AECOM
303 EAST WACKER DRIVE, SUITE 1400
CHICAGO, IL 60601-5276
PHONE: (312) 373-7700 FAX: (312) 373-6800

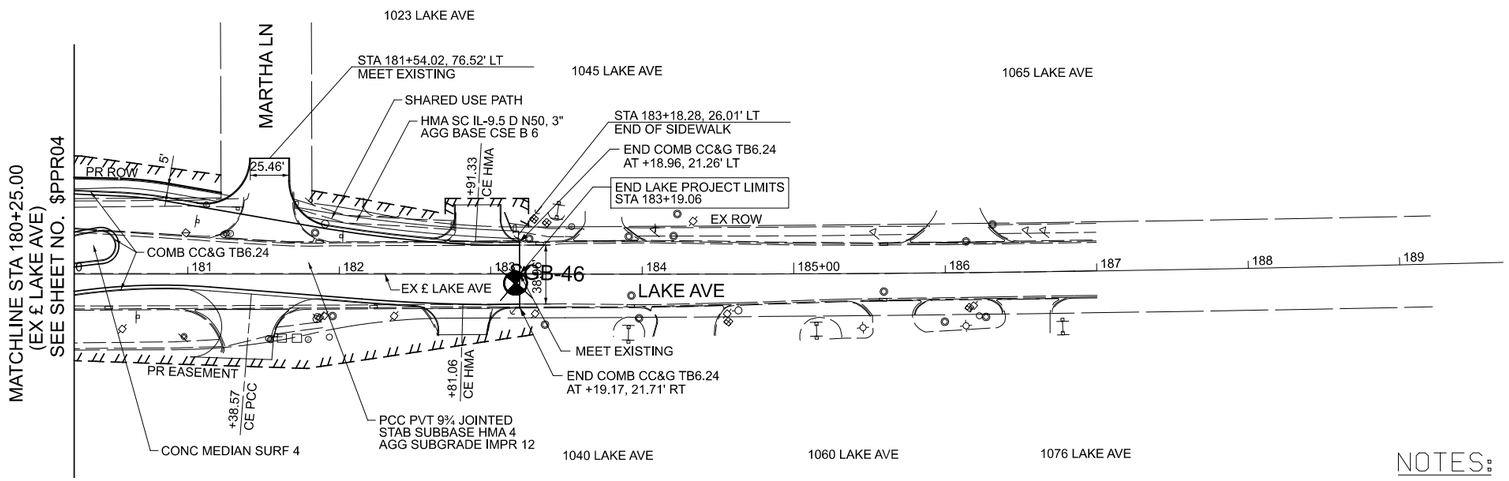
USER NAME = $USER$	DESIGNED - OPS	REVISED -
	DRAWN - JTN	REVISED -
PLOT SCALE = $SCALE$	CHECKED - TJW	REVISED -
PLOT DATE = $DATE$	DATE - $DATE	REVISED -

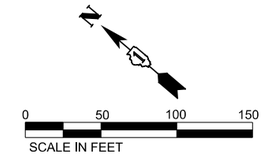
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LAKE AVENUE PLAN AND PROFILE

SCALE: 1"=50' | SHEET 14 OF $PPR-T SHEETS | STA. | TO STA.

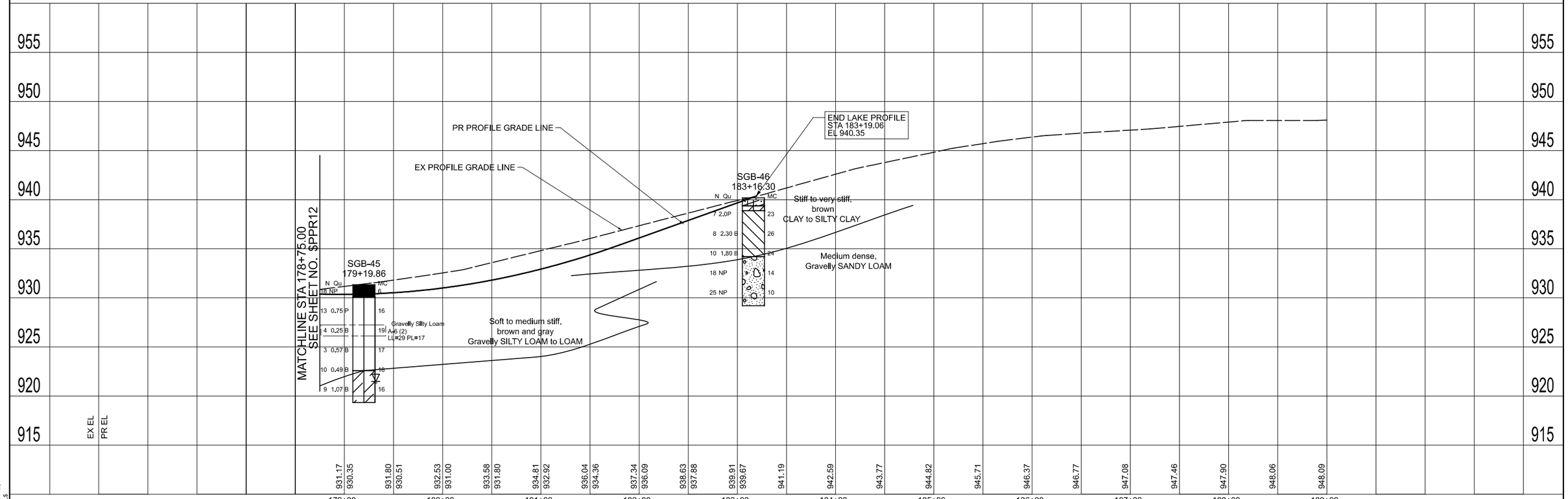
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	(104 & 105) WRS-9(13)	MCHENRY	17	$PPR12
		CONTRACT NO. 60X17		
		ILLINOIS	FED. AID PROJECT	





NOTES:

1. ALL STATIONS AND OFFSETS ARE BASED ON LAKE BASELINE, UNLESS OTHERWISE NOTED.
2. FOR DETAILS AT ROUNDABOUT AND SPLITTER ISLANDS, SEE SHEETS $RAB-01 TO $RAB-07
3. FOR GRADING DETAILS AT INTERSECTIONS, SEE SHEETS $INT-01 TO $INT-08
4. COMBINATION CONCRETE CURB AND GUTTER SHALL BE DEPRESSED AT ALL PROPOSED ENTRANCES AND DRIVEWAY LOCATIONS.
5. OFFSETS FOR COMBINATION CONCRETE CURB AND GUTTER ARE TAKEN AT THE FLOW LINE, UNLESS OTHERWISE NOTED.



PLAN	BY	DATE
SURVEYED		
PLOTTED		
ALIGNMENT CHECKED		
RT. OF WAY CHECKED		
CADD FILE NAME		
NOTE BOOK NO.		

PROFILE	BY	DATE
SURVEYED		
PLOTTED		
GRADES CHECKED		
B.M. NOTED		
STRUCTURE NOTATNS CHKD		
NOTE BOOK NO.		

MODEL: $MODELNAME$
FILE NAME: $FILEL$

AECOM
303 EAST WACKER DRIVE, SUITE 1400
CHICAGO, IL 60601-5276
PHONE: (312) 373-7700 FAX: (312) 373-6800

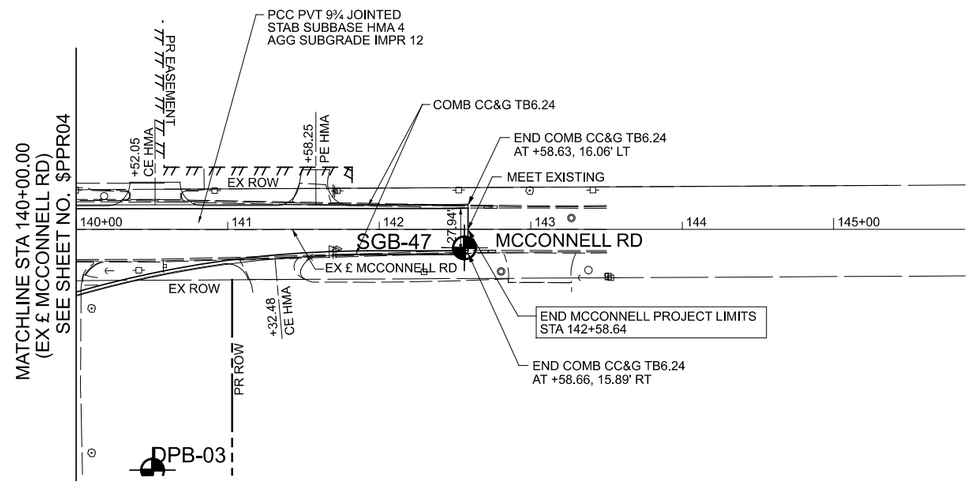
USER NAME = $USER$	DESIGNED - OPS	REVISED -
	DRAWN - JTN	REVISED -
PLOT SCALE = $SCALE$	CHECKED - TJW	REVISED -
PLOT DATE = $DATE$	DATE - $DATE	REVISED -

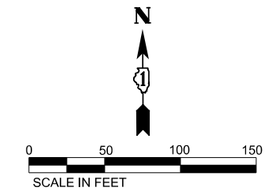
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

LAKE AVENUE PLAN AND PROFILE

SCALE: 1"=50' | SHEET 15 OF $PPR-T SHEETS | STA. TO STA.

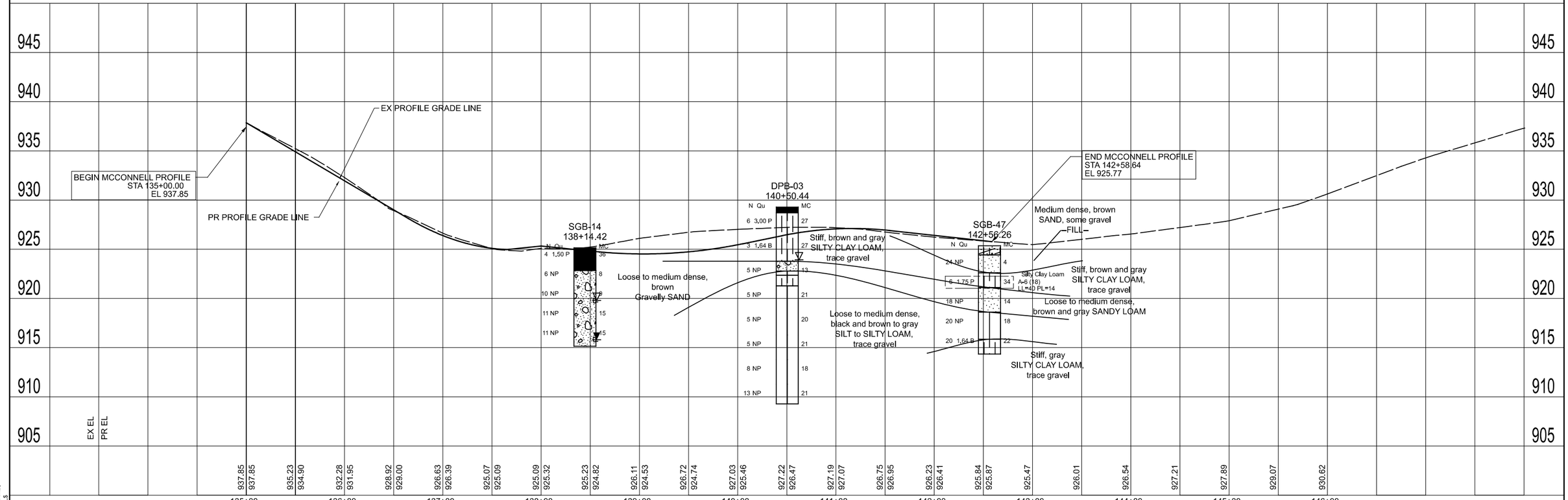
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	(104 & 105) WRS-9(13)	MCHENRY	17	$PPR13
		CONTRACT NO. 60X17		
		ILLINOIS	FED. AID PROJECT	





NOTES:

1. ALL STATIONS AND OFFSETS ARE BASED ON MCCONNELL BASELINE, UNLESS OTHERWISE NOTED.
2. FOR DETAILS AT ROUNDABOUT AND SPLITTER ISLANDS, SEE SHEETS $RABDT-01 TO $RABDT-07
3. FOR GRADING DETAILS AT INTERSECTIONS, SEE SHEETS $INT-01 TO $INT-08
4. COMBINATION CONCRETE CURB AND GUTTER SHALL BE DEPRESSED AT ALL PROPOSED ENTRANCES AND DRIVEWAY LOCATIONS.
5. OFFSETS FOR COMBINATION CONCRETE CURB AND GUTTER ARE TAKEN AT THE FLOW LINE, UNLESS OTHERWISE NOTED.



PLAN	BY	DATE
SURVEYED		
PLOTTED		
ALIGNMENT CHECKED		
RT. OF WAY CHECKED		
CADD FILE NAME		
NOTE BOOK NO.		

PROFILE	BY	DATE
SURVEYED		
PLOTTED		
GRADES CHECKED		
B.M. NOTED		
STRUCTURE NOTATNS CHKD		
NOTE BOOK NO.		

MODEL: $MODELNAME$
FILE NAME: $FILEL$

AECOM
303 EAST WACKER DRIVE, SUITE 1400
CHICAGO, IL 60601-5276
PHONE: (312) 373-7700 FAX: (312) 373-6800

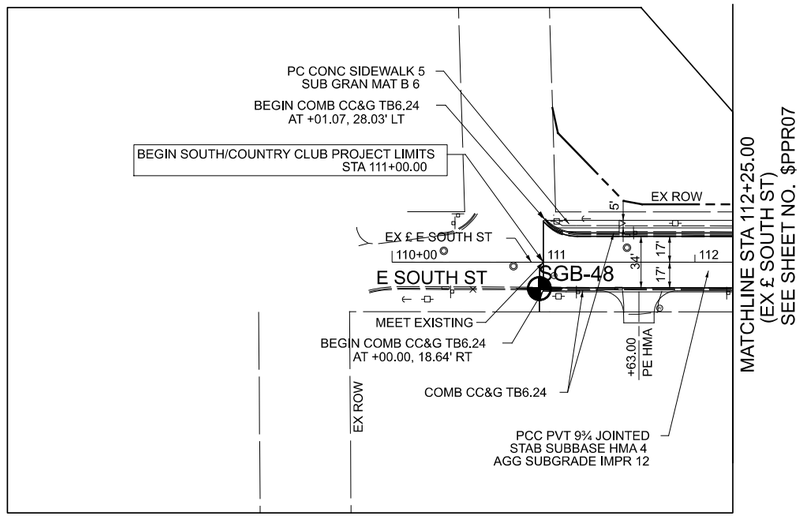
USER NAME = $USER$	DESIGNED - OPS	REVISED -	
	DRAWN - JTN	REVISED -	
PLOT SCALE = $SCALE$	CHECKED - TJW	REVISED -	
PLOT DATE = $DATE$	DATE - $DATE	REVISED -	

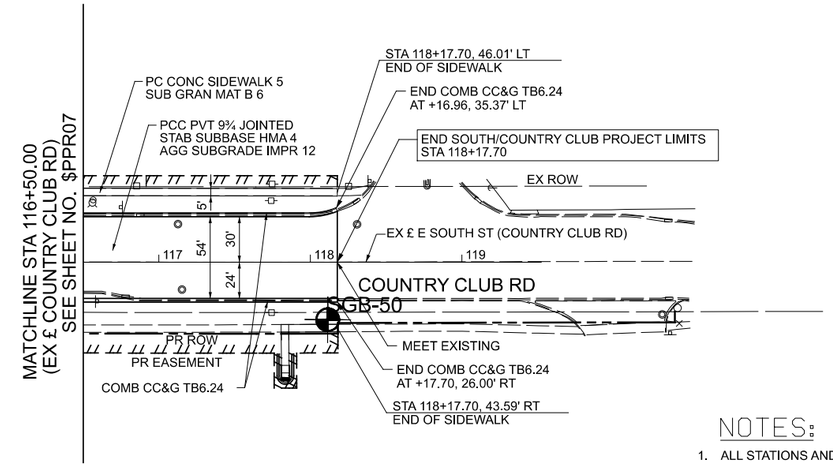
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

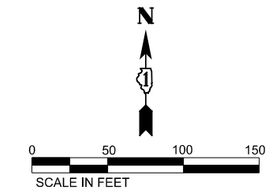
MCCONNELL ROAD PLAN AND PROFILE

SCALE: 1"=50' | SHEET 16 OF $PPR-T SHEETS | STA. | TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	(104 & 105) WRS-9(13)	MCHENRY	17	$PPR14
		CONTRACT NO. 60X17		
		ILLINOIS	FED. AID PROJECT	

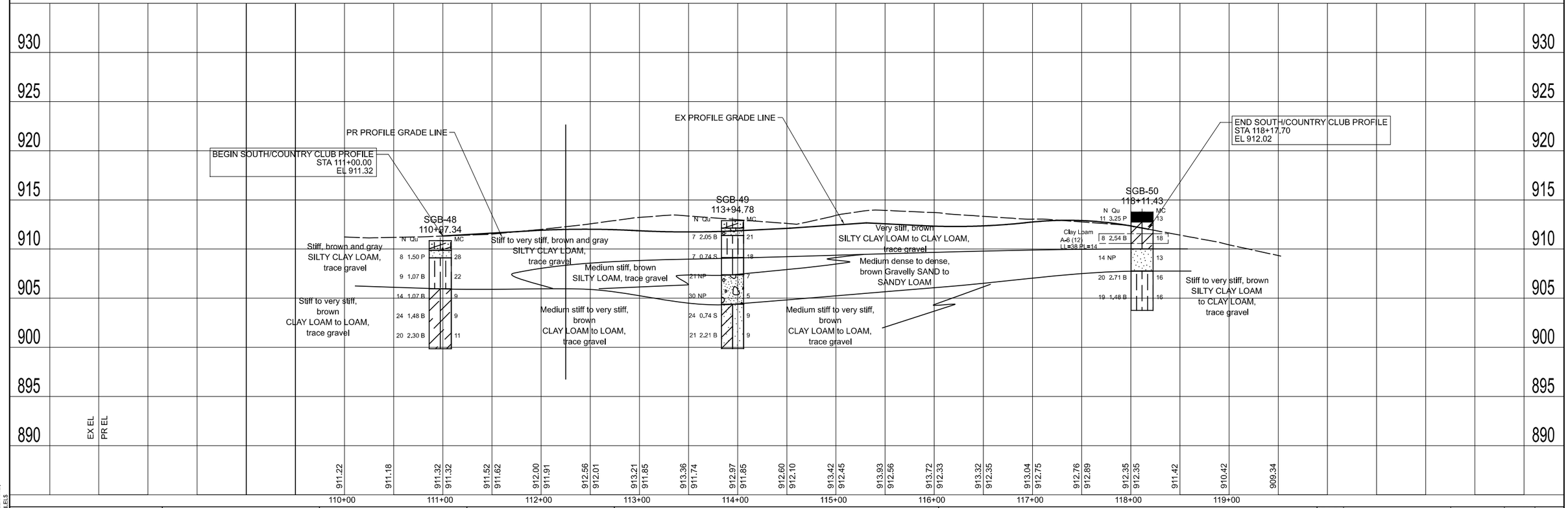






NOTES:

1. ALL STATIONS AND OFFSETS ARE BASED ON E SOUTH BASELINE, UNLESS OTHERWISE NOTED.
2. FOR DETAILS AT ROUNDABOUT AND SPLITTER ISLANDS, SEE SHEETS $RAD01 $RADT-07
3. FOR GRADING DETAILS AT INTERSECTIONS, SEE SHEETS $INT01 $INT-08
4. COMBINATION CONCRETE CURB AND GUTTER SHALL BE DEPRESSED AT ALL PROPOSED ENTRANCES AND DRIVEWAY LOCATIONS.
5. OFFSETS FOR COMBINATION CONCRETE CURB AND GUTTER ARE TAKEN AT THE FLOW LINE, UNLESS OTHERWISE NOTED.



PLAN	BY	DATE
SURVEYED		
PLOTTED		
ALIGNMENT CHECKED		
RT. OF WAY CHECKED		
CADD FILE NAME		
NOTE BOOK NO.		

PROFILE	BY	DATE
SURVEYED		
PLOTTED		
GRADES CHECKED		
B.M. NOTED		
STRUCTURE NOTATNS CHKD		
NOTE BOOK NO.		

MODEL: $MODELNAME$
FILE NAME: $FILEL$

AECOM
303 EAST WACKER DRIVE, SUITE 1400
CHICAGO, IL 60601-5276
PHONE: (312) 373-7700 FAX: (312) 373-6800

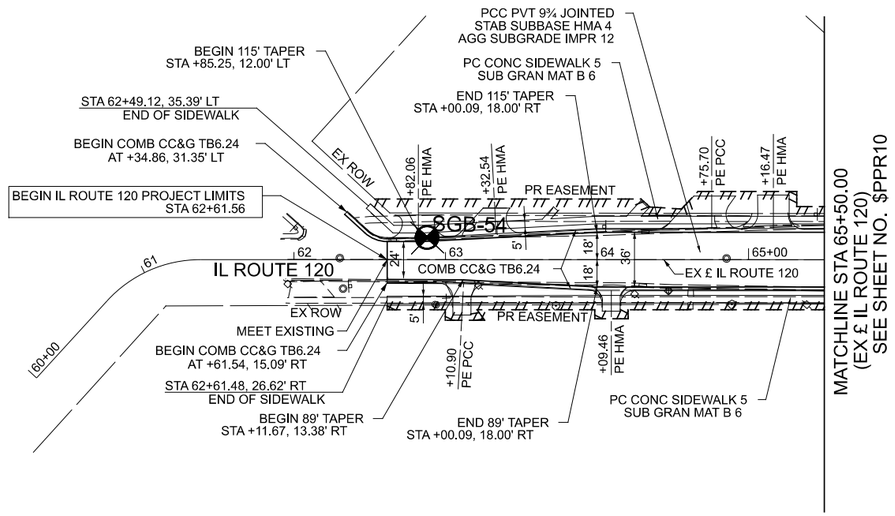
USER NAME = $USER$	DESIGNED - OPS	REVISED -
	DRAWN - JTN	REVISED -
PLOT SCALE = $SCALE$	CHECKED - TJW	REVISED -
PLOT DATE = $DATE$	DATE - $DATE	REVISED -

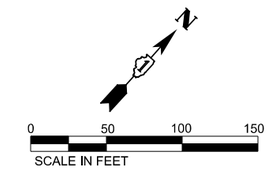
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH STREET/COUNTRY CLUB ROAD
PLAN AND PROFILE

SCALE: 1"=50' | SHEET 17 OF $PPR-T SHEETS | STA. TO STA.

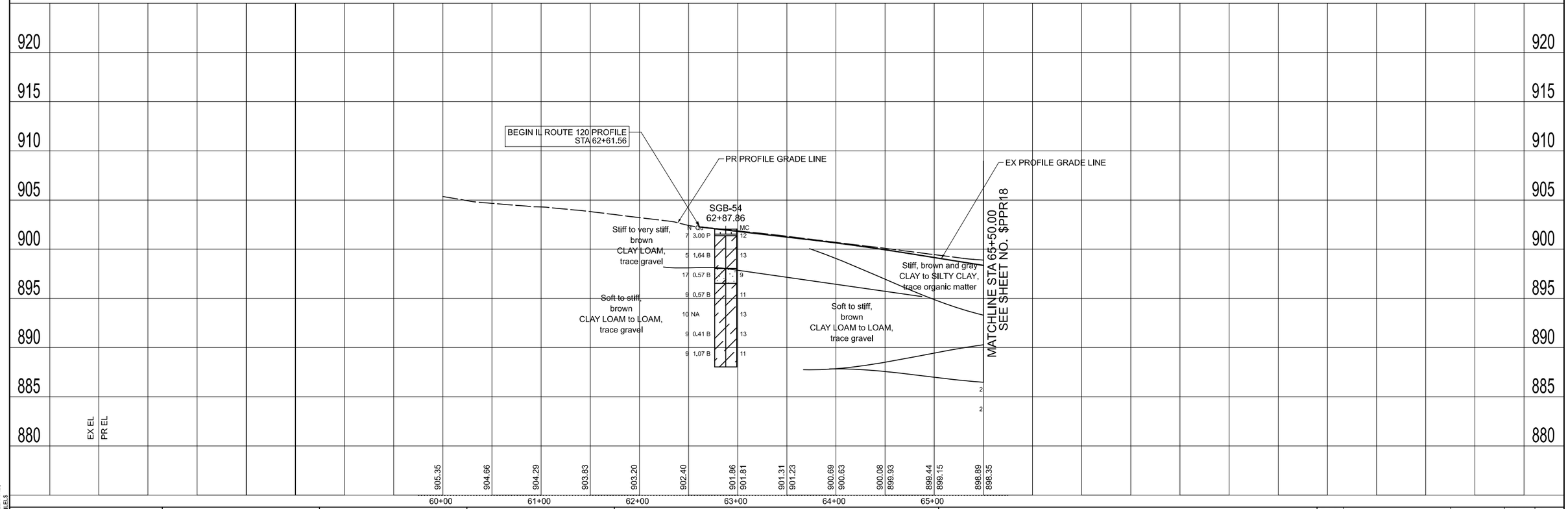
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	(104 & 105) WRS-9(13)	MCHENRY	17	$PPR15
		CONTRACT NO. 60X17		
		ILLINOIS	FED. AID PROJECT	





NOTES:

1. ALL STATIONS AND OFFSETS ARE BASED ON IL-120 BASELINE, UNLESS OTHERWISE NOTED.
2. FOR DETAILS AT ROUNDABOUT AND SPLITTER ISLANDS, SEE SHEETS $RABDT-01 TO $RABDT-07
3. FOR GRADING DETAILS AT INTERSECTIONS, SEE SHEETS $INT-01 TO $INT-08
4. COMBINATION CONCRETE CURB AND GUTTER SHALL BE DEPRESSED AT ALL PROPOSED ENTRANCES AND DRIVEWAY LOCATIONS.
5. OFFSETS FOR COMBINATION CONCRETE CURB AND GUTTER ARE TAKEN AT THE FLOW LINE, UNLESS OTHERWISE NOTED.



PLAN		BY	DATE
NOTE BOOK NO. ____	SURVEYED / PLOTTED / ALIGNMENT CHECKED / RT. OF WAY CHECKED / CADD FILE NAME		

PROFILE		BY	DATE
NOTE BOOK NO. ____	SURVEYED / PLOTTED / GRADES CHECKED / B.M. NOTED / STRUCTURE NOTATNS CHKD		

MODEL: $MODELNAME$
FILE NAME: $FILEL$

AECOM
303 EAST WACKER DRIVE, SUITE 1400
CHICAGO, IL 60601-5276
PHONE: (312) 373-7700 FAX: (312) 373-6800

USER NAME = $USER$	DESIGNED - OPS	REVISED -
	DRAWN - JTN	REVISED -
PLOT SCALE = $SCALE$	CHECKED - TJW	REVISED -
PLOT DATE = $DATE$	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

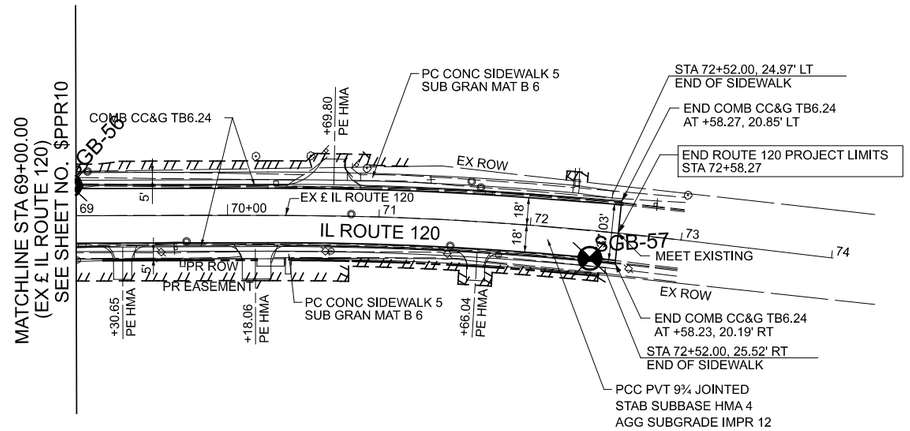
IL ROUTE 120 PLAN AND PROFILE

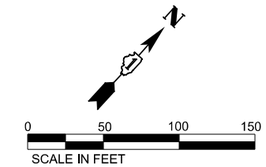
SCALE: 1"=50' | SHEET 19 OF $PPR-T SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	(104 & 105) WRS-9(13)	MCHENRY	17	$PPR17

CONTRACT NO. 60X17

ILLINOIS | FED. AID PROJECT



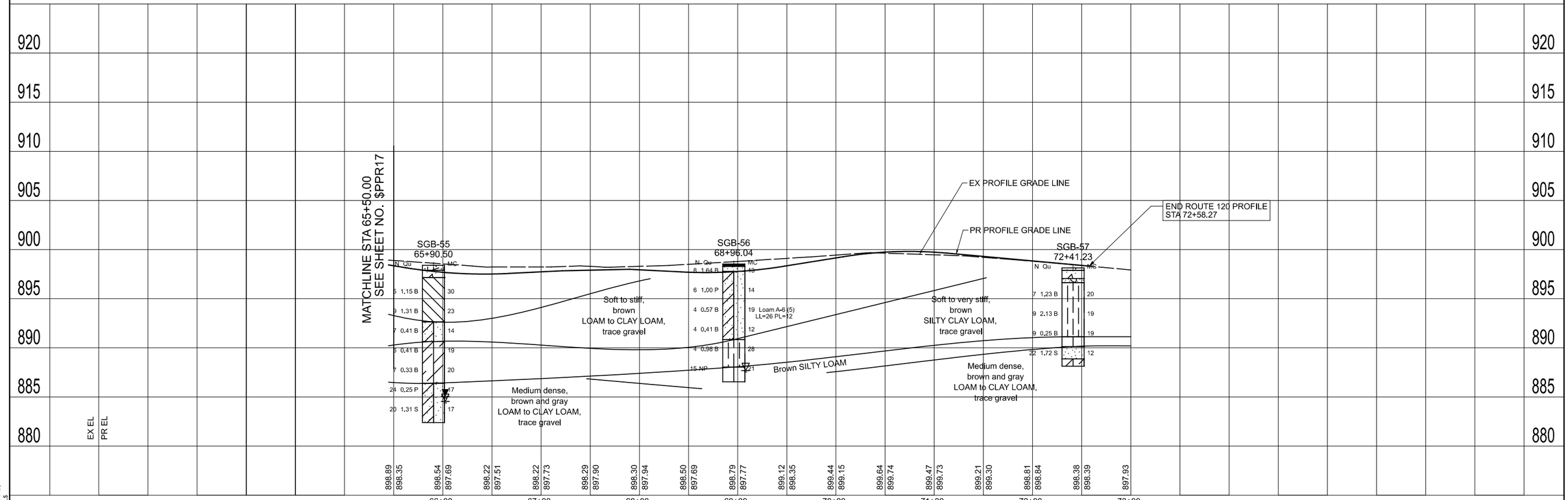


PLAN		BY	DATE
NOTE BOOK NO. ____	SURVEYED		
	PLOTTED		
	ALIGNMENT CHECKED		
	RT. OF WAY CHECKED		
	CADD FILE NAME		

NOTES:

1. ALL STATIONS AND OFFSETS ARE BASED ON IL-120 BASELINE, UNLESS OTHERWISE NOTED.
2. FOR DETAILS AT ROUNDABOUT AND SPLITTER ISLANDS, SEE SHEETS $RADT-01 TO $RADT-07
3. FOR GRADING DETAILS AT INTERSECTIONS, SEE SHEETS $INT-01 TO $INT-08
4. COMBINATION CONCRETE CURB AND GUTTER SHALL BE DEPRESSED AT ALL PROPOSED ENTRANCES AND DRIVEWAY LOCATIONS.
5. OFFSETS FOR COMBINATION CONCRETE CURB AND GUTTER ARE TAKEN AT THE FLOW LINE, UNLESS OTHERWISE NOTED.

PROFILE		BY	DATE
NOTE BOOK NO. ____	SURVEYED		
	PLOTTED		
	GRADES CHECKED		
	B.M. NOTED		
	STRUCTURE NOTAT'NS CHKD		



MODEL: $MODELNAME$
FILE NAME: $FILE1$

AECOM
303 EAST WACKER DRIVE, SUITE 1400
CHICAGO, IL 60601-5276
PHONE: (312) 373-7700 FAX: (312) 373-6800

USER NAME = $USER$	DESIGNED - OPS	REVISED -
	DRAWN - JTN	REVISED -
PLOT SCALE = $SCALE$	CHECKED - TJW	REVISED -
PLOT DATE = $DATE$	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL ROUTE 120 PLAN AND PROFILE

SCALE: 1"=50' | SHEET 20 OF $PPR-T SHEETS | STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
47	(104 & 105) WRS-9(13)	MCHENRY	17	1
		CONTRACT NO. 60X17		
		ILLINOIS	FED. AID PROJECT	

APPENDIX G

Wang Engineering

1145 North Main Street
Lombard, Illinois 60148
Phone (630) 953-9928
www.wangeng.com

Infiltration Rate Determination for A Single Ring Infiltrometer

Ref: 2012 Chicago Stormwater Ordinance Manual

Project Identification: IL 47

Test Location: INF-01
Soil Type: Sandy Loam
Tested By: Eric Datz
Depth to Water Table: NA

Excavation Depth: 11.5 inches
Ring Diameter: 12 inches
Ring Total Height: 27.25 inches
Penetration Depth: 0.75 inches

Elapsed Time (minutes)	Change in Time (minutes)	Water Decline (inches)	Cumulative Volume (cubic feet)
0	0	0.0000	0.0000
0.5	0.5	0.2500	0.0164
1	0.5	0.1250	0.0245
1.5	0.5	0.2500	0.0409
2	0.5	0.0625	0.0450
3	1	0.1875	0.0573
4	1	0.3750	0.0818
5	1	0.1875	0.0941
6	1	0.5000	0.1268
7	1	0.1250	0.1350
8	1	0.0625	0.1391
10	2	0.3750	0.1636
15	5	0.9375	0.2250
30	15	2.6875	0.4009
60	30	4.1250	0.6709
90	30	3.8750	0.9245
	Totals:	14.1250	0.9245

Distance of ground surface to initial water level, z : 26.5 inches
Total water drop, y_t : 14.125 inches

Infiltration rate, $i_n = y_n / t_n$

i_n = 1.794E-04 feet per second (fps)

Downward flow rate, $i_w = (i_n * r^2)/(1.5r)^2$

i_w = 7.973E-05 fps

Depth of wetted zone, $L = (y_t * r^2) / [n * (1.5r)^2]$; where n is the assumed in-situ porosity of the soil. A value of 0.2 to 0.3 for permeable soils would be typical.

n = 0.3
L = 1.744 feet

Design infiltration rate, $K = (i_w * L) / (z + L)$

K = 3.518E-05 fps
K = 1.52 in/hr

Wang Engineering

1145 North Main Street
Lombard, Illinois 60148
Phone (630) 953-9928
www.wangeng.com

Infiltration Rate Determination for A Single Ring Infiltrometer

Ref: 2012 Chicago Stormwater Ordinance Manual

Project Identification: IL 47

Test Location: INF-02
Soil Type: Silty Clay Loam
Tested By: F. Bozga/ I. Nenn
Depth to Water Table: NA

Excavation Depth: 72 inches
Ring Diameter: 6 inches
Ring Total Height: 76 inches
Penetration Depth: 4 inches

Elapsed Time (minutes)	Change in Time (minutes)	Water Decline (inches)	Cumulative Volume (cubic feet)
0	0	0.0000	0.0000
20	20	0.0625	0.0010
40	20	0.0625	0.0020
60	20	0.0625	0.0031
80	20	0.0625	0.0041
100	20	0.0625	0.0051
120	20	0.0625	0.0061
	Totals:	0.3750	0.0061

Distance of ground surface to initial water level, z : 72 inches
Total water drop, y_t : 0.375 inches

Infiltration rate, $i_n = y_n / t_n$

i_n = 4.340E-06 feet per second (fps)

Downward flow rate, $i_w = (i_n * r^2)/(1.5r)^2$

i_w = 1.929E-06 fps

Depth of wetted zone, $L = (y_t * r^2) / [n * (1.5r)^2]$; where n is the assumed in-situ porosity of the soil. A value of 0.2 to 0.3 for permeable soils would be typical.

n = 0.2
L = 0.069 feet

Design infiltration rate, $K = (i_w * L) / (z + L)$

K = 2.207E-08 fps
K = 0.001 in/hr