# ROADWAY GEOTECHNICAL REPORT
# IL ROUTE 47 AT IL ROUTE 176
# AND PLEASANT VALLEY ROAD
# SECTION 105-N-2 (15)
# CONTRACT 62B43
# MCHENRY COUNTY, ILLINOIS

**For**

**Strand Associates. Inc.**

**1170 Houbolt Road**

**Joliet, IL 60431**

**(815) 744-4200**

**Submitted by**

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**Original Report: September 25, 2018**
**Revised Report: September 29, 2020**

**Technical Report Documentation Page**

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**11. Abstract**

This report presents subsurface investigation results and recommendations for the widening and reconstruction of IL Route 47 (IL 47) at IL Route 176 (IL 176) and Pleasant Valley Road that extends for 1.65 miles. The improvements also include realignment and construction of Pleasant Valley Road.

The surface conditions show generally 3- to 32-inches thick topsoil. The subgrade soil along the proposed improvement consists of up to 8.0 feet of cohesive or granular fill. Below the fill and/or surface, the subgrade soils include 1 to 7 feet of soft to very stiff clay to silty clay followed by stiff to hard silty clay diamicton and medium dense to dense gravelly sand. Along the wetland areas, the subgrade soils mainly consist of up to 8.0 feet of very soft to soft organic clay to silty clay/ peat followed by up to 7 feet of very soft to medium stiff clay to silty clay. The organic soils rest on stiff to hard silty clay 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 15 inches should be used for estimating purposes. In general, the subgrade will exhibit poor drainage characteristics and we recommend installing both longitudinal and transverse underdrains below the pavement for the roadways. The transverse drains should be installed at 300 feet spacing and at the low points in the profile grade and at the base of any undercuts.

The new cuts and roadway embankment fills will be sloped 1:3 (V: H) and will have adequate factor of safety against instability. The fill areas will undergo more than 1.0 inch of long-term settlement in some areas, including wetland areas. Ground improvement options are discussed and recommendations are provided in the report. Due to complexity of the ground conditions, several soil treatment methods should be considered. Installing prefabricated vertical drains (PVD) for ground improvement would be the most economical solution.

Excavated materials may be reused along the length of the proposed improvements if they conform to the requirements outlined in the IDOT District One Special Provisions.


**12. Path to archived file**

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**AND PLEASANT VALLEY ROAD**
**SECTION 105-N-2 (15)**
**CONTRACT NO. 62B43**
**MCHENRY COUNTY, ILLINOIS**
**FOR**
**STRAND ASSOCIATES, INC.**

## 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) at Illinois Route 176 (IL 176) north and south junction along with the realignment and construction of Pleasant Valley Road. The roadways addressed in this report extend for about 1.65 mile between IL 47 Stations 565+80 and 660+92 in McHenry County, Illinois. A *Site Location Map* is presented as Exhibit 1.

Roadway design drawings provided to Wang Engineering, Inc. (Wang) by Strand Associates, Inc. (Strand) indicate the scope of improvements includes:

Widening and reconstruction of

- IL 47, between Station 565+80.11 and Station 660+91.74;
- IL 176 East, between Station 300+00.00 and Station 316+64.74;
- IL 176 West, between Station 404+15.02 and Station 429+00.00;

Realignment and construction of

- Pleasant Valley Road (PVRD), between Station 273+28.41 and Station 300+00.00;
- Swanson Road, between Station 502+16.66 and Station 507+19.86;
- Connector Road, between Station 400+00.00 and Station 412+50.00; and

Construction of

- Detention Basin #2 at PVRD right offset, between Station 278+50 and Station 282+00;
- Detention Basin #19 at PVRD left offset, between Station 289+00 and Station 292+00;
- Compensatory Storage Area at IL 47 right offset, between Station 622+00 and Station 626+00;
- Sign structures at the IL 47 and IL 176E intersection.;
- Retaining Wall at the IL 176 West left offset, between Station 408+50 and Station 414+95; and
- Culvert SN 056-0110 at IL 176 East, at Station 310+50.

Both the retaining wall and the culvert SN 056-0110 are part of the supplemental work performed in 2020, and they are addressed in separate Structure Geotechnical Reports (SGRs).

In addition to the roadway work, a sidewalk and a multi-use path will be constructed along the roadway embankments. The sidewalk will run along IL 47 west side, IL 176 E south side, and 176 W south side. The multi-use path will run along IL 47 east side, IL176 E north side, and IL176 W north side.

This report includes revisions made to our original RGR dated September 25, 2018 that is updated based on IDOT comments dated January 25, 2019. Additional investigations performed in 2020 are also included.

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 Grafton and Dorr Townships, McHenry County, Illinois. On the USGS Huntley and Woodstock 7.5 Minute Series Quadrangle maps, the project runs through N½ of Section 4, Tier 43 N, Range 7 E, NE ¼ Section 32, Section 33, and along the border line between Sections 28 and 29, 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 along the Barlina Moraine alignment and through one of the former outwash valleys carved by glacial meltwater through the moraine. 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 yards south of the project, the Kishwaukee River crosses IL 47 and flows from east to west, through a channel about 20-foot wide. The existing surface elevation varies from as low as 895 feet to as high as 925 feet.

## 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 (2017). 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 200-foot thick overburden covers the bedrock. The glacigenic deposits were emplaced during pulsating advances and retreats of an icesheet lobe 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 the silty clayey diamicton of the Yorkville Member of the Lemont Formation, which in turn overlies the loamy diamicton of the Tiskilwa Formation or gravelly sand outwash of the Henry Formation that interfinger with the two diamictons.

The Grayslake Peat, less than 10 feet thick, consists of black to brown peat interbedded with gray organic rich sand and silty clay and white to light gray marl (Curry and Thomason 2012, 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 10 feet, within the project limits to about 100 feet (Curry and Thomason 2012). The Yorkville Member of the Lemont Formation, up to 15 feet 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, about 65 feet 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 Illinoian-age drift, which in turn unconformably rests over the Silurian-age dolostone (Curry and Thomason 2012). The diamicton accounts for about 75% of the soil profile.

From a geotechnical viewpoint, 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 and Ordovician-age bedrock. The top of the bedrock lies about 160 to 200 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 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 October to December of 2017 and from June to July 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 through 4. 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 2017).

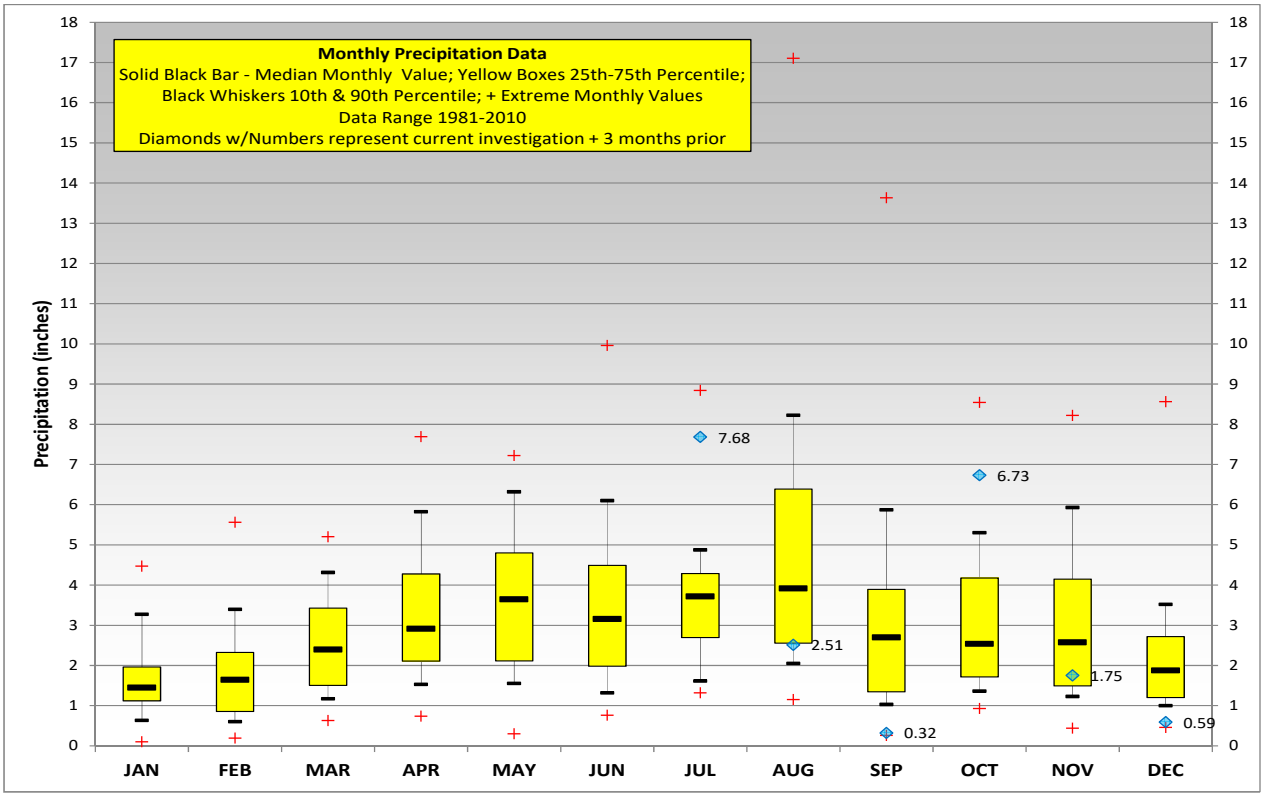


Figure 1: Monthly Precipitation Data for 2017

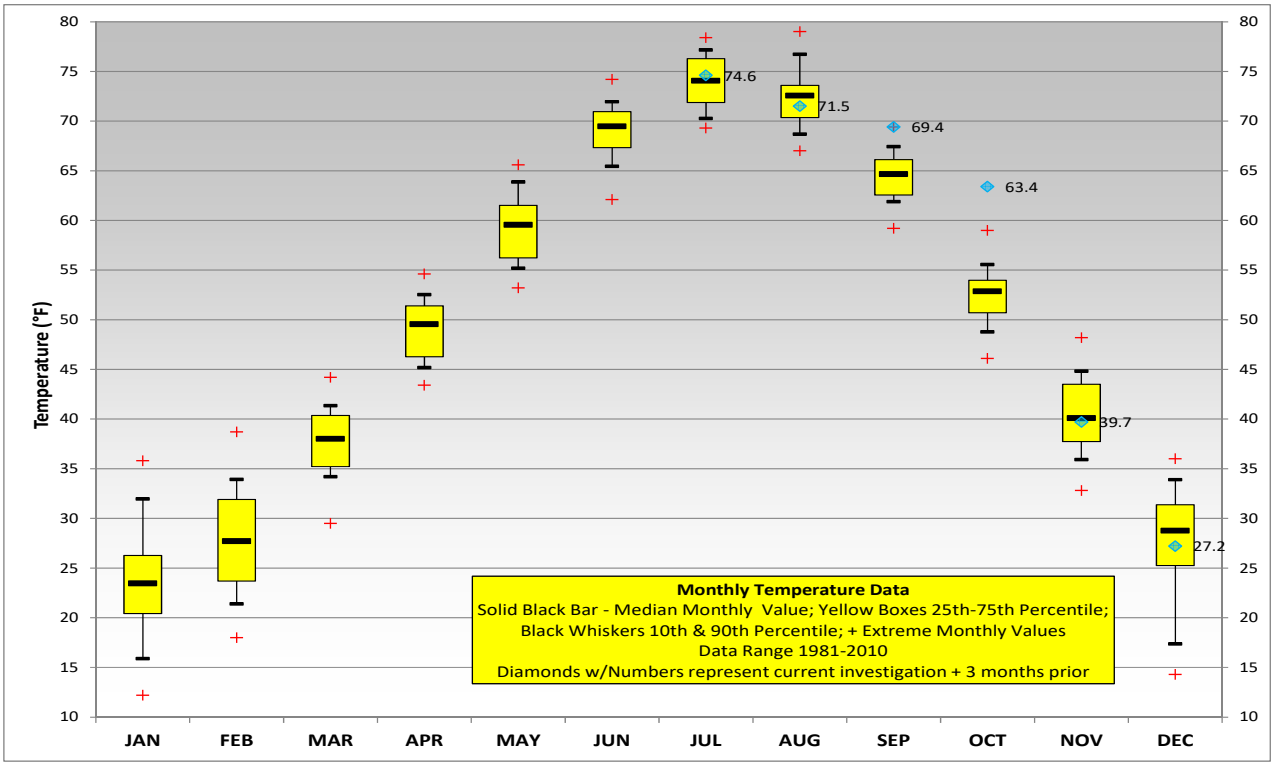


Figure 2: Monthly Temperature Data for 2017

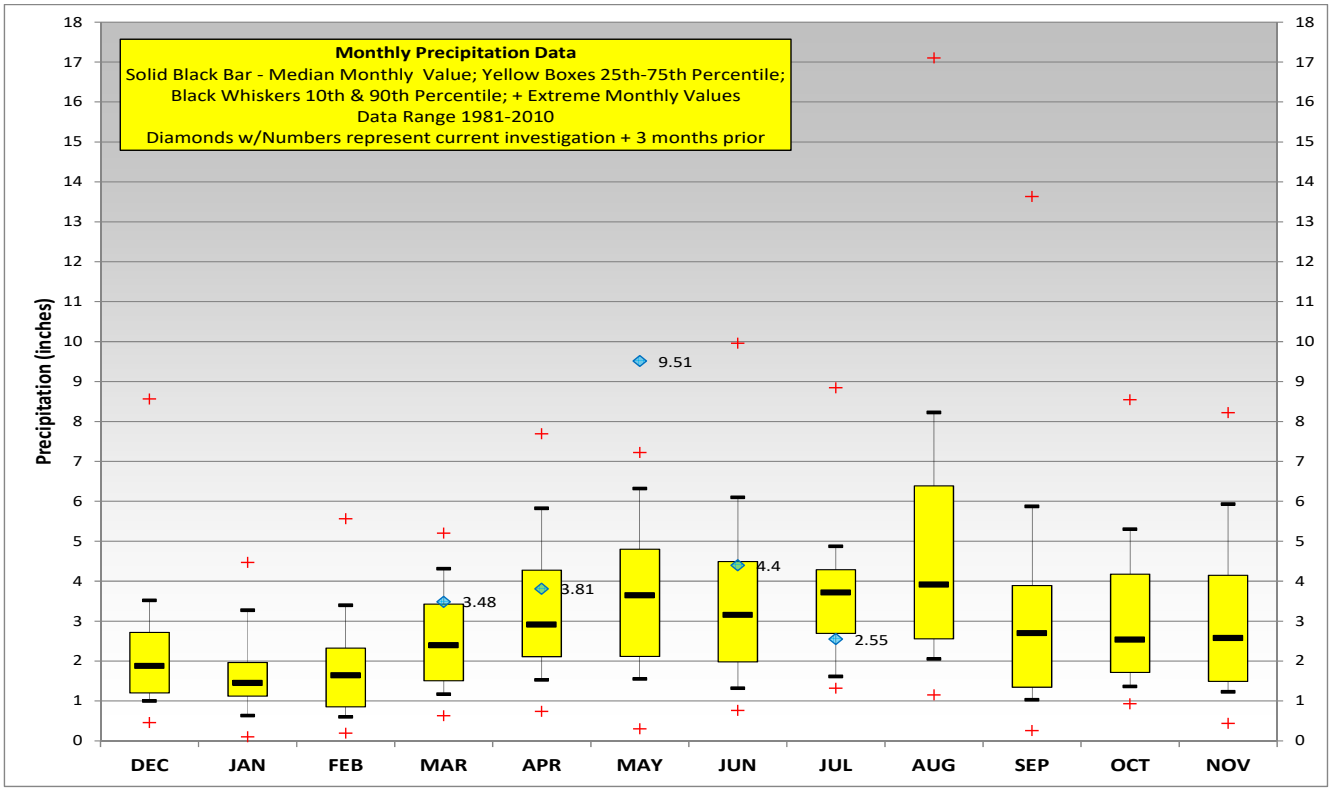


Figure 3: Monthly Precipitation Data for 2020

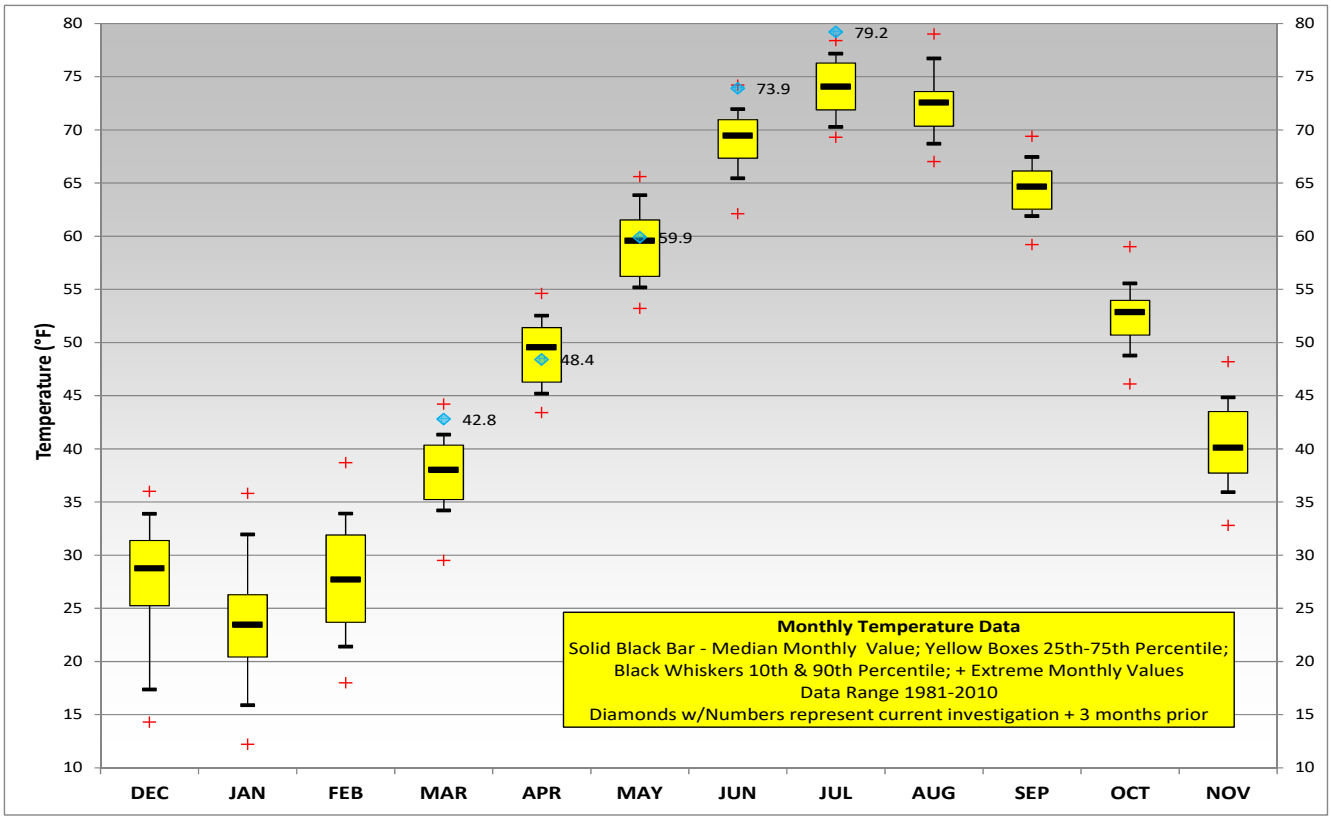


Figure 4: Monthly Temperature Data for 2020

The deviations from the historical 30-year climate data show the 2017 investigation period was characterized in general by average precipitations and temperature with the exception of record high temperatures with higher than average precipitation in October 2017. The 2020 investigation period was characterized in general by average precipitations and temperature with the exception of record high precipitations in May 2020, a month before our investigation. 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 October 6th and December 20th, 2017, Wang completed 178 soil borings and seven shelby tube borings. Between June 24th and July 13th, 2020, Wang competed additional 27 soil borings for retaining wall, culvert, and for delineate purpose. We considered data from subgrade (SGB) borings, bioswale (BIO) borings, peat delineation (PT) borings, culvert (CUL) borings, sign structure (SIGN) borings, and retaining wall (RWB) 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 | 565+80.11 | 660+91.74 | SGB-01 through SGB-17, SGB-25, BIO-01 through BIO-24, CUL-01 through CUL-09, SIGN-01 |
| IL-47 Peat Area 1 | 596+00.00 | 601+50.00 | PT5-01 through PT5-07, PT6-01 through PT6-07, PT7-01 through PT7-10, PT8-01 through PT8-08 |
| IL-47 Peat Area 2 | 610+00.00 | 615+50.00 | PT1-01 through PT1-11, PT2-01 through PT2-14, PT3-01 through PT3-10, PT4-01 through PT4-12 |
| IL-176 East | 300+00.00 | 316+64.74 | SGB-18 through SGB-26, BIO-29, BIO-30, PT9-03 through PT9-09, PT10-01 through PT10-05, SIGN-02, and CUL-01 through CUL-03 |
| IL-176 West | 404+15.02 | 429+00.00 | SGB-27 through SGB-32, BIO-31 through BIO-34, and RWB-01 through RWB-10 |

| Alignment | Approximate Limits | | Reference Boring IDs |
|---|---|---|---|
| | Start Station | End Station | |
| Pleasant Valley Road | 273+28.41 | 300+00.00 | SGB-35 through SGB-42, BIO-35 through BIO-38 |
| Swanson Road | 502+16.66 | 507+19.86 | SGB-33, SGB-34 |
| Connector Road | 400+00.00 | 405+13.92 | SGB-43, SGB-44 |
| Detention Basin #2 | 278+50 | 282+00 | DPB-04, DPB-05 |
| Detention Basin #19 | 289+00 | 292+00 | DPB-06, DPB-07 |
| Compensatory Storage Area | 622+00 | 626+00 | DPB-01, DPB-02, DPB-03 |
| Sign Structure | NA | NA | SIGN-01 and Sign-02 |

The northing and easting coordinates were surveyed by Wang with a mapping-grade GPS unit; boring elevations were surveyed with a level. Stations and offsets were obtained from design drawings provided by Strand. 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). Soil borings, including peat delineation borings, performed in the wetland areas are shown in *Cross Section Soil Profile* (Appendix G).

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."* In general, the soil was sampled continuously in the SGB, DPB, and PT borings. The CUL, BIO, SIGN, RWB, and deeper PT borings were sampled at 2.5-foot intervals to 30 feet below ground surface (bgs) followed by 5-foot intervals to boring termination depths. 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 engineer, 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 bentonite after completion, and the ground was restored to its original condition.

### 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 greater than 95% of the borings encountering black, brown, and dark brown silty clay to silty clay loam topsoil. The topsoil has thickness of 3 to 32 inches; for estimation purposes, the topsoil thickness to be stripped is 15 inches, which representing the 75$^{th}$ percentile. The topsoil thicknesses are summarized in Table 2. The three borings drilled along the existing pavement exposed 8 to 19 inches of asphalt and/or concrete pavement overlying aggregate base.

Table 2: Summary of Topsoil Thickness

| Alignment | Number of Measurements | Topsoil Thickness Range (inches) | Average Thickness (inches) |
|---|---|---|---|
| IL-47 | 51 | 3 to 22 | 9 |
| IL-47 Peat Area 1 | 23 | 5 to 32 | 12 |
| IL-47 Peat Area 2 | 49 | 5 to 25 | 14 |
| IL-176 East | 26 | 3 to 20 | 7 |
| IL-176 West | 19 | 3 to 18 | 7 |
| Pleasant Valley Road | 12 | 6 to 26 | 10 |
| Swanson Road | 2 | 14 to 19 | 17 |
| Connector Road | 2 | 5 to 13 | 9 |
| Detention Basin #2 | 2 | 8 | 8 |
| Detention Basin #19 | 2 | 6 to 8 | 7 |
| Compensatory Storage Area | 3 | 8 to 11 | 10 |
| Sign Structures | 2 | 4 to 5 | 5 |

## 4.2 Soil Conditions

Within the project limits, two general lithological (TL) profiles have been identified, with the soil units from each illustrated for reference in Figure 5. Lithology 1, designated as TL I, represents the soil profile exposed within borings that encountered primarily fill materials (Unit 1), medium stiff silty soils (Unit 4), overconsolidated clayey and silty cohesive soils (Units 5 and 6), and some medium dense to dense granular soils (Unit 7). The general lithology represented by TL II exposed kettle bog deposits, including modest thicknesses of soft organic silty clay and peat (Unit 2) and very soft to medium stiff silty clay with some organic matter (Unit 3) overlying the Soil Units designated as 4, 5, 6, and 7. The organization of lithologies that represent subgrade and foundation soil for each alignment are summarized in Table 3; this alignment distribution is maintained throughout the following section.

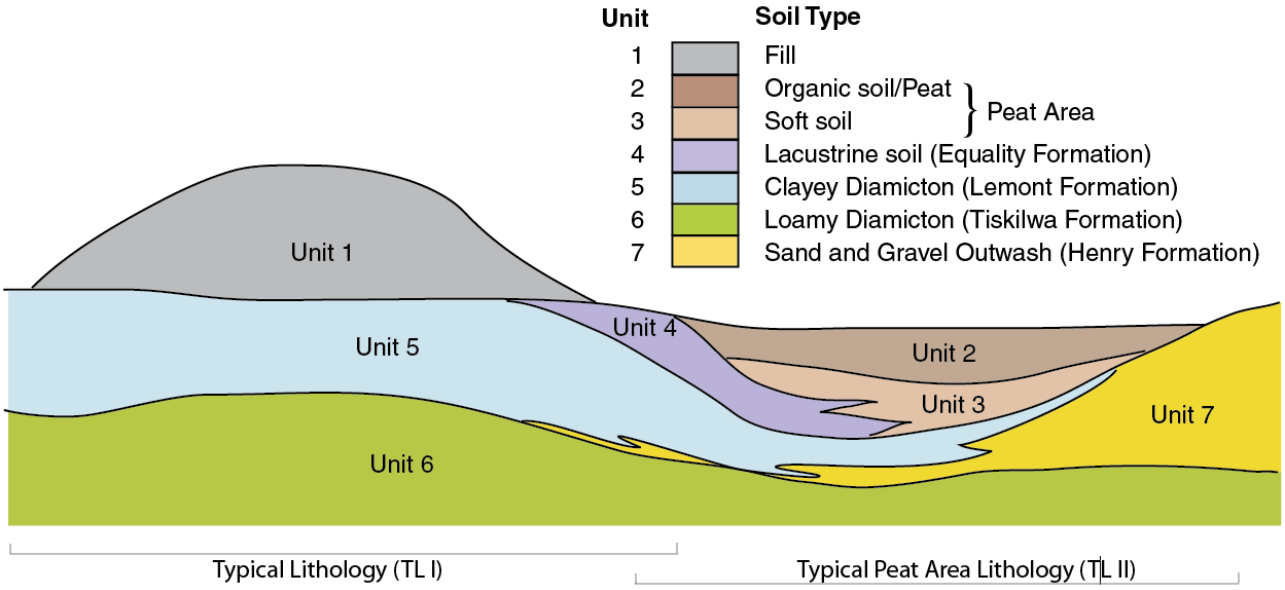


Figure 5: Typical lithological succession along the project areas

Table 3: Summary of Typical Lithology along the alignments

| Alignment | Approximate Limits | | Typical Lithological Profile |
|---|---|---|---|
| | Start Station | End Station | |
| IL-47 | 565+80.11 | 660+91.74 | TL I |
| IL-47 Peat Area 1 | 596+00.00 | 601+50.00 | TL II |
| IL-47 Peat Area 2 | 610+00.00 | 615+50.00 | TL II |
| IL-176 East | 300+00.00 | 316+64.74 | TL I |
| IL-176 West | 404+15.02 | 429+00.00 | TL I |
| Pleasant Valley Road | 273+28.41 | 300+00.00 | TL I |
| Swanson Road | 502+16.66 | 507+19.86 | TL I |
| Connector Road | 400+00.00 | 405+13.92 | TL I |

| Alignment | Approximate Limits | | Typical Lithological Profile |
|---|---|---|---|
| | Start Station | End Station | |
| Detention Basin #2 | 278+50 | 282+00 | TL I |
| Detention Basin #19 | 289+00 | 292+00 | TL I |
| Compensatory Storage Area | 622+00 | 626+00 | TL I |
| Sign Structure | NA | NA | TL I |

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

Underneath the surface, in general soil borings encountered up to 8 feet of cohesive and granular fill consisting of either soft to hard clay to silty clay loam or loose to medium 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 8.5 tsf with an average of 1.9 tsf and moisture content values of 8 and 39%. The granular fill has N-values of 3 and 10 blows per foot and moisture content values of 18 to 25%. Laboratory index tests performed on samples from this unit show liquid limit ($L_L$) values of 34 to 35% and plastic limit ($P_L$) values of 14 to 15%. The soil belongs primarily to the A-6 group in accordance with AASHTO.

Table 4: Summary of Existing Fill Properties

| Alignment | $Q_u$ Min-Max/Avg. (tsf) | SPT N-values Min-Max/Avg. (blows/foot) | Moisture Content Min-Max/Avg (%) | Liquid Limit Min-Max (%) | Plastic Limit Min-Max (%) |
|---|---|---|---|---|---|
| IL-47 | 0.6-8.5/2.1 | 2-23/9 | 10-32/18 | NA | NA |
| IL-47 Peat Area 1 | 0.7-2.7/2.0 | 6-10/8 | 12-20/16 | NA | NA |
| IL-47 Peat Area 2 | 0.7-3.1/1.7 | 3-13/8 | 15-28/21 | NA | NA |
| IL-176 East | 0.3-3.4/1.4 | 2-16/7 | 8-26/17 | 34-35 | 14-15 |
| IL-176 West | 1.0-4.0/2.3 | 5-23/9 | 12-31/19 | NA | NA |

*2) Very soft to soft organic silty clay/peat (TL II)*

At elevations at 891 to 916 feet, or 1.0 to 10.5 feet bgs, the borings advanced through the TL II areas encountered 2 to 8 feet of very soft to soft, black and gray organic clay to silty clay and peat. This unit has $Q_u$ values of 0.1 to 1.4 tsf with an average of 0.4 tsf, moisture content values of 40 to 298% with an average of 84%, and organic content values of 11 to 21%. Laboratory index testing performed on samples from this layer shows $L_L$ values of 74% and $P_L$ values of 30 to 36%. These soils classify in the A-7-5 group.

Table 5: Summary of Unit 2 Properties

| Alignment | $Q_u$ Min-Max/Avg. (tsf) | SPT N-values Min-Max/Avg. (blows/foot) | Moisture Content Min-Max/Avg (%) | Liquid Limit Min-Max (%) | Plastic Limit Min-Max (%) |
|---|---|---|---|---|---|
| IL-47 Peat Area 1 | 0.3-1.7/0.8 | 1-9/3 | 46-133/86 | NA | NA |
| IL-47 Peat Area 2 | 0.1-1.0/0.4 | 0-8/2 | 40-296/88 | 74 | 30 |
| IL-176 East | 0.2-0.7/0.4 | 0-5/2 | 41-164/97 | 74 | 36 |

*3) Very soft to medium stiff clay to silty clay (TL II)*

Beneath the high moisture organic clays and peat within the TL II area, at elevations at 887 to 907 feet, the borings encountered 1 to 7 feet of very soft to medium stiff, gray clay to silty clay and loose to medium dense, gray, saturated silt and sand. This unit is characterized by $Q_u$ values of 0.1 to 0.8 tsf with an average of 0.4 tsf, moisture content values of 12 to 148% with an of 38%, and organic content values of 7 to 10%. Laboratory index testing performed on samples from this unit shows $L_L$ values of 38 to 49% and $P_L$ values of 19 to 24%. This unit belongs to the A-7-6 and A-6 groups.

Table 6: Summary of Unit 3 Properties

| Alignment | $Q_u$ Min-Max/Avg. (tsf) | SPT N-values Min-Max/Avg. (blows/foot) | Moisture Content Min-Max/Avg (%) | Liquid Limit Min-Max (%) | Plastic Limit Min-Max (%) |
|---|---|---|---|---|---|
| IL-47 Peat Area 1 | 0.2-0.8/0.5 | 2-12/4 | 16-59/33 | NA | NA |
| IL-47 Peat Area 2 | 0.1-0.7/0.3 | 0-13/4 | 12-148/40 | NA | NA |

| Alignment | $Q_u$ Min-Max/Avg. (tsf) | SPT N-values Min-Max/Avg. (blows/foot) | Moisture Content Min-Max/Avg (%) | Liquid Limit Min-Max (%) | Plastic Limit Min-Max (%) |
|---|---|---|---|---|---|
| IL-47 Culvert SN056+0310 | 0.3-0.6/0.4 | 2-7/5 | 30-52/45 | 49 | 24 |

*4) Soft to very stiff clay to silty clay (TL I and II)*

Beneath the fill in the TL I areas and the very soft clayey soils of TL II, the borings advanced through 1 to 7 feet of soft to very stiff, lacustrine clay to silty clay with silt and sand interbeds. This unit has $Q_u$ values of about 0.2 to 3.4 tsf with an average of 1.0 tsf, and moisture content values of 10 to 43% with an average of 26%. Laboratory index testing performed on a sample from this unit shows $L_L$ values of 26 to 67% and $P_L$ values of 11 to 22%.

Table 7: Summary of Unit 4 Properties

| Alignment | $Q_u$ Min-Max/Avg. (tsf) | SPT N-values Min-Max/Avg. (blows/foot) | Moisture Content Min-Max/Avg (%) | Liquid Limit Min-Max (%) | Plastic Limit Min-Max (%) |
|---|---|---|---|---|---|
| IL-47 | 0.3-2.9/1.2 | 3-14/6 | 12-40/23 | 26-48 | 11-20 |
| IL-47 Peat Area 1 | 0.3-1.5/0.7 | 0-10/4 | 11-43/30 | NA | NA |
| IL-47 Peat Area 2 | 0.2-1.9/0.8 | 2-18/6 | 10-42/27 | NA | NA |
| IL-176 East | 0.3-1.6/0.9 | 2-10/6 | 20-35/27 | 52-67 | 22-27 |
| IL-176 West | 2/2 | 9-13/11 | 27-33/30 | 57 | 19 |
| PVRD | 1.0-2.9/1.8 | 4-10/7 | 14-29/22 | 43 | 17 |
| Detention Basin #2 | 3.4 | 5 | 28 | NA | NA |
| Compensatory Storage Area | 1.3-2.0/1.6 | 6-7/6 | 20-21/20 | 32 | 15 |

*5) Stiff to hard silty clay diamicton (TL I and II) and*

*6) Stiff to hard clay loam to loam diamicton (TL I and II)*

At elevations of 883 to 920 feet the borings encountered deeper foundation soil consisting of 3 to greater than 30 feet of stiff to hard, brown and gray to gray silty clay to loamy diamicton with occasional lenses of gravelly sand. While these are technically two separate formations, their properties are very closely aligned, and they can be considered as one layer for the purposes of design. This unit is characterized by Qu values of 0.5 to 9.9 tsf with an average of 2.5 tsf, and moisture content values of 7 to 25% averaging 18%. Laboratory index testing performed on samples from this unit shows $L_L$ values of 18 to 38% and $P_L$ values of 12 to 18%. 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/Avg. (tsf) | SPT N-values Min-Max/Avg. (blows/foot) | Moisture Content Min-Max/Avg (%) | Liquid Limit Min-Max (%) | Plastic Limit Min-Max (%) |
|---|---|---|---|---|---|
| IL-47 | 1.0-9.9/3.2 | 4-34/14 | 10-22/16 | 18-28 | 13-14 |
| IL-47 Peat Area 1 | 1.0-5.7/2.0 | 4-20/11 | 10-25/16 | NA | NA |
| IL-47 Peat Area 2 | 1.0-3.9/1.9 | 3-21/10 | 12-22/16 | NA | NA |
| IL-176 East | 1.0-8.9/3.6 | 4-34/12 | 8-24/16 | NA | NA |
| IL-176 West | 1.0-8.9/3.8 | 5-26/14 | 11-24/15 | NA | NA |
| PVRD | 1.2-7.2/3.3 | 4-29/15 | 9-21/15 | 29 | 15 |
| Swanson Road | 1.2-6.9/4.4 | 5-21/14 | 14-17/15 | 32 | 15 |
| Connector Road | 3.4 | 11 | 20 | NA | NA |
| Detention Basin #2 | 1.9-5.0/3.0 | 9-14/11 | 13-21/17 | 35 | 17 |
| Detention Basin #19 | NA | NA | NA | NA | NA |
| Compensatory Storage Area | 1.6-9.1/3.9 | 8-39/15 | 13-19/16 | NA | NA |

Areas containing softer loamy soils from this unit were encountered in few locations within the TL I peat areas. The soil is moist with $Q_u$ values of 0.3 to 0.9 tsf with an average of 0.6 tsf, moisture content values of 10 to 18% with an average of 13%, and $L_L$ and $P_L$ values of 20% and 10%, respectively. 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.

Table 9: Summary of Unit 6 Properties

| Alignment | $Q_u$ Min-Max/Avg. (tsf) | SPT N-values Min-Max/Avg. (blows/foot) | Moisture Content Min-Max/Avg (%) | Liquid Limit Min-Max (%) | Plastic Limit Min-Max (%) |
|---|---|---|---|---|---|
| IL-47 | 0.3-6.7/2.3 | 7-48/15 | 7-18/11 | 20-22 | 10-13 |
| IL-47 Peat Area 1 | 0.3-5.0/1.9 | 4-21/12 | 8-16/11 | NA | NA |
| IL-47 Peat Area 2 | 0.7-3.5/1.7 | 9-21/14 | 10-14/11 | NA | NA |
| IL-176 East | 0.8-7.3/2.6 | 7-37/16 | 8-15/11 | NA | NA |
| IL-176 West | 2.5-8.6/4.2 | 7-20/13 | 11-15/14 | NA | NA |
| PVRD | 1.0-5.7/2.9 | 5-30/18 | 9-14/11 | NA | NA |
| Swanson Road | -- | -- | -- | -- | -- |
| Connector Road | 1.0-4.8/2.6 | 7-22/16 | 9-13/11 | 26 | 12 |
| Detention Basin #2 | 1.3-3.1/2.2 | 8-17/14 | 9-18/12 | NA | NA |
| Detention Basin #19 | 1.1-4.9/3.0 | 8-33/15 | 9-16/12 | 21 | 13 |
| Compensatory Storage Area | -- | -- | -- | -- | -- |

*7) Medium dense to very dense gravelly sand*

Some borings along the southern portion of the project encountered medium dense to very dense, brown, saturated, sandy loam, gravelly loam, and gravelly sand at elevations below 907 feet. This unit thickness ranges from 3 to 12 feet and has N-values of 9 to 50 blows per foot.

### 4.3 Groundwater Conditions

Groundwater was observed in 70 out of 212 borings during drilling at elevations of 856 to 915 feet (0 to 40 feet bgs) with the majority of them dry. After drilling, the groundwater was measured in 28 borings at elevations of 853 to 914 feet (0 to 42 feet bgs). The smaller granular interbeds within the thicker granular layers were often encountered saturated; if excavations are made into or through these layer, dewatering efforts should be anticipated. The granular layers are relatively thin and discontinuous, so sump pumps should be able to control groundwater flow and maintain a dry working area.

Where encountered, the granular lenses were moist to saturated. During our investigation, few 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.

The deeper granular layer between Station 610+00 and 615+00 is confined and the groundwater was observed to be under artesian condition. This condition was revealed in Borings PT2-12, PT2-13, PT2-14, and PT4-11at 26 to 28.5 feet bgs (856 to 871 feet elevation). Undercut or ground improvement to be performed in this area should be performed above this granular layer.

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

## 5.0 ENGINEERING ANALYSIS AND RECOMMENDATIONS

According to the plans, cross-section drawings, and typical sections provided by Strand, 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 620+00 and 630+00, along IL 176 E between Stations 301+00 and 307+00, and along the realignment of PVRD. The new design includes embankment fills of up to 15 feet (IL 47 Station 627+00) and cuts as deep as 12.5 feet (IL 47 Station 577+00). In general, the embankments and cut sections 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

15 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. Using either static or dynamic cone penetrometer tests, subgrade areas should be tested and evaluated according to the IDOT Subgrade Stability Manual (IDOT 2005).

Where existing embankments are to be widened, the existing slopes should be deeply plowed or benched according to Section 205 (IDOT 2016). 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 subgrade or on new compacted fill material. Based on the typical sections (Appendix D), the proposed roadway sections will consist of 7.0 to 10.5 inches of asphalt followed by 12 inches of aggregate subgrade improvement. Thus, any additional subgrade improvements identified in this report shall be placed beyond the proposed 12 inches of aggregate subgrade.

Along the investigated alignments, the subgrade soils have $Q_u$ 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 10.

The actual need for removal and replacement of unstable and unsuitable soils, including the required width and depth of improvement shown in Table 10, should be determined in the field at the time of construction. It is possible that undercuts may be required in areas not reached by our investigation. Undercut determinations should be made by a qualified soils inspector at the time of construction. All

potentially unstable soils should be tested with a cone penetrometer and treated in accordance with Article 310.04 of the SSRBC and the undercut guidelines in the IDOT Subgrade Stability Manual. If unsuitable soils are encountered in the field during construction, it is recommended that the soil be removed and replaced with material meeting the District One Aggregate Subgrade Improvement Special Provision. 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 10 percent of the remaining plan pavement areas not included in Table 10 assuming 12 inches of thickness for the full width of the pavement.

Several of the unstable areas specified in Table 10 include highly compressible organic silts, organic clays, and peat. The widened sections in these areas will be constructed on new embankments with an average height of about 6 feet. Ground improvement options, other than removal and replacement option, are discussed in Section 5.6.

The replacement material should be in accordance with the IDOT District One Special Provision *Aggregate Subgrade Improvement (D-1).* We recommend including a separate pay item for the *Aggregate Subgrade Improvement* material as follows:

Item 1 **Aggregate Subgrade Improvement (CU YD)** this will be below Pavement Section in the areas where removal and replacement is recommended.

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 10: Summary of Subgrade Treatment Recommendations

| Roadway | Limits Station to Station | Treatment Width[1] | Treatment Type | Treatment Depth/Elevation (feet) [2] | Reference Borings/ Subgrade Concerns |
|---|---|---|---|---|---|
| IL 47 | 582+50 to 585+50 | Roadway Widening Both Sides | Aggregate Subgrade Improvement and Geofabric | 2/914.6 | SGB-07 ($Q_u$=0.66 tsf, MC=44%) |
| IL 47 | 597+00 to 598+75 | 25' LT to 75' LT | Aggregate Subgrade Improvement and Geofabric[3] | 5.5/896.9 | PT6-03 ($Q_u$=0.49 tsf, MC=30-55%) |
| IL 47 | 599+00 to 600+00 | 55' RT to 100' RT | Aggregate Subgrade Improvement and Geofabric[3] | 10.0/892.0 | PT7-04,PT7-05 ($Q_u$=0.41-0.74 tsf, MC=24-69%) |
| IL 47 | 600+00 to 601+50 | 55' RT to 90' RT | Aggregate Subgrade Improvement and Geofabric[3] | 6.0/897.8 | PT7-02 ($Q_u$=0.41-0.75 tsf, MC=26-61%) |
| IL 47 | 610+00 to 615+25 | 30' LT to 80' LT | Aggregate Subgrade Improvement and Geofabric[3] | 10.0/885 | PT1-01 to PT1-11, PT2-01 to PT2-11, PT3-01 to PT3-10, SGB-13 ($Q_u$=0.08 to 0.8 tsf, MC=40-138%) |
| IL 47 | 610+00 to 613+50 | 30' RT to 80' RT | Aggregate Subgrade Improvement and Geofabric[3] | 5.0/892 | PT4-03 to PT4-10 ($Q_u$=0.16 to 0.8 tsf, MC=27-69%) |

| Roadway | Limits Station to Station | Treatment Width[1] | Treatment Type | Treatment Depth/Elevation (feet) [2] | Reference Borings/ Subgrade Concerns |
|---|---|---|---|---|---|
| IL 47 | 615+50 to 617+00 | 30' LT to 80' LT | Aggregate Subgrade Improvement and Geofabric | 3.0/893.6 | BIO-07 ($Q_u$=0.5 tsf, MC=23%) |
| IL 47 | 623+00 to 626+50 | Embankment width | Aggregate Subgrade Improvement and Geofabric | 6.5/893.6 | BIO-11, BIO-12, BIO-14 ($Q_u$=<0.25-0.82 tsf, MC=24-40%) |
| IL 47 | 626+50 to 628+50 | Northbound Embankment Width | Aggregate Subgrade Improvement and Geofabric | 7.0/890.8 | CUL-05 and CUL-06 (Qu <0.25-0.57 tsf, MC=30-52%) |
| IL 47 | 637+00 to 640+00 | 30' RT to 80' RT | Aggregate Subgrade Improvement and Geofabric | 3.0 to 5.0/ 900 | BIO-20 and BIO-21 ($Q_u$=0.5-0.75 tsf, MC= 18-22%) |
| IL 47 | 651+00 to 652+50 | 30' RT to 80' RT | Aggregate Subgrade Improvement and Geofabric | 1.0 to 3.0/ 907 | BIO-26 ($Q_u$=0.41 tsf, MC= 39%) |
| IL 176E | 307+50 to 308+50 | 30' LT to 70' LT | Aggregate Subgrade Improvement and Geofabric | 3.0/911.1 | BIO-29 ($Q_u$=0.82 tsf, MC= 34%) |
| IL 176E | 310+50 to 312+50 | 30' LT to 70' LT | Aggregate Subgrade Improvement and Geofabric[3] | 12.0/899.2 | PT9-05, SGB-21 ($Q_u$=0.16-0.66 tsf, MC= 23-92%) |

| Roadway | Limits Station to Station | Treatment Width[1] | Treatment Type | Treatment Depth/Elevation (feet) [2] | Reference Borings/ Subgrade Concerns |
|---|---|---|---|---|---|
| IL 176E | 310+50 to 311+25 | 20' RT to 65' RT | Aggregate Subgrade Improvement and Geofabric[3] | 8.5/902 | PT10-01, PT10-02 ($Q_u$=0.16-0.49 tsf, MC= 33-164%) |
| IL 176W | 423+00 to 425+50 | Centerline to 80' LT | Aggregate Subgrade Improvement and Geofabric | 2.3/906.7 | SGB-27 ($Q_u$=0.57 tsf, MC= 30%) |

(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. The removal depth is measured from the existing grade elevation.
(3) See Section 5.6 for ground improvement recommendations.

The frost depth for pavement design in northeastern Illinois is 42 inches. Within the frost depths, 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 stiff to hard clayey soils or compacted borrow material. Laboratory testing on selected subgrade samples shows a Subgrade Support Rating (SSR) of POOR to FAIR (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* (2015).

### 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 both longitudinal and transverse pipe underdrains below the pavement for the roadways. The Department recommends installing the transverse pipe underdrains using a spacing of 300-foot, at the low points in the profile, and at the base of any undercuts. The underdrains should tie into the storm water drainage system, and should be installed per Article 601 in the IDOT Standard Specifications and consist of Type 2 underdrains (Adopted January 1, 2016).

## 5.5 Embankment and Cut Sections

The construction of the roadway will have both fill and cut sections. For this roadway contract, the highest embankment fill of 15 feet will be located along IL 47 near Station 627+00. The deepest cut sections measuring 12.5 feet is located along IL 47 near Station 577+00. 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 the high fill areas and wetland areas where the borings encountered organic soils and peat. We performed settlement analysis along IL 47 at Station 624+00 using the FoSSA computer program. Our evaluations show estimated long-term settlements of 2.5 inch. We estimate the long-term settlement will be less than 1 inch after 45 days. Settlement evaluations performed for the high fill and organic soil areas and treatment options are discussed in Section 5.6.

### *5.5.2 Global Stability*

The proposed embankment and cut side slopes will be graded at 1:3 (V: H). The global stability at critical sections at Stations 577+00 and 627+00 for the deepest cut and highest fill sections, respectively, was analyzed based on the soil information from the nearest borings. The analysis indicates that the factors of safety (FOS) meet IDOT's minimum requirement of 1.5 for embankment and 1.7 for cut. We also performed slope stability analyses for embankment located on the organic soil area. With average embankment height of 6 feet and slope of 1:3 (V:H), our analysis shows the FOS meet the IDOT's minimum requirement. Slope stability analyses results are included in Appendix E.

## 5.6 Ground Improvement

The subsurface investigation along the IL 47 and IL 176E alignments revealed the presence of compressible, organic silty clay and peat. These compressible soils were encountered mainly along IL 47 between Station 596+00 and Station 601+50, and between Station 610+00 and Station 615+00. The

widened roadway along the wetland areas will be constructed on new embankments with average fill heights of 6.0 feet.

We performed settlement analyses at five locations along IL 47 and IL 176 using the FoSSA computer program. Our evaluations show estimated long-term settlements of 3.0 to 12.0 inches within the wetland areas and areas with the highest new embankment fill. The summary of settlement analyses are presented in Table 11.

Table 11:Summary of settlement analyses

| Roadway | Station | Direction/Fill Height (feet) | Reference Borings | Settlement (inches) |
|---|---|---|---|---|
| IL 47 | 599+00 | Northbound/ 6.5 | Cul-02, Cul-02 ST | 3.1 |
| IL 47 | 613+03 | Both/5.5 | SGB-13 | 12.0 |
| IL 47 | 626+50 | Southbound/ 15.0 | Cul-05, Cul-05 ST | 9.4 |
| IL 176 E | 305+00 | Both/10.8 | SGB-23 | 5.3 |
| IL 176E | 311+00 | Both/ 7.0 | SGB-21 | 8.9 |

To achieve less than one inch of long-term settlement, these areas will require either removal and replacement (Section 5.2 Table 10) or ground improvements as presented in the following sections. We considered the following ground improvement options:

1. Installing prefabricated vertical drains (PVD) to accelerate the settlement;
2. Aggregate Columns; or
3. Pile supported embankment.

We estimate utilizing PVD will require 40 to 190 days of pre-loading with the least cost. Therefore, if construction time allowed, it is our opinion that installing PVD for ground improvement would be the most economical solution. Based on preliminary cost estimates, aggregate column option will be about five times higher than the PVD option and the pile supported embankment option will be more than ten times higher than the PVD option. Opinion of probable construction cost (OPCC) for removal and replacement, PVD, aggregate column, and pile supported embankment options are presented on the attached *Opinion of Probable Construction Costs* (Appendix H). These cost analyses were developed based on areas listed in Table 12 and shown in Appendix I.

We understand that the Department prefers not to use Light Cellular Concrete Fill (LCCF) in isolated, small areas when other ground improvement options are available.

The ground improvement options and our recommendations are discussed in detail in the following sections.

### *5.6.1 Prefabricated Vertical Drains (PVD)*

Constructing the embankment above the soft and compressible soils will result in large deformations of the new embankment section. To remediate the situation, a ground improvement consisting of prefabricated vertical drains (PVDs) to accelerate the time rate of consolidation can be considered. Simple preloading of the foundation soils will result in a waiting period of about 24 months for a residual settlement of 1 inch. The placement of lightweight fill will still result in at least 2 to 5 inches of total, long-term consolidation settlement and waiting periods of about 15 months for a residual settlement of 1 inch.

The PVDs should be installed within the limits as shown in Table 12 and in *Area of Improvement Plans* (Appendix I). For estimation purpose, PVDs can be placed in a triangular pattern with a spacing of 4.0 feet on-center and they should extend down to an elevations recommended in table 12. We estimate this pattern and spacing will reduce the consolidation time to 1.0 inch of residual settlement along the length of the embankment in approximately 40 to 190 days. The recommendations for a PVD system included in this report should be considered preliminary and used only for cost evaluations. A complete design will be required.

Table 12: Summary of Area for Improvement

| Roadway | Limits Station to Station | Treatment Width (feet) | Treatment Depth/ Elevation (feet) |
|---|---|---|---|
| IL 47 | 597+00 to 598+75 | 25’ LT to 75’ LT | 5.5/896.9 |
| IL 47 | 599+00 to 600+00 | 55’ RT to 100’ RT | 10.0/892.0 |
| IL 47 | 600+00 to 601+50 | 55’ RT to 90’ RT | 6.0/897.8 |
| IL 47 | 610+00 to 615+25 | 30’ LT to 80’ LT | 10.0/885.0 |

| Roadway | Limits Station to Station | Treatment Width (feet) | Treatment Depth/ Elevation (feet) |
|---|---|---|---|
| IL 47 | 610+00 to 613+50 | 30’ RT to 80’ RT | 5.0/892.0 |
| IL 176E | 310+50 to 312+50 | 30’ LT to 70’ LT | 12.0/899.2 |
| IL 176E | 310+50 to 311+25 | 20’ RT to 65’ RT | 8.5/902 |

The PVDs will require drainage at the base of the new embankment. The drainage should be provided by either specifying the initial 24 inches of new embankment fill to be clean, well-graded sand in accordance with the Special Provision, *Sand Drainage Blanket*, or by installing horizontal strip drains at each PVD row connecting to the face of the embankment.

We recommend monitoring the settlement by installing settlement plates. The plates should be installed at the top of the sand blanket with rod extending up through the embankment to the finished top elevation. Care should be taken by the Contractor not to impact the rod either during or after construction. The settlement should then be monitored once a week for 4 weeks followed by once every two weeks until the monitoring curve shows a residual settlement of 1.0 inch. When the settlement monitoring shows 1 inch of residual settlement, the embankment should be leveled off with additional compacted embankment fill and the tasks related to the sidewalk, guardrail, and pavement construction can be completed. The IDOT Special Provision for *Settlement Waiting Period and Settlement Platforms* should be included in the contract.

### *5.6.2 Aggregate Columns*

The soil within the limits as shown in Table 12 could be improved by the installation of aggregate (stone) columns. We estimate that 2.5-foot diameter columns, spaced about 8 feet in a triangular pattern and extending 2 feet below the bottom of treatment depths as shown in Table 12 would roughly achieve the target goal of 1 inch residual settlement at the time of pavement placement. The installation for these columns is relatively shallow, and we estimate about 3 to 4 weeks for installation.

### *5.6.3 Pile Supported Embankment*

The widened portions of IL 47 and IL176E proposed to extend over the areas with deformable organic soils could also be constructed as geosynthetically-reinforced pile supported embankments (PSE). The PSE system has been used at several locations within the State of Illinois to successfully support both roadway embankments as well as earth retaining structures.

The improvement areas that can be considered for pile supported embankment are summarized in Table 12. For estimation purpose, timber piles with lengths extending to depths of 20 to 25 feet below the base of the proposed embankment widening. Six to seven rows of piles in cross section at each proposed widening spaced in a square pattern roughly 7 feet on-center. The piles should be topped with square concrete caps 36 to 42 inches wide. A 36-inch thick load transfer platform with two rows of biaxial geogrid placed approximately 6 inches apart. The construction of the pile supported embankment will be relatively quick. A 500 foot-section with no access problems would probably take about 2 to 3 months to finish. The recommendations for a PSE system included in this report should be considered preliminary and used only for cost evaluations. A complete design will be required.

The construction of the PSE would require a working platform to be established along the length of both widening areas. The wetland along the IL 47 between approximately Stations 598+00 and 601+50, between Stations 610+00 and 614+25 will need to be temporarily dewatered to establish the platform. The existing embankments would be benched or cut down to establish a level elevation for pile driving.

## 5.7 Detention Pond

The proposed detention basin base elevations are summarized in Table 13. In general, the base of the detention basins consists of very stiff to hard silty clay. An exception is noted at Detention Basin #2 where saturated sand is expected to be exposed near the base of the basin, based on soil boring DPB-04. Groundwater was generally encountered below the proposed base of the detention basins with Boring DPB-04 encountering groundwater in the saturated sand. Groundwater may be expected from isolated pockets of granular soils 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.

Table 13: Summary of Detention Basin and Compensatory Storage

| Alignment | Approximate Limits | | Approximate Base Elevation (feet) | Boring Reference |
|---|---|---|---|---|
| | Start Station | End Station | | |
| Detention Basin #2 | 278+50 | 282+00 | 906.25 | DPB-04 and DPB-05 |
| Detention Basin #19 | 289+00 | 292+00 | 906.50 | DPB-06 and DPB-07 |
| Compensatory Storage Area | 622+00 | 626+00 | 897.00 | DPB-01 through DPB-03 |

The proposed cut slopes of 1:3 (V:H) are expected to be stable during and after construction. The analysis indicates that the factors of safety meet IDOT's minimum requirement of 1.7 for cut. Slope stability analysis results at Stations Detention Basin #19 for the deepest cut are included in Appendix E. 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.

### 5.8 Sign Structure

Two sign structure borings (SIGN-01 and SIGN-02) were drilled at the intersection of IL 47 and IL 176 E. The soil from these soil borings consists primarily of very stiff silty clay to clay loam with an average $Q_u$ value of 3.1 tsf. Proposed traffic lights and light poles foundation depths can be determined using IDOT District One Standard for Light Pole Foundation (BE-300).

## 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, 2016). 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, 2016).

### 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 Strand Associates, Inc. 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

Corina T. Farez, P.E., P.G.
QC/QA Reviewer

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Senior Geotechnical Engineer

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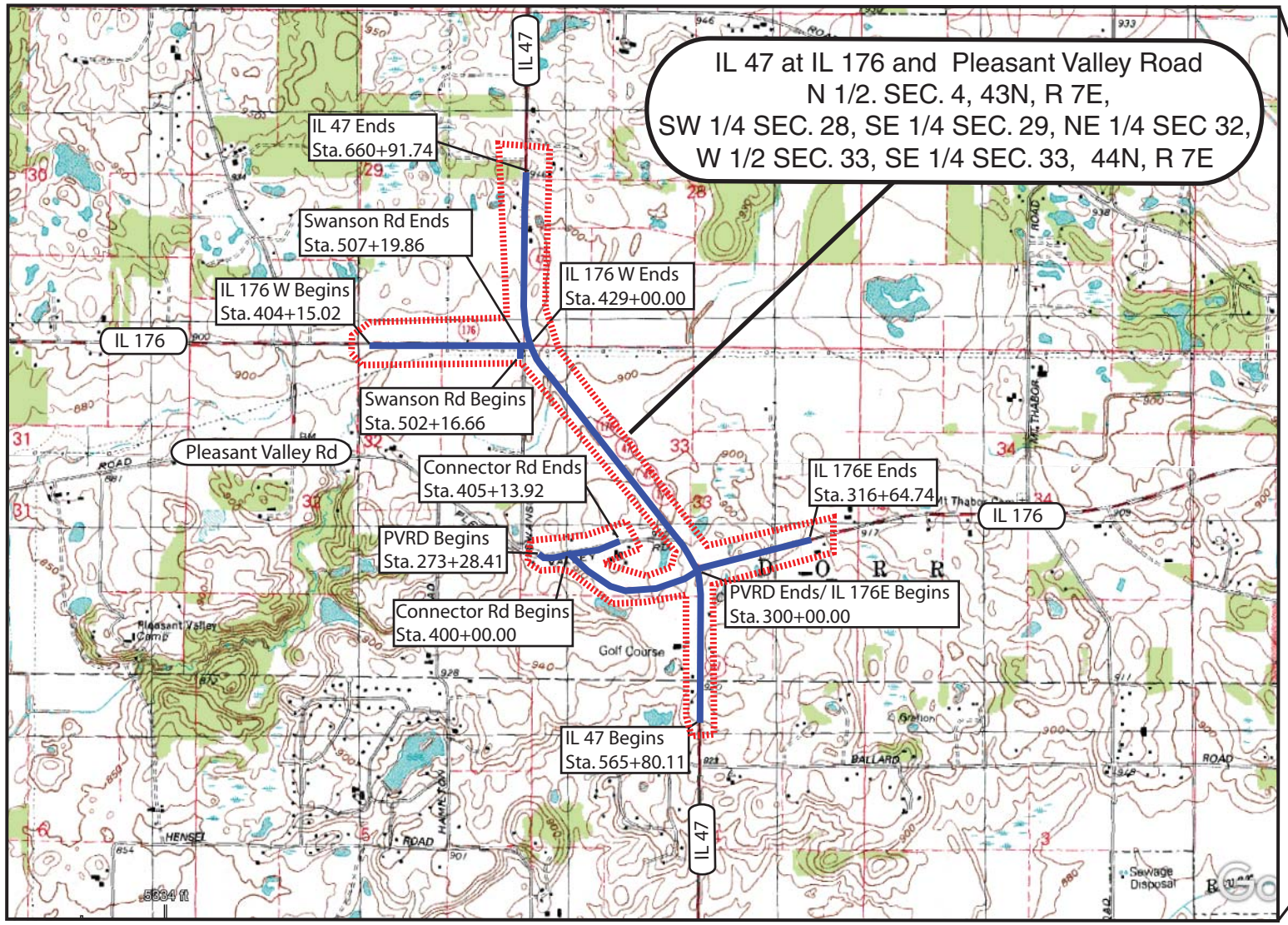
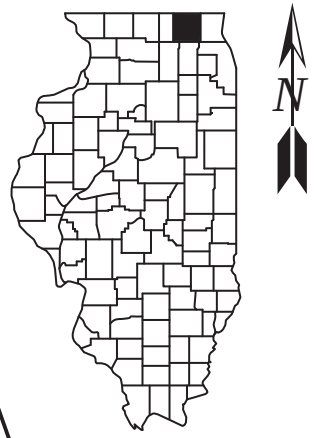
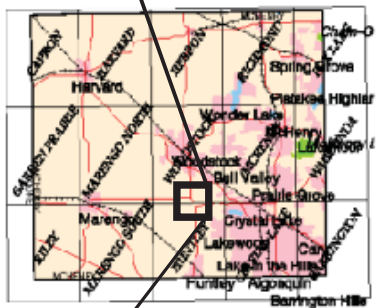
# EXHIBITS



McHenry County

Scale

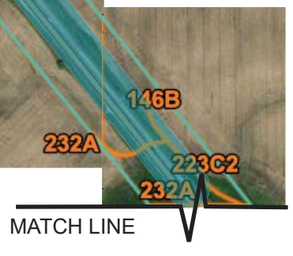
0 1.0 2.0 Miles

SITE LOCATION MAP: IL 47 AT IL 176 AND PLEASANT VALLEY ROAD, MCHENRY COUNTY, ILLINOIS

| | | |
|---|---|---|
| SCALE: GRAPHICAL | EXHIBIT 1 | DRAWN BY: R. KC<br>CHECKED BY: A. Kurnia |

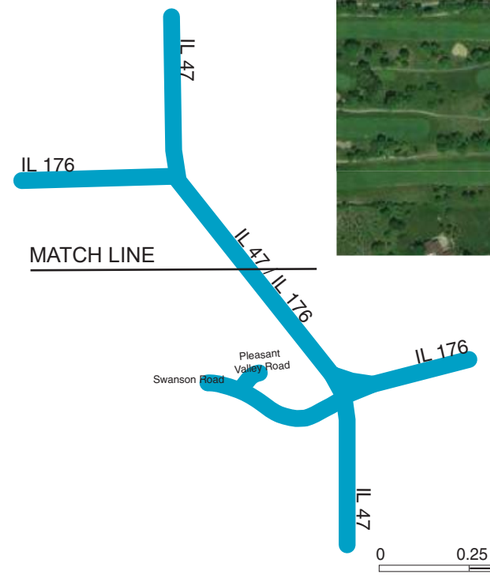
Wang Engineering
1145 N. Main Street
Lombard, IL 60148
www.wangeng.com

FOR STRAND ASSOCIATES, INC. 195-13-01


MATCH LINE


MATCH LINE


0 0.1 0.2 0.3 0.4 miles

0 0.25 0.5 miles

SITE PEDOLOGY MAP: IL 47 AT IL 176 AND PLEASANT VALLEY ROAD, MCHENRY COUNTY, ILLINOIS

| SCALE: GRAPHICAL | EXHIBIT 2-1 | DRAWN BY: C. Marin<br>CHECKED BY: L. Iordache |
|---|---|---|

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Lombard, IL 60148
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FOR STRAND ASSOCIATES, INC. 195-13-01

| Map unit symbol and soil name | Depth | USDA texture | Classification | Fragments | | Sand | Silt | Clay | Moist bulk density | Saturated hydraulic conductivity | Liquid limit | Plasticity index | Organic matter | Erosion Factor | | | 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* | | | % | % | % | % | % | *g/cc* | *micro m/sec* | % | | % | *(0.02 to 0.69)* | *(0.02 to 0.69)* | *(0 to 8)* | | | |
| 62A—Herbert silt loam, 0 to 2 percent slopes | | | | | | | | | | | | | | | | | | | |
| Herbert | 0-8 | Silt loam | A-6 | 0-0-0 | 0-0-0 | -8- | -67- | 20-24-27 | 1.10-1.201.30 | 4.23-9.1714.11 | 30-35-40 | 10-15-20 | 2.0-3.0-4.0 | 0.32 | 0.32 | 5 | Fair, wetness, low strength, Dusty | Very limited, Frost action, Low strength, Depth to saturated zone, Shrink-swell | Very limited, Depth to saturated zone, Dense layer, Dusty, Unstable excavation walls |
| | 8-12 | Silt loam | A-6 | 0-0-0 | 0-0-0 | -11- | -68- | 15-21-27 | 1.20-1.301.40 | 4.23-9.1714.11 | 25-30-35 | 10-15-20 | 0.5-0.8-1.0 | 0.49 | 0.49 | | | | |
| | 12-26 | Silty clay loam | A-6, A-7 | 0-0-0 | 0-0-0 | -7- | -63- | 25-30-35 | 1.20-1.301.40 | 4.23-9.1714.11 | 25-35-45 | 12-19-25 | 0.2-0.6-1.0 | 0.43 | 0.43 | | | | |
| | 26-36 | Clay loam, loam | A-6 | 0-0-0 | 0-0-0 | -27- | -45- | 22-29-35 | 1.35-1.451.55 | 4.23-9.1714.11 | 25-33-40 | 10-15-20 | 0.0-0.2-0.4 | 0.43 | 0.43 | | | | |
| | 36-60 | Loam, sandy loam | A-4, A-6 | 0-0-0 | 0-0-0 | -37- | -43- | 15-20-25 | 1.70-1.801.90 | 1.41-2.824.23 | 25-33-40 | 8-14-20 | 0.0-0.1-0.1 | 0.55 | 0.55 | | | | |
| Shr | | | | | | | | | | | | | | | | | | | |
| Harpster | 0-18 | Silty clay loam | A-7-6, A-7-5 | 0-0-0 | 0-0-0 | 2-8-15 | 50-60-71 | 27-32-35 | 1.10-1.201.30 | 4.23-9.1714.11 | 41-51-58 | 15-20-24 | 3.0-5.0-6.5 | 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 |
| | 18-36 | Silty clay loam | A-6, A-7-6 | 0-0-0 | 0-0-0 | 2-7-15 | 50-62-71 | 27-31-35 | 1.25-1.401.50 | 4.23-9.1714.11 | 37-42-48 | 17-21-25 | 0.5-1.0-1.7 | 0.37 | 0.37 | | | | |
| | 36-41 | Silty clay loam, loam, silt loam, clay loam | A-7-6, A-6 | 0-0-0 | 0-0-0 | 2-10-25 | 43-62-76 | 22-28-32 | 1.30-1.451.55 | 4.23-9.1714.11 | 32-38-43 | 14-19-23 | 0.2-0.5-0.8 | 0.43 | 0.43 | | | | |
| | 41-60 | Loam, silt loam | A-4, A-6 | 0-0-0 | 0-0-0 | 5-20-50 | 28-62-80 | 15-18-27 | 1.40-1.501.60 | 4.23-9.1714.11 | 25-28-38 | 9-11-19 | 0.0-0.3-0.6 | 0.49 | 0.49 | | | | |
| 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 | 0.23-0.330.43 | 1.00-22.0042.00 | - | - | 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 | 0.32-0.380.43 | 1.00-22.0042.00 | - | - | 30.0-55.0-85.0 | | | | | | |
| 146B—Elliott silt loam, 2 to 4 percent slopes | | | | | | | | | | | | | | | | | | | |
| Elliott | 0-9 | Silt loam | A-7-6, A-6 | 0-0-0 | 0-0-0 | 2-10-15 | 58-65-76 | 22-25-27 | 1.30-1.401.45 | 4.23-9.1714.11 | 38-44-47 | 15-17-18 | 3.0-4.3-5.0 | 0.32 | 0.32 | 3 | Poor, Low strength, Wetness, Dusty | Very limited, Low strength, Depth to saturated zone, Frost action | Very limited, Depth to saturated zone, Dusty, Unstable excavation walls |
| | 9-13 | Silty clay loam | A-7-6 | 0-0-0 | 0-0-0 | 2-8-15 | 50-62-71 | 27-30-35 | 1.25-1.351.45 | 4.23-9.1714.11 | 41-46-53 | 18-21-24 | 2.5-3.3-4.0 | 0.28 | 0.28 | | | | |
| | 13-17 | Silty clay loam, silty clay | A-7-6 | 0-0-0 | 0-0-0 | 2-7-15 | 40-51-61 | 37-42-49 | 1.35-1.451.55 | 1.41-2.824.23 | 46-52-60 | 26-30-35 | 0.5-1.0-1.6 | 0.32 | 0.32 | | | | |
| | 17-35 | Silty clay, silty clay loam | A-7-6, A-6 | 0-0-0 | 0-0-1 | 2-10-20 | 40-55-65 | 27-35-45 | 1.45-1.551.75 | 0.42-1.414.23 | 34-43-55 | 17-24-32 | 0.1-0.4-0.8 | 0.43 | 0.43 | | | | |
| | 35-60 | Silty clay loam | A-6, A-7-6 | 0-0-0 | 0-0-2 | 3-10-20 | 42-60-70 | 27-30-38 | 1.65-1.751.85 | 0.42-0.92-1.41 | 34-38-46 | 16-19-26 | 0.0-0.2-0.5 | 0.49 | 0.49 | | | | |
| 223C2—Varna silt loam, 4 to 6 percent slopes, eroded | | | | | | | | | | | | | | | | | | | |
| Varna | 0-8 | Silt loam | A-4, A-6 | 0-0-0 | 0-4-5 | -25- | -52- | 20-24-27 | 1.10-1.201.30 | 4.23-9.1714.11 | 25-33-40 | 8-14-20 | 3.0-3.5-4.0 | 0.32 | 0.32 | 5 | Poor, Low strength, Dusty, Wetness | Very limited, Frost action, Low strength, Shrink-swell | Somewhat limited, Depth to saturated zone, Dusty, Too clayey, Unstable excavation walls |
| | 8-25 | Silty clay, silty clay loam, clay | A-6, A-7 | 0-1-1 | 0-5-9 | -8- | -50- | 35-43-50 | 1.30-1.451.60 | 1.41-2.824.23 | 35-46-56 | 15-22-29 | 0.5-0.8-1.0 | 0.32 | 0.32 | | | | |
| | 25-60 | Silty clay loam, clay loam | A-6, A-7 | 0-1-1 | 0-4-8 | -19- | -48- | 27-34-40 | 1.65-1.781.90 | 0.42-0.92-1.41 | 30-38-45 | 13-20-26 | 0.2-0.3-0.5 | 0.43 | 0.43 | | | | |
| 232A—Ashkum silty clay loam, 0 to 2 percent slopes | | | | | | | | | | | | | | | | | | | |
| Ashkum, drained | 0-12 | Silty clay loam | A-7-6, A-7-5 | 0-0-0 | 0-0-0 | 1-8-15 | 45-55-64 | 35-37-40 | 1.20-1.351.45 | 1.41-2.824.23 | 51-58-67 | 25-26-28 | 3.0-5.0-8.0 | 0.20 | 0.20 | 5 | Poor, Wetness, Low strength, Shrink-swell, Dusty | Very limited, Ponding, Depth to saturated zone, Shrink-swell, Frost action, Low strength | Very limited, Ponding, Depth to saturated zone, Dusty, Unstable excavation walls, Too clayey |
| | 12-29 | Silty clay loam, silty clay | A-7-6 | 0-0-0 | 0-0-0 | 2-8-15 | 43-51-63 | 35-41-42 | 1.30-1.401.50 | 1.41-2.824.23 | 46-54-58 | 25-30-30 | 0.5-1.3-2.5 | 0.32 | 0.32 | | | | |
| | 29-54 | Silty clay loam, silty clay | A-6, A-7-6 | 0-0-0 | 0-1-1 | 5-9-20 | 40-58-65 | 30-33-42 | 1.50-1.601.70 | 1.41-2.824.23 | 39-43-53 | 21-23-30 | 0.1-0.3-1.0 | 0.43 | 0.43 | | | | |
| | 54-60 | Silty clay loam | A-6, A-7-6 | 0-0-0 | 0-1-1 | 5-9-20 | 45-61-68 | 27-30-35 | 1.55-1.651.75 | 1.41-2.824.23 | 37-41-47 | 19-21-25 | 0.0-0.3-1.0 | 0.43 | 0.43 | | | | |

SITE PEDOLOGY DATA: IL 47 AT IL 176 AND PLEASANT VALLEY ROAD, MCHENRY COUNTY, ILLINOIS

SCALE: GRAPHICAL

EXHIBIT 2-2

DRAWN BY: J. Rowells
CHECKED BY: L. Iordache

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

FOR STRAND ASSOCIATES, INC.

195-13-01

| Map unit symbol and soil name | Depth | USDA texture | Classification | Fragments | | Sand | Silt | Clay | Moist bulk density | Saturated hydraulic conductivity | Liquid limit | Plasticity index | Organic matter | Erosion Factor | | | 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* | | | % | % | % | % | % | *g/cc* | *micro m/sec* | % | | % | *(0.02 to 0.69)* | *(0.02 to 0.69)* | *(0 to 8)* | | | |
| 298B—Beecher silt loam, 2 to 4 percent slopes | | | | | | | | | | | | | | | | | | | |
| Beecher | 0-9 | Silt loam | A-4, A-6, A-7 | 0-0-0 | 0-0-0 | -25- | -52- | 20-24-27 | 1.35-1.451.55 | 1.41-2.824.23 | 30-38-45 | 7-11-15 | 2.0-3.0-4.0 | 0.43 | 0.43 | 5 | Poor, Low strength, Wetness, Dusty, Shrink-swell | Very limited, Frost action, Low strength, Shrink-swell, Depth to saturated zone | Very limited, Depth to saturated zone, Dusty, Too clayey, Unstable excavation walls |
| | 9-32 | Silty clay, silty clay loam | A-6, A-7 | 0-0-0 | 0-0-0 | -8- | -50- | 35-43-50 | 1.40-1.531.65 | 0.42-0.92-1.41 | 35-45-55 | 15-23-30 | 0.0-0.5-1.0 | 0.32 | 0.32 | | | | |
| | 32-60 | Silty clay loam, clay loam | A-6, A-7 | 0-1-1 | 0-2-4 | -17- | -48- | 25-35-45 | 1.65-1.781.90 | 0.42-0.92-1.41 | 28-39-50 | 10-18-25 | 0.0-0.3-0.5 | 0.43 | 0.43 | | | | |
| 330A—Peotone silty clay loam, 0 to 2 percent slopes | | | | | | | | | | | | | | | | | | | |
| Peotone, drained | 0-7 | Silty clay loam | A-7-6, A-7-5 | 0-0-0 | 0-0-0 | 1-5-10 | 50-60-67 | 32-35-40 | 1.20-1.301.40 | 1.41-2.824.23 | 50-57-65 | 22-25-28 | 4.5-6.2-7.5 | 0.24 | 0.24 | 5 | Poor, Wetness, Low strength, Shrink-swell, Dusty | Very limited, Ponding, Depth to saturated zone, Shrink-swell, Frost action, Low strength | Very limited, Ponding, Depth to saturated zone, Unstable excavation walls, Dusty, Too clayey |
| | 7-27 | Silty clay loam, silty clay | A-7-6, A-7-5 | 0-0-0 | 0-0-0 | 1-5-10 | 45-56-64 | 35-39-45 | 1.30-1.401.55 | 1.41-2.824.23 | 48-56-68 | 25-28-32 | 1.5-3.2-6.0 | 0.28 | 0.28 | | | | |
| | 27-50 | Silty clay loam, silty clay | A-7-6 | 0-0-0 | 0-0-1 | 1-6-12 | 43-53-66 | 33-41-45 | 1.35-1.451.60 | 1.41-2.824.23 | 43-54-61 | 23-29-33 | 0.5-1.3-2.7 | 0.32 | 0.32 | | | | |
| | 50-60 | Silty clay loam, silt loam | A-6, A-7-6 | 0-0-0 | 0-0-3 | 1-11-20 | 40-55-74 | 25-34-40 | 1.40-1.531.65 | 1.41-2.824.23 | 34-44-52 | 17-24-29 | 0.0-0.5-1.2 | 0.37 | 0.37 | | | | |
| 527C2—Kidami loam, 4 to 6 percent slopes, eroded | | | | | | | | | | | | | | | | | | | |
| Kidami | 0-10 | Loam | A-4, A-6 | 0-0-0 | 0-0-0 | -43- | -40- | 10-17-24 | 1.30-1.381.45 | 4.23-9.1714.11 | 20-28-35 | 5-10-15 | 1.0-2.0-3.0 | 0.37 | 0.37 | 5 | Poor, Low strength, Wetness, Dusty, Shrink-swell | Somewhat limited, Low strength, Frost action, Shrink-swell | Somewhat limitied, Depth to saturated zone, Dense layer, Dusty, Unstable excavation walls |
| | 10-37 | Loam, clay loam | A-6, A-7-6 | 0-0-0 | 0-1-1 | -37- | -36- | 20-27-34 | 1.40-1.501.60 | 4.23-9.1714.11 | 25-35-45 | 10-18-25 | 0.5-0.8-1.0 | 0.32 | 0.32 | | | | |
| | 37-45 | Loam | A-4, A-6 | 0-0-0 | 0-1-1 | -41- | -37- | 17-22-27 | 1.45-1.551.65 | 4.23-9.1714.11 | 25-30-35 | 8-12-15 | 0.0-0.3-0.5 | 0.37 | 0.37 | | | | |
| | 45-60 | Loam, sandy loam | A-4, A-6 | 0-0-0 | 0-1-2 | -43- | -40- | 15-18-20 | 1.70-1.801.90 | 1.41-2.824.23 | 15-23-30 | 3-9-15 | 0.0-0.3-0.5 | 0.43 | 0.43 | | | | |
| 530B—Ozaukee silt loam, 2 to 4 percent slopes | | | | | | | | | | | | | | | | | | | |
| Ozaukee | 0-4 | Silt loam | A-4, A-7-5, A-6 | 0-0-0 | 0-0-1 | 7-14-23 | 52-67-76 | 15-19-27 | 1.30-1.401.50 | 4.23-9.1714.11 | 28-33-43 | 9-12-18 | 1.2-2.0-3.0 | 0.43 | 0.43 | 3 | Fair, Low strength, Wetness, Dusty | Very limited, Low strength, Frost action, Depth to saturated zone | Very limited, Depth to saturated zone, Dusty, Unstable excavation walls, Too clayey |
| | 4-10 | Silt loam | A-6 | 0-0-0 | 0-0-1 | 5-10-18 | 57-69-76 | 17-21-27 | 1.35-1.451.55 | 4.23-9.1714.11 | 27-32-38 | 11-15-19 | 0.3-0.6-1.0 | 0.55 | 0.55 | | | | |
| | 10-21 | Clay, silty clay loam, silty clay | A-7-6, A-6 | 0-0-1 | 0-1-4 | 5-11-18 | 34-48-58 | 35-41-50 | 1.451.55-1.65 | 0.42-2.334.23 | 31-38-48 | 15-19-25 | 0.2-0.5-0.9 | 0.32 | 0.32 | | | | |
| | 21-39 | Silty clay loam, silty clay | A-6 | 0-1-2 | 0-1-5 | 5-12-20 | 40-52-64 | 29-36-42 | 1.55-1.65-1.70 | 0.42-0.921.41 | 24-31-37 | 11-15-19 | 0.1-0.3-0.6 | 0.37 | 0.37 | | | | |
| | 39-60 | Silty clay loam, clay loam | A-4, A-6 | 0-1-2 | 0-2-7 | 7-14-23 | 50-55-64 | 27-31-35 | 1.60-1.701.85 | 0.42-0.751.41 | 21-26-30 | 9-12-14 | 0.0-0.2-0.5 | 0.43 | 0.43 | | | | |
| 530C2—Ozaukee silt loam, 4 to 6 percent slopes, eroded | | | | | | | | | | | | | | | | | | | |
| Ozaukee, eroded | 0-7 | Silt loam | A-6, A-7-6 | 0-0-0 | 0-0-1 | 5-12-22 | 53-66-75 | 18-22-27 | 1.30-1.431.55 | 4.23-9.1714.11 | 30-35-42 | 12-14-18 | 1.0-1.7-2.5 | 0.43 | 0.43 | 3 | Fair, Low strength, Dusty, Wetness | Very limited, Low strength, Frost action | Somewhat limited, Depth to saturated zone, Dusty, Unstable excavation walls, Too clayey |
| | 7-26 | Silty clay loam, clay, silty clay | A-7-6, A-6 | 0-0-1 | 0-1-4 | 5-11-18 | 34-48-58 | 35-41-50 | 1.45-1.551.65 | 0.42-2.334.23 | 31-38-48 | 15-19-25 | 0.2-0.5-0.9 | 0.32 | 0.32 | | | | |
| | 26-37 | Silty clay loam, silty clay | A-6 | 0-1-2 | 0-1-5 | 5-12-20 | 40-52-64 | 29-36-42 | 1.55-1.651.70 | 0.42-0.921.41 | 24-31-37 | 11-15-19 | 0.1-0.3-0.6 | 0.37 | 0.37 | | | | |
| | 37-60 | Silty clay loam, clay loam | A-6, A-4 | 0-1-2 | 0-2-7 | 7-14-23 | 50-55-64 | 27-31-35 | 1.60-1.701.85 | 0.42-0.751.41 | 21-26-30 | 9-12-14 | 0.0-0.2-0.5 | 0.43 | 0.43 | | | | |

SITE PEDOLOGY DATA: IL 47 AT IL 176 AND PLEASANT VALLEY ROAD, MCHENRY COUNTY, ILLINOIS

SCALE: GRAPHICAL

EXHIBIT 2-3

DRAWN BY: J. Rowells
CHECKED BY: L. Iordache

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FOR STRAND ASSOCIATES, INC.

195-13-01

| Map unit symbol and soil name | Depth | USDA texture | Classification | Fragments | | Sand | Silt | Clay | Moist bulk density | Saturated hydraulic conductivity | Liquid limit | Plasticity index | Organic matter | Erosion Factor | | | 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* | | | % | % | % | % | % | *g/cc* | *micro m/sec* | % | | % | *(0.02 to 0.69)* | *(0.02 to 0.69)* | *(0 to 8)* | | | |
| 530C3—Ozaukee silty clay loam, 4 to 6 percent slopes, severely eroded | | | | | | | | | | | | | | | | | | | |
| Ozaukee, severely eroded | 0-7 | Silty clay loam | A-6 | 0-0-0 | 0-0-1 | 5-11-20 | 44-57-66 | 27-32-38 | 1.40-1.501.60 | 1.41-3.294.23 | 27-32-40 | 11-14-18 | 0.5-0.8-1.2 | 0.37 | 0.37 | 2 | Fair, Low strength, Dusty, Wetness | Very limited, Low strength, Frost action | Somewhat limited, Depth to saturated zone, Dusty, Unstable excavation walls, Too clayey |
| | 7-23 | Silty clay loam, clay, silty clay | A-7-6, A-6 | 0-0-1 | 0-1-4 | 5-11-18 | 34-48-58 | 35-41-50 | 1.45-1.551.65 | 0.42-2.334.23 | 31-38-48 | 15-19-25 | 0.2-0.5-0.9 | 0.32 | 0.32 | | | | |
| | 23-34 | Silty clay loam, silty clay | A-6 | 0-1-2 | 0-1-5 | 5-12-20 | 40-52-64 | 29-36-42 | 1.55-1.651.70 | 0.42-0.921.41 | 24-31-37 | 11-15-19 | 0.1-0.3-0.6 | 0.37 | 0.37 | | | | |
| | 34-60 | Silty clay loam, clay loam | A-6, A-4 | 0-1-2 | 0-2-7 | 7-14-23 | 50-55-64 | 27-31-35 | 1.60-1.701.85 | 0.42-0.751.41 | 21-26-30 | 9-12-14 | 0.0-0.2-0.5 | 0.43 | 0.43 | | | | |
| 530D3—Ozaukee silty clay loam, 6 to 12 percent slopes, severely eroded | | | | | | | | | | | | | | | | | | | |
| Ozaukee, severely eroded | 0-7 | Silty clay loam | A-6 | 0-0-0 | 0-0-1 | 5-11-20 | 44-57-66 | 27-32-38 | 1.40-1.501.60 | 1.41-3.294.23 | 27-32-40 | 11-14-18 | 0.5-0.8-1.2 | 0.37 | 0.37 | 2 | Fair, Low strength, Dusty, Wetness | Very limited, Low strength, Frost action, Slope, Depth to saturated zone | Very limited, Depth to saturated zone, Dusty, Slope, Unstable excavation walls, Too clayey |
| | 7-20 | Silty clay loam, clay, silty clay | A-7-6, A-6 | 0-0-1 | 0-1-4 | 5-11-18 | 34-48-58 | 35-41-50 | 1.45-1.551.65 | 0.42-2.334.23 | 30-37-51 | 15-19-26 | 0.2-0.5-0.9 | 0.32 | 0.32 | | | | |
| | 20-25 | Silty clay loam, silty clay | A-6 | 0-1-2 | 0-1-5 | 5-12-20 | 40-52-64 | 29-36-42 | 1.55-1.651.70 | 0.42-0.921.41 | 24-31-37 | 11-15-19 | 0.1-0.3-0.6 | 0.37 | 0.37 | | | | |
| | 25-60 | Silty clay loam, clay loam | A-6, A-4 | 0-1-2 | 0-2-7 | 7-14-23 | 50-55-64 | 27-31-35 | 1.65-1.751.85 | 0.42-0.751.41 | 21-26-31 | 9-12-15 | 0.0-0.2-0.5 | 0.43 | 0.43 | | | | |
| 570C2—Martinsville silt loam, 4 to 6 percent slopes, eroded | | | | | | | | | | | | | | | | | | | |
| Martinsville | 0-12 | Silt loam | A-4 | 0-0-0 | 0-0-0 | - 30- | - 54- | 12-16-20 | 1.35-1.401.45 | 4.23-9.1714.11 | 0-13-25 | 3-6-8 | 0.5-1.3-2.0 | 0.43 | 0.43 | 5 | Fair, Dusty | Somewhat limited, Frost action, Shrink-swell | Somewhat limited, Dusty, Unstable excavation walls |
| | 12-37 | Clay loam, silty clay loam, sandy clay loam, loam | A-2-4, A-2-6, A-4, A-6 | 0-0-0 | 0-0-0 | - 35- | - 38- | 20-27-33 | 1.40-1.501.60 | 4.23-9.1714.11 | 25-33-40 | 7-11-15 | 0.0-0.3-0.5 | 0.32 | 0.32 | | | | |
| | 37-58 | Sandy loam, loam, sandy clay loam | A-2-4, A-2-6, A-4, A-6 | 0-0-0 | 0-0-0 | - 65- | - 15- | 15-20-25 | 1.40-1.501.60 | 4.23-9.1714.11 | 20-25-30 | 5-8-11 | 0.0-0.1-0.2 | 0.20 | 0.20 | | | | |
| | 58-64 | Stratified sand to silt loam | A-1, A-2-4, A-4 | 0-0-0 | 0-0-0 | - 88- | - 1- | 2-11-20 | 1.501.60-1.70 | 4.23-23.29 -42.34 | 0-13-25 | NP-4-8 | 0.0-0.1-0.2 | 0.10 | 0.10 | | | | |
| 1330A—Peotone silty clay loam, 0 to 2 percent slopes, undrained | | | | | | | | | | | | | | | | | | | |
| Peotone | 0-22 | Silty clay loam | A-7-6, A-7-5 | 0-0-0 | 0-0-0 | 0-7-10 | 50-57-67 | 33-37-40 | 1.201.30-1.40 | 1.41-2.824.23 | 40-53-65 | 15-25-35 | 5.0-6.0-7.0 | 0.24 | 0.24 | 5 | Poor, Wetness, Low strength, Shrink-swell, Dusty | Very limited, Ponding, Depth to saturated zone, Shrink-swell, Frost action, Low strength | Very limited, Ponding, Depth the saturated zone, Unstable excavation walls, Dusty |
| | 22-43 | Silty clay loam, silty clay | A-7-6, A-7-5 | 0-0-0 | 0-1-3 | 0-7-10 | 45-55-65 | 35-39-45 | 1.30-1.451.60 | 1.41-2.824.23 | 40-55-70 | 15-28-40 | 0.5-1.8-3.0 | 0.32 | 0.32 | | | | |
| | 43-60 | Silty clay loam, silt loam, silty clay | A-6, A-7-6, A-7-5 | 0-0-0 | 0-3-4 | 0-11-20 | 38-56-75 | 25-34-42 | 1.40-1.531.65 | 1.41-2.824.23 | 30-45-60 | 15-23-30 | 0.2-0.3-0.5 | 0.37 | 0.37 | | | | |

SITE PEDOLOGY DATA: IL 47 AT IL 176 AND PLEASANT VALLEY ROAD, MCHENRY COUNTY, ILLINOIS

SCALE: GRAPHICAL

EXHIBIT 2-4

DRAWN BY: J. Rowells
CHECKED BY: L. Iordache

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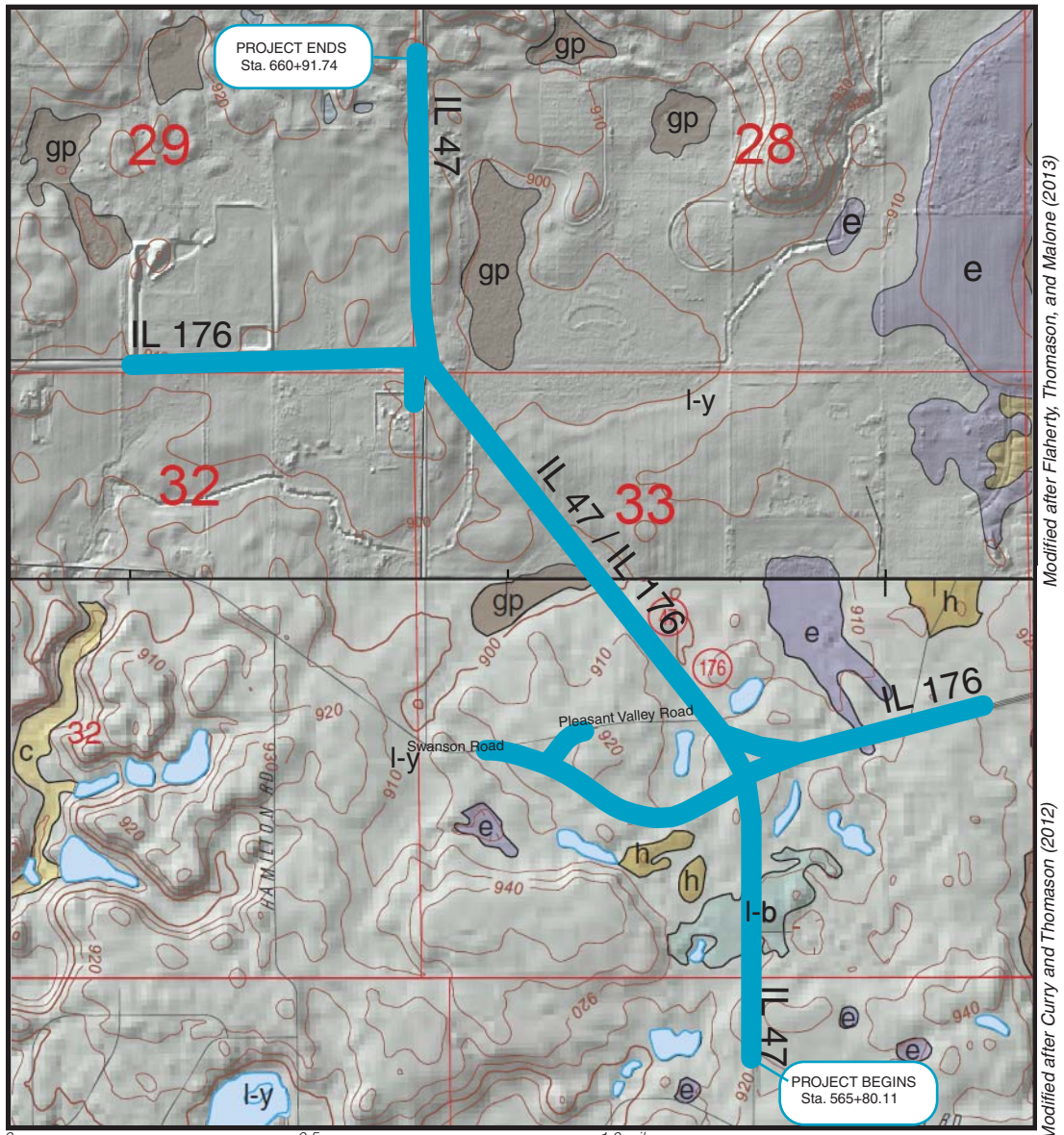
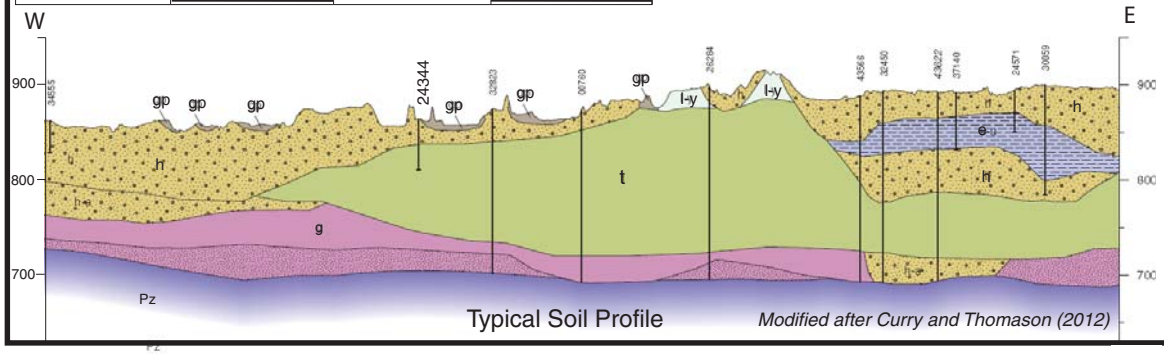
195-13-01




Modified after Flaherty, Thomason, and Malone (2013)

Modified after Curry and Thomason (2012)




Typical Soil Profile

*Modified after Curry and Thomason (2012)*

## REGIONAL GEOLOGY


***Wedron Group***

- Wadsworth Formation
- Lemont Formation
- Tiskilwa Formation

*Modified after Hansel and Johnson (1996)*

## 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-y** — **Lemont Fornation, Yorkville Member**
Debris flow deposits and diamicton; silty clay, silty clay loam, and clay, includes layers of sand and gravel

**l-b** — **Lemont Formation, Batestown Member (Cross section only)**
Debris flow deposits and diamicton; sandy loam to loam with abundant cobbles; includes layers of sand and gravel or silt and sorted sediment

**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 is 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 Curry and Thomason (2012)*

SITE AND REGIONAL GEOLOGY: IL 47 AT IL 176 AND PLEASANT VALLEY ROAD, MCHENRY COUNTY, ILLINOIS

| SCALE: GRAPHICAL | EXHIBIT 3 | DRAWN BY: C. Marin<br>CHECKED BY: L. Iordache |
|---|---|---|

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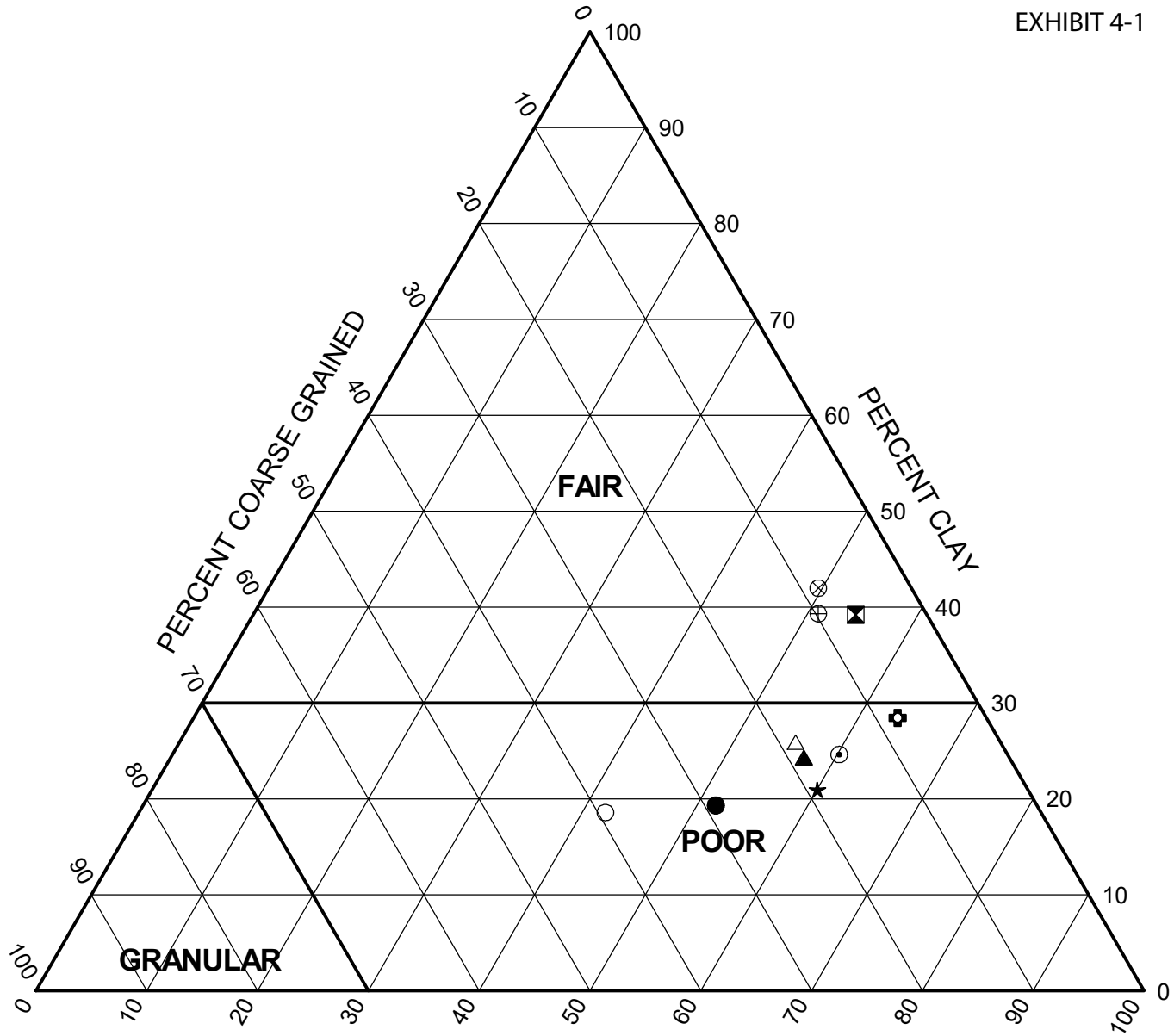
195-13-01

EXHIBIT 4-1




| | Sample | Depth (ft) | Coarse (%) | Silt (%) | Clay (%) | Classification | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | IL DOT | AASHTO | RATING |
| ● | BIO-02#2 | 3.5 | 29.0 | 51.7 | 19.3 | Silty Clay Loam | A-4 (3) | POOR |
| ⊠ | BIO-03#1 | 1.0 | 6.4 | 54.4 | 39.2 | Silty Clay | A-7-6 (35) | FAIR |
| ▲ | BIO-06#3 | 6.0 | 18.5 | 57.1 | 24.3 | Silty Clay Loam | A-6 (7) | POOR |
| ★ | BIO-09#1 | 1.0 | 19.0 | 60.0 | 21.0 | Silty Clay Loam | A-4 (0) | POOR |
| ⊙ | BIO-11#3 | 6.0 | 15.2 | 60.2 | 24.6 | Silty Clay Loam | A-6 (7) | POOR |
| ✿ | BIO-14#1 | 1.0 | 8.0 | 63.5 | 28.5 | Silty Clay Loam | A-7-6 (28) | POOR |
| ○ | BIO-20#1 | 1.0 | 39.3 | 42.1 | 18.6 | Clay Loam | A-6 (9) | POOR |
| △ | BIO-21#1 | 1.0 | 18.5 | 55.6 | 25.9 | Silty Clay Loam | A-6 (15) | POOR |
| ⊗ | BIO-25#2 | 3.5 | 8.4 | 49.6 | 42.0 | Silty Clay | A-6 (19) | FAIR |
| ⊕ | BIO-29#1 | 1.0 | 9.7 | 51.0 | 39.3 | Silty Clay | A-7-6 (41) | FAIR |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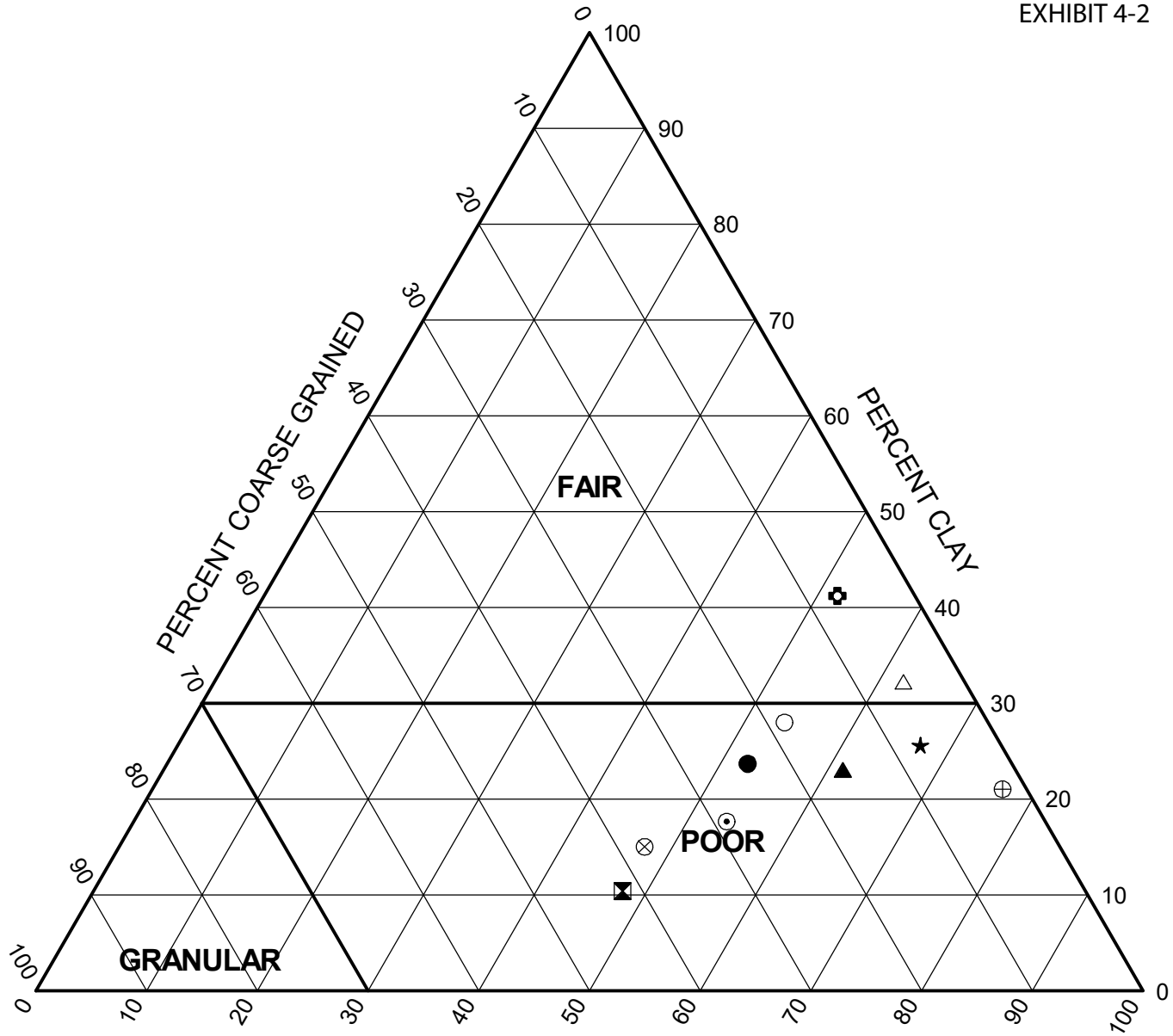
## Subgrade Support Rating Chart

Project: IL 47 at IL 176 and Pleasant Valley Road

Location: McHenry County, Illinois

Number: 195-13-01

EXHIBIT 4-2




| | Sample | Depth (ft) | Coarse (%) | Silt (%) | Clay (%) | Classification | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | IL DOT | AASHTO | RATING |
| ● | BIO-33#1 | 1.0 | 23.9 | 52.4 | 23.7 | Silty Clay Loam | A-7-6 (23) | POOR |
| ⊠ | BIO-35#2 | 3.5 | 41.8 | 47.8 | 10.5 | Loam | A-4 (0) | POOR |
| ▲ | CUL-03#3 | 6.0 | 15.6 | 61.3 | 23.1 | Silty Clay Loam | A-6 (9) | POOR |
| ★ | CUL-06#2 | 3.5 | 7.3 | 67.1 | 25.6 | Silty Clay Loam | A-7-6 (26) | POOR |
| ⊙ | CUL-08#3 | 6.0 | 28.8 | 53.5 | 17.7 | Silty Loam | A-4 (3) | POOR |
| ✿ | CUL-09#2 | 3.5 | 7.0 | 51.8 | 41.2 | Silty Clay | A-7-6 (28) | FAIR |
| ○ | DPB-01#2 | 2.0 | 18.4 | 53.6 | 28.0 | Silty Clay Loam | A-6 (12) | POOR |
| △ | DPB-05#2 | 2.0 | 5.5 | 62.2 | 32.3 | Silty Clay | A-6 (17) | FAIR |
| ⊗ | DPB-07#2 | 2.0 | 37.5 | 47.5 | 15.0 | NA | A-4 (2) | POOR |
| ⊕ | PT2-05ST#2 | 4.0 | 2.2 | 76.8 | 21.1 | Silty Clay Loam | A-7-5 (56) | POOR |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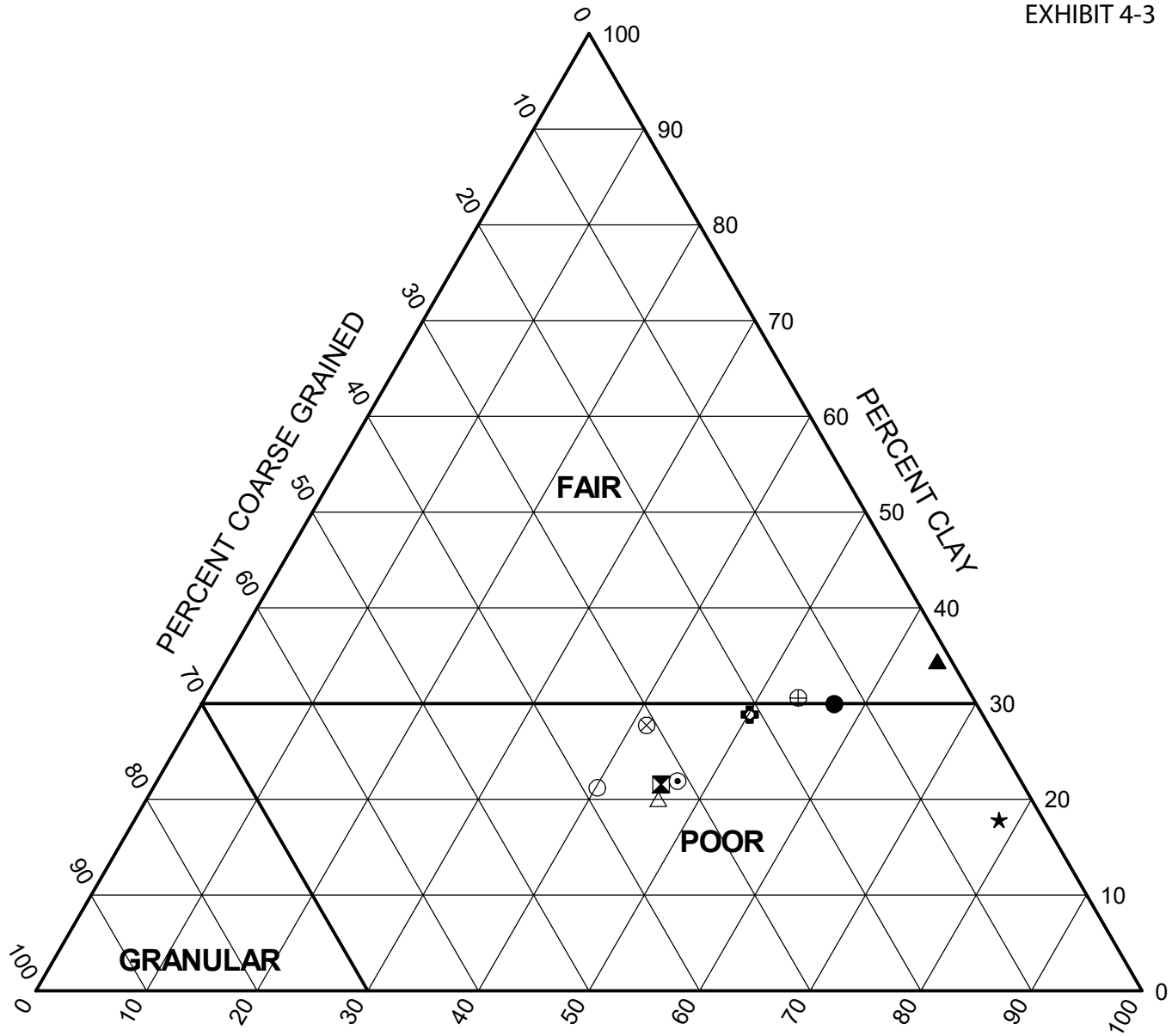
## Subgrade Support Rating Chart

Project: IL 47 at IL 176 and Pleasant Valley Road

Location: McHenry County, Illinois

Number: 195-13-01

EXHIBIT 4-3




| | Sample | Depth (ft) | Coarse (%) | Silt (%) | Clay (%) | Classification | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | IL DOT | AASHTO | RATING |
| ● | SGB-03#2 | 2.0 | 12.8 | 57.2 | 30.0 | Silty Clay | A-6 (10) | POOR |
| ⊠ | SGB-07#1 | 0.0 | 32.7 | 45.7 | 21.6 | Clay Loam | A-7-6 (13) | POOR |
| ▲ | SGB-12#2 | 2.0 | 1.3 | 64.3 | 34.4 | Silty Clay | A-6 (17) | FAIR |
| ★ | SGB-13#3 | 4.0 | 4.0 | 78.1 | 17.9 | Silty Loam | A-7-5 (50) | POOR |
| ⊙ | SGB-16#2 | 2.0 | 31.0 | 47.0 | 21.9 | Clay Loam | A-4 (3) | POOR |
| ✿ | SGB-20#2 | 2.0 | 21.0 | 50.1 | 28.9 | Silty Clay Loam | A-7-6 (24) | POOR |
| ○ | SGB-21#3 | 4.0 | 38.6 | 40.1 | 21.2 | Clay Loam | A-6 (9) | POOR |
| △ | SGB-21ST#2 | 6.0 | 33.7 | 46.3 | 20.0 | Clay Loam | A-6 (4) | POOR |
| ⊗ | SGB-23#2 | 2.0 | 30.9 | 41.3 | 27.7 | Clay Loam | A-6 (12) | POOR |
| ⊕ | SGB-24#2 | 3.0 | 15.8 | 53.6 | 30.6 | Silty Clay | A-7-6 (27) | FAIR |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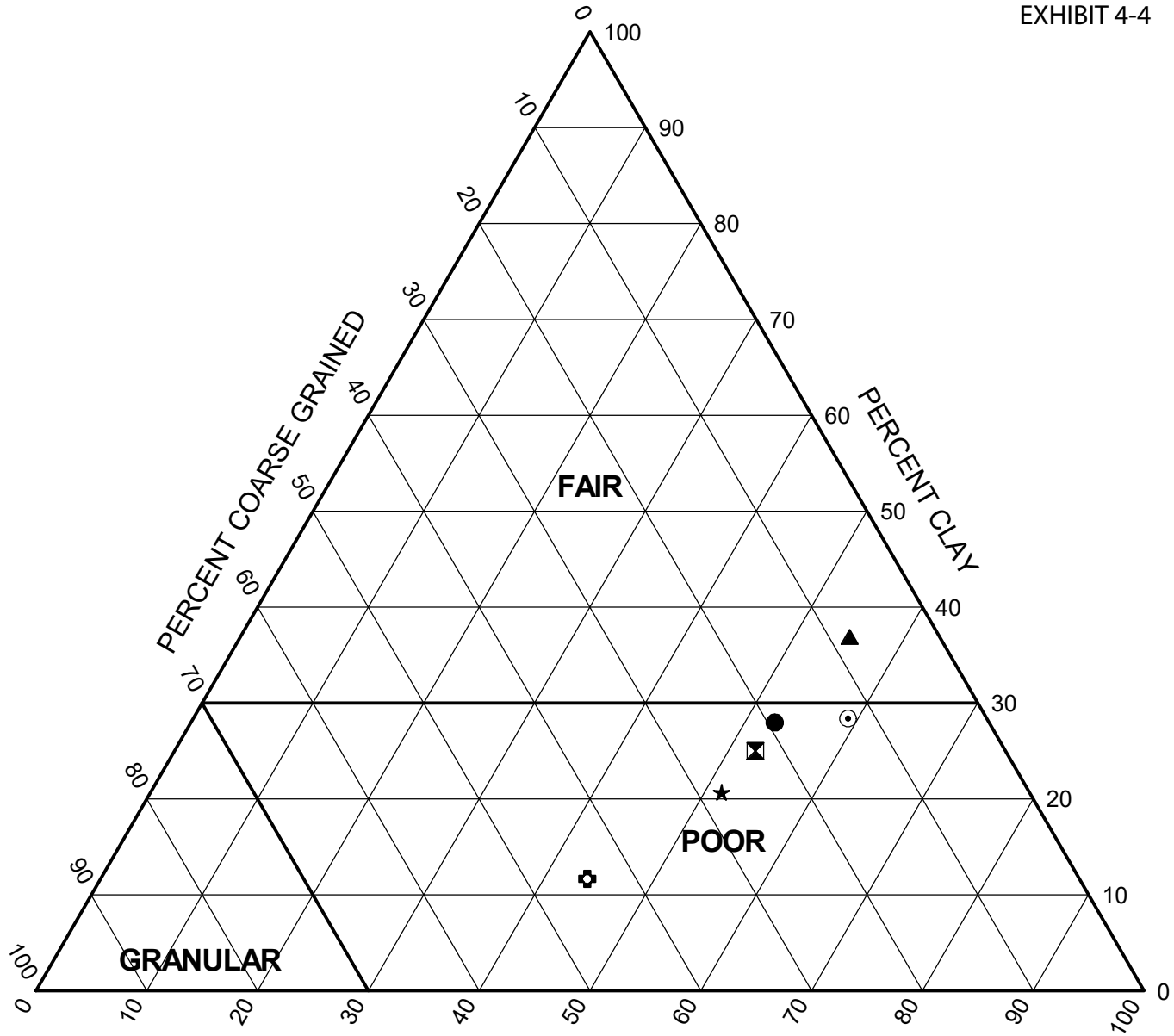
## Subgrade Support Rating Chart

Project: IL 47 at IL 176 and Pleasant Valley Road

Location: McHenry County, Illinois

Number: 195-13-01

EXHIBIT 4-4




| | Sample | Depth (ft) | Coarse (%) | Silt (%) | Clay (%) | Classification | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | IL DOT | AASHTO | RATING |
| ● | SGB-32#2 | 2.0 | 19.3 | 52.7 | 28.0 | Silty Clay Loam | A-7-6 (32) | POOR |
| ⊠ | SGB-34#2 | 2.0 | 22.6 | 52.4 | 25.0 | Silty Clay Loam | A-6 (11) | POOR |
| ▲ | SGB-36#2 | 2.0 | 8.1 | 55.0 | 36.9 | Silty Clay | A-7-6 (25) | FAIR |
| ★ | SGB-39#2 | 2.0 | 27.8 | 51.5 | 20.7 | Silty Clay Loam | A-6 (6) | POOR |
| ⊙ | SGB-40#2 | 2.0 | 12.5 | 59.1 | 28.4 | Silty Clay Loam | A-6 (11) | POOR |
| ✿ | SGB-44#2 | 2.0 | 44.4 | 43.9 | 11.7 | Loam | A-6 (4) | POOR |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |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## Subgrade Support Rating Chart

Project: IL 47 at IL 176 and Pleasant Valley Road

Location: McHenry County, Illinois

Number: 195-13-01

# 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 |

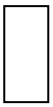
| Relative Drilling Resistace | |
|---|---|
| **RDR** | **Drilling Resistance Term** |
| 1 | Very Easy |
| 2 | Easy |
| 3 | Moderate |
| 4 | Hard |
| 5 | Very Hard |

| 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 |

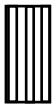
## Sample Type Symbols

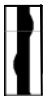

Split Spoon


No Recovery


Geoprobe


Rock Core


Shelby Tube


Auger Cuttings

SS = Split Spoon

ST = Shelby Tube

SPT = Standard Penetration Test

$Q_u$ = Unconfined Compressive Strength

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,

Drill Rig:

TMR = Truck Mouted Rig

ATV = All Terrain Vehicle Rig

[--%] = SPT Hammer Efficiency


In-situ Vane Shear Test

SPT = Standard Penetration Test

N Value is the sum of the second and the third numbers

04/28/2017

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# BORING LOG BIO-01

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 905.30 ft
North: 2032551.11 ft
East: 959599.77 ft
Station: 595+88.91
Offset: 60.16 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 904.8 | 6-inch thick, dark brown SILTY CLAY LOAM, trace gravel, some roots | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Hard, pinkish brown CLAY LOAM to SILTY LOAM, trace gravel; damp | | | 1 | 3<br>7<br>8 | 6.23<br>B | 13 |
| | | --RDR 2-- | | | | | | |
| | | | | | 2 | 6<br>10<br>10 | 6.72<br>B | 12 |
| | | | 5 | | | | | |
| | 899.8 | | | | | | | |
| | | --hard drilling, 5.5 to 6 feet-- | | | | | | |
| | 899.3 | --pebbly-- | | | | | | |
| | | Very stiff to hard, pinkish gray CLAY LOAM to SILTY LOAM, trace to little gravel; damp | | | 3 | 3<br>4<br>8 | 2.21<br>B | 9 |
| | | --RDR 2-- | | | | | | |
| | | | | | 4 | 8<br>11<br>12 | 4.76<br>B | 8 |
| | | | 10 | | | | | |
| | | | | | 5 | 3<br>4<br>8 | 2.54<br>B | 7 |
| | | | | | 6 | 5<br>6<br>7 | 3.85<br>B | 10 |
| | | | 15 | | | | | |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | | | | 7 | 6<br>7<br>10 | 2.87<br>B | 9 |
| | | | | | 8 | 5<br>7<br>10 | 3.28<br>B | 9 |
| | 885.3 | | 20 | | | | | |
| | | Boring terminated at 20.00 ft | | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-10-2017** Complete Drilling: **10-10-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG BIO-02

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 906.30 ft
North: 2032651.31 ft
East: 959719.28 ft
Station: 595+92.46
Offset: 95.75 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 LOAM, trace roots; damp --TOPSOIL-- | | | | | | |
| | 905.1 | | | | | | | |
| | | Very stiff to hard, brown and gray SILTY CLAY LOAM to SILTY LOAM, trace gravel; damp --RDR 2-- | | | 1 | 3 4 4 | 3.50 P | 11 |
| | | --$L_L$(%)=22, $P_L$(%)=13-- --%Gravel=5.6-- --%Sand=23.4-- --%Silt=51.7-- --%Clay=19.3-- --A-4 (3)-- | | | 2 | 3 5 9 | 2.54 B | 14 |
| | | | 5 | | 3 | 4 6 9 | 6.23 S | 14 |
| | 898.3 | | | | | | | |
| | | Stiff to very stiff, gray CLAY LOAM to SILTY CLAY LOAM, trace to little gravel; damp --RDR 2-- | | | 4 | 6 7 8 | 1.64 B | 9 |
| | | | 10 | | 5 | 7 9 9 | 2.05 B | 10 |
| | | | 15 | | 6 | 6 6 8 | 1.97 B | 9 |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | | | | 7 | 5 5 8 | 1.39 B | 10 |
| | | | | | 8 | 4 5 7 | 1.72 B | 11 |
| | 886.3 | | 20 | | | | | |
| | | Boring terminated at 20.00 ft | | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-15-2017** Complete Drilling: **11-15-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG BIO-03

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 902.40 ft
North: 2033415.09 ft
East: 958903.88 ft
Station: 606+98.28
Offset: 63.63 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, dark brown CLAY LOAM --TOPSOIL-- | | | | | | |
| | 901.2 | Stiff, gray CLAY to SILTY CLAY; damp --RDR 2-- --$L_L$(%)=51, $P_L$(%)=16-- --%Gravel=0.0-- --%Sand=6.4-- --%Silt=54.4-- --%Clay=39.2-- --A-7-6 (35)-- | | | 1 | 2 3 4 | 1.07 B | 24 |
| | | | 5 | | 2 | 2 4 4 | 1.80 B | 19 |
| | 896.9 | Stiff to hard, gray and brown SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | 3 | 3 5 9 | 6.31 B | 15 |
| | | | 10 | | 4 | 6 8 9 | 3.36 B | 13 |
| | 890.2 | Gray GRAVELLY SAND; wet | | | 5 | 5 6 7 | 1.89 B | 13 |
| | 888.5 | Medium dense, gray SILT; moist --RDR 2-- | 15 | | 6 | 8 9 10 | NP | 12 |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 886.9 | Very dense, brown GRAVEL fragments; damp --possible cobbles-- --RDR 3-- | | | 7 | 24 25 25 | NP | |
| | 884.4 | Very stiff, gray SILTY CLAY LOAM to SILTY LOAM, little gravel; damp --RDR 2-- | | | 8 | 11 8 10 | 2.54 B | 10 |
| | 882.4 | Boring terminated at 20.00 ft | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-26-2017** Complete Drilling: **10-26-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **12.25 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.

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# BORING LOG BIO-04

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.00 ft
North: 2033556.49 ft
East: 958797.73 ft
Station: 608+75.01
Offset: 58.14 LT

| Depth (ft) | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | 899.3 | 9-inch thick, dark brown SILTY CLAY LOAM | | | | | |
| | | --TOPSOIL-- | | | | | |
| | | Stiff to very stiff, brown to gray SILTY CLAY LOAM, trace gravel | | | | | |
| | | --RDR 2-- | | 1 | 3 4 3 | 2.30 B | 16 |
| | | | | 2 | 2 3 5 | 1.64 B | 13 |
| 5 | | | | | | | |
| | | | | 3 | 6 6 9 | 3.77 B | 13 |
| | | | | 4 | 2 3 4 | 2.87 B | 14 |
| 10 | | | | | | | |
| | | --rig chatter, 11.5 feet-- | | | | | |
| | 888.5 | --gravel and cobbles; wet-- | | 5 | 6 6 8 | NA | |
| | 887.0 | Medium stiff to stiff, pinkish gray CLAY LOAM to SILTY LOAM, little gravel; damp to moist | | | | | |
| | | --RDR 2-- | | 6 | 3 5 6 | 0.98 B | 10 |
| 15 | | | | | | | |

| Depth (ft) | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | | | | 7 | 4 4 6 | 1.31 B | 9 |
| | | | | 8 | 5 4 6 | 1.23 B | 11 |
| 20 | 880.0 | Boring terminated at 20.00 ft | | | | | |
| 25 | | | | | | | |
| 30 | | | | | | | |

## GENERAL NOTES

Begin Drilling: **10-27-2017** Complete Drilling: **10-27-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG BIO-05

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 901.70 ft
North: 2033588.73 ft
East: 958912.06 ft
Station: 608+28.74
Offset: 51.25 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 901.4 | 4-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | 900.2 | Brown SILTY CLAY LOAM; damp --FILL-- | | | 1 | 3 5 6 | 2.54 B | 32 |
| | | Very stiff, black SILTY CLAY; damp --BURIED TOPSOIL-- | | | | | | |
| | 897.7 | Stiff to very stiff, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp to moist --RDR 2-- | 5 | | 2 | 2 2 3 | 1.39 B | 23 |
| | | | | | 3 | 7 6 8 | 1.80 B | 19 |
| | | | 10 | | 4 | 4 4 13 | 1.50 P | 16 |
| | | | | | 5 | 4 6 8 | 3.12 B | 16 |
| | | | 15 | | 6 | 5 5 5 | 2.95 B | 16 |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 883.7 | Stiff, brown CLAY LOAM, trace gravel; damp --RDR 2-- | | | 7 | 4 4 6 | 1.00 P | 19 |
| | | | | | 8 | 3 3 5 | 1.23 B | 13 |
| | 881.7 | Boring terminated at 20.00 ft | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-15-2017** Complete Drilling: **11-15-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG BIO-06

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 898.70 ft
North: 2033723.45 ft
East: 958819.90 ft
Station: 609+91.50
Offset: 63.47 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 898.1 | 7-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Medium stiff to very stiff, gray SILTY CLAY LOAM, trace gravel; damp to moist | | | 1 | 3 3 2 | 2.21 B | 18 |
| | 894.7 | Loose, gray LOAM; wet | 5 | | 2 | 2 2 2 | 0.74 B | 20 |
| | 893.2 | Medium stiff to very stiff, gray SILTY CLAY LOAM, trace gravel; damp to moist --$L_L$(%)=26, $P_L$(%)=14-- --%Gravel=3.2-- --%Sand=15.4-- --%Silt=57.1-- --%Clay=24.3-- --A-6 (7)-- --2-inch thick, interbedded loam-- | | | 3 | 4 3 3 | 0.98 B | 16 |
| | | | 10 | | 4 | 3 5 8 | 1.48 B | 15 |
| | | | | | 5 | 3 6 7 | 3.61 B | 16 |
| | | | 15 | | 6 | 4 6 7 | 3.53 B | 16 |
| | 880.7 | Medium stiff, gray CLAY LOAM, trace gravel; moist --RDR 2-- | 20 | | 7 | 4 4 6 | 2.38 B | 16 |
| | | | | | 8 | 3 4 6 | 0.66 B | 18 |
| | 878.2 | | | ▽ | | | | |
| | 878.0 | sand lens; saturated | | | | | | |
| | | Soft to stiff, brown, gray to pinkish gray CLAY LOAM to SILTY LOAM, trace gravel; damp to moist --RDR 2-- | | | 9 | 7 8 9 | 0.57 B | 17 |
| | | | 25 | | 10 | 3 3 5 | 0.90 B | 18 |
| | | | | | 11 | 4 5 4 | 0.25 B | 13 |
| | | | 30 | | 12 | 7 8 8 | 0.50 P | 11 |

## GENERAL NOTES

Begin Drilling: **11-16-2017** Complete Drilling: **11-16-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling ▽: **20.50 ft**
At Completion of Drilling ▼: **34.50 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.

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# BORING LOG BIO-06

**WEI Job No.: 195-13-01**

Client **Strand Associates, Inc.**
Project **IL 47 at IL 176 and Pleasant Valley Road**
Location **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 898.70 ft
North: 2033723.45 ft
East: 958819.90 ft
Station: 609+91.50
Offset: 63.47 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 863.7 | Boring terminated at 35.00 ft | 35 | | 13 | 3<br>4<br>7 | 1.23<br>B | 12 |
| | | | 40 | | | | | |
| | | | 45 | | | | | |

## GENERAL NOTES

Begin Drilling **11-16-2017** Complete Drilling **11-16-2017**
Drilling Contractor **Wang Testing Services** Drill Rig **D50 ATV [88%]**
Driller **K&N** Logger **T. Rothschild** Checked by **C. Marin**
Drilling Method **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling ▽ **20.50 ft**
At Completion of Drilling ▼ **34.50 ft**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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# BORING LOG BIO-07

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 897.80 ft
North: 2034116.33 ft
East: 958336.89 ft
Station: 616+00.02
Offset: 68.13 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 896.8 | 12-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Medium stiff, brown CLAY to SILTY CLAY, trace gravel; moist --RDR 2-- | | | 1 | 4 4 5 | 0.50 P | 23 |
| | 894.8 | Very stiff to hard, brown to gray SILTY CLAY, trace gravel; damp to moist --RDR 2-- | | | 2 | 4 6 7 | 3.94 B | 14 |
| | | | 5 | | 3 | 5 6 8 | 3.44 B | 14 |
| | | | 10 | | 4 | 5 8 7 | 5.66 S | 14 |
| | | | | | 5 | 4 5 7 | 3.36 B | 16 |
| | | | 15 | | 6 | 4 3 7 | 2.30 B | 18 |
| | 877.8 | Boring terminated at 20.00 ft | 20 | | 7 | 4 5 8 | 3.12 B | 17 |
| | | | 25 | | 8 | 4 5 7 | 3.53 B | 17 |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-22-2017** Complete Drilling: **11-22-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG BIO-08

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.00 ft
North: 2034277.82 ft
East: 958211.03 ft
Station: 618+04.70
Offset: 65.49 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 898.9 | 13-inch thick, black SILTY CLAY LOAM<br>--TOPSOIL-- | | | | | | |
| | | Stiff to very stiff, brown CLAY LOAM to CLAY, trace gravel; damp<br>--RDR 2--<br>--FILL-- | | | 1 | 2<br>1<br>1 | 1.00<br>P | 19 |
| | | --wet spoon--<br>--black plastic drain tile fragment at 3.5 feet-- | 5 | | 2 | 6<br>4<br>6 | NA | |
| | | | | | 3 | 18<br>10<br>13 | 2.71<br>B | 24 |
| | 891.3 | Stiff to hard, gray SILTY CLAY LOAM, trace gravel; damp<br>--RDR 2-- | 10 | | 4 | 14<br>13<br>7 | 2.25<br>P | 16 |
| | | | | | 5 | 8<br>7<br>8 | 4.26<br>B | 16 |
| | | | 15 | | 6 | 5<br>5<br>6 | 2.95<br>B | 17 |
| | | | | | 7 | 4<br>4<br>6 | 1.48<br>B | 18 |
| | | | | | 8 | 2<br>4<br>6 | 1.72<br>B | 17 |
| | 880.0 | Boring terminated at 20.00 ft | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-22-2017** Complete Drilling: **11-22-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG BIO-09

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 898.20 ft
North: 2034100.65 ft
East: 958545.35 ft
Station: 614+57.56
Offset: 84.81 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 897.5 | 9-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Stiff to very stiff, black, brown and gray SILTY CLAY LOAM, trace gravel; damp | | | 1 | 3<br>3<br>5 | 2.21 B | 16 |
| | | --RDR 2--<br>--$L_L$(%)=18, $P_L$(%)=14--<br>--%Gravel=4.1--<br>--%Sand=14.8--<br>--%Silt=60.0--<br>--%Clay=21.0-- | | | 2 | 4<br>4<br>4 | 2.00 P | 17 |
| | | --interbedded medium sand-- | 5 | | 3 | 9<br>11<br>13 | 1.72 B | 14 |
| | | | 10 | | 4 | 5<br>5<br>7 | 3.85 B | 15 |
| | | | | | 5 | 4<br>5<br>7 | 2.54 B | 17 |
| | | | 15 | | 6 | 4<br>5<br>8 | 1.72 B | 17 |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | | | | 7 | 4<br>5<br>8 | 1.97 B | 16 |
| | | | | | 8 | 5<br>5<br>8 | 1.25 P | 16 |
| | 878.2 | Boring terminated at 20.00 ft | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-16-2017** Complete Drilling: **11-16-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG BIO-10

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.70 ft
North: 2034216.37 ft
East: 958457.78 ft
Station: 616+02.63
Offset: 88.75 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 899.7 | 12-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Stiff to hard, brown to gray SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | 1 | 3 3 4 | 1.72 B | 14 |
| | | | | | 2 | 5 5 7 | 4.35 B | 13 |
| | | | 5 | | | | | |
| | | | | | 3 | 10 11 12 | 1.39 B | 15 |
| | | | | | 4 | 4 4 6 | 4.43 B | 14 |
| | | | 10 | | | | | |
| | | | | | 5 | 3 4 4 | 3.20 B | 16 |
| | | | | | 6 | 3 3 4 | 2.79 B | 17 |
| | | | 15 | | | | | |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | | | | 7 | 3 5 8 | 2.95 B | 15 |
| | | | | | 8 | 3 5 8 | 1.72 B | 13 |
| | 880.7 | Boring terminated at 20.00 ft | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-16-2017** Complete Drilling: **11-16-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG BIO-11

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 899.80 ft
North: 2034757.69 ft
East: 957842.87 ft
Station: 624+09.48
Offset: 53.09 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | 16-inch thick, dark brown CLAY LOAM, trace roots and gravel; damp | | | | | | |
| | 898.5 | --TOPSOIL-- | | | | | | |
| | | Medium stiff, dark brown CLAY to SILTY CLAY, trace gravel; moist | | | 1 | 4 3 4 | 2.95 B | 31 |
| | | --RDR 2-- | | | | | | |
| | | | 5 | | 2 | 0 0 3 | 0.66 B | 40 |
| | 893.6 | | | | | | | |
| | 893.3 | Brown LOAM; moist | | | | | | |
| | | Stiff to hard, brown to gray SILTY CLAY LOAM, trace gravel; damp | | | 3 | 4 10 8 | 2.71 B | 14 |
| | | --RDR 2-- | | | | | | |
| | | --$L_L$(%)=24, $P_L$(%)=12-- | | | | | | |
| | | --%Gravel=1.4-- | | | | | | |
| | | --%Sand=13.8-- | | | | | | |
| | | --%Silt=60.2-- | | | | | | |
| | | --%Clay=24.6-- | | | | | | |
| | | --A-6 (7)-- | | | 4 | 5 6 8 | 2.46 B | 14 |
| | | | 10 | | | | | |
| | | | | | 5 | 4 7 9 | 5.99 B | 14 |
| | 886.6 | --light chatter, at 13 feet; pebbly-- | | | | | | |
| | | | | | 6 | 3 6 9 | 2.95 B | 14 |
| | | | 15 | | | | | |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | | | | 7 | 5 6 9 | 3.85 B | 16 |
| | | | | | 8 | 3 3 5 | 1.56 B | 17 |
| | 879.8 | | 20 | | | | | |
| | | Boring terminated at 20.00 ft | | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-09-2017** Complete Drilling: **10-09-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG BIO-12

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.70 ft
North: 2034899.39 ft
East: 957727.62 ft
Station: 625+92.12
Offset: 54.53 LT

| Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 899.4 | 16-inch thick, dark brown SILTY CLAY LOAM, trace gravel, roots --TOPSOIL-- | | | | | | |
| | Very stiff, brown SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2-- | | | 1 | 0 3 7 | 3.69 B | 13 |
| 897.7 | | | | | | | |
| | Very soft, gray CLAY to SILTY CLAY; moist --RDR 1-- | | | 2 | 3 2 2 | < 0.25 P | 24 |
| | | 5 | | | | | |
| 895.2 | | | | | | | |
| | Very stiff to hard, brown and gray SILTY CLAY, trace gravel; damp --RDR 2-- | | | 3 | 3 9 10 | 7.79 B | 15 |
| | | | | 4 | 3 5 6 | 3.69 B | 16 |
| | | 10 | | | | | |
| | | | | 5 | 3 4 5 | 3.36 B | 17 |
| | | | | 6 | 3 4 6 | 3.12 B | 17 |
| | | 15 | | | | | |

| Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 885.2 | | | | | | | |
| | Medium dense, gray SILTY LOAM; moist --RDR 2-- | | | 7 | 4 6 8 | NP | 16 |
| | --hard drilling, at 18 feet-- --pebbly-- | | | | | | |
| 882.7 | | | | | | | |
| | Very stiff, gray CLAY LOAM, trace gravel; damp | | | 8 | 5 6 7 | 3.77 B | 11 |
| 880.7 | | 20 | | | | | |
| | Boring terminated at 20.00 ft | | | | | | |
| | | 25 | | | | | |
| | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-09-2017** Complete Drilling: **10-09-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG BIO-12ST

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.70 ft
North: 2034899.39 ft
East: 957727.62 ft
Station: 625+92.12
Offset: 54.53 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | Drilled to 3 feet without sampling | | | | | | |
| | 897.7 | Very stiff, gray SILTY CLAY, trace gravel; damp | | | 1 | PUSH | 3.75 P | |
| | 895.7 | Boring terminated at 5.00 ft | 5 | | | | | |
| | | | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-09-2017** Complete Drilling: **10-09-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **CLM (-lab)**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG BIO-13

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 901.20 ft
North: 2034824.15 ft
East: 957934.02 ft
Station: 624+04.42
Offset: 59.59 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 900.2 | 12-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Stiff to very stiff, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | 1 | 3 4 5 | 2.71 B | 17 |
| | | | 5 | | 2 | 2 4 7 | 1.64 B | 18 |
| | | | | | 3 | 6 9 10 | 3.69 B | 14 |
| | | | 10 | | 4 | 4 6 8 | 3.20 B | 15 |
| | | | | | 5 | 4 5 7 | 2.21 B | 16 |
| | | | 15 | | 6 | 5 6 7 | 1.50 P | 16 |
| | 881.2 | Boring terminated at 20.00 ft | 20 | | 7 | 4 4 7 | 1.64 B | 18 |
| | | | 25 | | 8 | 4 5 8 | 1.89 B | 18 |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-25-2017** Complete Drilling: **10-25-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&R** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG BIO-14

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 897.50 ft
North: 2034962.30 ft
East: 957805.80 ft
Station: 625+92.36
Offset: 45.81 RT

| 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 | 12-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Medium stiff, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace organic matter; moist --RDR 1-- --$L_L$(%)=45, $P_L$(%)=15-- --%Gravel=0.1-- --%Sand=7.9-- --%Silt=63.5-- --%Clay=28.5-- --A-7-6 (28)-- | | | 1 | 2 2 4 | 0.82 B | 21 |
| | 893.5 | | | | 2 | 4 5 6 | NP | 12 |
| | | Medium dense, brown SANDY GRAVEL; saturated --RDR 2-- | 5 | | | | | |
| | 892.0 | Stiff to very stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | 3 | 3 4 6 | 1.64 B | 17 |
| | | | 10 | | 4 | 3 4 8 | 2.05 B | 15 |
| | | | | | 5 | 3 5 6 | 2.87 B | 16 |
| | | | 15 | | 6 | 4 5 6 | 2.38 B | 16 |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | | | | 7 | 3 4 5 | NA | |
| | | | | | 8 | 2 3 5 | 1.15 B | 19 |
| | 877.5 | Boring terminated at 20.00 ft | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-25-2017** Complete Drilling: **10-25-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **4.00 ft**
At Completion of Drilling: **7.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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# BORING LOG BIO-15

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 902.00 ft
North: 2035057.14 ft
East: 957587.74 ft
Station: 628+02.69
Offset: 65.18 LT

| Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 901.7 | 4-inch thick, dark brown SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | Stiff, brown to gray SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | 1 | 3 4 3 | 1.48 B | 16 |
| 898.0 | Loose, brown to gray LOAM; damp --RDR 2-- | 5 | | 2 | 4 4 3 | NP | 13 |
| 896.5 | Stiff to hard, gray SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | 3 | 4 5 6 | 4.10 B | 14 |
| | | 10 | | 4 | 4 5 6 | 3.85 B | 17 |
| | | | | 5 | 4 5 6 | 2.38 B | 17 |
| | | 15 | | 6 | 4 5 6 | 1.80 B | 17 |
| | | | | 7 | 3 4 7 | 1.80 B | 16 |
| | | | | 8 | 4 5 6 | 1.39 B | 16 |
| 882.0 | Boring terminated at 20.00 ft | 20 | | | | | |
| | | 25 | | | | | |
| | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-27-2017** Complete Drilling: **10-27-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG BIO-16

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 902.50 ft
North: 2035162.49 ft
East: 957494.83 ft
Station: 629+39.52
Offset: 73.76 LT

| Depth (ft) | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | 901.9 | 7-inch thick, black SILTY CLAY --TOPSOIL-- | | | | | |
| | | Stiff to hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | | | |
| | | | | 1 | 7<br>12<br>13 | 7.22 B | 14 |
| | | | | 2 | 7<br>10<br>12 | 6.07 B | 17 |
| 5 | | | | | | | |
| | | | | 3 | 8<br>8<br>10 | 5.41 B | 16 |
| | | | | 4 | 4<br>5<br>5 | NA | |
| 10 | | | | | | | |
| | | | | 5 | 3<br>5<br>5 | 2.38 B | 15 |
| | | | | 6 | 3<br>4<br>7 | 1.64 B | 16 |
| 15 | | | | | | | |
| | | | | 7 | 3<br>5<br>5 | 1.64 B | 16 |
| | | | | 8 | 4<br>6<br>6 | 2.54 B | 17 |
| 20 | 882.5 | Boring terminated at 20.00 ft | | | | | |
| 25 | | | | | | | |
| 30 | | | | | | | |

## GENERAL NOTES

Begin Drilling: **10-26-2017** Complete Drilling: **10-26-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG BIO-17

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 907.30 ft
North: 2035730.77 ft
East: 957225.89 ft
Station: 635+43.09
Offset: 77.64 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 907.1 | 3-inch thick, dark brown SILTY CLAY LOAM; damp --TOPSOIL-- | | | | | | |
| | | Medium stiff, dark brown SILTY CLAY, trace gravel; damp | | | 1 | 3 2 3 | 0.98 B | 19 |
| | 903.6 | | | | | | | |
| | 903.3 | Brown, coarse SAND; moist | | | | | | |
| | | Very stiff to hard, brown and gray SILTY CLAY LOAM, trace to little gravel; damp to moist --RDR 2-- | 5 | | 2 | 4 3 5 | 3.03 B | 15 |
| | | | | | 3 | 4 6 7 | 4.18 B | 15 |
| | | | 10 | | 4 | 5 9 11 | 7.05 B | 13 |
| | | | | | 5 | 7 8 11 | 4.67 B | 13 |
| | | | 15 | | 6 | 7 7 10 | 4.59 B | 13 |
| | | | | | 7 | 5 6 9 | 2.54 B | 14 |
| | | | | | 8 | 5 5 8 | 3.20 B | 14 |
| | 887.3 | Boring terminated at 20.00 ft | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-13-2017** Complete Drilling: **10-13-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG BIO-18

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 905.90 ft
North: 2035871.32 ft
East: 957202.07 ft
Station: 636+79.11
Offset: 72.85 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 905.7 | 3-inch thick, dark brown SILTY CLAY LOAM; damp --TOPSOIL-- | | | | | | |
| | | Stiff to very stiff, brown to gray SILTY CLAY LOAM, trace to some gravel; damp --RDR 2-- | | | 1 | 2 3 3 | 1.80 B | 16 |
| | | | 5 | | 2 | 4 4 6 | 3.36 B | 16 |
| | | | | | 3 | 5 8 9 | NA | |
| | | | 10 | | 4 | 6 12 8 | 1.97 B | 18 |
| | | | | | 5 | 7 7 8 | 1.39 B | 13 |
| | 892.9 | Stiff, pinkish brown CLAY LOAM, little gravel; damp --RDR 2-- | 15 | | 6 | 8 8 7 | 1.64 B | 9 |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 888.7 | Brown LOAM; saturated | | | 7 | 4 4 5 | 1.31 B | 10 |
| | 887.9 | Soft brown CLAY LOAM to SILTY LOAM, little gravel; wet --RDR 2-- | | | | | | |
| | 886.9 | Medium dense, gray SANDY GRAVEL; wet --RDR 2-- | 20 | | 8 | 6 6 8 | 0.41 B | 18 |
| | 885.9 | Boring terminated at 20.00 ft | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-13-2017** Complete Drilling: **10-13-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **17.25 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.

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# BORING LOG BIO-19

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 903.00 ft
North: 2035797.67 ft
East: 957362.38 ft
Station: 635+76.40
Offset: 70.66 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 902.2 | 10-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Stiff to hard, brown and gray SILTY CLAY LOAM, trace gravel; damp | | | 1 | 1 3 3 | 1.75 P | 17 |
| | | --RDR 2-- | | | 2 | 4 4 5 | 4.26 B | 14 |
| | | | 5 | | 3 | 6 8 8 | NA | |
| | | | | | 4 | 5 5 7 | 2.62 B | 13 |
| | | | 10 | | | | | |
| | 892.5 | Stiff, gray CLAY LOAM to SILTY LOAM, trace gravel; damp | | | 5 | 3 4 5 | 1.48 B | 11 |
| | | --RDR 2-- | | | 6 | 3 5 7 | 1.72 B | 11 |
| | | | 15 | | | | | |
| | 883.0 | Boring terminated at 20.00 ft | 20 | | 7 | 5 7 8 | 1.31 B | 10 |
| | | | | | 8 | 4 7 9 | 1.15 B | 9 |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-26-2017** Complete Drilling: **10-26-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG BIO-20

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 903.80 ft
North: 2035956.42 ft
East: 957329.53 ft
Station: 637+45.83
Offset: 65.08 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 903.3 | 6-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Medium stiff, brown and gray CLAY LOAM, trace gravel; damp --RDR 2-- --$L_L$(%)=31, $P_L$(%)=11-- --%Gravel=9.6-- --%Sand=29.7-- --%Silt=42.1-- --%Clay=18.6-- --A-6 (9)-- | | | 1 | 1 2 3 | 0.75 P | 21 |
| | 900.8 | Stiff, brown SILTY CLAY, trace gravel; moist --RDR 2-- | 5 | | 2 | 3 3 6 | 1.89 B | 17 |
| | 898.3 | Medium dense, brown SANDY GRAVEL; saturated --RDR 2-- | | | 3 | 4 9 9 | NP | 15 |
| | 895.8 | Very stiff, gray SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | 10 | | 4 | 5 6 10 | 2.82 B | 14 |
| | | | | | 5 | 4 5 7 | 3.69 B | 14 |
| | 890.8 | Medium stiff to very stiff, pinkish gray LOAM to CLAY LOAM, trace to little gravel; damp --RDR 2-- --$L_L$(%)=20, $P_L$(%)=10-- --%Gravel=6.5-- | 15 | | 6 | 3 3 4 | 0.90 B | 10 |
| | | --%Sand=34.1-- --%Silt=44.0-- --%Clay=15.4-- --A-4 (3)-- | | | 7 | 3 5 9 | 1.89 B | 10 |
| | | | | | 8 | 6 10 12 | 2.13 B | 9 |
| | 883.8 | Boring terminated at 20.00 ft | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-26-2017** Complete Drilling: **10-26-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **5.50 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.

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# BORING LOG BIO-21

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 905.30 ft
North: 2036128.28 ft
East: 957319.13 ft
Station: 639+25.5
Offset: 64.85 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 904.3 | 12-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Medium stiff, black, brown, and gray SILTY CLAY LOAM, trace gravel; damp --RDR 1-- --$L_L$(%)=35, $P_L$(%)=15-- --%Gravel=2.1-- --%Sand=16.4-- --%Silt=55.6-- --%Clay=25.9-- --A-6 (15)-- | | | 1 | 2 2 3 | 0.50 P | 22 |
| | | | 5 | | 2 | 2 2 3 | 0.50 P | 18 |
| | 899.8 | Very stiff to hard, brown and gray SILTY CLAY LOAM to CLAY LOAM, trace gravel; damp --RDR 2-- | | | 3 | 5 8 10 | 5.25 B | 13 |
| | | | 10 | | 4 | 5 5 7 | 3.44 B | 15 |
| | | | | | 5 | 5 6 9 | 4.10 B | 13 |
| | | | 15 | | 6 | 4 7 8 | 3.44 B | 11 |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | | | | 7 | 3 6 8 | 3.61 B | 10 |
| | | | | | 8 | 6 7 7 | 2.13 B | 13 |
| | 885.3 | Boring terminated at 20.00 ft | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-26-2017** Complete Drilling: **10-26-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG BIO-22

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 906.10 ft
North: 2036211.32 ft
East: 957186.77 ft
Station: 640+08.77
Offset: 67.38 LT

| Elevation (ft) | Depth (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 905.8 | 0 | 4-inch thick, brown SILTY CLAY LOAM; damp --TOPSOIL-- | | | | | |
| | | Stiff to hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp to moist --RDR 2-- | | 1 | 5 5 4 | 3.69 B | 20 |
| | 5 | | | 2 | 4 3 5 | 3.12 B | 16 |
| | | | | 3 | 4 5 10 | 6.15 B | 15 |
| | 10 | | | 4 | 4 7 8 | 4.51 B | 14 |
| | | | | 5 | 4 5 8 | 3.03 B | 16 |
| | 15 | | | 6 | 3 5 8 | 2.62 B | 14 |
| 889.1 | 17 | GRAVEL; saturated | | 7 | 8 11 17 | 1.25 P | 14 |
| 888.1 | | Stiff, gray CLAY LOAM to SILTY LOAM, little gravel; moist to wet | | 8 | 7 7 11 | 1.23 B | 12 |
| 886.1 | 20 | Boring terminated at 20.00 ft | | | | | |
| | 25 | | | | | | |
| | 30 | | | | | | |

## GENERAL NOTES

Begin Drilling: **10-13-2017** Complete Drilling: **10-13-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: ▽ **17.50 ft**
At Completion of Drilling: ▼ **11.75 ft**
Time After Drilling: **NA**
Depth to Water: ▼ **NA**

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# BORING LOG BIO-23

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 911.00 ft
North: 2036293.75 ft
East: 957311.92 ft
Station: 640+91.02
Offset: 57.9 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 910.3 | 8-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Very stiff to hard, brown SILTY CLAY, trace gravel | | | | 3 | | |
| | | --RDR 2-- | | | 1 | 4 | 3.53 B | 16 |
| | | | | | | 8 | | |
| | | | 5 | | 2 | 8 | 5.25 B | 14 |
| | | | | | | 9 | | |
| | | | | | | 13 | | |
| | | | | | 3 | 8 | 7.87 B | 12 |
| | | | | | | 11 | | |
| | | | | | | 16 | | |
| | 903.0 | | | ▽ | | | | |
| | | Medium dense, brown SANDY GRAVEL; saturated | | | | 5 | | |
| | | | | | 4 | 9 | NP | 12 |
| | | | 10 | ▼ | | 11 | | |
| | 899.3 | | | | | 3 | | |
| | | Hard (>4.5P), gray SILTY CLAY LOAM, trace gravel | | | 5 | 12 | NP | 15 |
| | | --RDR 2-- | | | | 12 | | |
| | 898.0 | | | | | | | |
| | | Medium dense, gray SILTY LOAM to LOAM, trace gravel and cobbles; moist | | | | 9 | | |
| | | | | | 6 | 10 | NP | 8 |
| | | | 15 | | | 14 | | |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | --hard drilling, 15 to 16 feet-- | | | | | | |
| | | --possible cobbles-- | | | | | | |
| | | --RDR 5-- | | | | | | |
| | | | | | | 12 | | |
| | | | | ◯ | 7 | 13 | NA | |
| | | | | | | 15 | | |
| | 893.0 | | | | | | | |
| | | Medium dense, gray, fine SAND; wet | | | | | | |
| | | --RDR 2-- | | | | 7 | | |
| | | | | | 8 | 6 | NP | 16 |
| | 891.0 | | 20 | | | 7 | | |
| | | Boring terminated at 20.00 ft | | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-26-2017** Complete Drilling: **10-26-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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**

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# BORING LOG BIO-24

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 908.20 ft
North: 2036484.68 ft
East: 957187.32 ft
Station: 642+82.13
Offset: 66.41 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 907.8 | 5-inch thick, dark brown SILTY CLAY LOAM; damp | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Stiff to hard, brown and gray SILT CLAY LOAM, trace to little gravel; damp | | | | | | |
| | | --RDR 2-- | | | 1 | 5<br>4<br>5 | 2.62 B | 19 |
| | | | | | 2 | 4<br>4<br>6 | 3.03 B | 16 |
| | | | 5 | | | | | |
| | | | | | 3 | 5<br>6<br>7 | 5.08 B | 15 |
| | | | | | 4 | 8<br>8<br>11 | 1.48 B | 16 |
| | | | 10 | | | | | |
| | | | | | 5 | 6<br>6<br>7 | 2.30 B | 13 |
| | | | | | 6 | 4<br>5<br>9 | 3.20 B | 13 |
| | | | 15 | | | | | |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 892.7 | Medium dense, brownish gray GRAVELLY LOAM to GRAVELLY SANDY LOAM; moist to saturated | | | | | | |
| | | --RDR 3-- | | | 7 | 7<br>9<br>12 | NP | 11 |
| | | --rig chatter-- | | | | | | |
| | | --possible cobbles-- | | | | | | |
| | | | | | 8 | 9<br>9<br>13 | NP | 11 |
| | | | 20 | | | | | |
| | 887.7 | Very stiff, gray CLAY LOAM to SILTY LOAM, little gravel; moist | | | | | | |
| | | --RDR 2-- | | | 9 | 15<br>12<br>12 | 2.30 B | 8 |
| | 885.7 | Boring terminated at 20.00 ft | | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-13-2017** Complete Drilling: **10-13-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **19.25 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.

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# BORING LOG BIO-25

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 915.20 ft
North: 2037208.74 ft
East: 957329.38 ft
Station: 650+05.98
Offset: 76.76 RT

| Elevation (ft) | Depth (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 914.8 | 0 | 5-inch thick, black SILTY CLAY LOAM<br>--TOPSOIL-- | | | | | |
| | | Very stiff, brown SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp<br>--RDR 2-- | | 1 | 3<br>6<br>10 | NA | 20 |
| | | --$L_L$(%)=38, $P_L$(%)=18--<br>--%Gravel=2.5--<br>--%Sand=5.9--<br>--%Silt=49.6--<br>--%Clay=42.0--<br>--A-6 (19)-- | | 2 | 6<br>9<br>12 | 2.79 B | 18 |
| 910.7 | 5 | Hard, orange brown CLAY LOAM, trace gravel; damp<br>--RDR 2-- | | 3 | 6<br>10<br>14 | 6.64 S | 12 |
| 906.5 | | Medium dense, brown GRAVELLY SAND; saturated | | 4 | 7<br>4<br>7 | NP | 18 |
| 905.7 | 10 | Very stiff, orange brown to gray CLAY LOAM, trace gravel; damp<br>--RDR 2-- | | 5 | 6<br>9<br>10 | 2.46 B | 8 |
| | 15 | | | 6 | 8<br>11<br>17 | 3.25 P | 10 |
| 895.2 | 20 | Boring terminated at 20.00 ft | | 7 | 15<br>11<br>10 | 3.44 B | 9 |
| | 25 | | | 8 | 6<br>9<br>11 | 2.46 B | 8 |
| | 30 | | | | | | |

## GENERAL NOTES

Begin Drilling: **11-20-2017** Complete Drilling: **11-20-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **8.75 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

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# BORING LOG BIO-26

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 909.90 ft
North: 2037349.74 ft
East: 957324.58 ft
Station: 651+46.99
Offset: 72.17 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 909.6 | 4-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Soft, brown SILTY CLAY LOAM, trace gravel; wet --FILL-- --RDR 2-- | | | 1 | 4 5 6 | 0.41 B | 39 |
| | 906.9 | Loose, brown GRAVELLY SAND; saturated --FILL-- | 5 | | 2 | 5 5 4 | NP | 18 |
| | 903.7 | Very loose, black ORGANIC SILT, some plant debris --organic content= 13.0%-- | | | 3 | 3 1 1 | NP | 113 |
| | 901.9 | Very stiff to hard, pinkish gray SILTY CLAY LOAM to CLAY LOAM, trace to little gravel; damp --RDR 2-- | 10 | | 4 | 4 1 6 | 2.54 B | 12 |
| | | --hard drilling, 12.5 to 13.25 feet-- --pebbly-- | | | 5 | 7 7 11 | 4.10 B | 11 |
| | | | 15 | | 6 | 5 5 11 | 2.54 B | 9 |
| | | | | | 7 | 10 8 12 | 2.46 B | 10 |
| | | | | | 8 | 7 9 12 | 2.79 B | 9 |
| | 889.9 | Boring terminated at 20.00 ft | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-21-2017** Complete Drilling: **11-21-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **3.00 ft**
At Completion of Drilling: **5.30 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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# BORING LOG BIO-27

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 915.10 ft
North: 2037182.94 ft
East: 957185.65 ft
Station: 649+80.39
Offset: 67.00 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 914.0 | 13-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Stiff, orange brown and gray SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | 1 | 6 4 4 | 1.50 P | 13 |
| | | | | | 2 | 5 6 7 | 1.39 B | 18 |
| | 909.6 | Medium stiff to very stiff, brown and gray CLAY LOAM to SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | 5 | | 3 | 5 6 7 | 0.98 B | 12 |
| | | | 10 | | 4 | 4 5 6 | 2.05 B | 11 |
| | | | | | 5 | 4 6 8 | 3.36 B | 11 |
| | | | 15 | | 6 | 6 7 10 | 2.46 B | 10 |
| | | | 20 | | 7 | 5 6 8 | 2.97 B | 11 |
| | 895.9 | --cobbles-- | | | 8 | 7 50/2" | 1.48 B | 11 |
| | | Boring terminated at 19.20 ft | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-22-2017** Complete Drilling: **11-22-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG BIO-28

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 911.00 ft
North: 2037358.94 ft
East: 957187.83 ft
Station: 651+56.37
Offset: 64.53 LT

| Depth (ft) | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | 909.8 | 14-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | |
| 0 | | Stiff to very stiff, brown, pinkish brown to pinkish gray SILTY CLAY LOAM to CLAY LOAM, trace to little gravel; damp to moist --RDR 2-- | | 1 | 4 4 7 | 2.30 B | 13 |
| 5 | | | | 2 | 4 6 9 | 3.44 B | 15 |
| | | | | 3 | 3 4 7 | 2.21 B | 11 |
| 10 | | | | 4 | 6 9 10 | 2.13 B | 9 |
| | | | | 5 | 6 6 8 | 2.87 B | 11 |
| 15 | | | | 6 | 4 6 7 | 2.71 B | 11 |
| 20 | 891.0 | Boring terminated at 20.00 ft | | 7 | 5 6 8 | 2.62 B | 11 |
| | | | | 8 | 3 4 6 | 1.48 B | 10 |
| 25 | | | | | | | |
| 30 | | | | | | | |

## GENERAL NOTES

Begin Drilling: **11-21-2017** Complete Drilling: **11-21-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG BIO-29

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 914.10 ft
North: 2032259.00 ft
East: 960749.87 ft
Station: 307+86.56
Offset: 32.15 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 913.8 | 4-inch thick, dark brown SILTY CLAY LOAM; damp --TOPSOIL-- | | | | | | |
| | | Medium stiff to stiff, dark brown and gray CLAY to SILTY CLAY; damp --RDR 2-- --$L_L$(%)=67, $P_L$(%)=27-- --%Gravel=0.3-- --%Sand=9.5-- --%Silt=51.0-- --%Clay=39.3-- --A-7-6 (41)-- | | | 1 | 2 3 4 | 0.82 B | 34 |
| | | | | | 2 | 2 3 4 | 1.31 B | 27 |
| | 908.6 | Medium stiff to very stiff, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace to little gravel; damp --RDR 2-- | 5 | | | | | |
| | | | | | 3 | 2 4 4 | 3.03 B | 18 |
| | | | 10 | | 4 | 2 3 5 | 0.50 P | 19 |
| | | | | | 5 | 4 4 7 | 1.23 B | 17 |
| | | | 15 | | 6 | 5 6 6 | 0.98 B | 14 |
| | 898.6 | Stiff to very stiff, gray CLAY LOAM, trace gravel; damp --RDR 2-- | | | 7 | 3 4 7 | 1.80 B | 11 |
| | | | | | 8 | 7 7 10 | 2.62 B | 13 |
| | 894.1 | Boring terminated at 20.00 ft | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-19-2017** Complete Drilling: **10-19-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG BIO-30

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 916.60 ft
North: 2032217.29 ft
East: 960556.77 ft
Station: 305+89.63
Offset: 42.24 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 915.9 | 8-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Stiff, dark brown to black CLAY to SILTY CLAY, trace roots; damp | | | 1 | 3<br>3<br>4 | 1.07 B | 28 |
| | | --RDR 2-- | | | | | | |
| | 913.6 | Stiff, brown and gray SILTY CLAY, trace gravel; damp | | | | | | |
| | | --RDR 2-- | | | 2 | 3<br>3<br>4 | 1.07 B | 24 |
| | | | 5 | | | | | |
| | 909.9 | Stiff to very stiff, brown to gray CLAY LOAM, trace to little gravel; damp to moist | | | 3 | 4<br>6<br>6 | 1.80 B | 18 |
| | | --RDR 2-- | | | | | | |
| | | | | | 4 | 4<br>8<br>10 | 2.54 B | 13 |
| | | | 10 | | | | | |
| | | | | | 5 | 4<br>7<br>8 | 1.15 B | 11 |
| | | --gray-- | | | | | | |
| | | | | | 6 | 4<br>7<br>8 | 2.62 B | 13 |
| | | | 15 | | | | | |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | | | | 7 | 4<br>7<br>9 | 2.13 B | 13 |
| | | | | | 8 | 4<br>6<br>7 | 1.31 B | 10 |
| | 896.6 | Boring terminated at 20.00 ft | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-15-2017** Complete Drilling: **11-15-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG BIO-31

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 909.50 ft
North: 2035659.75 ft
East: 956642.79 ft
Station: 421+96.86
Offset: 69.73 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 908.8 | 9-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Stiff to hard, brown to gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp | | | 1 | 2 3 3 | 2.46 B | 19 |
| | | --RDR 2 to 3-- | | | | | | |
| | | --2-inch, interbedded silty loam; wet-- | | | 2 | 3 3 7 | 1.23 B | 14 |
| | | | 5 | | 3 | 5 9 9 | 1.31 B | 19 |
| | | | 10 | | 4 | 5 9 12 | 7.46 B | 16 |
| | | | | | 5 | 7 6 7 | 4.02 B | 16 |
| | | | 15 | | 6 | 5 6 8 | 4.10 B | 16 |
| | 889.5 | | 20 | | 7 | 3 6 7 | 2.30 B | 16 |
| | | Boring terminated at 20.00 ft | | | 8 | 6 6 10 | 1.56 B | 14 |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-17-2017** Complete Drilling: **11-17-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG BIO-32

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 907.40 ft
North: 2035658.16 ft
East: 956443.45 ft
Station: 419+97.56
Offset: 72.02 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 906.7 | 9-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Stiff, brown SILTY CLAY LOAM, little gravel; damp | | | 1 | 4 4 3 | 1.50 P | 17 |
| | | --RDR 2-- | | | | | | |
| | 904.4 | Brown CLAY LOAM, trace gravel; moist | | | 2 | 2 5 8 | NA | 19 |
| | | | 5 | | | | | |
| | 901.9 | Very stiff to hard, brown and gray SILTY CLAY, trace gravel; damp | | | 3 | 4 7 10 | 7.13 S | 15 |
| | | --RDR 2 to 3-- | | | | | | |
| | | | | | 4 | 6 8 11 | 8.94 S | 14 |
| | | | 10 | | | | | |
| | | | | | 5 | 6 8 11 | 4.59 B | 16 |
| | | | | | 6 | 10 15 10 | > 4.50 P | 13 |
| | | | 15 | | | | | |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | | | | 7 | 5 6 7 | 3.69 B | 13 |
| | | | | | 8 | 4 4 6 | 3.36 B | 16 |
| | 887.4 | Boring terminated at 20.00 ft | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-20-2017** Complete Drilling: **11-20-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG BIO-33

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 907.00 ft
North: 2035538.32 ft
East: 956652.51 ft
Station: 422+04.22
Offset: 51.85 RT

| Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 906.0 | 12-inch thick, brown SILTY CLAY LOAM<br>--TOPSOIL-- | | | | | | |
| | Hard, black and brown SILTY CLAY LOAM to CLAY LOAM, trace gravel; damp<br>--RDR 2--<br>--$L_L$(%)=49, $P_L$(%)=18--<br>--%Gravel=1.5--<br>--%Sand=22.4--<br>--%Silt=52.4--<br>--%Clay=23.7--<br>--A-7-6 (23)-- | | | 1 | 3<br>3<br>4 | 4.10<br>B | 24 |
| 904.0 | Very stiff to hard, brown to gray SILTY CLAY LOAM, trace to little gravel; damp<br>--RDR 2-- | 5 | | 2 | 2<br>3<br>4 | 2.95<br>B | 15 |
| | | | | 3 | 3<br>8<br>10 | 5.49<br>B | 14 |
| | --hard drilling, 10 feet-- | 10 | | 4 | 4<br>9<br>11 | 8.61<br>B | 12 |
| 896.8 | --possible cobbles-- | | | 5 | 5<br>6<br>11 | 4.18<br>B | 14 |
| | | 15 | | 6 | 3<br>5<br>7 | 3.53<br>B | 15 |

| Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | | | | 7 | 3<br>4<br>7 | 3.03<br>B | 15 |
| | | | | 8 | 3<br>4<br>7 | 2.54<br>B | 14 |
| 887.0 | Boring terminated at 20.00 ft | 20 | | | | | |
| | | 25 | | | | | |
| | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-09-2017** Complete Drilling: **10-09-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG BIO-34

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 906.70 ft
North: 2035536.54 ft
East: 956480.42 ft
Station: 420+34.55
Offset: 50.27 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 906.2 | 6-inch thick, black GRAVELLY SILTY LOAM --TOPSOIL-- | | | | | | |
| | | Stiff to hard, black SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2-- | | | 1 | 4 4 4 | 4.00 P | 24 |
| | | | 5 | | 2 | 4 5 4 | 1.39 B | 19 |
| | 901.2 | Medium stiff, gray CLAY LOAM; moist --RDR 2-- | | | 3 | 1 5 5 | 0.66 B | 17 |
| | 898.7 | Very stiff to hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel; damp to moist --RDR 2-- | 10 | | 4 | 4 9 11 | 5.99 B | 15 |
| | | | 15 | | 5 | 4 6 9 | 4.67 B | 14 |
| | | | | | 6 | 5 5 12 | 3.69 B | 15 |
| | 888.7 | Very stiff, gray CLAY LOAM, trace gravel; damp --RDR 2-- | 20 | | 7 | 4 6 8 | 3.12 B | 14 |
| | 886.7 | Boring terminated at 20.00 ft | | | 8 | 5 5 6 | 2.95 B | 11 |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-06-2017** Complete Drilling: **10-06-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG BIO-35

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 914.40 ft
North: 2031716.38 ft
East: 959579.04 ft
Station: 294+97.57
Offset: 51.19 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 913.9 | 6-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | 912.9 | Very stiff, brown CLAY to SILTY CLAY; moist | | | | 3 | | |
| | | --RDR 2-- | | | 1 | 4<br>4 | 2.87<br>B | 25 |
| | | Loose to medium dense, brown GRAVELLY LOAM to LOAM; moist | | | | | | |
| | | --RDR 2-- | | | | | | |
| | | --%Gravel=3.6-- | | | | 4 | | |
| | | --%Sand=38.2-- | | | 2 | 3 | NP | 17 |
| | | --%Silt=47.8-- | | | | 4 | | |
| | | --%Clay=10.5-- | | | | | | |
| | | --A-4 (0)-- | 5 | | | | | |
| | | | | | | 6 | | |
| | | | | | 3 | 9 | NP | 14 |
| | | | | | | 11 | | |
| | 906.4 | | | | | | | |
| | | Medium dense, brown GRAVELLY SAND; moist to saturated | | | | 5 | | |
| | | --RDR 2-- | | | 4 | 12 | NP | 11 |
| | | --interbedded clay; wet-- | | | | 12 | | |
| | | | 10 | | | | | |
| | | | | | | 5 | | |
| | | | | | 5 | 11 | NP | 10 |
| | | | | | | 17 | | |
| | | | | | | 8 | | |
| | | | | | 6 | 11 | NP | 9 |
| | | | 15 | | | 14 | | |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 898.2 | Stiff, gray CLAY LOAM to SILTY LOAM, little gravel; damp | | | | 14 | | |
| | | --RDR 2-- | | | 7 | 13<br>10 | 1.23<br>B | 12 |
| | | | | | | 17 | | |
| | | | | | 8 | 12 | 1.64 | 11 |
| | | | | | | 8 | B | |
| | 894.4 | | 20 | | | | | |
| | | Boring terminated at 20.00 ft | | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-10-2017** Complete Drilling: **11-10-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **10.50 ft**
At Completion of Drilling: **13.80 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.

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# BORING LOG BIO-36

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 909.30 ft
North: 2031624.44 ft
East: 959282.39 ft
Station: 291+96.71
Offset: 43.5 RT

| Elevation (ft) | Depth (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 908.6 | 0 | 9-inch thick, black SILTY CLAY LOAM | | | | | |
| | | --TOPSOIL-- | | | | | |
| | | Stiff to hard, pinkish brown and gray SILTY CLAY LOAM to CLAY LOAM, trace to little gravel; damp | | 1 | 3<br>2<br>3 | 1.07<br>B | 12 |
| | | --RDR 2-- | | 2 | 3<br>5<br>7 | 3.69<br>B | 14 |
| | 5 | | | 3 | 6<br>8<br>11 | 2.38<br>B | 12 |
| | 10 | | | 4 | 5<br>7<br>9 | 2.95<br>B | 10 |
| | | | | 5 | 7<br>8<br>7 | 4.18<br>S | 10 |
| | 15 | | | 6 | 9<br>9<br>12 | NA | |
| 889.3 | 20 | Boring terminated at 20.00 ft | | 7 | 8<br>15<br>15 | 4.51<br>S | 9 |
| | | | | 8 | 6<br>7<br>10 | 2.05<br>B | 9 |
| | 25 | | | | | | |
| | 30 | | | | | | |

## GENERAL NOTES

Begin Drilling: **11-10-2017** Complete Drilling: **11-10-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG BIO-37

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 915.10 ft
North: 2031944.09 ft
East: 958382.13 ft
Station: 282+15.22
Offset: 29.39 LT

| Elevation (ft) | Depth (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 914.4 | | 8-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | |
| | | Stiff to very stiff, brown and gray SILTY CLAY LOAM to CLAY LOAM, trace to little gravel; damp --RDR 2-- | | 1 | 2 4 7 | 1.56 B | 11 |
| | 5 | | | 2 | 4 6 8 | 2.21 B | 11 |
| | | | | 3 | 5 9 10 | 3.36 B | 13 |
| | 10 | | | 4 | 4 7 9 | 2.30 B | 10 |
| 904.6 | | Stiff to hard, pinkish gray CLAY LOAM to LOAM, trace to little gravel; damp --RDR 2-- | | 5 | 5 8 11 | 4.26 B | 12 |
| | | --hard drilling, 12.5 to 13 feet-- --possible cobbles-- | | | | | |
| 900.8 | | --4-inch thick, sand lenses; damp-- | | 6 | 3 6 8 | 1.39 S | 9 |
| | 15 | | | | | | |
| 895.1 | 20 | Boring terminated at 20.00 ft | | 7 | 4 7 8 | 3.03 B | 9 |
| | | | | 8 | 4 6 7 | 3.94 B | 10 |
| | 25 | | | | | | |
| | 30 | | | | | | |

## GENERAL NOTES

Begin Drilling: **11-09-2017** Complete Drilling: **11-09-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG BIO-38

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 918.10 ft
North: 2032078.82 ft
East: 958235.31 ft
Station: 280+16.60
Offset: 29.84 LT

| Elevation (ft) | Depth (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 917.6 | 0 | 6-inch thick, dark brown SILTY CLAY LOAM --TOPSOIL-- | | | | | |
| | | Stiff, brown CLAY to SILTY CLAY; damp --RDR 2-- | | 1 | 3 4 6 | 1.80 B | 29 |
| 915.1 | | Hard, brown SILTY CLAY, trace gravel --RDR 2-- | | 2 | 5 7 9 | 5.74 B | 19 |
| | 5 | --interbedded silt lenses; moist-- | | 3 | 5 6 9 | 4.33 S | 18 |
| 910.4 | | Brown, medium SAND; saturated --RDR 2-- | | | | | |
| 909.2 | | Very stiff, brown SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | 4 | 4 7 5 | 3.50 P | 14 |
| | 10 | | | | | | |
| 907.6 | | Brown, coarse SAND; saturated | | | | | |
| 906.7 | | Medium dense, gray SANDY GRAVEL; saturated --RDR 2-- | | 5 | 6 15 9 | NP | 23 |
| 905.1 | | Stiff to hard, brown SILTY CLAY LOAM to CLAY LOAM, trace gravel; damp --RDR 2-- | | 6 | 4 7 10 | 1.97 B | 13 |
| | 15 | | | | | | |
| 898.1 | 20 | Boring terminated at 20.00 ft | | 7 | 6 9 14 | 3.61 B | 13 |
| | 25 | | | 8 | 7 9 14 | 4.35 B | 13 |
| | 30 | | | | | | |

## GENERAL NOTES

Begin Drilling: **11-08-2017** Complete Drilling: **11-08-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **7.75 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

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# BORING LOG CUL-01

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 903.40 ft
North: 2032766.30 ft
East: 959415.12 ft
Station: 598+72.30
Offset: 69.86 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 903.1 | 4-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Hard, brown SILTY CLAY, trace gravel; damp --RDR 2-- | | | 1 | 5 6 6 | 4.59 B | 16 |
| | 900.4 | Stiff to very stiff, brown to gray SILTY CLAY LOAM to CLAY LOAM, trace gravel; damp --RDR 2-- | 5 | | 2 | 3 6 5 | 2.05 B | 12 |
| | | | | | 3 | 7 10 11 | 2.00 P | 13 |
| | | --cobbles-- | 10 | | 4 | 5 6 8 | 3.20 B | 10 |
| | | | | | 5 | 4 7 8 | 1.64 B | 9 |
| | 888.4 | | 15 ▽ | | 6 | 3 5 4 | 2.54 B | 11 |
| | | GRAVEL; saturated | | | | | | |
| | 887.9 | Medium stiff to very stiff, gray SILTY CLAY LOAM, trace gravel; damp to moist --RDR 2-- | | | 7 | 2 2 5 | 0.98 B | 13 |
| | | | 20 | | 8 | 3 5 11 | 2.95 B | 13 |
| | | | | | 9 | 3 5 5 | 1.72 B | 12 |
| | | | 25 | | 10 | 4 4 4 | 1.23 B | 15 |
| | 876.9 | Medium dense, gray SANDY GRAVEL; saturated --RDR 3-- | | | 11 | 27 16 11 | NP | 11 |
| | 874.7 | Stiff, gray CLAY LOAM, trace gravel; damp --RDR 2-- | 30 | | 12 | 6 4 12 | 1.00 P | 11 |

## GENERAL NOTES

Begin Drilling: **11-27-2017** Complete Drilling: **11-27-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling ▽: **15.00 ft**
At Completion of Drilling ▼: **23.30 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.

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# BORING LOG CUL-01

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 903.40 ft
North: 2032766.30 ft
East: 959415.12 ft
Station: 598+72.30
Offset: 69.86 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 871.7 | | | | | | | |
| | | Stiff, gray SILTY CLAY LOAM, trace gravel; damp<br>--RDR 2-- | | | 13 | 7<br>8<br>5 | 1.64<br>B | 14 |
| | 868.4 | | 35 | | | | | |
| | | Boring terminated at 35.00 ft | | | | | | |
| | | | 40 | | | | | |
| | | | 45 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-27-2017** Complete Drilling: **11-27-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **15.00 ft**
At Completion of Drilling: **23.30 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.

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# BORING LOG CUL-02

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 905.10 ft
North: 2032847.66 ft
East: 959507.08 ft
Station: 598+78.32
Offset: 52.77 RT

| Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 904.9 | 3-inch thick, black to dark brown SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | Medium stiff to stiff, dark brown SILTY CLAY LOAM; trace gravel --FILL-- --RDR 2-- | | | 1 | 2 2 5 | 1.50 P | 16 |
| | | 5 | | 2 | 4 3 3 | 0.90 B | 18 |
| 898.1 | Black CLAY LOAM | | | 3 | 3 4 3 | 1.50 P | 23 |
| 897.6 | --BURIED TOPSOIL-- Soft, dark gray ORGANIC SILTY CLAY to CLAY with organic matter; moist --RDR 1-- --organic content= 7.0%-- | 10 | | 4 | 1 1 1 | 0.41 B | 53 |
| 894.6 | Soft, light gray CLAY to SILTY CLAY; wet --RDR 1-- --$L_L$(%)=38, $P_L$(%)=19-- --%Gravel=0.1-- --%Sand=3.9-- --%Silt=57.2-- --%Clay=38.8-- --A-6 (19)-- --sand seams; moist-- | | | 5 | 1 1 2 | 0.41 B | 28 |
| 892.1 | Medium stiff, gray SILTY CLAY, trace gravel; moist --RDR 2-- | 15 | | 6 | 3 4 4 | 0.50 P | 17 |
| 889.6 | Stiff, pinkish gray CLAY LOAM to LOAM; trace to little gravel; damp --RDR 2-- | | | 7 | 3 4 7 | 1.56 B | 10 |
| | | | | 8 | 3 5 9 | 1.64 B | 10 |
| 885.4 | Gray SANDY GRAVEL; saturated | 20 | | | | | |
| 884.6 | --RDR 2-- Stiff to very stiff, pinkish gray CLAY LOAM to LOAM, little gravel; damp --RDR 2-- | | | 9 | 7 8 11 | 1.50 P | 11 |
| | | 25 | | 10 | 7 8 12 | 3.20 B | 9 |
| | | | | 11 | 6 8 12 | 3.77 B | 8 |
| | | 30 | | 12 | 5 7 11 | 1.89 B | 11 |

## GENERAL NOTES

Begin Drilling: **10-23-2017** Complete Drilling: **10-23-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **19.75 ft**
At Completion of Drilling: **30.50 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.

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# BORING LOG CUL-02

**WEI Job No.: 195-13-01**

Client **Strand Associates, Inc.**
Project **IL 47 at IL 176 and Pleasant Valley Road**
Location **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 905.10 ft
North: 2032847.66 ft
East: 959507.08 ft
Station: 598+78.32
Offset: 52.77 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 873.4 | | | | | | | |
| | | Medium dense, gray SANDY GRAVEL; saturated --RDR 2-- | | | 13 | 3<br>9<br>10 | NP | 14 |
| | 870.1 | | 35 | | | | | |
| | | Boring terminated at 35.00 ft | | | | | | |
| | | | 40 | | | | | |
| | | | 45 | | | | | |

## GENERAL NOTES

Begin Drilling **10-23-2017** Complete Drilling **10-23-2017**
Drilling Contractor **Wang Testing Services** Drill Rig **D50 ATV [88%]**
Driller **K&N** Logger **T. Rothschild** Checked by **C. Marin**
Drilling Method **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling ▽ **19.75 ft**
At Completion of Drilling ▼ **30.50 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.

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# BORING LOG CUL-02ST

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 905.10 ft
North: 2032843.89 ft
East: 959505.71 ft
Station: 598+76.23
Offset: 49.34 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | Blind drilled to 9 feet | | | | | | |
| | | | 5 | | | | | |
| | 896.1 | Gray SILTY CLAY; moist<br>--$C_c$=0.491, OCR=1.3-- | 10 | | 1 | PUSH | | 44 |
| | 894.1 | 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: **10-24-2017** Complete Drilling: **10-24-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG CUL-03

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.30 ft
North: 2032876.10 ft
East: 959534.10 ft
Station: 598+83.67
Offset: 91.63 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, medium stiff, black SILTY CLAY LOAM, some organic matter --TOPSOIL-- | | | | 1 1 2 | | |
| | 898.5 | Medium stiff, brown to gray SILTY CLAY LOAM, some fine sand and clay interbeds; wet --RDR 1-- | | | 1 | 1 1 2 | 0.66 B | 50 |
| | | | 5 | | 2 | 2 2 1 | 0.80 B | 17 |
| | | --$L_L$(%)=26, $P_L$(%)=13-- --%Gravel=4.2-- --%Sand=11.4-- --%Silt=61.3-- --%Clay=23.1-- --A-6 (9)-- | | | 3 | 2 3 4 | 0.82 B | 21 |
| | 892.3 | Stiff, gray SILTY CLAY, trace gravel; damp --RDR 2-- | | | 4 | 3 4 5 | 1.31 B | 17 |
| | 888.8 | Gray SANDY GRAVEL; wet | 10 | | 5 | 9 7 6 | 1.48 B | 10 |
| | 888.3 | Stiff to very stiff, pinkish gray CLAY LOAM to SILTY LOAM, trace gravel; damp --RDR 2-- | | | | | | |
| | | | 15 | | 6 | 4 5 6 | 1.80 B | 10 |
| | | | 20 | | 7 | 10 10 9 | 2.30 B | 10 |
| | | | | | 8 | 5 7 8 | 1.89 B | 10 |
| | | | 25 | | 9 | 5 8 11 | 3.28 B | 9 |
| | | | | | 10 | 6 8 8 | 2.71 B | 9 |
| | | | | | 11 | 5 5 11 | NR | |
| | 872.3 | Medium dense, gray GRAVELLY COARSE SAND; wet --RDR 2-- | 30 | | 12 | 2 5 10 | NP | 14 |

## GENERAL NOTES

Begin Drilling: **10-24-2017** Complete Drilling: **10-24-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **11.50 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.

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# BORING LOG CUL-03

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.30 ft
North: 2032876.10 ft
East: 959534.10 ft
Station: 598+83.67
Offset: 91.63 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 868.6 | | | | | | | |
| | | Very stiff, gray SILTY CLAY LOAM; trace gravel --RDR 2-- | | | | | | |
| | | | | | 13 | 6<br>5<br>6 | 2.05<br>B | 13 |
| | 865.3 | | 35 | | | | | |
| | | Boring terminated at 35.00 ft | | | | | | |
| | | | 40 | | | | | |
| | | | 45 | | | | | |

| 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: **10-24-2017** Complete Drilling: **10-24-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **11.50 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.

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# BORING LOG CUL-03ST

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.30 ft
North: 2032874.72 ft
East: 959536.58 ft
Station: 598+80.11
Offset: 93.47 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | Drilled to 4 feet without sampling | | | | | | |
| | 896.3 | Medium stiff, brown to gray SILTY CLAY LOAM | 5 | | 1 | PUSH | 0.75 P | |
| | 894.3 | Boring terminated at 6.00 ft | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-23-2017** Complete Drilling: **10-23-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **F. Bozga** Checked by: **CLM (-lab)**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG CUL-04

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.30 ft
North: 2034924.71 ft
East: 957622.74 ft
Station: 626+77.43
Offset: 120.6 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 LOAM --TOPSOIL-- | | | | | | |
| | 899.1 | | | | | | | |
| | 898.6 | Medium stiff, brown SILTY CLAY LOAM, trace gravel --FILL-- --RDR 2-- | | | 1 | 2 3 3 | 0.66 B | 14 |
| | | Black SILTY CLAY LOAM; damp --BURIED TOPSOIL-- --RDR 2-- | | | | | | |
| | 896.6 | | | | | | | |
| | | Stiff to very stiff, brown to gray SILTY CLAY LOAM, trace to little gravel; damp to moist --RDR 2-- | 5 | | 2 | 2 2 4 | 2.30 B | 16 |
| | | | | | 3 | 5 6 6 | 3.12 B | 14 |
| | 891.6 | | | | | | | |
| | | Medium dense, brown SANDY GRAVEL to GRAVELLY LOAM; saturated --possible cobbles-- --RDR 3-- | 10 | | 4 | 6 8 8 | 1.00 P | 14 |
| | | | | | 5 | 11 12 9 | NP | 11 |
| | 887.3 | | | | | | | |
| | | Stiff to very stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | 15 | | 6 | 4 5 6 | 3.12 B | 16 |
| | | | 20 | | 7 | 5 8 9 | 2.95 B | 17 |
| | | | | | 8 | 5 6 9 | 2.95 B | 17 |
| | | | | | 9 | 5 5 7 | 1.80 B | 18 |
| | | | 25 | | 10 | 4 6 7 | 1.80 B | 18 |
| | | | | | 11 | 5 5 8 | 1.64 B | 17 |
| | | | 30 | | 12 | 4 4 6 | 1.64 B | 17 |

## GENERAL NOTES

Begin Drilling: **11-22-2017** Complete Drilling: **11-22-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **8.75 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.

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# BORING LOG CUL-04

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.30 ft
North: 2034924.71 ft
East: 957622.74 ft
Station: 626+77.43
Offset: 120.6 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 865.3 | Boring terminated at 35.00 ft | 35 | | 13 | 4<br>5<br>7 | 2.05<br>B | 16 |
| | | | 40 | | | | | |
| | | | 45 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-22-2017** Complete Drilling: **11-22-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **8.75 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.

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# BORING LOG CUL-05

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.40 ft
North: 2035078.93 ft
East: 957691.23 ft
Station: 627+55.04
Offset: 29.23 RT

| Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 900.1 | 4-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | Hard, gray SILTY CLAY LOAM, little gravel; damp --FILL-- --RDR 2-- | | | 1 | 6 6 5 | > 4.50 P | 14 |
| 896.2 | Very soft, gray SILTY CLAY LOAM, little organic matter, wood fragments; wet --RDR 1-- | 5 | | 2 | 4 4 4 | NA | |
| | --organic content= 9.8%-- | | | 3 | 1 1 1 | < 0.25 P | 52 |
| 892.4 | Soft to medium stiff, gray SILTY CLAY LOAM, trace gravel; moist --RDR 1-- --$L_L$(%)=28, $P_L$(%)=13-- --%Gravel=4.9-- --%Sand=13.8-- --%Silt=55.4-- --%Clay=25.9-- --A-6 (10)-- | 10 | | 4 | 1 1 1 | 0.57 B | 20 |
| | | | | 5 | 3 4 4 | 0.49 B | 18 |
| 887.4 | Stiff to very stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | 15 | | 6 | 2 3 5 | 1.64 B | 17 |
| | | 20 | | 7 | 3 5 7 | 2.38 B | 16 |
| | | | | 8 | 3 4 6 | 1.97 B | 17 |
| | | 25 | | 9 | 3 4 5 | 1.89 B | 19 |
| | | | | 10 | 3 4 5 | 1.64 B | 19 |
| | | | | 11 | 2 4 5 | 1.64 B | 17 |
| | | 30 | | 12 | 3 5 7 | 1.56 B | 18 |

## GENERAL NOTES

Begin Drilling: **10-25-2017** Complete Drilling: **10-25-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **R&K** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG CUL-05

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.40 ft
North: 2035078.93 ft
East: 957691.23 ft
Station: 627+55.04
Offset: 29.23 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 865.4 | Boring terminated at 35.00 ft | 35 | | 13 | 3<br>5<br>6 | 1.48<br>B | 15 |
| | | | 40 | | | | | |
| | | | 45 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-25-2017** Complete Drilling: **10-25-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **R&K** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG CUL-05ST

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.40 ft
North: 2035078.77 ft
East: 957696.94 ft
Station: 627+51.35
Offset: 33.59 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | Blind drilled to 7-feet | | | | | | |
| | | | 5 | | | | | |
| | 893.4 | | | | | | | |
| | | Soft, gray SILTY CLAY LOAM<br>--$C_c$=0.093, OCR=2.4-- | | | 1 | PUSH | 0.25 P | 16 |
| | 891.4 | | | | | | | |
| | | Boring terminated at 9.00 ft | | | | | | |
| | | | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-26-2017** Complete Drilling: **10-26-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG CUL-06

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 897.80 ft
North: 2035199.29 ft
East: 957674.66 ft
Station: 628+59.36
Offset: 91.5 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 896.8 | 12-inch thick, black SILTY CLAY LOAM<br>--TOPSOIL-- | | | | | | |
| | | Medium stiff, brown SILTY CLAY LOAM, trace gravel; damp<br>--FILL--<br>--RDR 2-- | | | 1 | 2<br>3<br>2 | 0.74 B | 16 |
| | 894.8 | Soft to medium stiff, brown and gray SILTY CLAY LOAM, trace to little organic matter; moist<br>--RDR 2--<br>--$L_L$(%)=49, $P_L$(%)=24--<br>--%Gravel=0.1--<br>--%Sand=7.0--<br>--%Silt=67.1--<br>--%Clay=25.6--<br>--A-7-6 (26)-- | 5 | | 2 | 2<br>2<br>3 | 0.57 B | 52 |
| | 890.8 | Stiff to hard, gray SILTY CLAY, trace gravel; damp<br>--RDR 2-- | | | 3 | 2<br>3<br>4 | 0.41 B | 30 |
| | | | 10 | | 4 | 3<br>4<br>6 | 3.28 B | 15 |
| | | | | | 5 | 3<br>4<br>6 | 5.08 B | 15 |
| | | | 15 | | 6 | 4<br>6<br>9 | 4.26 B | 15 |
| | | | 20 | | 7 | 4<br>5<br>8 | 3.77 B | 17 |
| | | | | | 8 | 4<br>4<br>6 | 2.54 B | 15 |
| | | | | | 9 | 4<br>5<br>7 | 2.38 B | 17 |
| | | | 25 | | 10 | 4<br>6<br>6 | 1.75 P | 17 |
| | | | | | 11 | 5<br>7<br>5 | 1.56 B | 14 |
| | | | 30 | | 12 | 4<br>3<br>6 | 1.07 B | 15 |

## GENERAL NOTES

Begin Drilling: **11-20-2017** Complete Drilling: **11-20-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **34.75 ft**
At Completion of Drilling: **1.90 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.

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# BORING LOG CUL-06

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 897.80 ft
North: 2035199.29 ft
East: 957674.66 ft
Station: 628+59.36
Offset: 91.5 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 862.9 | | | | | | | |
| | 862.8 | Gray GRAVELLY SAND; saturated | 35 | | 13 | 3<br>5<br>10 | 2.38<br>B | 18 |
| | | Boring terminated at 35.00 ft | 40 | | | | | |
| | | | 45 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-20-2017** Complete Drilling: **11-20-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **34.75 ft**
At Completion of Drilling: **1.90 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.

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# BORING LOG CUL-07

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 911.70 ft
North: 2037591.35 ft
East: 957259.53 ft
Station: 653+88.69
Offset: 7.5 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 910.1 | 9-inch thick, ASPHALT over 10-inch thick, CONCRETE --PAVEMENT-- | | | | | | |
| | 909.9 | 3-inch thick, BASE COURSE | | | | | | |
| | | Stiff to very stiff, brown CLAY LOAM, trace gravel; damp --RDR 2-- --FILL-- | | | 1 | 4 2 3 | 3.50 P | 17 |
| | | | 5 | | 2 | 2 3 4 | 1.89 B | 11 |
| | 905.5 | Stiff, black CLAY; damp --BURIED TOPSOIL-- --RDR 2-- | | | 3 | 3 2 3 | 1.00 P | 38 |
| | 903.0 | Stiff, brown and gray CLAY to SILTY CLAY; damp --RDR 1-- | 10 | | 4 | 2 1 2 | 1.23 B | 28 |
| | 901.2 | Stiff to very stiff, pinkish brown CLAY LOAM to LOAM, trace to some gravel; damp --RDR 2-- | | | 5 | 4 6 6 | 3.03 B | 13 |
| | | | 15 | | 6 | 3 7 7 | 3.53 B | 13 |
| | | | 20 | | 7 | 7 7 10 | NR | |
| | | | | | 8 | 8 19 13 | 2.00 P | 10 |
| | | | 25 | | 9 | 7 7 9 | 1.39 B | 10 |
| | | | | | 10 | 6 7 7 | 1.15 B | 10 |
| | | --$L_L$(%)=20, $P_L$(%)=12-- --%Gravel=8.8-- --%Sand=32.2-- --%Silt=45.4-- --%Clay=13.7-- --A-4 (2)-- | | | 11 | 6 7 11 | 1.56 B | 12 |
| | | | 30 | | 12 | 3 6 8 | 1.48 B | 12 |

## GENERAL NOTES

Begin Drilling: **10-27-2017** Complete Drilling: **10-27-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **39.90 ft**
At Completion of Drilling: **34.25 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.

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# BORING LOG CUL-07

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 911.70 ft
North: 2037591.35 ft
East: 957259.53 ft
Station: 653+88.69
Offset: 7.5 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | | 35 | | 13 | 5<br>6<br>8 | 1.80<br>B | 12 |
| | 871.8 | Gray LOAM; damp | 40 | | 14 | 3<br>4<br>6 | 1.72<br>B | 14 |
| | 870.0 | Stiff, pinkish brown CLAY LOAM, trace gravel; damp<br>--RDR 2-- | | | | | | |
| | 866.7 | Boring terminated at 45.00 ft | 45 | | 15 | 6<br>7<br>9 | 1.72<br>B | 14 |

## GENERAL NOTES

Begin Drilling: **10-27-2017** Complete Drilling: **10-27-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **39.90 ft**
At Completion of Drilling: **34.25 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.

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# BORING LOG CUL-08

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 906.20 ft
North: 2037615.04 ft
East: 957163.64 ft
Station: 654+12.54
Offset: 88.35 LT

| Elevation (ft) | Depth (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 905.0 | 0 | 14-inch thick, black SILTY CLAY LOAM<br>--TOPSOIL-- | | | | | |
| | | Medium stiff to very stiff, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp<br>--RDR 2-- | | 1 | 2<br>2<br>1 | 0.98<br>B | 17 |
| 902.0 | 3 | Very stiff to hard, brown CLAY LOAM to SILTY LOAM, trace gravel; damp<br>--RDR 2-- | | 2 | 2<br>4<br>5 | 2.05<br>B | 14 |
| | 5 | --$L_L$(%)=22, $P_L$(%)=13--<br>--%Gravel=3.7--<br>--%Sand=25.1--<br>--%Silt=53.5--<br>--%Clay=17.7--<br>--A-4 (3)-- | | 3 | 5<br>7<br>8 | 3.44<br>B | 13 |
| | 10 | | | 4 | 6<br>6<br>9 | 3.12<br>B | 13 |
| | | | | 5 | 4<br>10<br>12 | 6.07<br>S | 11 |
| 892.5 | 13 | GRAVELLY SAND; saturated | ▽ | | | | |
| 892.0 | | Stiff to hard, gray CLAY LOAM, trace to little gravel; damp | | 6 | 7<br>12<br>8 | NP | 12 |
| | 15 | | | | | | |
| | | --RDR 2-- | | 7 | 6<br>8<br>11 | 2.54<br>B | 10 |
| | 20 | | | 8 | 7<br>9<br>12 | 2.21<br>B | 9 |
| | 25 | | | | 4<br>7<br>10 | 2.62<br>B | 11 |
| | | | | | 6<br>7<br>9 | 1.80<br>B | 11 |
| | | | | | 10<br>7<br>9 | 1.39<br>B | 9 |
| | 30 | | | | 5<br>6<br>10 | 1.31<br>B | 10 |

## GENERAL NOTES

Begin Drilling: **11-21-2017** Complete Drilling: **11-21-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling ▽: **13.75 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.

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# BORING LOG CUL-08

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 906.20 ft
North: 2037615.04 ft
East: 957163.64 ft
Station: 654+12.54
Offset: 88.35 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 871.2 | Boring terminated at 35.00 ft | 35 | | | 4<br>7<br>9 | 4.02<br>B | 11 |
| | | | 40 | | | | | |
| | | | 45 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-21-2017** Complete Drilling: **11-21-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **13.75 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.

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# BORING LOG CUL-09

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 904.70 ft
North: 2037640.87 ft
East: 957343.06 ft
Station: 654+38.09
Offset: 91.1 RT

| Elevation (ft) | Depth (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | | 21-inch thick, black SILTY CLAY LOAM, trace organic --TOPSOIL-- | | | | | |
| 903.0 | | Stiff, gray CLAY to SILTY CLAY; damp --RDR 2-- | | 1 | 0 2 4 | 1.15 B | 28 |
| | | --$L_L$(%)=48, $P_L$(%)=20-- --%Gravel=0.1-- --%Sand=6.9-- --%Silt=51.8-- --%Clay=41.2-- --A-7-6 (28)-- | | 2 | 2 2 1 | 1.07 B | 28 |
| 899.2 | 5 | Very stiff, brown and gray SILTY CLAY LOAM to CLAY LOAM, trace gavel; damp --RDR 2-- | | 3 | 4 8 8 | 2.46 B | 14 |
| | 10 | | | 4 | 4 6 8 | 2.62 B | 12 |
| | | | | 5 | 5 6 9 | 2.71 B | 12 |
| 892.0 | | GRANULAR; saturated | | | | | |
| 891.5 | 15 | Stiff to very stiff, gray CLAY LOAM, trace gravel; damp --RDR 2-- | | 6 | 4 7 11 | 2.71 B | 14 |
| | 20 | | | 7 | 8 9 3 | 1.56 B | 13 |
| | | | | 8 | 5 6 11 | 2.21 B | 11 |
| | 25 | | | | 5 7 10 | 3.36 B | 10 |
| | | | | | 5 7 10 | 1.72 B | 11 |
| | | | | | 5 6 13 | 2.13 B | 11 |
| | 30 | | | | 5 4 8 | 1.48 B | 12 |

## GENERAL NOTES

Begin Drilling: **11-21-2017** Complete Drilling: **11-21-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **12.75 ft**
At Completion of Drilling: **32.40 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.

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# BORING LOG CUL-09

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 904.70 ft
North: 2037640.87 ft
East: 957343.06 ft
Station: 654+38.09
Offset: 91.1 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 869.7 | Boring terminated at 35.00 ft | 35 | | | 5<br>9<br>12 | 2.21<br>B | 11 |
| | | | 40 | | | | | |
| | | | 45 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-21-2017** Complete Drilling: **11-21-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **12.75 ft**
At Completion of Drilling: **32.40 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.

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# BORING LOG DPB-01

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 901.10 ft
North: 2035022.66 ft
East: 958010.86 ft
Station: 625+11.39
Offset: 243.62 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, black SILTY CLAY LOAM | | | | | | |
| | 900.2 | --TOPSOIL-- | | | 1 | 4 4 4 5 | 0.57 B | |
| | | Stiff, brown and gray CLAY to SILTY CLAY LOAM, trace gravel; damp | | | | | | |
| | | --RDR 2-- | | | | | | |
| | | --$L_L$(%)=32, $P_L$(%)=15-- | | | | | | |
| | | --%Gravel=6.0-- | | | | | | |
| | | --%Sand=12.4-- | | | 2 | 5 3 3 4 | 1.97 B | 20 |
| | | --%Silt=53.6-- | | | | | | |
| | 897.4 | --%Clay=28.0-- | | | | | | |
| | | --A-6 (12)-- | | | | | | |
| | | Stiff to hard, brown to gray SILTY CLAY, trace gravel; damp | | | | | | |
| | | --RDR 2 to 3-- | 5 | | 3 | 2 3 5 9 | 5.25 B | 16 |
| | | | | | 4 | 5 8 11 12 | 5.17 B | 13 |
| | | | | | 5 | 3 5 8 9 | 4.84 S | 14 |
| | | | 10 | | 6 | 8 11 9 12 | 3.69 B | 14 |
| | | | | | 7 | 3 5 6 9 | 3.77 B | 15 |
| | | | 15 | | | 3 5 | | |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | | | | 8 | 8 6 | 3.03 B | 17 |
| | | | | | 9 | 3 5 6 6 | 2.30 B | 17 |
| | | | | | 10 | 14 10 12 10 | 1.64 B | 18 |
| | 881.1 | Boring terminated at 20.00 ft | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-17-2017** Complete Drilling: **11-17-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG DPB-02

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 901.30 ft
North: 2035091.01 ft
East: 958270.61 ft
Station: 624+02.45
Offset: 489.13 RT

| Depth (ft) | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | 900.6 | 8-inch thick, black SILTY CLAY LOAM | | | | | |
| | | --TOPSOIL-- | | | | | |
| | | Stiff, brown and gray CLAY to SILTY CLAY, trace gravel; damp --RDR 2-- | | 1 | 2 4 4 4 | 1.48 B | 19 |
| | | | | 2 | 4 3 4 5 | 1.31 B | 21 |
| | 897.6 | Stiff to hard, brown to gray SILTY CLAY, trace gravel; damp --RDR 2 to 3-- | | | | | |
| 5 | | | | 3 | 3 5 7 9 | 6.40 S | 15 |
| | | | | 4 | 6 7 9 10 | 4.67 B | 16 |
| 10 | | | | 5 | 2 4 5 6 | 2.71 B | 17 |
| | | | | 6 | 7 7 8 8 | 2.21 B | 18 |
| 15 | | | | 7 | 2 4 5 6 | 1.64 B | 17 |
| | | | | | 3 4 | | |

| Depth (ft) | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | | | | 8 | 5 6 | 1.64 B | 19 |
| | | | | 9 | 2 3 5 6 | 1.56 B | 18 |
| | | | | 10 | 3 5 6 8 | 1.56 B | 16 |
| 20 | 881.3 | Boring terminated at 20.00 ft | | | | | |
| 25 | | | | | | | |
| 30 | | | | | | | |

## GENERAL NOTES

Begin Drilling: **11-17-2017** Complete Drilling: **11-17-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG DPB-03

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 906.30 ft
North: 2034850.52 ft
East: 958178.83 ft
Station: 622+72.03
Offset: 267.2 RT

| Depth (ft) | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 0 | 905.6 | 8.5-inch thick, black SILTY CLAY LOAM | | | | | |
| | | --TOPSOIL-- | | | | | |
| | 904.8 | Brown GRAVELLY SILTY CLAY LOAM; damp | | 1 | 2 5 6 4 | 1.07 B | 21 |
| | | Very stiff to hard, brown and gray SILTY CLAY LOAM, trace gravel; damp | | | | | |
| | | --RDR 2 to 3-- | | 2 | 3 5 8 10 | 4.59 B | 14 |
| 5 | | | | 3 | 2 7 11 12 | 7.22 S | 14 |
| | | | | 4 | 15 19 20 25 | 9.10 S | 15 |
| 10 | | | | 5 | 7 12 11 15 | 7.54 S | 15 |
| | | | | 6 | 17 16 17 16 | 4.59 B | 16 |
| | | | | 7 | 3 4 9 10 | 3.77 B | 15 |
| 15 | | | | | 4 6 | | |

| Depth (ft) | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | | | | 8 | 7 7 | 3.36 B | 16 |
| | 888.6 | | | | | | |
| | 888.1 | Gray LOAM, little gravel; wet | | 9 | 4 5 9 11 | 2.71 B | 15 |
| | | Very stiff, gray SILTY CLAY, trace gravel; damp | | | | | |
| | | --RDR 2-- | | 10 | 4 4 7 8 | 2.79 B | 14 |
| 20 | 886.3 | Boring terminated at 20.00 ft | | | | | |
| 25 | | | | | | | |
| 30 | | | | | | | |

## GENERAL NOTES

Begin Drilling: **11-16-2017** Complete Drilling: **11-16-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **17.75 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

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# BORING LOG DPB-04

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 911.40 ft
North: 2032052.34 ft
East: 958067.57 ft
Station: 278+89.31
Offset: 89.6 RT

| Elevation (ft) | Depth (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 910.7 | 0 | 8-inch thick, dark brown SILTY CLAY LOAM --TOPSOIL-- | | | | | |
| 909.9 | 1 | Stiff, dark brown CLAY LOAM, trace gravel; damp --FILL-- | | 1 | 1 2 2 3 | 1.23 B | 22 |
| | | Very stiff, brown and gray CLAY to SILTY CLAY, trace gravel; damp --RDR 2-- | | 2 | 5 2 3 4 | 3.36 B | 28 |
| 907.7 | | Medium dense, brown to gray SAND; saturated --RDR 2-- | | 3 | 3 5 6 7 | NP | 12 |
| 904.9 | 5 | Stiff to very stiff, gray SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | 4 | 4 4 6 7 | 1.89 B | 14 |
| 901.2 | 10 | Dense, brown SILT; saturated --RDR 2-- --clay and gravel lenses-- | | 5 | 4 5 9 9 | 2.87 B | 13 |
| 899.9 | | Stiff to very stiff, pinkish brown SILTY CLAY LOAM to CLAY LOAM, little gravel; damp --RDR 2-- | | 6 | 13 18 16 8 | NP | 21 |
| | 15 | | | 8 | 6 4 6 8 | 1.31 B | 14 |
| | | | | | 5 7 | | |

| Elevation (ft) | Depth (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | | | | 7 | 8 9 | 2.38 B | 9 |
| | | | | 8 | 5 7 9 10 | 2.71 B | 10 |
| | | | | 9 | 5 6 9 9 | 3.12 B | 9 |
| 891.4 | 20 | Boring terminated at 20.00 ft | | | | | |
| | 25 | | | | | | |
| | 30 | | | | | | |

## GENERAL NOTES

Begin Drilling: **11-08-2017** Complete Drilling: **11-08-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG DPB-05

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 912.60 ft
North: 2031955.92 ft
East: 958191.95 ft
Station: 280+66.81
Offset: 90.31 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 911.9 | 8-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Stiff to hard, brown to gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp to moist | | | 1 | 2 2 2 3 | 1.50 P | 29 |
| | | --RDR 2-- | | | | | | |
| | | --$L_L$(%)=35, $P_L$(%)=17-- | | | | | | |
| | | --%Gravel=0.7-- | | | | | | |
| | | --%Sand=4.9-- | | | 2 | 4 4 5 7 | 2.30 S | 18 |
| | | --%Silt=62.2-- | | | | | | |
| | | --%Clay=32.3-- | | | | | | |
| | | --A-6 (17)-- | | | | | | |
| | | | 5 | | 3 | 6 6 7 7 | 5.00 B | 21 |
| | | | | | 4 | 6 5 5 6 | 2.62 B | 17 |
| | | | | | 5 | 4 4 5 5 | 3.03 B | 21 |
| | 902.8 | | 10 | | | | | |
| | | Stiff, gray CLAY LOAM, trace gravel; moist | | | 6 | 6 8 7 7 | 1.56 B | 11 |
| | | --RDR 2-- | | | | | | |
| | | --2-inch thick, sand lens; moist-- | | | | | | |
| | 900.1 | | | | | | | |
| | | Loose, gray SILTY LOAM; moist | | | 7 | 2 3 5 5 | NP | 18 |
| | 898.9 | | | | | | | |
| | | Very stiff, gray SILTY CLAY LOAM, trace gravel | | | | 2 6 | | |
| | 897.6 | | 15 | | | | | |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | SANDY GRAVEL; wet | | | 8 | 8 13 | 2.62 B | 14 |
| | 897.1 | | | | | | | |
| | | Stiff to very stiff, gray SILTY CLAY LOAM to CLAY LOAM, little gravel; damp | | | 9 | 4 7 10 9 | 2.71 B | 10 |
| | | --RDR 2-- | | | | | | |
| | | | | | 10 | 7 5 7 6 | 1.39 B | 18 |
| | 892.6 | | 20 | | | | | |
| | | Boring terminated at 20.00 ft | | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-09-2017** Complete Drilling: **11-09-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **14.50 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.

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# BORING LOG DPB-06

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 916.70 ft
North: 2031754.06 ft
East: 959016.28 ft
Station: 289+31.30
Offset: 104.28 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 916.2 | 6-inch thick, black SILTY CLAY LOAM | | | | 2 | | |
| | | --TOPSOIL-- | | | 1 | 2 | 1.50 P | 23 |
| | | Stiff to very stiff, brown SILTY CLAY LOAM to CLAY LOAM, trace gravel | | | | 3 | | |
| | | --RDR 2-- | | | | 3 | | |
| | | | | | 2 | 5 | 2.21 B | 12 |
| | 913.0 | | | | | 5 | | |
| | | | | | | 7 | | |
| | | Medium dense, brown GRAVELLY SILTY LOAM; moist | 5 | | | 3 | | |
| | | | | | 3 | 5 | NP | 10 |
| | | | | | | 6 | | |
| | | | | | | 7 | | |
| | 910.2 | | | | | 4 | | |
| | | Very stiff, brown CLAY LOAM, trace gravel | | | | 6 | | |
| | | --RDR 2-- | | | 4 | 8 | 2.71 B | 11 |
| | | | | | | 11 | | |
| | | | | | | 5 | | |
| | | | | | | 8 | | |
| | | | | | 5 | 10 | 3.03 B | 9 |
| | | | 10 | | | 13 | | |
| | | | | | | 13 | | |
| | | | | | | 16 | | |
| | | | | | 6 | 17 | 2.25 P | 12 |
| | | | | | | 16 | | |
| | | | | | | 3 | | |
| | | | | | | 6 | | |
| | | | | | 7 | 9 | 3.20 B | 11 |
| | 903.0 | | | | | 18 | | |
| | | Medium dense, brown LOAM; wet | | | | | | |
| | | --RDR 2-- | | | | 14 | | |
| | | | 15 | | | 10 | | |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | | | | 8 | 4 | NP | 13 |
| | 901.2 | | | | | 5 | | |
| | | Very stiff, gray CLAY LOAM, trace gravel; damp | | | | | | |
| | | --RDR 2-- | | | | 6 | | |
| | | | | | 9 | 4 | 2.21 B | 13 |
| | | | | | | 5 | | |
| | 899.0 | | | | | 7 | | |
| | | Brown LOAM; wet | | | | | | |
| | 898.0 | | | | | 3 | | |
| | | Hard, gray CLAY LOAM, trace gravel; damp | | | 10 | 5 | 4.92 B | 11 |
| | | --RDR 2-- | | | | 8 | | |
| | 896.7 | | 20 | | | 10 | | |
| | | Boring terminated at 20.00 ft | | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-09-2017** Complete Drilling: **11-09-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **13.75 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.

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# BORING LOG DPB-07

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 914.00 ft
North: 2031764.84 ft
East: 959131.85 ft
Station: 290+60.28
Offset: 115.01 LT

| Depth (ft) | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 0 | 913.3 | 8-inch thick, dark brown SILTY CLAY LOAM<br>--TOPSOIL-- | | | | | |
| | | Stiff, brown LOAM to SILTY LOAM, trace gravel; damp<br>--RDR 2--<br>--$L_L$(%)=21, $P_L$(%)=13--<br>--%Gravel=5.0--<br>--%Sand=32.5--<br>--%Silt=47.5--<br>--%Clay=15.0--<br>--A-4 (2)-- | | 1 | 2<br>1<br>2<br>2 | 1.56 B | 33 |
| | | | | 2 | 5<br>3<br>5<br>6 | 1.07 B | 16 |
| 5 | | | | 3 | 4<br>7<br>9<br>9 | 3.12 B | 11 |
| | | | | 4 | 5<br>5<br>7<br>9 | 3.61 B | 13 |
| | | | | 5 | 4<br>3<br>7<br>11 | 2.61 B | 12 |
| 10 | 903.5 | GRAVEL | | 6 | 11<br>10<br>11<br>13 | 3.00 P | 13 |
| | 902.3 | Very stiff, brown CLAY LOAM, trace to little gravel; damp<br>--RDR 2-- | | 7 | 3<br>6<br>9<br>10 | 3.53 B | 11 |
| 15 | | | | | 4<br>6 | | |
| 20 | 894.0 | Boring terminated at 20.00 ft | | 8 | 7<br>9 | 3.28 B | 10 |
| | 896.8 | SILTY LOAM; moist | | | 6<br>11 | | |
| | | | | 9 | 11<br>18 | 3.28 B | 10 |
| | 895.8 | Gray GRAVELLY SAND; wet | ▽ | | 10 | | |
| | 895.3 | Very stiff, brown CLAY LOAM; trace gravel<br>--RDR 2-- | | 10 | 11<br>7<br>6 | 3.69 B | 12 |
| 25 | | | | | | | |
| 30 | | | | | | | |

## GENERAL NOTES

Begin Drilling: **11-10-2017** Complete Drilling: **11-10-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling ▽: **18.25 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.

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# BORING LOG PT10-04

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 918.50 ft
North: 2032085.80 ft
East: 960445.04 ft
Station: 304+44.02
Offset: 50.73 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 917.8 | 8-inch thick, stiff, black SILTY CLAY LOAM, trace gravel | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Stiff to very stiff, brown SILTY CLAY LOAM, trace gravel; damp | | | 1 | 2 5 7 7 | 1.00 P | 26 |
| | | --FILL-- | | | | | | |
| | | --RDR 2-- | | | 2 | 4 5 4 6 | 2.13 B | 12 |
| | 914.0 | | | | | | | |
| | | Medium stiff, black, gray, and greenish gray CLAY to SILTY CLAY; moist | 5 | | 3 | 4 4 5 7 | 2.38 B | 16 |
| | | --RDR 2-- | | | 4 | 2 3 4 4 | 0.98 B | 22 |
| | 909.5 | | | | | | | |
| | | Stiff to hard, brown CLAY LOAM to SILTY CLAY LOAM, trace gravel; damp | 10 | | 5 | 2 3 4 4 | 0.82 B | 20 |
| | | --RDR 2-- | | | 6 | 2 3 4 5 | 1.23 B | 13 |
| | | | | | 7 | 3 4 7 8 | 5.00 S | 12 |
| | 904.5 | | | | | | | |
| | | 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: **12-20-2017** Complete Drilling: **12-20-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT10-05

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 917.40 ft
North: 2032122.57 ft
East: 960534.79 ft
Station: 305+42.31
Offset: 42.7 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 916.9 | 6-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Stiff to very stiff, brown and black SILTY CLAY LOAM, trace gravel; moist | | | 1 | 3<br>6<br>4<br>4 | 2.41<br>S | 11 |
| | | --FILL-- | | | | | | |
| | | --RDR 2-- | | | | 3<br>3<br>4<br>4 | | |
| | 914.4 | | | | 2 | | 1.07<br>B | 16 |
| | | Medium stiff, black to gray CLAY to SILTY CLAY, trace organic matter; damp | | | | | | |
| | | --RDR 2-- | | | | 2<br>2<br>2<br>4 | | |
| | | | 5 | | 3 | | 0.90<br>B | 31 |
| | 911.9 | | | | | | | |
| | | Stiff to very stiff, brown to gray CLAY LOAM to SILTY CLAY LOAM, trace to little gravel; damp to moist | | | | | | |
| | | --RDR 2-- | | | 4 | 2<br>3<br>4<br>6 | 2.13<br>B | 15 |
| | | | | | 5 | 3<br>4<br>6<br>7 | 1.64<br>S | 11 |
| | 907.4 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-20-2017** Complete Drilling: **12-20-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT1-01

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 896.00 ft
North: 2034013.79 ft
East: 958337.82 ft
Station: 615+19.46
Offset: 131.48 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 895.3 | 9-inch thick, very soft black SILTY CLAY LOAM; damp | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Medium stiff, gray CLAY to SILTY CLAY, trace organic matter; moist | | | 1 | 1 1 2 2 | < 0.25 P | 72 |
| | | --RDR 2-- | | | 2 | 4 2 1 1 | 0.57 B | 41 |
| | 890.8 | Gray, GRAVELLY CLAY LOAM; moist | 5 | | 3 | 1 1 1 1 | 0.57 B | 51 |
| | | --RDR 1-- | | | | | | |
| | 889.5 | Stiff, gray SILTY CLAY, trace gravel; damp | | | 4 | 2 2 3 5 | 1.23 B | 18 |
| | | --RDR 2-- | | | | | | |
| | 888.0 | Boring terminated at 8.00 ft | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-14-2017** Complete Drilling: **12-14-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT1-02

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 895.40 ft
North: 2033972.92 ft
East: 958373.76 ft
Station: 614+65.05
Offset: 128.96 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, medium stiff, black SILTY CLAY LOAM; damp --TOPSOIL-- | | | 1 | 1 0 2 2 | 0.50 P | 95 |
| | 893.8 | Very soft, brown to gray ORGANIC SILTY CLAY; moist --RDR 1-- | | | 2 | 1 1 0 1 | NR | |
| | 890.5 | | 5 | | 3 | 0 0 1 3 | 0.16 B | 67 |
| | 890.0 | Gray, SILTY LOAM; moist to wet --RDR 2-- | | | | | | |
| | 889.5 | Brown, medium SAND; moist | | | | | | |
| | | Soft, gray CLAY LOAM; trace gravel; damp --RDR 2-- | | | 4 | 1 2 3 4 | 0.25 B | 14 |
| | 887.7 | Stiff, gray SILTY CLAY, trace gravel; damp --RDR 2-- | | | 5 | 3 3 4 6 | 1.48 B | 16 |
| | 885.4 | | 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: **12-13-2017** Complete Drilling: **12-13-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT1-03

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 895.40 ft
North: 2033931.32 ft
East: 958404.84 ft
Station: 614+13.16
Offset: 130.69 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 stiff, black SILTY CLAY LOAM, trace gravel; damp --TOPSOIL-- | | | 1 | 1 0 1 1 | 0.50 P | 91 |
| | 893.9 | | | | | | | |
| | | Very soft to soft, gray SILTY CLAY, little to some organic matter; moist --RDR 1-- | | | 2 | 0 1 0 0 | 0.41 B | 89 |
| | 890.7 | | | | | | | |
| | | Gray, SILTY LOAM; moist to wet --RDR 1-- | 5 | | 3 | 0 0 1 4 | 0.16 B | 71 |
| | 889.7 | | | | | | | |
| | | Medium stiff to stiff, gray SILTY CLAY, trace gravel; moist --RDR 2-- | | | 4 | 2 2 4 5 | 0.66 B | 16 |
| | | | | | 5 | 1 3 6 6 | 1.48 B | 17 |
| | 885.4 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-13-2017** Complete Drilling: **12-13-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT1-04

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 894.80 ft
North: 2033897.61 ft
East: 958433.40 ft
Station: 613+68.99
Offset: 129.45 LT

| 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, medium stiff, black SILTY CLAY LOAM; damp | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | --RDR 2-- | | | 1 | 1 0 0 2 | 0.50 P | 149 |
| | 893.1 | | | | | | | |
| | | Very soft to soft, brown to gray SILTY CLAY; moist | | | | | | |
| | | --RDR 1-- | | | 2 | 1 0 0 1 | 0.25 B | 96 |
| | 889.8 | | 5 | | | | | |
| | | Gray, SILTY LOAM; moist to wet | | | 3 | 0 0 0 0 | 0.16 B | 98 |
| | | --RDR 1-- | | | | | | |
| | 888.6 | | | | | | | |
| | | Medium stiff to stiff, gray SILTY CLAY, trace gravel; damp to moist | | | 4 | 1 3 3 3 | 0.66 B | 18 |
| | | --RDR 2-- | | | | | | |
| | | | | | 5 | 0 2 3 5 | 1.31 B | 16 |
| | 884.8 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-13-2017** Complete Drilling: **12-13-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT1-05

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 895.20 ft
North: 2033857.41 ft
East: 958474.64 ft
Station: 613+15.35
Offset: 122.42 LT

| 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-- | | | 1 | 1 0 0 1 | 1.00 P | 108 |
| | 893.5 | Very soft, gray ORGANIC SILTY LOAM; wet --RDR 1-- | | | 2 | 1 1 0 1 | < 0.25 P | 50 |
| | | | 5 | | 3 | 0 0 0 0 | NA | |
| | 888.2 | Very loose, gray SILTY LOAM, trace organic matter; wet to saturated --RDR 1-- | | | 4 | 0 0 0 0 | < 0.25 P | 109 |
| | | | 10 | | 5 | 0 0 0 0 | NP | 70 |
| | 884.7 | Medium dense, gray SAND; saturated <<R>--RDR 2-- | | ▽ | 6 | 0 5 6 8 | NP | 13 |
| | 883.7 | Medium dense, gray GRAVELLY SAND to GRAVELLY LOAM; saturated --RDR 2-- | | | 7 | 0 5 7 3 | NP | 14 |
| | 881.2 | Boring terminated at 14.00 ft | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-13-2017** Complete Drilling: **12-13-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling ▽: **10.75 ft**
At Completion of Drilling ▼: **DRY**
Time After Drilling: **NA**
Depth to Water ▼: **NA**

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# BORING LOG PT1-06

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 895.30 ft
North: 2033820.33 ft
East: 958505.47 ft
Station: 612+63.59
Offset: 121.46 LT

| Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | Very soft, black SILTY CLAY LOAM; damp | | | | 1 0 0 1 | | |
| | --TOPSOIL-- | | | 1 | | < 0.25 P | 139 |
| | --RDR 2-- | | | | | | |
| 893.6 | | | | | | | |
| | Very soft, gray ORGANIC SILTY LOAM; moist | | | | 1 0 0 1 | | |
| | --RDR 1-- | | | 2 | | NA | |
| | --organic content= 10.5%-- | 5 | | 3 | 0 0 1 0 | 0.08 B | 138 |
| 888.3 | | | | | | | |
| | Very loose, light gray SILTY LOAM; wet to saturated | | | 4 | 0 0 0 0 | 0.08 B | 97 |
| | --RDR 1-- | | | | | | |
| 886.6 | | | | | | | |
| | Loose, gray LOAM, trace gravel; wet | | | 5 | 0 0 3 5 | NP | 51 |
| | --RDR 2-- | 10 | | | | | |
| | | | | 6 | 2 3 3 3 | NP | 12 |
| 883.8 | | | | | | | |
| | Soft, gray CLAY LOAM, trace gravel; wet | | | | 2 1 2 4 | | |
| | --RDR 2-- | | | 7 | | 0.41 B | 14 |
| 881.8 | | | | | | | |
| | Stiff, gray SILTY CLAY, trace gravel; damp | | | | 6 7 | | |
| | --RDR 2-- | 15 | | | | | |

| Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | | | | 8 | 10 11 | 1.89 B | 16 |
| 879.3 | Boring terminated at 16.00 ft | 20 | | | | | |
| | | 25 | | | | | |
| | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-13-2017** Complete Drilling: **12-13-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **8.75 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

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# BORING LOG PT1-07

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 895.30 ft
North: 2033779.10 ft
East: 958527.74 ft
Station: 612+17.52
Offset: 129.86 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | 20-inch thick, soft, black SILTY CLAY LOAM --TOPSOIL-- | | | 1 | 1 1 1 1 | 0.25 P | 122 |
| | 893.6 | Very soft, dark brown to gray ORGANIC SILTY CLAY, trace shells; moist --RDR 1-- | | | 2 | 1 0 0 1 | NA | |
| | | | 5 | | 3 | 0 0 0 0 | 0.16 B | 82 |
| | 889.6 | Very loose, gray SILTY LOAM, trace organic matter; moist to wet --RDR 1-- | | | 4 | 3 2 1 1 | NP | 41 |
| | 887.8 | Very loose, gray GRAVELLY LOAM; wet to saturated --RDR 1-- | | | 5 | 0 0 0 0 | NP | 20 |
| | 885.8 | Stiff, gray SILTY CLAY, trace gravel; damp --RDR 2-- | 10 | | 6 | 0 3 3 3 | 1.23 B | 17 |
| | 883.3 | Boring terminated at 12.00 ft | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-13-2017** Complete Drilling: **12-13-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: ▽ **7.50 ft**
At Completion of Drilling: ▼ **DRY**
Time After Drilling: **NA**
Depth to Water: ▼ **NA**

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# BORING LOG PT1-08

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 895.70 ft
North: 2033738.05 ft
East: 958562.52 ft
Station: 611+63.70
Offset: 128.34 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 893.7 | 24-inch thick, black, SILTY CLAY LOAM --TOPSOIL-- | | | 1 | 2 1 2 2 | NA | 58 |
| | 891.5 | Very soft, gray ORGANIC SILTY CLAY; moist --RDR 1-- | | | 2 | 2 1 1 1 | < 0.25 P | 72 |
| | 890.8 | Very loose, gray SILTY LOAM; wet to saturated | 5 | | 3 | 1 0 0 7 | NP | 37 |
| | | Medium dense, gray fine SAND; wet to saturated --RDR 2-- | | | 4 | 6 7 5 3 | NP | 17 |
| | 886.7 | Stiff, gray SILTY CLAY, trace gravel; damp --RDR 2-- | 10 | | 5 | 3 5 6 7 | 1.89 B | 15 |
| | 885.7 | Boring terminated at 10.00 ft | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-13-2017** Complete Drilling: **12-13-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT1-09

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 896.40 ft
North: 2033705.81 ft
East: 958583.09 ft
Station: 611+25.71
Offset: 132.43 LT

| 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, black SILTY CLAY --TOPSOIL-- | | | 1 | 1 1 2 2 | NA | 65 |
| | 894.7 | Very soft, gray CLAY to SILTY CLAY; wet --RDR 2-- | | | 2 | 2 1 2 3 | NA | |
| | | | 5 | | 3 | 2 1 2 2 | 0.08 B | 22 |
| | 890.9 | Loose, gray SILTY LOAM; wet --RDR 2-- | | | | | | |
| | 889.7 | Gray, SILTY CLAY; damp | | | 4 | 3 2 3 3 | NP | 36 |
| | 888.9 | Very soft, gray CLAY LOAM, little gravel; moist --RDR 2-- | | | | | | |
| | 887.9 | Stiff, gray SILTY CLAY, trace gravel; damp --RDR 2-- | | | 5 | 3 3 5 5 | < 0.25 P | 19 |
| | | | 10 | | 6 | 3 3 4 5 | 1.48 B | 15 |
| | | | | | 7 | 7 11 10 9 | 1.48 B | 16 |
| | 882.4 | Boring terminated at 14.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-12-2017** Complete Drilling: **12-12-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT1-10

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 896.80 ft
North: 2033663.18 ft
East: 958623.25 ft
Station: 610+67.33
Offset: 127.72 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | 17-inch thick, stiff, black SILTY CLAY LOAM; damp --TOPSOIL-- | | | 1 | 2 2 4 6 | 1.50 P | 45 |
| | 895.4 | Medium stiff, gray CLAY to SILTY CLAY; moist --RDR 2-- | | | 2 | 2 2 2 3 | 0.66 B | 27 |
| | 892.5 | Very stiff, gray SILTY CLAY, trace gravel; damp --2-inch thick, loam interbeds-- | 5 | | 3 | 3 4 5 6 | 2.54 B | 16 |
| | 890.8 | Boring terminated at 6.00 ft | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-18-2017** Complete Drilling: **12-18-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT1-11

**WEI Job No.: 195-13-01**

Client **Strand Associates, Inc.**
Project **IL 47 at IL 176 and Pleasant Valley Road**
Location **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 897.50 ft
North: 2033623.60 ft
East: 958660.62 ft
Station: 610+13.08
Offset: 123.27 LT

| 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, stiff, dark brown to black SILTY CLAY, trace gravel; damp to moist --RDR 2-- | | | 1 | 3 3 4 6 | 1.84 B | 32 |
| | 895.8 | Stiff, gray SILTY CLAY, little gravel; damp --RDR 2-- | | | 2 | 2 2 3 3 | 1.31 B | 22 |
| | 893.3 | Brown, medium SAND; moist | | | | 2 3 4 5 | | |
| | 892.8 | Stiff, gray SILTY CLAY, trace gravel; damp | 5 | | 3 | | 1.50 P | 14 |
| | 889.5 | Boring terminated at 8.00 ft | | | 4 | 3 3 5 6 | 1.39 B | 15 |
| | | | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling **12-18-2017** Complete Drilling **12-18-2017**
Drilling Contractor **Wang Testing Services** Drill Rig **D50 ATV [88%]**
Driller **N&J** Logger **T. Rothschild** Checked by **C. Marin**
Drilling Method **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT2-01

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 896.10 ft
North: 2034050.50 ft
East: 958375.33 ft
Station: 615+24.68
Offset: 79.27 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 895.1 | 12-inch thick, stiff, black SILTY CLAY LOAM, trace gravel; damp --TOPSOIL-- | | | | | | |
| | | Soft to stiff, brown and gray CLAY to SILTY CLAY, trace organic matter; moist --RDR 1-- | | | 1 | 2 1 2 3 | 1.50 P | 62 |
| | | | | | 2 | 1 2 1 2 | 0.25 B | 34 |
| | 891.3 | | 5 | | | | | |
| | | Stiff, brown to gray SILTY CLAY, trace gravel; damp --RDR 2-- | | | 3 | 1 3 2 2 | 1.23 B | 18 |
| | | | | | 4 | 3 3 4 5 | 1.23 B | 16 |
| | 888.1 | Boring terminated at 8.00 ft | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-08-2017** Complete Drilling: **12-08-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT2-02

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 896.10 ft
North: 2034007.28 ft
East: 958414.11 ft
Station: 614+66.67
Offset: 75.99 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 894.9 | 15-inch thick, stiff, black SILTY CLAY LOAM; moist --TOPSOIL-- | | | 1 | 1 1 1 1 | 1.00 P | 78 |
| | 892.1 | Medium stiff, gray SILTY CLAY, little to some organic matter; wet --RDR 1-- | | | 2 | 1 1 1 2 | 0.66 B | 60 |
| | 890.9 | Soft, gray CLAY to SILTY CLAY; moist | 5 | | 3 | 1 2 3 2 | 0.33 B | 33 |
| | | Stiff, gray SILTY CLAY, trace gravel; damp --RDR 2-- | | | 4 | 2 3 5 6 | 1.23 B | 16 |
| | 886.1 | | 10 | | 5 | 2 3 5 6 | 1.56 B | 17 |
| | | Boring terminated at 10.00 ft | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-08-2017** Complete Drilling: **12-08-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT2-03

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 895.30 ft
North: 2033966.29 ft
East: 958447.23 ft
Station: 614+13.97
Offset: 75.75 LT

| 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, black SILTY CLAY LOAM; damp --TOPSOIL-- | | | 1 | 1 1 2 2 | NA | 76 |
| | 893.6 | Very soft, gray SILTY CLAY; moist --RDR 2-- | | | 2 | 1 2 2 2 | 0.16 B | 32 |
| | 890.8 | Medium dense, brown GRAVELLY LOAM; wet | 5 | | 3 | 3 5 9 9 | NP | 12 |
| | 889.1 | Medium stiff, gray CLAY LOAM, trace gravel; moist | | | 4 | 4 3 2 2 | 0.57 B | 13 |
| | 887.6 | Very stiff, gray SILTY CLAY, trace gravel; damp | | | 5 | 3 5 7 8 | 3.20 B | 16 |
| | | | 10 | | 6 | 1 2 5 6 | 2.71 B | 17 |
| | 883.3 | Boring terminated at 12.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-08-2017** Complete Drilling: **12-08-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT2-04

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 895.40 ft
North: 2033928.32 ft
East: 958477.61 ft
Station: 613+65.39
Offset: 75.75 LT

| 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, black SILTY CLAY LOAM --TOPSOIL-- | | | 1 | 1 1 1 2 | NA | 108 |
| 893.7 | | | | | | | |
| | Soft, gray ORGANIC SILTY CLAY; moist --RDR 1-- | | | 2 | 1 1 0 1 | 0.25 B | 85 |
| 891.2 | | | ▽ | | | | |
| | Loose, gray SILTY LOAM; wet --RDR 2-- | 5 | | 3 | 1 1 5 5 | NP | 54 |
| 889.9 | | | | | | | |
| | Soft to medium stiff, gray CLAY LOAM to SILTY CLAY LOAM, trace gravel to little; moist --RDR 2-- | | | 4 | 2 2 4 5 | 0.74 B | 20 |
| | | | | 5 | 2 3 4 5 | 0.82 B | 18 |
| | | 10 | | | | | |
| | | | | 6 | 2 4 5 5 | 0.49 B | 17 |
| 883.7 | | | | | | | |
| | Stiff to very stiff, gray SILTY CLAY, trace gravel; damp --RDR 2-- | | | 7 | 3 4 6 6 | 1.89 B | 15 |
| | | 15 | | | 3 5 | | |

| Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 879.4 | Boring terminated at 16.00 ft | 20 | | 8 | 7 8 | 2.54 B | 17 |
| | | 25 | | | | | |
| | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-08-2017** Complete Drilling: **12-08-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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**

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# BORING LOG PT2-04ST

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 895.40 ft
North: 2033929.29 ft
East: 958479.31 ft
Station: 613+65.08
Offset: 73.81 LT

| Elevation (ft) | Depth (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 893.7 | 0 | 21-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | |
| | | Gray SILTY LOAM; moist to wet --RDR 1-- | PUSH | 1 | | NP | |
| 891.9 | | Gray GRAVELLY LOAM; moist --RDR 2-- | PUSH | 2 | | NP | |
| 889.9 | 5 | Stiff to very stiff, gray SILTY CLAY, trace gravel; damp --RDR 2-- | PUSH | 3 | | 1.00 P | |
| | 10 | | | | | | |
| | 15 | | | | | | |
| 873.4 | 20 | Boring terminated at 22.00 ft | | | | | |
| | 25 | | | | | | |
| | 30 | | | | | | |

| Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|
| 4 | 5 7 8 9 | 2.71 B | 19 |
| 5 | 1 3 5 6 | 1.97 B | 19 |
| 6 | 2 3 5 6 | 2.05 B | 18 |

## GENERAL NOTES

Begin Drilling: **12-15-2017** Complete Drilling: **12-15-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **CLM (-lab)**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT2-05

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 895.10 ft
North: 2033889.55 ft
East: 958511.43 ft
Station: 613+13.99
Offset: 73.57 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | Black, SILTY CLAY LOAM --TOPSOIL-- | | | 1 | 1 1 2 1 | NA | 162 |
| | 893.6 | Very soft, gray ORGANIC SILTY CLAY, trace plant matter; moist --RDR 2-- | | | 2 | 3 1 1 1 | < 0.25 P | 109 |
| | | | 5 | | 3 | 1 1 1 1 | 0.16 B | 127 |
| | 888.6 | Very loose, gray SILTY LOAM, wet --RDR 2-- | | | 4 | 1 0 0 1 | NP | 61 |
| | 886.4 | Soft to medium stiff, gray CLAY LOAM to SILTY CLAY; moist --RDR 2-- | | | 5 | 1 1 2 3 | NP | 50 |
| | | | 10 | | 6 | 2 2 3 4 | 0.98 B | 18 |
| | | | | | 7 | 2 3 4 6 | 0.49 B | 17 |
| | 881.6 | Stiff to very stiff, gray SILTY CLAY, trace gravel; damp --RDR 2-- | | | | 3 6 | | |
| | | | 15 | | | | | |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | | | | 8 | 7 8 | 1.15 B | 19 |
| | | | | | 9 | 6 6 8 9 | 3.20 B | 18 |
| | 877.1 | Boring terminated at 18.00 ft | | | | | | |
| | | | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-12-2017** Complete Drilling: **12-12-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT2-05ST

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 895.10 ft
North: 2033890.81 ft
East: 958510.74 ft
Station: 613+15.40
Offset: 73.33 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 893.4 | 21-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | 892.3 | Very soft, black PEAT | | | | | | |
| | | Very soft to soft, dark gray SILTY LOAM, some organic matter | | | 1 | PUSH | < 0.25 P | 106 |
| | | --Laboratory $Q_u$=0.16 tsf (B), $w_n$(%)=97-- --organic content= 11.1%-- --$C_c$=1.361, OCR=1.08-- --$L_L$(%)=79, $P_L$(%)=31-- --%Gravel=0.0-- --%Sand=2.2-- --%Silt=76.8-- --%Clay=21.1-- | 5 | | 2 | PUSH | 0.16 B | 86 |
| | 889.1 | Boring terminated at 6.00 ft | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-15-2017** Complete Drilling: **12-15-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT2-06

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 895.20 ft
North: 2033848.50 ft
East: 958546.05 ft
Station: 612+60.26
Offset: 72.19 LT

| 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, black SILTY CLAY LOAM --TOPSOIL-- | | | 1 | 1 1 0 1 | 1.00 P | 107 |
| 893.3 | Very loose, gray SILTY LOAM; damp to moist --RDR 1-- | | | 2 | 1 1 0 1 | NP | 30 |
| 891.0 | Very soft, gray ORGANIC SILTY LOAM; moist --organic content= 11.3%-- | 5 | | 3 | 1 1 1 1 | < 0.25 P | 105 |
| 889.7 | Very loose to loose, gray SILTY LOAM, trace organic matter; moist to wet --RDR 2-- | | | 4 | 1 2 0 3 | NP | 49 |
| | | | | 5 | 1 2 3 2 | NP | 40 |
| | | 10 | | | | | |
| 884.7 | Stiff to very stiff, gray SILTY CLAY, trace gravel; damp --RDR 2-- | | | 6 | 2 2 1 2 | NP | 26 |
| | | | | 7 | 2 3 7 6 | 1.72 B | 16 |
| | | 15 | | | 2 4 | | |
| | | | | 8 | 6 8 | 3.36 B | 16 |
| 879.2 | Boring terminated at 16.00 ft | 20 | | | | | |
| | | 25 | | | | | |
| | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-12-2017** Complete Drilling: **12-12-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT2-07

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 895.50 ft
North: 2033811.44 ft
East: 958572.88 ft
Station: 612+14.55
Offset: 74.4 LT

| 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 --RDR 2-- | | | 1 | 1 1 1 2 | 1.25 P | 84 |
| | 894.2 | | | | | | | |
| | | Very soft, gray CLAY LOAM, trace gravel; moist --RDR 1-- | | | | 1 1 1 1 | | |
| | 892.5 | | | | 2 | | NA | |
| | | Soft, gray CLAY to SILTY CLAY, trace organic matter; moist --RDR 1-- | 5 | | 3 | 1 1 1 2 | 0.25 P | 28 |
| | 888.8 | | | | | | | |
| | | Stiff to very stiff, gray SILTY CLAY, trace gravel; damp to moist --RDR 2-- | | | 4 | 2 3 2 7 | 1.48 B | 18 |
| | | | | | 5 | 1 2 3 5 | 2.13 B | 17 |
| | 885.5 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-12-2017** Complete Drilling: **12-12-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT2-08

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 896.10 ft
North: 2033767.61 ft
East: 958605.89 ft
Station: 611+59.69
Offset: 76.01 LT

| 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, medium stiff, black SILTY CLAY LOAM; damp --TOPSOIL-- | | | 1 | 1 1 1 2 | 0.75 P | 80 |
| | 894.4 | Loose, gray SILTY LOAM; moist to wet --RDR 2-- | | | 2 | 2 1 1 1 | NA | |
| | 891.6 | Brown, medium SAND; saturated | 5 | | 3 | 3 4 5 6 | NP | 35 |
| | 890.6 | Loose, gray LOAM, trace gravel; damp to moist --RDR 2-- | | | 4 | 4 4 4 4 | NP | 15 |
| | 889.1 | Stiff, gray SILTY CLAY, trace gravel; damp --RDR 2-- | | | 5 | 2 3 3 5 | 1.31 B | 16 |
| | 885.6 | Gray, medium SAND; wet | 10 | | 6 | 2 2 4 7 | 2.54 B | 16 |
| | 885.1 | Very stiff, gray SILTY CLAY, trace gravel; damp | | | | | | |
| | 884.1 | 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: **12-12-2017** Complete Drilling: **12-12-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT2-09

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 896.00 ft
North: 2033731.32 ft
East: 958633.25 ft
Station: 611+14.29
Offset: 77.33 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 stiff, black SILTY CLAY LOAM; damp | | | 1 | 1 2 2 3 | 0.75 P | 76 |
| | | --TOPSOIL-- | | | | | | |
| | 893.9 | --RDR 2-- | | | | | | |
| | | Very soft to soft, gray CLAY to SILTY CLAY; moist | | | 2 | 1 1 2 2 | 0.08 B | 40 |
| | | --RDR 1-- | 5 | | 3 | 1 1 3 4 | 0.25 B | 29 |
| | 889.3 | | | | | | | |
| | | Stiff to very stiff, gray SILTY CLAY, trace gravel; damp | | | 4 | 3 3 4 6 | 1.31 B | 17 |
| | | --RDR 2-- | | | 5 | 1 3 5 7 | 2.71 B | 18 |
| | 886.0 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-12-2017** Complete Drilling: **12-12-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT2-10

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 895.70 ft
North: 2033699.05 ft
East: 958654.09 ft
Station: 610+76.07
Offset: 81.22 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 894.9 | 10-inch thick, black SILTY CLAY LOAM<br>--TOPSOIL-- | | | | | | |
| | | --RDR 1-- | | | 1 | 1<br>1<br>0<br>1 | 0.74 B | 42 |
| | | Soft to medium stiff, gray CLAY to SILTY CLAY; moist<br>--RDR 1-- | | | 2 | 2<br>1<br>1<br>1 | 0.41 B | 32 |
| | 890.7 | | 5 | | 3 | 1<br>2<br>3<br>5 | 1.64 B | 15 |
| | 889.7 | Stiff, brown to gray SILTY CLAY, trace gravel; damp<br>--RDR 2-- | | | | | | |
| | | Boring terminated at 6.00 ft | | | | | | |
| | | | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-14-2017** Complete Drilling: **12-14-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT2-11

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 897.80 ft
North: 2033656.80 ft
East: 958701.04 ft
Station: 610+13.74
Offset: 70.97 LT

| 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, stiff, black SILTY CLAY LOAM; damp --TOPSOIL-- | | | 1 | 1 2 3 3 | 1.00 P | 53 |
| | 896.1 | | | | | | | |
| | | Stiff, gray CLAY to SILTY CLAY; moist --RDR 2-- | | | 2 | 2 2 2 2 | 1.07 B | 26 |
| | 894.3 | | | | | | | |
| | | Medium stiff to stiff, gray SILTY CLAY, trace gravel; moist --RDR 2-- | 5 | | 3 | 2 2 4 5 | 0.82 B | 17 |
| | | | | | 4 | 6 6 6 8 | 1.23 B | 16 |
| | 889.8 | | | | | | | |
| | | Boring terminated at 8.00 ft | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-19-2017** Complete Drilling: **12-19-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT3-01

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 899.30 ft
North: 2034074.76 ft
East: 958414.04 ft
Station: 615+19.40
Offset: 33.88 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 898.6 | 8-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Very stiff, brown, gray, and black SILTY CLAY, trace gravel; damp | | | 1 | 3 5 6 7 | 3.00 P | 16 |
| | | --FILL-- | | | | | | |
| | | --RDR 2-- | | | 2 | 3 7 6 6 | 3.12 B | 15 |
| | 894.8 | | 5 | | | | | |
| | | Medium stiff, gray CLAY to SILTY CLAY; moist | | | 3 | 2 2 3 3 | 0.90 B | 33 |
| | | --RDR 2-- | | | | | | |
| | 892.8 | | | | | | | |
| | | Medium dense, gray fine SAND, little gravel; moist | | | 4 | 7 7 8 7 | NP | 10 |
| | | --RDR 2-- | | | | | | |
| | 890.8 | | | | | | | |
| | | Stiff to very stiff, gray SILTY CLAY, trace gravel; damp to moist | | | 5 | 1 2 3 5 | 2.13 B | 15 |
| | | --RDR 2-- | 10 | | | | | |
| | | | | | 5 | 2 2 4 6 | 1.89 B | 16 |
| | 887.3 | | | | | | | |
| | | Boring terminated at 12.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-14-2017** Complete Drilling: **12-14-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT3-02

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 899.40 ft
North: 2034038.17 ft
East: 958445.90 ft
Station: 614+70.89
Offset: 31.87 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 898.7 | 8-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Very stiff, brown, black, and gray SILTY CLAY, trace gravel; damp | | | 1 | 11<br>7<br>5<br>8 | 2.50<br>P | 14 |
| | | --FILL-- | | | | | | |
| | | --RDR 2-- | | | | 4<br>5<br>5<br>3 | | |
| | 896.2 | | | | 2 | | 2.00<br>P | 20 |
| | | Medium stiff, gray CLAY to SILTY CLAY; moist | | | | 2<br>2<br>2<br>6 | | |
| | | --RDR 2-- | 5 | | 3 | | 0.98<br>B | 35 |
| | 894.2 | GRAVEL; wet | | | | | | |
| | | --RDR 2-- | | | | 4<br>4<br>4<br>6 | | |
| | 892.4 | Medium stiff, brown to gray CLAY LOAM; moist | | | 4 | | NA | |
| | | --RDR 2-- | | | | 2<br>3<br>4<br>6 | | |
| | | | 10 | | 5 | | 0.57<br>B | 16 |
| | | | | | 6 | 2<br>3<br>4<br>6 | 0.57<br>B | 16 |
| | 887.2 | Very stiff, gray SILTY CLAY, trace gravel; damp | | | | 3<br>5<br>5<br>6 | | |
| | | --RDR 2-- | | | 7 | | 2.54<br>B | 15 |
| | 885.4 | Boring terminated at 14.00 ft | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-14-2017** Complete Drilling: **12-14-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT3-03

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 899.60 ft
North: 2033998.95 ft
East: 958478.45 ft
Station: 614+19.96
Offset: 30.96 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 898.9 | 8-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Stiff to hard, brown and black GRAVELLY SILTY CLAY; damp | | | 1 | 11<br>7<br>9<br>9 | 4.76<br>B | 17 |
| | | --FILL-- | | | | | | |
| | | | | | 2 | 4<br>3<br>3<br>4 | 1.07<br>B | 15 |
| | 896.4 | Medium stiff, black to gray CLAY to SILTY CLAY; moist | | | | | | |
| | | --RDR 2-- | | | | 2<br>2<br>4<br>4 | | |
| | | | 5 | | 3 | | 0.98<br>B | 29 |
| | 893.1 | Soft to medium stiff gray GRAVELLY CLAY LOAM; moist | | | | 2<br>5<br>3<br>3 | | |
| | | --RDR 2-- | | | 4 | | 0.75<br>P | 13 |
| | | | | | | 3<br>5<br>8<br>3 | | |
| | | | | | 5 | | 0.25<br>B | 12 |
| | | | 10 | | | | | |
| | 889.1 | Very stiff, gray SILTY CLAY, trace gravel; damp | | | | 2<br>4<br>4<br>4 | | |
| | | --RDR 2-- | | | 6 | | 2.13<br>B | 15 |
| | 887.6 | 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: **12-14-2017** Complete Drilling: **12-14-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT3-04

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 899.30 ft
North: 2033957.07 ft
East: 958508.96 ft
Station: 613+68.24
Offset: 33.31 LT

| Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 898.7 | 7-inch thick, black SILTY CLAY LOAM<br>--TOPSOIL--<br>Very stiff to hard, brown to black SILTY CLAY, trace gravel; damp<br>--FILL--<br>--RDR 2-- | | | 1 | 6<br>7<br>10<br>4 | < 4.50<br>P | 23 |
| | | | | 2 | 4<br>4<br>4<br>5 | 2.95<br>B | 23 |
| 894.8 | Medium stiff, black ORGANIC SILTY CLAY, trace roots; damp<br>--RDR 1-- | 5 | | 3 | 3<br>2<br>3<br>5 | 0.75<br>P | 82 |
| 893.8 | Very soft, gray CLAY to SILTY CLAY; moist to wet<br>--RDR 1-- | | | 4 | 2<br>1<br>1<br>1 | < 0.25<br>P | 43 |
| 892.3 | Medium dense, gray SILTY LOAM; wet<br>--RDR 2--<br>--gravelly loam lenses; wet-- | 10 | | 5 | 1<br>5<br>8<br>2 | NP | 59 |
| 888.6 | Medium stiff to stiff, gray SILTY CLAY, trace gravel; moist<br>--RDR 2-- | | | 6 | 1<br>1<br>1<br>2 | 0.66<br>B | 19 |
| | | | | 7 | 1<br>2<br>4<br>5 | 0.90<br>B | 18 |
| | | 15 | | | 3<br>5 | | |
| | | 20 | | | | | |
| | | 25 | | | | | |
| 883.3 | Boring terminated at 16.00 ft | 30 | | 8 | 6<br>8 | 1.48<br>B | 15 |

## GENERAL NOTES

Begin Drilling: **12-14-2017** Complete Drilling: **12-14-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT3-05

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 899.20 ft
North: 2033876.93 ft
East: 958575.08 ft
Station: 612+64.28
Offset: 31.75 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 898.5 | 8-inch thick, black GRAVELLY SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Medium stiff, to hard, brown black SILTY CLAY, trace gravel; damp --FILL-- --RDR 2-- | | | 1 | 19 8 9 8 | > 4.50 P | 17 |
| | | | | | 2 | 5 4 3 4 | 0.90 B | 18 |
| | 894.7 | Medium stiff, black SILTY CLAY LOAM; damp --RDR 1-- | 5 | | 3 | 2 3 4 4 | 0.50 P | 88 |
| | 892.2 | Very soft (<0.25P), gray SILTY CLAY; moist --RDR 1-- | | | 4 | 1 2 1 1 | NA | |
| | 890.7 | Very loose, gray SILTY LOAM; wet --RDR 1-- | 10 | | 5 | 1 1 2 2 | NP | 36 |
| | 888.2 | Stiff, gray SILTY CLAY, trace gravel; damp --RDR 2-- | | | 6 | 2 1 2 2 | NA | |
| | | | | | 7 | 2 4 5 6 | 1.56 B | 17 |
| | 885.2 | Boring terminated at 14.00 ft | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-14-2017** Complete Drilling: **12-14-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT3-06

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 899.20 ft
North: 2033836.70 ft
East: 958605.31 ft
Station: 612+14.02
Offset: 33.29 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 898.5 | 8-inch thick, black SILTY CLAY LOAM<br>--TOPSOIL-- | | | | | | |
| | | Very stiff to hard, brown, black and gray SILTY CLAY, trace gravel; damp<br>--FILL--<br>--RDR 2-- | | | 1 | 7<br>6<br>6<br>6 | > 4.50 P | 19 |
| | | | | | 2 | 4<br>3<br>4<br>5 | 2.24 B | 28 |
| | 895.0 | Very soft, black to gray ORGANIC SILTY CLAY; moist<br>--RDR 1-- | 5 | | 3 | 2<br>2<br>3<br>2 | < 0.25 P | 108 |
| | 893.0 | Very loose, gray SILTY LOAM; wet<br>--RDR 1-- | | | 4 | 1<br>1<br>1<br>3 | NP | 40 |
| | 890.7 | Medium stiff to very stiff, gray SILTY CLAY, trace gravel; moist to damp<br>--RDR 2-- | 10 | | 5 | 2<br>1<br>2<br>3 | NP | 39 |
| | | | | | 6 | 1<br>1<br>1<br>3 | 0.98 B | 17 |
| | | | | | 7 | 2<br>3<br>6<br>6 | 3.28 B | 15 |
| | 885.2 | Boring terminated at 14.00 ft | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-15-2017** Complete Drilling: **12-15-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT3-07

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 899.50 ft
North: 2033799.61 ft
East: 958636.21 ft
Station: 611+65.76
Offset: 32.35 LT

| Depth (ft) | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | 898.9 | 7-inch thick, black SILTY CLAY LOAM | | | | | |
| | | --TOPSOIL-- | | | | | |
| | | Very stiff to hard, brown to black SILTY CLAY, trace gravel; damp | | 1 | 7 5 6 7 | > 4.50 P | 20 |
| | | --FILL-- | | | | | |
| | | --RDR 2-- | | | | | |
| | | | | | 3 3 2 3 | | |
| | 896.3 | | | 2 | | 2.13 B | 20 |
| | | Soft, black and gray CLAY to SILTY CLAY; moist | | | | | |
| | | --RDR 1-- | | | 2 1 2 6 | | |
| 5 | | | | 3 | | 0.41 B | 22 |
| | | --wet spoon-- | | | | | |
| | 893.7 | | | | | | |
| | | | | | 6 6 4 3 | | |
| | 892.2 | | | 4 | | 0.25 P | 24 |
| | | Medium stiff, gray CLAY LOAM, trace gravel; moist | | | | | |
| | | --RDR 2-- | | | 3 3 5 5 | | |
| | | | | 5 | | 0.82 B | 13 |
| 10 | | | | | | | |
| | | | | | 2 3 4 6 | | |
| | | | | 6 | | 0.98 B | 16 |
| | 887.0 | | | | | | |
| | | Very stiff, gray SILTY CLAY LOAM, trace gravel; damp | | | 3 4 6 7 | | |
| | | --RDR 2-- | | 7 | | 2.62 B | 15 |
| | 885.5 | | | | | | |
| | | Boring terminated at 14.00 ft | | | | | |
| 15 | | | | | | | |

## GENERAL NOTES

Begin Drilling: **12-15-2017** Complete Drilling: **12-15-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT3-08

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.00 ft
North: 2033762.02 ft
East: 958669.01 ft
Station: 611+15.91
Offset: 30.23 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 899.3 | 9-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Hard, brown to black SILTY CLAY, trace gravel; damp | | | 1 | 8 6 6 5 | > 4.50 P | 15 |
| | 898.3 | --FILL-- | | | | | | |
| | | Loose, gray SILTY LOAM; moist to wet | | | | 4 | | |
| | | --FILL-- | | | 2 | 4 4 6 | NP | 25 |
| | | --RDR 2-- | | | | | | |
| | 896.5 | Stiff, black and gray SILTY CLAY LOAM, trace gravel; damp | | | | 3 | | |
| | | --FILL-- | | | | 4 | | |
| | | --RDR 2-- | 5 | | 3 | 3 4 | 1.25 P | 17 |
| | 893.0 | Soft, black and gray SILTY CLAY, little organic matter; moist | | | 4 | 1 2 1 2 | NA | |
| | | --RDR 1-- | | | | | | |
| | | | | | | 1 | | |
| | | | | | 5 | 1 3 3 | 0.25 B | 49 |
| | | | 10 | | | | | |
| | 889.8 | Very loose, gray to brown SILTY LOAM; wet | | | | 1 1 | | |
| | | --RDR 2-- | | | 6 | 2 3 | NP | 33 |
| | 887.5 | Very stiff, gray SILTY CLAY, trace gravel; damp | | | | 5 | | |
| | | --RDR 2-- | | | 7 | 6 8 8 | 2.38 B | 16 |
| | 886.0 | Boring terminated at 14.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-15-2017** Complete Drilling: **12-15-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT3-09

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.20 ft
North: 2033713.75 ft
East: 958708.43 ft
Station: 610+53.59
Offset: 29.61 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 899.5 | 9-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Stiff to hard, brown, black and gray SILTY CLAY, trace gravel; damp | | | 1 | 7 6 5 6 | > 4.50 P | 14 |
| | | --FILL-- | | | | | | |
| | | --RDR 2-- | | | 2 | 5 6 7 3 | 1.64 B | 22 |
| | 896.0 | | | | | | | |
| | | Stiff, black SILTY CLAY, trace organic matter; damp | | | | 2 3 4 4 | | |
| | 895.5 | --RDR 2-- | 5 | | 3 | | 1.75 B | 43 |
| | 894.7 | Gray SILTY CLAY; moist | | | | | | |
| | | Medium dense,gray LOAM, trace to little gravel; moist to wet | | | | 2 8 6 6 | | |
| | | --RDR 2-- | | | 4 | | NP | 17 |
| | 892.7 | | | | | | | |
| | | Very stiff, gray SILTY CLAY, trace gravel; damp | | | | 4 3 4 5 | | |
| | | --RDR 2-- | | | 5 | | 3.28 B | 16 |
| | 890.2 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-15-2017** Complete Drilling: **12-15-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT3-10

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.80 ft
North: 2033684.89 ft
East: 958731.40 ft
Station: 610+16.70
Offset: 29.71 LT

| Elevation (ft) | Depth (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 900.2 | 0 | 7-inch thick, brown GRAVELLY SILTY CLAY LOAM --TOPSOIL-- | | | | | |
| | | Medium stiff to very stiff, black, brown, and gray SILTY CLAY, trace gravel; damp --FILL-- --RDR 2-- | | 1 | 4 4 4 5 | 3.00 P | 15 |
| | | | | 2 | 3 3 4 5 | 0.90 B | 22 |
| 896.3 | 5 | Soft to medium stiff, gray SILTY CLAY, trace organic matter; moist --RDR 2-- | | 3 | 3 3 3 4 | 0.74 B | 38 |
| | | | | 4 | 2 1 3 4 | 0.41 B | 21 |
| 892.9 | | Gray LOAM, trace gravel; saturated | ▽ | | 4 | | |
| 892.1 | | --RDR 2-- | | 5 | 5 4 4 | NP | 15 |
| 891.3 | | Gray SILTY CLAY; moist | | | | | |
| | 10 | Gray GRAVELLY LOAM; wet | | | | | |
| 890.3 | | Stiff, gray SILTY CLAY, trace gravel; damp --RDR 2-- | | 6 | 3 3 2 2 | NP | 17 |
| | | | | 7 | 3 7 13 19 | 1.23 B | 15 |
| 887.3 | | Medium stiff, gray CLAY LOAM, trace gravel; damp --RDR 2-- | | | 4 4 | | |
| | 15 | | | | | | |
| 884.6 | 20 | Very stiff, brown SILTY CLAY, trace gravel; damp --RDR 2-- | | 8 | 7 6 | 0.74 B | 13 |
| | | | | 9 | 4 7 10 12 | 2.13 B | 16 |
| 883.1 | | | | | | | |
| 882.8 | | Brown SILTY LOAM | | | | | |
| | | Boring terminated at 18.00 ft | | | | | |
| | 25 | | | | | | |
| | 30 | | | | | | |

## GENERAL NOTES

Begin Drilling: **12-18-2017** Complete Drilling: **12-18-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT4-01

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 897.30 ft
North: 2034121.69 ft
East: 958486.31 ft
Station: 615+10.88
Offset: 51.86 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 896.8 | 6-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Very stiff, brown to gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp | | | 1 | 2 2 4 4 | 3.03 B | 15 |
| | | --RDR 2-- | | | 2 | 3 3 3 4 | 3.28 B | 16 |
| | | | 5 | | 3 | 3 4 4 6 | 3.85 S | 14 |
| | 891.3 | Boring terminated at 6.00 ft | | | | | | |
| | | | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-08-2017** Complete Drilling: **12-08-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT4-02

**WEI Job No.: 195-13-01**

Client **Strand Associates, Inc.**
Project **IL 47 at IL 176 and Pleasant Valley Road**
Location **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 896.80 ft
North: 2034080.51 ft
East: 958514.27 ft
Station: 614+61.26
Offset: 47.97 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 896.3 | 6-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Stiff to very stiff, black, brown and gray SILTY CLAY, trace gravel; damp | | | 1 | 1<br>2<br>2<br>3 | 1.07<br>B | 29 |
| | | --RDR 2-- | | | 2 | 2<br>3<br>5<br>5 | 3.53<br>B | 15 |
| | | | 5 | | 3 | 3<br>3<br>5<br>7 | 2.79<br>B | 15 |
| | 890.8 | Boring terminated at 6.00 ft | | | | | | |
| | | | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling **12-08-2017** Complete Drilling **12-08-2017**
Drilling Contractor **Wang Testing Services** Drill Rig **D50 ATV [88%]**
Driller **N&J** Logger **T. Rothschild** Checked by **C. Marin**
Drilling Method **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT4-03

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 897.90 ft
North: 2034036.21 ft
East: 958543.04 ft
Station: 614+08.69
Offset: 42.75 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 897.2 | 8-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Very stiff, brown SILTY CLAY LOAM, trace gravel; damp | | | 1 | 1 2 3 3 | 3.00 P | 14 |
| | 896.4 | --FILL-- | | | | | | |
| | | Medium stiff, black, brown, and gray CLAY to SILTY CLAY trace organic matter; moist | | | 2 | 2 4 5 5 | 0.98 B | 39 |
| | | --RDR 2-- | 5 | | 3 | 2 3 5 5 | 0.90 B | 30 |
| | 892.4 | Stiff to very stiff, gray SILTY CLAY, trace gravel; damp | | | | | | |
| | | --RDR 2-- | | | 4 | 4 4 4 6 | 2.13 B | 16 |
| | 887.9 | | 10 | | 5 | 2 3 4 6 | 1.48 B | 15 |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-08-2017** Complete Drilling: **12-08-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT4-04

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 897.50 ft
North: 2034003.77 ft
East: 958567.72 ft
Station: 613+67.94
Offset: 41.74 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 897.0 | 6-inch thick, black SILTY CLAY, trace gravel; damp | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Medium stiff to stiff, black to gray SILTY CLAY, trace gravel; damp | | | 1 | 1 3 3 4 | 1.00 P | 27 |
| | | --FILL-- | | | | | | |
| | | --RDR 2-- | | | | 2 3 4 5 | | |
| | 894.3 | | | | 2 | | 0.98 B | 15 |
| | 893.8 | Black SILTY CLAY LOAM | | | | | | |
| | | --BURIED TOPSOIL-- | | | | | | |
| | | Loose, gray LOAM, trace gravel; moist | | | | 1 2 4 6 | | |
| | | --RDR 2-- | 5 | | 3 | | NP | 12 |
| | 892.0 | | | | | | | |
| | | Stiff, gray SILTY CLAY, trace gravel; damp | | | | | | |
| | | --RDR 2-- | | | | 1 3 4 7 | | |
| | | | | | 4 | | 1.89 B | 15 |
| | | | | | | 2 2 4 6 | | |
| | | | | | 5 | | 1.89 B | 15 |
| | 887.5 | | 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: **12-08-2017** Complete Drilling: **12-08-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT4-05

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 897.10 ft
North: 2033966.15 ft
East: 958601.88 ft
Station: 613+17.23
Offset: 44.91 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 896.4 | 8-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Medium stiff, brown and black SILTY CLAY LOAM, trace gravel; damp | | | 1 | 1 3 2 4 | 0.74 B | 15 |
| | 895.4 | --FILL-- | | | | | | |
| | | --RDR 2-- | | | | | | |
| | | Medium stiff, brown and gray CLAY LOAM to LOAM, trace gravel; damp | | | 2 | 2 3 5 5 | 0.82 B | 12 |
| | | --RDR 2-- | 5 | | 3 | 4 5 7 7 | 0.82 B | 13 |
| | 891.4 | Stiff to very stiff, gray SILTY CLAY LOAM, trace gravel; damp | | | | | | |
| | | --RDR 2-- | | | 4 | 4 5 7 8 | 1.89 B | 14 |
| | 887.1 | | 10 | | 5 | 3 3 5 7 | 2.62 B | 13 |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-08-2017** Complete Drilling: **12-08-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT4-06

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 897.10 ft
North: 2033925.98 ft
East: 958636.69 ft
Station: 612+64.12
Offset: 46.99 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 896.4 | 8-inch thick, black SILTY CLAY LOAM, trace gravel | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Medium stiff, brown and black SILTY CLAY, trace gravel; damp | | | 1 | 1 2 4 4 | 0.90 B | 20 |
| | 895.4 | --FILL-- | | | | | | |
| | | --RDR 2-- | | | | | | |
| | | Stiff, black and gray SILTY CLAY, little to some organic matter; moist | | | 2 | 2 4 4 3 | 1.00 P | 54 |
| | 893.9 | --RDR 2-- | | | | | | |
| | | Soft, gray CLAY to SILTY CLAY; moist to wet | | | | | | |
| | | --RDR 1-- | 5 | | 3 | 1 2 3 3 | 0.41 B | 30 |
| | 890.4 | | | | | | | |
| | | Stiff, gray SILTY CLAY LOAM, trace gravel; damp | | | 4 | 2 4 4 4 | 1.07 B | 17 |
| | | --RDR 2-- | | | | | | |
| | | | | | 5 | 4 5 6 7 | 1.89 B | 14 |
| | 887.1 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-07-2017** Complete Drilling: **12-07-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT4-07

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 897.00 ft
North: 2033887.92 ft
East: 958671.79 ft
Station: 612+12.47
Offset: 50.61 RT

| Elevation (ft) | Depth (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 896.3 | 0 | 8-inch thick, black SILTY CLAY LOAM | | | | | |
| | | --TOPSOIL-- | | | | | |
| | | Stiff, brown, black and gray SILTY CLAY, trace gravel; damp to moist --FILL-- | | 1 | 1 3 3 5 | 1.15 B | 25 |
| 895.3 | | --RDR 2-- | | | | | |
| | | Stiff, black SILTY CLAY, some organic matter; moist | | 2 | 1 2 3 2 | 1.00 P | 58 |
| 893.8 | | --RDR 2-- | | | | | |
| | | Very soft, gray CLAY to SILTY CLAY; moist | | | | | |
| | | --RDR 2-- | | | 2 1 2 7 | | |
| | 5 | | | 3 | | 0.16 B | 34 |
| 891.5 | | Brown LOAM; wet | | | | | |
| 890.5 | | Stiff, gray SILTY CLAY, trace gravel; damp | | | 2 2 4 4 | | |
| | | --RDR 2-- | | 4 | | 1.23 B | 18 |
| | | | | 5 | 3 3 6 6 | 1.89 B | 16 |
| 887.0 | 10 | | | | | | |
| | | Boring terminated at 10.00 ft | | | | | |
| | 15 | | | | | | |

## GENERAL NOTES

Begin Drilling: **12-07-2017** Complete Drilling: **12-07-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT4-08

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 897.50 ft
North: 2033851.53 ft
East: 958697.53 ft
Station: 611+67.98
Offset: 47.97 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 896.8 | 8-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Medium stiff to stiff, brown and black SILTY CLAY, some organic matter; damp to moist --RDR 1-- | | | 1 | 1 2 3 4 | 0.66 B | 33 |
| | | | | | 2 | 1 2 2 2 | 1.00 P | 69 |
| | 894.0 | Very soft, gray CLAY to SILTY CLAY, trace organic matter; wet --RDR 1-- | 5 | | 3 | 1 1 1 2 | 0.08 B | 33 |
| | 892.2 | Medium stiff to stiff, gray SILTY CLAY, trace gravel; damp --RDR 2-- | | | 4 | 3 3 4 5 | 0.90 B | 17 |
| | | | 10 | | 5 | 3 5 6 6 | 1.80 B | 15 |
| | | | | | 6 | 3 3 6 9 | 1.80 B | 16 |
| | 885.5 | Boring terminated at 12.00 ft | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-07-2017** Complete Drilling: **12-07-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT4-09

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 898.20 ft
North: 2033807.87 ft
East: 958729.35 ft
Station: 611+14.0
Offset: 45.54 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 897.5 | 9-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Stiff, brown and black SILTY CLAY, trace gravel; damp | | | 1 | 1 1 3 4 | 1.48 B | 32 |
| | 896.5 | Gray SILTY LOAM; moist | | | | | | |
| | 896.0 | Stiff, brown and black SILTY CLAY, trace gravel; damp | | | 2 | 2 3 4 5 | 1.89 B | 39 |
| | 894.7 | Soft, brown, gray SILTY CLAY, some organic matter, shells; moist | | | | | | |
| | | --RDR 2-- | 5 | | 3 | 1 1 1 2 | 0.25 B | 48 |
| | 892.2 | Medium dense, gray LOAM, little gravel; saturated | | | | | | |
| | | --RDR 2-- | | | 4 | 2 6 10 5 | NP | 18 |
| | 890.7 | Stiff, gray CLAY LOAM, trace gravel; moist | | | | | | |
| | | --RDR 2-- | | | 5 | 4 4 4 2 | 1.07 B | 17 |
| | 889.0 | Very stiff, gray SILTY CLAY, trace gravel; damp | | | | | | |
| | | --RDR 2-- | 10 | | 6 | 1 3 4 5 | 2.62 B | 16 |
| | 886.2 | Boring terminated at 12.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-07-2017** Complete Drilling: **12-07-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **6.00 ft**
At Completion of Drilling: **11.90 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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# BORING LOG PT4-10

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 898.70 ft
North: 2033772.98 ft
East: 958758.99 ft
Station: 610+68.24
Offset: 46.87 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 898.0 | 8-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Medium stiff to stiff, brown and black SILTY CLAY, trace gravel; damp | | | 1 | 2 3 3 6 | 1.97 B | 31 |
| | | --FILL-- | | | | | | |
| | | --RDR 2-- | | | 2 | 2 3 3 4 | 0.98 B | 27 |
| | 894.2 | | | | | | | |
| | | Soft, gray, CLAY to SILTY CLAY, trace organic matter; moist | 5 | | 3 | 2 1 1 2 | 0.41 B | 31 |
| | | --RDR 1-- | | | | | | |
| | 892.5 | | | | | | | |
| | | Loose to medium dense, gray SILTY LOAM, trace gravel; moist | | | 4 | 10 7 6 3 | NP | 12 |
| | | --3-inch brown, coarse sand-- | | | | | | |
| | 889.7 | | | | | | | |
| | | Stiff, gray CLAY LOAM, trace to little gravel; damp to moist | 10 | | 5 | 1 2 4 5 | 1.48 B | 13 |
| | | --RDR 3-- | | | | | | |
| | 887.7 | | | | | | | |
| | | Stiff, gray SILTY CLAY, trace gravel; damp | | | 6 | 3 5 7 8 | NR | |
| | | --RDR 3-- | | | | | | |
| | | | | | 7 | 3 4 5 7 | 1.64 B | 18 |
| | 884.7 | | | | | | | |
| | | Boring terminated at 14.00 ft | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-07-2017** Complete Drilling: **12-07-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT5-01

**WEI Job No.: 195-13-01**

Client **Strand Associates, Inc.**
Project **IL 47 at IL 176 and Pleasant Valley Road**
Location **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 906.90 ft
North: 2032817.27 ft
East: 959317.98 ft
Station: 599+72.79
Offset: 113.86 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | 12-inch thick, dark brown SILTY CLAY | | | | | | |
| | 905.9 | --TOPSOIL-- | | | | | | |
| | | Very soft to medium stiff, brown SILTY CLAY, trace gravel; moist | | | 1 | 2<br>3<br>5<br>4 | < 0.25<br>P | 24 |
| | | --RDR 2-- | | | 2 | 3<br>2<br>3<br>4 | 0.82<br>B | 16 |
| | 903.4 | Very stiff, brown CLAY LOAM, trace gravel; damp | | | | | | |
| | | --RDR 2-- | 5 | | 3 | 2<br>6<br>8<br>10 | 3.12<br>B | 13 |
| | | | | | 4 | 7<br>8<br>8<br>13 | 3.64<br>B | 12 |
| | 898.9 | Boring terminated at 8.00 ft | 10 | | | | | |
| | | | 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 **12-19-2017** Complete Drilling **12-19-2017**
Drilling Contractor **Wang Testing Services** Drill Rig **D25 ATV [93%]**
Driller **R&K** Logger **F. Bozga** Checked by **C. Marin**
Drilling Method **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT5-02

**WEI Job No.: 195-13-01**

Client **Strand Associates, Inc.**
Project **IL 47 at IL 176 and Pleasant Valley Road**
Location **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 906.60 ft
North: 2032773.68 ft
East: 959346.15 ft
Station: 599+21.16
Offset: 119.11 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 905.6 | 12-inch thick, dark brown SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Medium stiff to very stiff, brown CLAY LOAM, trace gravel; damp --RDR 2-- | | | 1 | 2 2 3 5 | 2.05 B | 21 |
| | | | | | 2 | 2 4 5 6 | 0.98 B | 11 |
| | 900.6 | | 5 | | 3 | 4 6 9 10 | 2.05 B | 11 |
| | | Boring terminated at 6.00 ft | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling **12-19-2017** Complete Drilling **12-19-2017**
Drilling Contractor **Wang Testing Services** Drill Rig **D25 ATV [93%]**
Driller **R&K** Logger **F. Bozga** Checked by **C. Marin**
Drilling Method **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT5-03

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 904.50 ft
North: 2032729.30 ft
East: 959377.63 ft
Station: 598+66.84
Offset: 122.26 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 903.3 | 15-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | 1 | 1 1 3 3 | 1.75 P | 28 |
| | 901.3 | Medium stiff to stiff, brown and gray CLAY to SILTY CLAY, trace to little gravel; moist --RDR 1-- | | | 2 | 2 2 4 5 | 0.75 P | 24 |
| | 898.5 | Very stiff, brown and gray SILTY CLAY LOAM to CLAY LOAM, trace gravel; damp --RDR 2-- | 5 | | 3 | 2 3 5 7 | 3.60 B | 15 |
| | | Boring terminated at 6.00 ft | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-19-2017** Complete Drilling: **12-19-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT5-04

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 903.40 ft
North: 2032697.34 ft
East: 959409.24 ft
Station: 598+22.13
Offset: 117.55 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | 32-inch thick, medium stiff, black SILTY CLAY LOAM, trace organic --TOPSOIL-- | | | 1 | 1 2 2 2 | 0.75 P | 41 |
| | 900.7 | | | | | 1 2 3 3 | | |
| | | Medium stiff to stiff, brown and gray CLAY to SILTY CLAY; moist --RDR 1-- | | | 2 | | 0.50 P | 31 |
| | | | 5 | | 3 | 2 1 2 3 | 0.82 B | 29 |
| | 897.9 | | | | | | | |
| | | Stiff, brown SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | 4 | 3 4 5 6 | 1.97 B | 16 |
| | 895.4 | | | | | | | |
| | | Boring terminated at 8.00 ft | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-19-2017** Complete Drilling: **12-19-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT5-05

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 902.10 ft
North: 2032660.16 ft
East: 959448.14 ft
Station: 597+68.8
Offset: 110.41 LT

| 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, medium stiff, dark brown and black SILTY CLAY, trace organic matter; wet --TOPSOIL-- | | | 1 | 1 1 1 1 | 0.74 B | 41 |
| | 900.6 | Soft, brown and gray CLAY to SILTY CLAY, trace organic matter; moist --RDR 1-- | | | 2 | 2 1 1 1 | 0.25 P | 38 |
| | | | 5 | | 3 | 1 1 1 1 | 0.25 P | 41 |
| | 896.6 | Stiff, brown and gray SILTY CLAY; moist --RDR 2-- | | | 4 | 2 3 4 6 | 1.07 B | 17 |
| | 894.3 | Medium stiff to stiff, pinkish brown CLAY LOAM, trace gravel; damp --RDR 2-- | | | 5 | 3 5 7 6 | 0.74 B | 11 |
| | | | 10 | | 6 | 4 5 6 9 | 1.48 B | 11 |
| | 890.1 | Boring terminated at 12.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-19-2017** Complete Drilling: **12-19-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT5-06

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 902.20 ft
North: 2032618.32 ft
East: 959473.04 ft
Station: 597+20.57
Offset: 117.11 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, medium stiff, black SILTY CLAY LOAM, trace organic | | | 1 | 1 1 1 1 | 0.50 P | 47 |
| | 901.0 | --TOPSOIL-- | | | | | | |
| | | Medium stiff, black, brown, and gray CLAY to SILTY CLAY, trace organic matter; moist --RDR 1-- | | | 2 | 1 1 1 2 | 0.57 B | 32 |
| | | | 5 | | 3 | 1 1 2 3 | 0.57 B | 35 |
| | 896.5 | Soft to stiff, pinkish brown CLAY LOAM, trace to little gravel; damp --RDR 1-- | | | 4 | 2 2 2 4 | 0.33 B | 13 |
| | | | | | 5 | 4 3 5 5 7 | 0.57 B | 11 |
| | | | 10 | | 6 | 4 5 5 5 | 0.98 B | 12 |
| | | | | | 7 | 3 4 6 7 | 1.07 B | 9 |
| | 888.2 | Boring terminated at 14.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-19-2017** Complete Drilling: **12-19-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT5-07

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 902.60 ft
North: 2032583.58 ft
East: 959507.43 ft
Station: 596+71.96
Offset: 111.97 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 901.1 | 18-inch thick, medium stiff, black SILTY CLAY LOAM, trace organic matter --TOPSOIL-- | | | 1 | 1 2 3 4 | 0.98 B | 31 |
| | 898.9 | Stiff, brown and gray CLAY to SILTY CLAY, trace organic matter, shells; damp --RDR 1-- | | | 2 | 2 2 2 3 | 1.31 B | 28 |
| | 896.9 | Medium stiff, brown and gray SILTY CLAY LOAM, trace; damp --RDR 2-- | 5 | | 3 | 2 3 4 5 | 0.98 B | 19 |
| | 892.6 | Medium stiff to stiff, pinkish brown CLAY LOAM, little gravel; damp --RDR 2-- | 10 | | 4 | 2 3 4 5 | 0.74 B | 12 |
| | | | | | 5 | 3 3 4 7 | 1.15 B | 11 |
| | | Boring terminated at 10.00 ft | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-19-2017** Complete Drilling: **12-19-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT6-02

**WEI Job No.: 195-13-01**

Client **Strand Associates, Inc.**
Project **IL 47 at IL 176 and Pleasant Valley Road**
Location **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 904.10 ft
North: 2032808.63 ft
East: 959390.57 ft
Station: 599+20.69
Offset: 62.59 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 903.4 | 9-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Stiff to very stiff, brown CLAY LOAM, little gravel; damp | | | 1 | 1<br>3<br>8<br>6 | 1.50<br>P | 10 |
| | | --RDR 2-- | | | 2 | 4<br>6<br>7<br>10 | 2.21<br>B | 11 |
| | | | 5 | | 3 | 2<br>4<br>7<br>10 | 2.46<br>B | 11 |
| | 898.1 | Boring terminated at 6.00 ft | | | | | | |
| | | | 10 | | | | | |
| | | | 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 **12-19-2017** Complete Drilling **12-19-2017**
Drilling Contractor **Wang Testing Services** Drill Rig **D50 ATV [88%]**
Driller **N&J** Logger **T. Rothschild** Checked by **C. Marin**
Drilling Method **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT6-03

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 902.40 ft
North: 2032729.17 ft
East: 959454.53 ft
Station: 598+18.68
Offset: 62.3 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 901.9 | 6-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Medium stiff, brown and black SILTY CLAY; damp | | | 1 | 1 3 4 4 | 0.98 B | 19 |
| | | --FILL-- | | | | | | |
| | 899.9 | Soft to stiff, black and gray SILTY CLAY, little to some organic matter; moist | | | 2 | 2 2 3 4 | 1.00 P | 57 |
| | | --RDR 2-- | 5 | | 3 | 1 1 1 2 | 0.49 B | 30 |
| | 896.9 | Medium dense, gray LOAM; moist to wet | | | | | | |
| | | --RDR 2-- | | | 4 | 1 3 9 6 | NP | 19 |
| | 894.2 | Medium stiff to stiff, gray SILTY CLAY LOAM, trace gravel; damp | | | | | | |
| | | --RDR 2-- | 10 | | 5 | 3 2 3 6 | 0.75 P | 16 |
| | | | | | 6 | 2 3 4 7 | 1.23 B | 17 |
| | 890.4 | 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: **12-19-2017** Complete Drilling: **12-19-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT6-04

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 902.90 ft
North: 2032690.49 ft
East: 959485.79 ft
Station: 597+68.95
Offset: 62.05 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 902.3 | Black SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Very stiff, brown, black and gray SILTY CLAY, little gravel; damp --FILL-- --RDR 2-- | | | 1 | 2 1 4 6 | 2.00 P | 21 |
| | | | | | 2 | 2 4 4 4 | 2.71 B | 16 |
| | 899.4 | Stiff, brown, black and gray CLAY to SILTY CLAY, trace organic matter; moist --RDR 2-- | 5 | | 3 | 2 2 3 4 | 1.31 B | 21 |
| | 897.2 | Stiff, brown to gray SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | 4 | 2 4 4 4 | 1.07 B | 14 |
| | 892.9 | | 10 | | 5 | 1 4 4 5 | 1.23 B | 13 |
| | | Boring terminated at 10.00 ft | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-19-2017** Complete Drilling: **12-19-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT6-05

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 903.60 ft
North: 2032651.38 ft
East: 959516.02 ft
Station: 597+19.53
Offset: 62.89 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 902.8 | 10-inch thick, medium stiff, black SILTY CLAY LOAM; damp --TOPSOIL-- | | | | | | |
| | | Medium stiff, brown and black SILTY CLAY, little gravel; damp --FILL-- --RDR 2-- | | | 1 | 2 2 4 5 | 0.50 P | 20 |
| | 901.1 | Medium stiff, gray SILTY CLAY; moist --RDR 2-- | | | 2 | 2 3 4 4 | 0.74 B | 19 |
| | | | 5 | | 3 | 1 2 3 3 | 0.90 B | 14 |
| | 897.1 | Stiff, brown CLAY LOAM, trace gravel --RDR 2-- | | | 4 | 9 7 7 9 | 1.39 B | 12 |
| | 895.6 | Boring terminated at 8.00 ft | | | | | | |
| | | | 10 | | | | | |
| | | | 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: **12-19-2017** Complete Drilling: **12-19-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT6-06

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 904.30 ft
North: 2032613.26 ft
East: 959547.85 ft
Station: 596+69.87
Offset: 61.87 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 903.5 | 10-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Very stiff, brown SILTY CLAY; damp | | | 1 | 1 3 4 5 | 2.30 B | 28 |
| | 902.4 | --FILL-- | | | | | | |
| | | Very stiff, brown and gray SILTY CLAY, trace to little gravel; damp | | | | 4 6 8 7 | | |
| | | --RDR 2-- | | | 2 | | 2.30 B | 19 |
| | | | 5 | | | 3 4 5 6 | | |
| | 899.1 | | | | 3 | | 2.13 B | 14 |
| | | Medium stiff to stiff, brown and gray CLAY LOAM, trace to little gravel; damp | | | | | | |
| | | --RDR 2-- | | | 4 | 5 5 5 5 | 0.57 B | 11 |
| | | | | | 5 | 2 5 6 6 | 0.98 B | 10 |
| | | | 10 | | | | | |
| | | | | | 6 | 4 5 6 6 | 1.48 B | 10 |
| | 892.3 | | | | | | | |
| | | Boring terminated at 12.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-19-2017** Complete Drilling: **12-19-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT7-01

**WEI Job No.: 195-13-01**

Client **Strand Associates, Inc.**
Project **IL 47 at IL 176 and Pleasant Valley Road**
Location **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 903.80 ft
North: 2033071.55 ft
East: 959361.43 ft
Station: 601+44.17
Offset: 78.95 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 | 8-inch thick, black SILTY CLAY LOAM; damp<br>--TOPSOIL-- | | | | | | |
| | | Medium stiff to hard, brown CLAY LOAM, trace to little gravel; damp<br>--RDR 2-- | | | 1 | 2 3 4 5 | NA | 34 |
| | | | | | 2 | 3 3 4 4 | 0.57 B | 14 |
| | | | 5 | | 3 | 3 3 3 5 | 0.57 B | 11 |
| | | | | | 4 | 6 9 10 9 | NA | |
| | | | 10 | | 5 | 4 8 9 10 | 2.95 B | 9 |
| | | | | | 6 | 4 5 10 12 | 5.00 B | 9 |
| | 891.8 | Boring terminated at 12.00 ft | 15 | | | | | |

## GENERAL NOTES

Begin Drilling **12-06-2017** Complete Drilling **12-06-2017**
Drilling Contractor **Wang Testing Services** Drill Rig **D50 ATV [88%]**
Driller **N&J** Logger **T. Rothschild** Checked by **C. Marin**
Drilling Method **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT7-02

**WEI Job No.: 195-13-01**

Client **Strand Associates, Inc.**
Project **IL 47 at IL 176 and Pleasant Valley Road**
Location **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 901.30 ft
North: 2033026.46 ft
East: 959394.83 ft
Station: 600+88.10
Offset: 76.85 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 900.3 | 12-inch thick, medium stiff, black SILTY CLAY LOAM; damp --TOPSOIL-- | | | 1 | 2 2 4 4 | 0.75 P | 61 |
| | | Soft, black to gray CLAY to SILTY CLAY; moist --RDR 2-- | | | 2 | 1 2 3 4 | 0.41 B | 26 |
| | 897.8 | Stiff to very stiff, brown to gray SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | 5 | | 3 | 2 3 2 3 | 1.23 B | 12 |
| | | | | | 4 | 4 5 6 8 | 1.97 B | 16 |
| | | | 10 | | 5 | 4 4 6 7 | 2.13 B | 15 |
| | | | | | 6 | 3 4 5 7 | 1.89 B | 16 |
| | 889.3 | Boring terminated at 12.00 ft | 15 | | | | | |

## GENERAL NOTES

Begin Drilling **12-06-2017** Complete Drilling **12-06-2017**
Drilling Contractor **Wang Testing Services** Drill Rig **D50 ATV [88%]**
Driller **N&J** Logger **T. Rothschild** Checked by **C. Marin**
Drilling Method **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT7-03

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 901.00 ft
North: 2032988.08 ft
East: 959417.49 ft
Station: 600+43.97
Offset: 70.55 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 900.3 | 8-inch thick, black SILTY CLAY LOAM<br>--TOPSOIL-- | | | | | | |
| | | Medium stiff, black SILTY CLAY, some organic matter; moist<br>--RDR 1-- | | | 1 | 1<br>2<br>2<br>3 | 0.98<br>B | 50 |
| | 898.5 | Medium stiff to stiff, brown to gray SILTY CLAY, trace gravel; damp to moist<br>--RDR 2-- | | | 2 | 2<br>3<br>3<br>9 | 0.66<br>B | 18 |
| | 895.5 | Very stiff, brown CLAY LOAM, trace gravel; damp<br>--RDR 2-- | 5 | | 3 | 2<br>2<br>3<br>5 | 1.64<br>B | 16 |
| | 893.0 | Boring terminated at 8.00 ft | | | 4 | 6<br>10<br>10<br>11 | 2.46<br>B | 10 |
| | | | 10 | | | | | |
| | | | 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: **12-07-2017** Complete Drilling: **12-07-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT7-04

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.70 ft
North: 2032943.61 ft
East: 959441.41 ft
Station: 599+94.30
Offset: 61.45 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 900.0 | 8-inch thick, black SILTY CLAY LOAM | | | | 1 | | |
| | | --TOPSOIL-- | | | | 2 | | |
| | | Medium stiff, black and gray SILTY CLAY, trace gravel; damp | | | 1 | 2 | 0.57 B | 21 |
| | 899.1 | --FILL-- | | | | 3 | | |
| | | --RDR 2-- | | | | | | |
| | | Stiff, black and gray SILTY CLAY, some organic matter; moist | | | | 2 | | |
| | | --RDR 2-- | | | 2 | 4 | 1.56 B | 46 |
| | | | | | | 5 | | |
| | | | | | | 4 | | |
| | 895.7 | | 5 | | | 1 | | |
| | | Soft, gray CLAY to SILTY CLAY; moist | | | | 1 | | |
| | | --RDR 2-- | | | 3 | 3 | 0.49 B | 25 |
| | | | | | | 4 | | |
| | 893.7 | | | | | 3 | | |
| | | Very stiff, brown and gray SILTY CLAY LOAM, trace gravel; damp | | | | 3 | | |
| | | --RDR 2-- | | | 4 | 7 | 3.20 B | 15 |
| | | | | | | 5 | | |
| | 892.0 | | | | | 3 | | |
| | | Stiff, brown to gray CLAY LOAM, trace to little gravel; damp | | | | 4 | | |
| | | --RDR 2-- | | | 5 | 5 | 1.48 B | 14 |
| | 890.7 | | 10 | | | 6 | | |
| | | 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: **12-07-2017** Complete Drilling: **12-07-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT7-05

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 901.60 ft
North: 2032909.02 ft
East: 959479.47 ft
Station: 599+43.52
Offset: 69.55 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 900.9 | 8-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Soft to stiff, black, brown, and gray SILTY CLAY, trace gravel; damp to moist | | | 1 | 2 2 2 3 | 1.31 B | 21 |
| | | --FILL-- | | | | | | |
| | | --RDR 2-- | | | | 1 2 2 3 | | |
| | 898.1 | | | | 2 | | 0.41 B | 24 |
| | | Stiff, black SILTY CLAY, some organic matter; moist | | | | 2 2 3 4 | | |
| | | --RDR 2-- | 5 | | 3 | | 1.23 B | 69 |
| | 896.1 | | | | | | | |
| | | Soft, gray SILTY CLAY; moist | | | | 1 1 2 2 | | |
| | | --RDR 1-- | | | 4 | | 0.41 B | 18 |
| | 893.3 | | | | | 2 2 3 4 | | |
| | | Medium stiff, gray SILTY CLAY, little organic matter; moist | | | 5 | | 0.74 B | 54 |
| | | --RDR 2-- | | | | | | |
| | 892.1 | | | | | | | |
| | | Soft, gray SILTY CLAY, trace gravel; moist | 10 | | | 1 2 3 4 | | |
| | | --RDR 2-- | | | 6 | | 0.49 B | 20 |
| | 888.9 | | | | | 3 3 4 5 | | |
| | | Medium stiff to stiff, brown and gray CLAY LOAM, trace gravel; damp | | | 7 | | 0.98 B | 11 |
| | | --RDR 2-- | | | | | | |
| | | | 15 | | | 3 4 | | |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | | | | 8 | 5 7 | 1.23 B | 11 |
| | | | | | | 4 5 9 8 | 0.82 B | 13 |
| | 883.9 | Loose, gray GRAVELLY SAND; saturated | | | 9 | | | |
| | | --RDR 2-- | | | | 3 3 4 6 | NP | 11 |
| | 882.6 | Very stiff, brown and gray CLAY LOAM, trace to little gravel; damp | 20 | | 10 | | | |
| | | | | | 11 | 3 5 6 8 | 3.77 B | 10 |
| | 879.6 | Boring terminated at 22.00 ft | | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-06-2017** Complete Drilling: **12-06-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **17.75 ft**
At Completion of Drilling: **11.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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# BORING LOG PT7-06

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 902.90 ft
North: 2032817.50 ft
East: 959549.94 ft
Station: 598+28.00
Offset: 67.39 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 902.2 | 8-inch thick, black SILTY CLAY LOAM, trace gravel | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Stiff to very stiff, black, brown and gray SILTY CLAY, trace gravel; damp | | | 1 | 1<br>2<br>3<br>4 | 1.23<br>B | 18 |
| | | --FILL-- | | | 2 | 3<br>3<br>4<br>4 | 2.62<br>B | 25 |
| | | | 5 | | 3 | 2<br>3<br>3<br>5 | 1.48<br>B | 16 |
| | 897.4 | | | | | | | |
| | | Stiff, brown CLAY LOAM, trace gravel; damp | | | 4 | 5<br>6<br>7<br>6 | 1.89<br>B | 10 |
| | 894.9 | | | | | | | |
| | | Boring terminated at 8.00 ft | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-07-2017** Complete Drilling: **12-07-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT7-07

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 903.50 ft
North: 2032789.01 ft
East: 959572.03 ft
Station: 597+91.99
Offset: 66.83 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, medium stiff, black SILTY CLAY LOAM, trace gravel; damp | | | | 1 2 4 4 | | |
| | | --TOPSOIL-- | | | 1 | | 0.66 B | 34 |
| | 902.0 | | | | | | | |
| | | Stiff, gray and black SILTY CLAY, trace gravel; damp | | | | 4 4 4 6 | | |
| | | --FILL-- | | | | | | |
| | | --RDR 2-- | | | 2 | | 1.89 B | 18 |
| | 899.0 | | | | | | | |
| | | Very stiff to hard, gray CLAY LOAM, trace gravel; damp | 5 | | | 4 4 6 5 | | |
| | | --RDR 2-- | | | 3 | | 2.71 B | 12 |
| | | | | | | 4 5 7 9 | | |
| | | | | | 4 | | 2.79 B | 11 |
| | | | | | | 4 7 7 6 | | |
| | | | | | 5 | | 4.18 B | 11 |
| | 893.5 | | 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: **12-05-2017** Complete Drilling: **12-05-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT7-08

**WEI Job No.: 195-13-01**

Client **Strand Associates, Inc.**
Project **IL 47 at IL 176 and Pleasant Valley Road**
Location **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 904.00 ft
North: 2032753.94 ft
East: 959606.42 ft
Station: 597+43.12
Offset: 71.76 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | 18-inch thick, black SILTY CLAY LOAM, trace gravel; damp --TOPSOIL-- | | | 1 | 3 3 4 4 | 0.82 B | 21 |
| | 902.5 | Medium stiff to stiff, gray to dark gray CLAY to SILTY CLAY; moist --RDR 2-- | | | 2 | 3 2 3 5 | 1.48 B | 30 |
| | | | 5 | | 3 | 1 2 3 3 | 0.66 B | 27 |
| | 898.5 | Stiff to very stiff, dark gray to gray SILTY CLAY to SILTY CLAY LOAM, trace to little gravel; damp --RDR 2-- | | | 4 | 3 4 6 6 | 1.00 P | 17 |
| | | | | | 5 | 3 5 6 7 | 2.62 B | 15 |
| | | | 10 | | 6 | 3 5 7 8 | 1.23 B | 15 |
| | | | | | 7 | 4 9 9 9 | 2.79 B | 14 |
| | 890.0 | Boring terminated at 14.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling **12-05-2017** Complete Drilling **12-05-2017**
Drilling Contractor **Wang Testing Services** Drill Rig **D50 ATV [88%]**
Driller **N&J** Logger **T. Rothschild** Checked by **C. Marin**
Drilling Method **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT8-01

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.60 ft
North: 2033100.56 ft
East: 959397.68 ft
Station: 601+44.17
Offset: 125.38 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, medium stiff, black SILTY CLAY LOAM; damp --TOPSOIL-- | | | 1 | 1 2 2 2 | 0.50 P | 41 |
| | 899.1 | Medium stiff, black CLAY to SILTY CLAY; moist --RDR 2-- | | | 2 | 1 2 3 3 | 0.98 B | 29 |
| | 897.1 | Stiff to hard, brown SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | 5 | | 3 | 2 2 2 3 | 1.48 B | 17 |
| | | | | | 4 | 6 7 9 11 | 5.66 B | 17 |
| | | | 10 | | 5 | 3 6 7 8 | 4.84 S | 16 |
| | | | | | 6 | 3 5 6 7 | 3.69 B | 15 |
| | 888.6 | Boring terminated at 12.00 ft | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-06-2017** Complete Drilling: **12-06-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT8-02

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 899.00 ft
North: 2033060.86 ft
East: 959426.75 ft
Station: 600+95.01
Offset: 123.26 RT

| 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, stiff, black SILTY CLAY LOAM; DAMP --TOPSOIL-- | | | 1 | 1 1 1 1 | 1.00 P | 57 |
| 897.5 | Medium stiff, black SILTY CLAY LOAM, trace organic matter; moist --RDR 1-- | | | 2 | 1 1 1 1 | 0.57 B | 77 |
| 895.5 | ▽ | | | | | | |
| 895.3 | GRAVEL; wet | | | | | | |
| | Medium stiff, brown to gray CLAY to SILTY CLAY, trace plant matter; moist | 5 | | 3 | 0 1 3 2 | 0.66 B | 28 |
| 892.0 | Medium stiff to very stiff, gray SILTY CLAY, trace gravel; damp --RDR 2-- | | | 4 | 3 3 4 5 | NA | |
| | | | | 5 | 2 3 5 5 | 0.90 B | 16 |
| | | 10 | | 6 | 5 5 7 7 | 0.90 B | 14 |
| | | | | 7 | 3 5 6 7 | 2.13 B | 14 |
| 885.3 | Very stiff, brown CLAY LOAM, trace gravel; damp --RDR 2-- | | | | 4 6 | | |
| | | 15 | | | | | |
| | | 20 | | 8 | 7 7 | 2.30 B | 10 |
| 883.0 | Boring terminated at 16.00 ft | | | | | | |
| | | 25 | | | | | |
| | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-06-2017** Complete Drilling: **12-06-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling ▽: **3.50 ft**
At Completion of Drilling ▼: **14.30 ft**
Time After Drilling: **NA**
Depth to Water ▼: **NA**

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# BORING LOG PT8-03

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 898.60 ft
North: 2033020.49 ft
East: 959458.73 ft
Station: 600+43.48
Offset: 123.02 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | 18-inch thick, medium stiff, black and gray SILTY CLAY LOAM; wet --TOPSOIL-- | | | 1 | 1 1 1 0 | 0.50 P | 68 |
| | 897.1 | Soft to stiff, black and gray SILTY CLAY, trace gravel, plant, shell; moist --RDR 2-- | | | 2 | 1 1 1 0 | 1.00 P | 71 |
| | | | 5 | | 3 | 1 1 1 2 | 0.41 B | 74 |
| | 893.1 | Very soft, gray CLAY to SILTY CLAY; moist --RDR 1-- | | | 4 | 2 1 2 2 | 0.16 B | 23 |
| | 891.1 | Medium stiff to stiff, gray SILTY CLAY; damp to moist --RDR 2-- | | | 5 | 2 2 4 5 | 1.48 B | 17 |
| | | | 10 | | 6 | 2 1 2 6 | 0.66 B | 15 |
| | 886.9 | Medium stiff to stiff, brown CLAY LOAM, trace gravel; damp --RDR 2-- | | | 7 | 3 4 5 6 | 0.98 B | 10 |
| | | | 15 | | | 4 4 | | |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | | | | 8 | 7 9 | 1.97 B | 10 |
| | | | | | 9 | 8 10 11 12 | 1.48 B | 8 |
| | 880.6 | Boring terminated at 18.00 ft | | | | | | |
| | | | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-06-2017** Complete Drilling: **12-06-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT8-04

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 899.00 ft
North: 2032987.10 ft
East: 959493.07 ft
Station: 599+95.98
Offset: 128.96 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, medium stiff, black and gray SILTY CLAY LOAM; MOIST --TOPSOIL-- | | | 1 | 1 1 2 | 0.50 P | 38 |
| | 897.5 | Very soft to medium stiff, black ORGANIC SILTY CLAY, trace to little plant matter; moist --RDR 2-- | | | 2 | 1 1 1 1 | 0.75 P | 133 |
| | 893.8 | Soft to medium stiff, gray CLAY to SILTY CLAY; moist --RDR 1-- | 5 | | 3 | 1 1 0 1 | < 0.25 P | 133 |
| | | | | | 4 | 0 1 1 1 | 0.49 B | 21 |
| | | | 10 | | 5 | 1 3 2 4 | 0.66 B | 18 |
| | | | | | 6 | 1 1 2 3 | 0.49 B | 18 |
| | 886.8 | Medium stiff to very stiff, brown CLAY LOAM, trace gravel; damp --RDR 2-- | | | 7 | 3 3 5 6 | 0.98 B | 10 |
| | | | 15 | | | 4 6 | | |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | | | | 8 | 7 8 | 1.23 B | 10 |
| | | | | | 9 | 8 9 9 10 | 2.05 B | 10 |
| | 881.0 | Boring terminated at 18.00 ft | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-05-2017** Complete Drilling: **12-05-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT8-05

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 899.50 ft
North: 2032947.25 ft
East: 959525.27 ft
Station: 599+44.75
Offset: 129.19 RT

| 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, medium stiff, black SILTY CLAY LOAM, trace gravel; damp to moist --TOPSOIL-- | | | 1 | 1 1 2 3 | 0.50 P | 49 |
| 897.7 | Soft, brown, black and gray CLAY to SILTY CLAY; moist | | | 2 | 2 1 2 2 | 0.49 B | 29 |
| 896.0 | ▽ | | | | | | |
| 895.8 | GRAVELLY SAND | | | | | | |
| | Medium stiff, brown and gray SILTY CLAY, trace gravel, plant matter; damp to moist --RDR 2-- | 5 | | 3 | 2 3 3 6 | 0.90 B | 16 |
| | | | | 4 | 4 4 6 9 | 0.75 P | 20 |
| 891.3 | Stiff to very stiff, brown CLAY LOAM, trace gravel; damp --RDR 2-- | | | 5 | 4 5 6 6 | 1.31 B | 11 |
| | | 10 | | 6 | 2 4 6 7 | 1.23 B | 11 |
| | | | | 7 | 4 7 9 10 | 2.46 B | 10 |
| 885.5 | Boring terminated at 14.00 ft | | | | | | |
| | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-05-2017** Complete Drilling: **12-05-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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**

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# BORING LOG PT8-06

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.20 ft
North: 2032906.67 ft
East: 959550.67 ft
Station: 598+97.19
Offset: 123.67 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 899.2 | 12-inch thick, stiff, black SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Medium stiff, black and brown CLAY to SILTY CLAY; moist --RDR 1-- | | | 1 | 1 1 2 4 | 1.00 P | 44 |
| | | | | | 2 | 2 2 3 3 | 0.57 B | 37 |
| | 896.7 | Stiff, black, brown and gray SILTY CLAY, trace gravel; damp to moist --RDR 2-- | 5 | | 3 | 3 3 3 5 | 1.48 B | 18 |
| | 893.2 | Stiff, brown to gray CLAY LOAM, trace gravel --RDR 2-- | | | 4 | 4 8 8 9 | 1.00 P | 20 |
| | | | 10 | | 5 | 10 9 10 11 | 1.31 B | 9 |
| | | | | | 6 | 2 5 5 6 | 1.48 B | 13 |
| | 888.2 | 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: **12-05-2017** Complete Drilling: **12-05-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG PT8-07

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 901.80 ft
North: 2032877.64 ft
East: 959580.43 ft
Station: 598+55.93
Offset: 128.77 RT

| Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | 26-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | 1 | 1 2 3 4 | 1.75 P | 14 |
| 899.6 | Stiff, brown SILTY CLAY LOAM, trace gravel; damp | | | 2 | 3 4 5 4 | 1.07 B | 19 |
| 898.8 | --FILL-- Soft to medium stiff, black and gray CLAY to SILTY CLAY; moist --RDR 2-- | 5 | | 3 | 2 2 3 4 | 0.75 P | 35 |
| | | | | 4 | 1 2 2 2 | 0.49 B | 43 |
| | | 10 | | 5 | 1 1 2 3 | 0.66 B | 35 |
| 891.6 | Medium stiff, brown CLAY LOAM, trace gravel; damp | | | | | | |
| 890.8 | Brown GRAVELLY SAND; saturated | | | 6 | 3 4 6 4 | 0.74 B | 11 |
| 889.6 | Very stiff, brown CLAY LOAM, trace gravel; damp --RDR 2-- | | | 7 | 5 6 10 11 | 2.87 B | 11 |
| | | 15 | | | 7 9 | | |
| | | 20 | | | | | |
| | | 25 | | | | | |
| 885.8 | Boring terminated at 16.00 ft | 30 | | 8 | 11 12 | 3.20 B | 10 |

## GENERAL NOTES

Begin Drilling: **12-05-2017** Complete Drilling: **12-05-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **11.00 ft**
At Completion of Drilling: **8.90 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.

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# BORING LOG PT8-08

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 902.90 ft
North: 2032830.63 ft
East: 959618.32 ft
Station: 597+95.55
Offset: 128.97 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | 22-inch thick, medium stiff, black SILTY CLAY LOAM; damp to moist --TOPSOIL-- | | | 1 | 1 2 3 3 | 0.66 B | 30 |
| | 901.1 | Medium stiff to stiff, gray and brown SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | 2 | 2 2 2 4 | 0.82 B | 16 |
| | | | 5 | | 3 | 3 3 5 5 | 1.97 B | 21 |
| | | | | | 4 | 2 4 5 6 | 1.56 B | 16 |
| | 894.9 | Boring terminated at 8.00 ft | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-19-2017** Complete Drilling: **12-19-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT9-03

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 917.60 ft
North: 2032298.84 ft
East: 960903.61 ft
Station: 309+45.38
Offset: 30.61 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 917.1 | 6-inch thick, brown SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Very stiff to hard, brown and gray SILTY CLAY, trace gravel, plant matter; damp | | | 1 | 1<br>3<br>4<br>6 | 2.71<br>B | 15 |
| | | --RDR 2-- | | | 2 | 4<br>6<br>8<br>11 | 2.71<br>B | 17 |
| | | | 5 | | 3 | 4<br>6<br>8<br>14 | 4.18<br>S | 17 |
| | 911.6 | Boring terminated at 6.00 ft | | | | | | |
| | | | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-20-2017** Complete Drilling: **12-20-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT9-04

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 917.10 ft
North: 2032307.04 ft
East: 960955.19 ft
Station: 309+97.32
Offset: 25.11 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 916.6 | 6-inch thick, brown GRAVELLY SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Very stiff, brown SILTY CLAY, trace gravel; damp | | | 1 | 2<br>2<br>2<br>3 | 2.00<br>P | 18 |
| | 915.6 | --FILL-- | | | | | | |
| | | Very stiff, brown SILTY CLAY, trace gravel; damp | | | 2 | 4<br>5<br>8<br>10 | 2.30<br>B | 17 |
| | | --RDR 2-- | 5 | | 3 | 5<br>10<br>10<br>12 | 2.62<br>B | 14 |
| | 911.1 | Boring terminated at 6.00 ft | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-20-2017** Complete Drilling: **12-20-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT9-05

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 911.80 ft
North: 2032330.80 ft
East: 961006.90 ft
Station: 310+53.44
Offset: 34.57 LT

| 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, medium stiff, brown to black SILTY CLAY LOAM --TOPSOIL-- | | | 1 | 1 1 2 2 | 0.66 B | 37 |
| | 910.1 | Soft to medium stiff, black and dark gray CLAY to SILTY CLAY, little to some organic matter; damp --RDR 1-- | | | 2 | 2 1 2 1 | 0.66 B | 59 |
| | | | 5 | | 3 | 1 1 1 1 | NA | |
| | 905.1 | Stiff, gray SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | 4 | 1 2 3 5 | 0.25 B | 41 |
| | | | | | 5 | 3 3 5 8 | 1.15 B | 14 |
| | 901.8 | | 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: **12-19-2017** Complete Drilling: **12-19-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT9-06

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 915.40 ft
North: 2032351.27 ft
East: 961102.44 ft
Station: 311+51.01
Offset: 29.5 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 914.9 | 6-inch thick, black SILTY CLAY LOAM | | | | 3 | | |
| | | --TOPSOIL-- | | | 1 | 2 | 2.00 | 19 |
| | | Stiff to very stiff, brown SILTY CLAY LOAM, trace gravel; damp | | | | 3 | P | |
| | | --FILL-- | | | | 3 | | |
| | 913.1 | --RDR 2-- | | | | | | |
| | | Black SILTY CLAY LOAM | | | | 2 | | |
| | | --BURIED TOPSOIL-- | | | 2 | 3 | 1.00 | 18 |
| | 911.9 | | | | | 3 | P | |
| | | Very stiff, brown and gray SILTY CLAY, trace gravel; damp | | | | 3 | | |
| | | --RDR 2-- | | | | 4 | | |
| | | | 5 | | 3 | 5 | 2.21 | 17 |
| | 909.4 | | | | | 8 | B | |
| | | Boring terminated at 6.00 ft | | | | | | |
| | | | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-20-2017** Complete Drilling: **12-20-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT9-07

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 916.20 ft
North: 2032363.71 ft
East: 961142.79 ft
Station: 311+93.22
Offset: 30.99 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 916.0 | 3-inch thick, black SILTY CLAY LOAM | | | | 1 | | |
| | | --TOPSOIL-- | | | | 2 | | |
| | | Stiff to hard, brown SILTY CLAY LOAM to CLAY LOAM, trace gravel; damp | | | 1 | 3 | 1.00 P | 16 |
| | | | | | | 4 | | |
| | | --RDR 2-- | | | | 2 | | |
| | | | | | 2 | 4 | 2.21 S | 14 |
| | | | | | | 4 | | |
| | | | | | | 6 | | |
| | | | 5 | | | 5 | | |
| | | | | | | 10 | | |
| | | | | | 3 | 12 | 7.13 S | 12 |
| | | | | | | 13 | | |
| | 910.2 | Boring terminated at 6.00 ft | | | | | | |
| | | | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-20-2017** Complete Drilling: **12-20-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG PT9-08

**WEI Job No.: 195-13-01**

Client **Strand Associates, Inc.**
Project **IL 47 at IL 176 and Pleasant Valley Road**
Location **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 917.70 ft
North: 2032377.26 ft
East: 961199.56 ft
Station: 312+51.56
Offset: 29.29 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 917.3 | 5-inch thick, black GRAVELLY SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Stiff, black and brown SILTY CLAY LOAM, little gravel; damp | | | 1 | 2<br>2<br>3<br>5 | 1.00<br>P | 14 |
| | 916.2 | --FILL-- | | | | | | |
| | | Very stiff, brown and black SILTY CLAY LOAM, trace to little gravel, plant matter; damp | | | 2 | 5<br>5<br>5<br>5 | 2.50<br>P | 13 |
| | | --RDR 2-- | 5 | | 3 | 3<br>4<br>6<br>7 | 2.13<br>B | 16 |
| | 911.7 | Boring terminated at 6.00 ft | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling **12-20-2017** Complete Drilling **12-20-2017**
Drilling Contractor **Wang Testing Services** Drill Rig **D50 ATV [88%]**
Driller **N&J** Logger **T. Rothschild** Checked by **C. Marin**
Drilling Method **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG SGB-01

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 921.50 ft
North: 2029717.38 ft
East: 960117.08 ft
Station: 566+00.39
Offset: 1.45 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 921.2 | 4-inch thick, dark brown SILTY CLAY LOAM; damp --TOPSOIL-- | | | | | | |
| | | Very stiff, brown to gray SILTY CLAY to SILTY CLAY LOAM, trace to some gravel; damp --RDR 2-- | | | 1 | 2 2 5 6 | 3.03 B | 18 |
| | | | | | 2 | 4 5 8 12 | 3.44 B | 14 |
| | 916.8 | | | | | | | |
| | | Medium SAND, trace gravel; moist --RDR 2-- | 5 | | 3 | 6 8 8 9 | 2.05 B | 12 |
| | 916.0 | | | | | | | |
| | | Brown LOAM, trace gravel; wet | | | | | | |
| | 915.2 | | | | | | | |
| | 914.8 | Brown, medium SAND; moist | | | | | | |
| | | Brown SILTY LOAM; moist --RDR 2-- | | | 4 | 8 7 5 8 | NP | 17 |
| | 913.2 | | | | | | | |
| | | Stiff, gray SILTY CLAY; moist | | | 5 | 2 2 2 3 | 1.48 B | 20 |
| | 911.5 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-19-2017** Complete Drilling: **10-19-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **6.33 ft**
At Completion of Drilling: **7.66 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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# BORING LOG SGB-02

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 920.60 ft
North: 2030017.82 ft
East: 960067.27 ft
Station: 569+00.98
Offset: 47.49 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 920.1 | 6-inch thick, brown SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Very stiff to hard, brown and gray SILTY CLAY LOAM, trace gravel; damp | | | 1 | 5 5 7 6 | 6.23 B | 15 |
| | | --RDR 2-- | | | 2 | 3 5 10 7 | 2.71 B | 15 |
| | | | 5 | | 3 | 5 9 12 15 | 9.92 B | 15 |
| | | | | | 4 | 7 9 9 6 | 3.44 B | 14 |
| | | | | | 5 | 5 5 7 6 | 2.46 B | 15 |
| | 911.1 | Gray SILTY LOAM; moist | | | | | | |
| | 910.6 | | 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: **10-10-2017** Complete Drilling: **10-10-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG SGB-03

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 919.10 ft
North: 2030319.90 ft
East: 960150.65 ft
Station: 572+02.81
Offset: 36.74 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 918.8 | 4-inch thick, dark brown SILTY CLAY | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Very stiff, brown CLAY, trace roots; damp | | | 1 | 2<br>2<br>5<br>4 | 2.05<br>B | 26 |
| | 917.6 | --RDR 2-- | | | | | | |
| | | Very stiff to hard, brown SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp | | | 2 | 4<br>5<br>9<br>12 | 2.79<br>B | 14 |
| | | --RDR 2--<br>--$L_L$(%)=28, $P_L$(%)=14--<br>--%Gravel=2.1--<br>--%Sand=10.8--<br>--%Silt=57.2--<br>--%Clay=30.0--<br>--A-6 (10)-- | 5 | | 3 | 5<br>9<br>9<br>13 | 5.90<br>B | 15 |
| | | | | | 4 | 9<br>15<br>18<br>16 | 3.49<br>B | 16 |
| | 912.1 | Medium SAND to SANDY LOAM; moist | | | | | | |
| | 911.1 | Very stiff, brown CLAY LOAM to SILTY LOAM, little gravel; damp | | | 5 | 8<br>10<br>8<br>12 | 2.30<br>B | 10 |
| | 909.1 | Boring terminated at 10.00 ft | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-19-2017** Complete Drilling: **10-19-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **6.25 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.

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# BORING LOG SGB-04

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 917.30 ft
North: 2030619.45 ft
East: 960061.70 ft
Station: 575+02.61
Offset: 51.33 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 916.8 | 6-inch thick, hard, dark brown SILTY CLAY LOAM, some gravel, roots | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Very stiff, dark brown SILTY CLAY, trace gravel; damp | | | 1 | 3 8 9 6 | 7.38 B | 17 |
| | | | | | 2 | 5 5 4 5 | 3.85 B | 22 |
| | 913.8 | Medium stiff to stiff, brown to gray CLAY LOAM to SILTY LOAM, trace gravel; moist to wet | | | | | | |
| | | --RDR 2-- | 5 | | 3 | 4 4 4 4 | 1.56 B | 12 |
| | | | | | 4 | 3 2 5 3 | 0.66 B | 12 |
| | | | | | 5 | 3 3 5 6 | 0.90 B | 16 |
| | 907.3 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-10-2017** Complete Drilling: **10-10-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SGB-05

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 926.30 ft
North: 2030920.42 ft
East: 960155.72 ft
Station: 578+03.31
Offset: 43.54 RT

| Profile | 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 LOAM | | | | 2 | | |
| | | --TOPSOIL-- | | | | 2 | | |
| | 925.2 | | | | 1 | 3 | 1.80 B | 27 |
| | | Stiff to very stiff, brown SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp | | | | 4 | | |
| | | --RDR 2-- | | | | 4 | | |
| | | | | | | 5 | | |
| | | | | | 2 | 7 | 2.87 B | 15 |
| | | | | | | 9 | | |
| | | | | | | 4 | | |
| | | | 5 | | | 7 | | |
| | | | | | 3 | 9 | 2.54 B | 15 |
| | | --interbedded loam-- | | | | 8 | | |
| | 919.8 | | | | | 5 | | |
| | | Stiff to very stiff, pinkish brown CLAY LOAM, trace gravel; damp | | | | 5 | | |
| | | --RDR 2-- | | | 4 | 7 | 2.13 B | 11 |
| | | | | | | 8 | | |
| | | | | | | 3 | | |
| | | | | | | 3 | | |
| | | | | | 5 | 5 | 1.56 B | 13 |
| | | | | | | 6 | | |
| | 916.3 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-15-2017** Complete Drilling: **11-15-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG SGB-06

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 916.50 ft
North: 2031222.84 ft
East: 960045.16 ft
Station: 581+06.05
Offset: 66.15 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, dark brown SILTY CLAY LOAM, trace gravel, roots --TOPSOIL-- | | | 1 | 2 2 2 3 | 1.48 B | 13 |
| | 915.2 | Stiff, black CLAY to SILTY CLAY, trace organic matter; moist --RDR 2-- | | | 2 | 3 2 4 5 | 1.72 B | 22 |
| | | | 5 | | 3 | 2 3 3 4 | 1.56 B | 35 |
| | 911.0 | Stiff, gray SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | 4 | 2 3 6 5 | 1.15 B | 15 |
| | | | | | 5 | 3 4 6 7 | 1.72 B | 17 |
| | 906.5 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-10-2017** Complete Drilling: **10-10-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG SGB-07

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 916.60 ft
North: 2031519.83 ft
East: 960137.43 ft
Station: 584+01.06
Offset: 30.00 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 916.4 | 3-inch thick, black SILTY CLAY --TOPSOIL-- | | | | | | |
| | | Medium stiff to hard, brown CLAY LOAM to SILTY CLAY LOAM, trace gravel; damp | | | 1 | 1 4 3 7 | 0.66 B | 44 |
| | | --RDR 2-- | | | | | | |
| | | --$L_L$(%)=44, $P_L$(%)=22-- | | | | | | |
| | | --%Gravel=8.5-- | | | | | | |
| | | --%Sand=24.2-- | | | | | | |
| | | --%Silt=45.7-- | | | 2 | 5 7 8 8 | 3.85 B | 14 |
| | | --%Clay=21.6-- | | | | | | |
| | | --A-7-6 (13)-- | | | | | | |
| | | | 5 | | 3 | 4 6 8 11 | 5.49 B | 14 |
| | | | | | 4 | 7 9 10 11 | 5.86 B | 14 |
| | 908.8 | Very stiff, pinkish brown CLAY LOAM to SILTY LOAM, little gravel; damp | | | | | | |
| | | --RDR 2-- | | | 5 | 9 14 12 14 | 2.00 P | 10 |
| | 906.6 | | 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: **10-19-2017** Complete Drilling: **10-19-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG SGB-08

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 918.30 ft
North: 2031801.71 ft
East: 960010.13 ft
Station: 587+01.33
Offset: 53.93 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 917.3 | 12-inch thick, dark brown SILTY CLAY LOAM, some gravel, roots --TOPSOIL-- | | | | | | |
| | | Hard, brown SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | 1 | 3, 8, 12, 15 | 4.50 P | 11 |
| | | | | | 2 | 7, 12, 15, 17 | 6.23 B | 14 |
| | | | 5 | | 3 | 7, 10, 14, 13 | 7.87 B | 15 |
| | 912.3 | Very stiff, pinkish brown CLAY LOAM to SILTY LOAM, trace to little gravel; damp --RDR 2-- | | | 4 | 4, 9, 9, 9 | 2.87 B | 10 |
| | | Rock fragments --hard drilling, 9 feet-- --possible cobbles-- | | | 5 | 5, 8, 40, 15 | 3.36 B | 10 |
| | 908.3 | | 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: **10-10-2017** Complete Drilling: **10-10-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG SGB-09

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 917.20 ft
North: 2032127.74 ft
East: 960005.30 ft
Station: 590+12.32
Offset: 47.65 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 916.9 | 4-inch thick, dark brown SILTY CLAY LOAM; damp --TOPSOIL-- | | | | | | |
| | | Very stiff to hard, brown SILTY CLAY LOAM to CLAY LOAM, trace gravel; damp --RDR 2-- | | | 1 | 2 3 5 8 | 3.03 B | 15 |
| | | | | | 2 | 7 11 14 20 | 5.08 B | 15 |
| | | | 5 | | 3 | 4 9 15 19 | 7.46 B | 13 |
| | | | | | 4 | 10 16 18 23 | 8.77 B | 12 |
| | | | | | 5 | 7 13 16 19 | 5.08 B | 13 |
| | 907.2 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-18-2017** Complete Drilling: **10-18-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG SGB-10

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 909.40 ft
North: 2032335.47 ft
East: 959777.39 ft
Station: 593+05.27
Offset: 50.83 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 908.7 | 8-inch thick, dark brown SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Very stiff to hard, brown and gray SILTY CLAY LOAM, trace gravel | | | 1 | 1<br>4<br>4<br>5 | 4.43<br>B | 17 |
| | | --RDR 2-- | | | 2 | 4<br>4<br>11<br>11 | 6.72<br>B | 15 |
| | | | 5 | | 3 | 4<br>10<br>13<br>16 | 5.08<br>B | 15 |
| | 902.2 | --reddish brown gravelly sand-- | | | 4 | 8<br>14<br>17<br>22 | 9.84<br>B | 14 |
| | | --cobbles-- | | | | | | |
| | | --RDR 3-- | | | 5 | 15<br>16<br>16<br>18 | 3.50<br>P | 15 |
| | 899.4 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-26-2017** Complete Drilling: **10-26-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG SGB-11

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 905.20 ft
North: 2032941.39 ft
East: 959300.93 ft
Station: 600+80.31
Offset: 49.61 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 904.7 | 6-inch thick, dark brown SILTY CLAY LOAM, some gravel, roots; damp | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Very stiff to hard, brown CLAY LOAM to SILTY CLAY LOAM, trace to little gravel; damp | | | | | | |
| | | --RDR 2-- | | | | | | |
| | | | | | 1 | 3 3 7 8 | 2.75 P | 12 |
| | | | | | 2 | 4 9 7 5 | 2.05 P | 13 |
| | | | 5 | | 3 | 2 4 5 6 | 2.30 B | 11 |
| | | | | | 4 | 3 6 7 8 | 3.44 B | 14 |
| | | | | | 5 | 3 5 8 8 | 4.18 B | 13 |
| | 895.2 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-10-2017** Complete Drilling: **10-10-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG SGB-12

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 904.40 ft
North: 2033251.02 ft
East: 959162.93 ft
Station: 604+08.32
Offset: 36.1 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 904.2 | 3-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Very stiff, brown and gray SILTY CLAY; damp --RDR 2-- | | | 1 | 2 2 3 4 | 2.62 B | 21 |
| | | --$L_L$(%)=33, $P_L$(%)=15-- --%Gravel=0.0-- --%Sand=1.3-- --%Silt=64.3-- --%Clay=34.4-- --A-6 (17)-- | | | 2 | 2 4 5 6 | 2.95 B | 21 |
| | | | 5 | | 3 | 3 3 4 4 | 2.13 B | 20 |
| | 898.9 | Brown and gray SILT; moist | | | | | | |
| | 898.0 | Medium dense, brown, GRAVELLY SAND; saturated --RDR 2-- | | | 4 | 4 5 9 8 | NP | 21 |
| | 895.9 | Very stiff, brown SILTY CLAY LOAM, trace gravel; moist --RDR 2-- | | | 5 | 5 6 5 5 | 2.87 B | 15 |
| | 894.4 | Boring terminated at 10.00 ft | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-25-2017** Complete Drilling: **10-25-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&R** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **6.50 ft**
At Completion of Drilling: **7.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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# BORING LOG SGB-13

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 897.60 ft
North: 2033900.21 ft
East: 958541.60 ft
Station: 613+03.41
Offset: 43.35 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 896.6 | 12-inch thick, very stiff, black CLAY LOAM --TOPSOIL-- | | | 1 | 1 3 6 5 | 2.54 B | 18 |
| | 895.3 | Very stiff, dark brown SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2-- | | | 2 | 3 2 3 4 | 2.95 B | 20 |
| | | Medium stiff to stiff, black ORGANIC SILTY LOAM, trace roots; damp --RDR 2-- --$L_L$(%)=74, $P_L$(%)=30-- --%Gravel=0.1-- --%Sand=3.9-- --%Silt=78.2-- --%Clay=17.7-- --A-7-5 (50)-- --organic content= 11.5%-- | 5 | | 3 | 2 2 3 3 | 0.66 B | 86 |
| | | | | | 4 | 0 0 0 0 | 0.75 P | 60 |
| | 888.6 | Stiff, gray SILTY CLAY LOAM to CLAY LOAM, trace gravel; moist to wet --RDR 2-- | 10 | | 5 | PUSH | 1.00 P | |
| | | | | | 6 | 4 2 2 3 | 1.07 B | 15 |
| | | | | | 7 | 4 6 7 8 | 1.31 B | 15 |
| | 883.6 | Boring terminated at 14.00 ft | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-09-2017** Complete Drilling: **10-09-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG SGB-14

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 899.80 ft
North: 2034577.80 ft
East: 958106.89 ft
Station: 621+04.06
Offset: 40.63 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 899.6 | 3-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Very stiff to hard, brown and gray SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | 1 | 2 3 5 6 | 3.28 B | 15 |
| | | | | | 2 | 4 6 9 12 | 6.40 B | 14 |
| | | | 5 | | 3 | 6 8 10 11 | 6.56 B | 14 |
| | | | | | 4 | 4 6 7 9 | 4.92 B | 15 |
| | | | | | 5 | 4 4 7 8 | 3.44 B | 15 |
| | 889.8 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-25-2017** Complete Drilling: **10-25-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SGB-15

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 900.20 ft
North: 2035448.88 ft
East: 957457.20 ft
Station: 632+01.74
Offset: 42.71 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 899.9 | 4-inch thick, dark brown SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Very stiff to hard, brown to gray SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | 1 | 3 4 5 10 | 3.69 B | 16 |
| | | | | | 2 | 5 8 12 16 | 5.58 B | 14 |
| | | | 5 | | 3 | 8 11 15 16 | 3.69 B | 16 |
| | | | | | 4 | 10 11 12 17 | 3.77 B | 15 |
| | | | | | 5 | 5 7 10 11 | 3.12 B | 16 |
| | 890.2 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-26-2017** Complete Drilling: **10-26-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SGB-16

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 914.40 ft
North: 2036710.41 ft
East: 957280.45 ft
Station: 645+07.72
Offset: 27.06 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 914.2 | 3-inch thick, dark brown SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Stiff, brown CLAY LOAM to SILTY CLAY LOAM, little gravel; damp | | | 1 | 2 4 5 7 | 1.07 B | 12 |
| | | --RDR 2-- --$L_L$(%)=22, $P_L$(%)=13-- --%Gravel=3.6-- --%Sand=27.4-- --%Silt=47.0-- --%Clay=21.9-- --A-4 (3)-- | | | 2 | 3 5 7 10 | 1.31 B | 13 |
| | | | 5 | | 3 | 3 8 9 13 | 1.00 P | 12 |
| | | | | | 4 | 9 11 13 15 | 1.97 B | 11 |
| | | | | | 5 | 10 13 17 18 | 1.50 P | 11 |
| | 904.4 | Boring terminated at 10.00 ft | 10 | | | | | |
| | | | 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: **10-26-2017** Complete Drilling: **10-26-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SGB-17

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 916.00 ft
North: 2036995.63 ft
East: 957219.98 ft
Station: 647+93.04
Offset: 32.96 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 915.8 | 3-inch thick, dark brown SILTY CLAY LOAM; damp --TOPSOIL-- | | | | | | |
| | | Stiff to very stiff, brown to gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | 1 | 1 2 3 3 | 1.50 P | 25 |
| | | | | | 2 | 3 5 5 5 | 1.72 B | 21 |
| | | | 5 | | 3 | 3 5 6 6 | 2.87 B | 19 |
| | | | | | 4 | 6 7 8 9 | 3.36 B | 20 |
| | | | | | 5 | 3 5 7 9 | 2.62 B | 20 |
| | 906.0 | | 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: **10-26-2017** Complete Drilling: **10-26-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SGB-18

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 922.10 ft
North: 2032505.45 ft
East: 961933.90 ft
Station: 319+93.93
Offset: 37.98 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 921.8 | 4-inch thick, dark brown SILTY CLAY LOAM; damp | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Stiff, brown CLAY to SILTY | | | 1 | 2 2 2 5 | 1.72 B | 21 |
| | 920.5 | CLAY; damp | | | | | | |
| | | --RDR 2-- | | | | | | |
| | | Very stiff to hard, brown SILTY CLAY LOAM, trace gravel: damp | | | 2 | 3 5 7 9 | 2.38 B | 12 |
| | | --RDR 2-- | | | | | | |
| | | --pebbly-- | 5 | | 3 | 9 11 12 11 | NA | |
| | | | | | 4 | 9 11 14 18 | 8.94 B | 16 |
| | | | | | 5 | 10 13 13 13 | 4.00 P | 16 |
| | 912.1 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-18-2017** Complete Drilling: **10-18-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SGB-19

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 920.80 ft
North: 2032493.01 ft
East: 961641.39 ft
Station: 317+08.27
Offset: 26.12 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 920.4 | 5-inch thick, dark brown SILTY CLAY LOAM; damp | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Stiff, dark brown CLAY to SILTY CLAY, trace roots; damp | | | 1 | 2<br>2<br>3<br>5 | 1.56<br>B | 24 |
| | | --RDR 2-- | | | | | | |
| | 918.6 | | | | | | | |
| | 918.3 | Brown LOAM; moist | | | | 3<br>3<br>5<br>5 | | |
| | | Very stiff to hard, brown CLAY LOAM, trace gravel; damp | | | 2 | | 2.62<br>B | 13 |
| | | --RDR 2-- | | | | | | |
| | | | 5 | | 3 | 4<br>6<br>7<br>10 | 6.56<br>B | 13 |
| | 914.1 | --pebbly-- | | | | 10<br>20<br>14<br>15 | | |
| | | Hard, brown SILTY CLAY LOAM, trace gravel; damp | | | 4 | | 8.61<br>B | 15 |
| | | --RDR 2-- | | | | | | |
| | | | | | 5 | 14<br>12<br>14<br>18 | 8.20<br>B | 15 |
| | 910.8 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-18-2017** Complete Drilling: **10-18-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG SGB-20

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 919.70 ft
North: 2032358.31 ft
East: 961357.93 ft
Station: 313+99.52
Offset: 30.18 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 919.4 | 4-inch thick, dark brown SILTY CLAY LOAM, trace gravel --TOPSOIL-- | | | | | | |
| | | Very stiff, brown CLAY LOAM, trace gravel; damp --FILL-- | | | 1 | 3 5 5 4 | 2.87 B | 11 |
| | 918.2 | Stiff, brown CLAY to SILTY CLAY LOAM, trace gravel; damp --RDR 2-- --$L_L$(%)=52, $P_L$(%)=22-- --%Gravel=2.5-- --%Sand=18.6-- --%Silt=49.9-- --%Clay=29.1-- --A-7-6 (24)-- | | | 2 | 2 2 3 3 | 1.48 B | 35 |
| | 916.2 | Very stiff to hard, brown SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | 5 | | 3 | 3 3 5 5 | 3.53 B | 14 |
| | | | | | 4 | 3 5 8 10 | 6.31 B | 15 |
| | | | | | 5 | 4 7 11 11 | 8.94 B | 16 |
| | 909.7 | Boring terminated at 10.00 ft | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-11-2017** Complete Drilling: **10-11-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG SGB-21

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 917.60 ft
North: 2032328.01 ft
East: 961051.60 ft
Station: 310+95.85
Offset: 20.27 LT

| Depth (ft) | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | 917.4 | 3-inch thick, dark brown SILTY CLAY LOAM; damp | | | 3 | | |
| | | --TOPSOIL-- | | | 2 | | |
| | | Soft to very stiff, brown to gray CLAY LOAM, trace gravel; moist | | 1 | 2 | 2.21 B | 16 |
| | | | | | 3 | | |
| | | --FILL-- | | | 2 | | |
| | | --RDR 1-- | | | 1 | | |
| | | | | 2 | 3 | 0.66 B | 18 |
| | | | | | 3 | | |
| | | --$L_L$(%)=34, $P_L$(%)=15-- | | | 2 | | |
| | | --%Gravel=5.0-- | | | 1 | | |
| | | --%Sand=33.6-- | | | 2 | | |
| 5 | | --%Silt=40.1-- | | 3 | 2 | 0.25 B | 25 |
| | | --%Clay=21.2-- | | | 2 | | |
| | | --A-6 (9)-- | | | 3 | | |
| | | | | 4 | 2 | 0.33 B | 17 |
| | | | | | 2 | | |
| | | | | | 3 | | |
| | | | | | 2 | | |
| | | | | | 2 | | |
| | | | | 5 | 2 | 0.49 B | 23 |
| | | | | | 2 | | |
| 10 | | | | | 2 | | |
| | 907.3 | Very soft to soft, dark brown to gray ORGANIC SILTY LOAM; moist | | | 2 | | |
| | | | | | 2 | | |
| | | --RDR 1-- | | 6 | 2 | 0.25 B | 21 |
| | | | | | 2 | | |
| | | | | | 1 | | |
| | | | | | 1 | | |
| | | | | 7 | 2 | < 0.25 P | 55 |
| | | | | | 1 | | |
| | | --$L_L$(%)=74, $P_L$(%)=36-- | | | 1 | | |
| | | --%Gravel=0.2-- | | | | | |
| 15 | | --%Sand=7.4-- | | | 2 | | |

| Depth (ft) | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | | --%Silt=78.5-- | | | 1 | 0.25 B | 80 |
| | | --%Clay=13.9-- | | 8 | 2 | | |
| | | --A-7-5 (43)-- | | | | | |
| | | --organic content= 16.4%-- | | | 2 | | |
| | | | | | 2 | | |
| | | | | 9 | 3 | 0.16 B | 92 |
| | | | | | 3 | | |
| | 899.2 | | | | 1 | | |
| | | Stiff, gray SILTY CLAY LOAM, trace gravel; moist | | | 1 | | |
| | | | | 10 | 1 | 0.33 B | 82 |
| | | --RDR 2-- | | | 3 | | |
| 20 | | | | | 2 | | |
| | | | | | 4 | | |
| | | | | 11 | 5 | 1.07 B | 20 |
| | 895.6 | | | | 5 | | |
| | | Boring terminated at 22.00 ft | | | | | |
| 25 | | | | | | | |
| 30 | | | | | | | |

## GENERAL NOTES

Begin Drilling: **10-18-2017** Complete Drilling: **10-18-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SGB-21ST

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 917.60 ft
North: 2032326.88 ft
East: 961050.67 ft
Station: 310+94.67
Offset: 19.43 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 917.1 | 6-inch thick, black SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Medium stiff, brown SILTY CLAY, trace gravel; moist | | | | | | |
| | | --RDR 2-- | | | | | | |
| | | | 5 | | 1 | PUSH | 0.50 P | 27 |
| | 912.1 | Very soft to soft, brown SILTY CLAY LOAM to CLAY LOAM, trace gravel; damp | | | | | | |
| | | --RDR 2-- | | | | | | |
| | | --Laboratory $Q_u$=0.71 tsf (B), $w_n$(%)=23-- | | | 2 | PUSH | < 0.25 P | 18 |
| | | --$L_L$(%)=24, $P_L$(%)=13-- | | | | | | |
| | | --%Gravel=3.2-- | | | | | | |
| | | --%Sand=30.5-- | | | | | | |
| | | --%Silt=46.3-- | | | | | | |
| | | --%Clay=20.0-- | | | | | | |
| | | --A-6 (4)-- | | | | | | |
| | | | 10 | | | | | |
| | 905.3 | --organic content= 20.9-- | | | | | | |
| | | Very soft to soft, black and dark brown ORGANIC SILTY LOAM; moist | | | 3 | PUSH | < 0.25 P | 92 |
| | | --RDR 1-- | | | | | | |
| | | --organic content= 15.0%-- | | | | | | |
| | | --Laboratory $Q_u$=0.33 tsf (B), | 15 | | | PU | | |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | $w_n$(%)=73-- | | | 4 | S H | < 0.25 P | 81 |
| | | --$C_c$=1.038, OCR=1.16-- | | | | | | |
| | 901.6 | --$L_L$(%)=72, $P_L$(%)=40-- | | | | | | |
| | | --%Gravel=0.0-- | | | | | | |
| | | --%Sand=5.0-- | | | | | | |
| | | --%Silt=75.8-- | | | | | | |
| | | --%Clay=19.2-- | | | | | | |
| | | --A-7-5 (39)-- | | | | | | |
| | | --organic content= 14.5%-- | | | | | | |
| | | Boring terminated at 16.00 ft | | | | | | |
| | | | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **12-20-2017** Complete Drilling: **12-20-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **N&J** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SGB-22

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 919.00 ft
North: 2032176.78 ft
East: 960679.52 ft
Station: 306+97.26
Offset: 28.96 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 918.8 | 3-inch thick, dark brown SILTY CLAY --TOPSOIL-- | | | | | | |
| | | Very stiff to hard, brown CLAY LOAM, trace gravel; damp --RDR 2-- | | | 1 | 2 4 5 6 | 3.36 B | 13 |
| | | | | | 2 | 4 8 11 13 | 5.17 B | 9 |
| | | | 5 | | 3 | 12 18 19 20 | NR | |
| | 911.8 | Brown LOAM, trace gravel; moist | | | 4 | 5 8 12 10 | 4.10 B | 13 |
| | 911.3 | Stiff, pinkish brown CLAY LOAM, trace gravel; damp | | | 5 | 3 6 8 8 | 1.23 B | 11 |
| | 909.0 | | 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: **10-11-2017** Complete Drilling: **10-11-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SGB-23

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 917.50 ft
North: 2032107.00 ft
East: 960489.61 ft
Station: 304+93.81
Offset: 44.39 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 917.3 | 3-inch thick, dark brown SILTY CLAY --TOPSOIL-- | | | | | | |
| | | Stiff to very stiff, gray CLAY to CLAY LOAM, trace gravel; damp --FILL-- --RDR 2-- --$L_L$(%)=35, $P_L$(%)=14-- --%Gravel=3.4-- --%Sand=27.5-- --%Silt=41.3-- --%Clay=27.7-- --A-6 (12)-- | | | 1 | 2 3 7 6 | 3.77 B | 18 |
| | | | | | 2 | 3 3 3 4 | 2.71 B | 14 |
| | | | 5 | | 3 | 2 3 3 3 | 1.72 B | 23 |
| | | | | | 4 | 2 2 2 3 | 2.30 B | 16 |
| | 910.0 | Soft to medium stiff, gray to black ORGANIC SILTY CLAY; moist --RDR 1-- --organic content= 15.5%-- | | | 5 | 1 1 1 1 | 0.41 B | 94 |
| | | | 10 | | 6 | 1 1 1 7 | 0.66 B | 75 |
| | 905.8 | Stiff to very stiff, gray SILTY CLAY LOAM; damp --RDR 2-- | | | 7 | 3 4 5 6 | 1.07 B | 19 |
| | | | 15 | | | 2 4 | | |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | | | | 8 | 5 8 | 2.46 B | 19 |
| | 901.5 | Boring terminated at 16.00 ft | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-11-2017** Complete Drilling: **10-11-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SGB-24

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 919.30 ft
North: 2032213.26 ft
East: 960178.62 ft
Station: 302+43.20
Offset: 162.28 LT

| Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 918.6 | 3-inch thick, ASPHALT over 5-inch thick, CONCRETE --PAVEMENT-- | | | | | | |
| | Stiff, dark brown CLAY LOAM to LOAM, trace gravel; dry --FILL-- | | | 1 | 2 5 3 2 | 1.07 B | 8 |
| 916.8 | Medium stiff to stiff, black SILTY CLAY, trace organic matter; damp --BURIED TOPSOIL-- --RDR 2-- --$L_L$(%)=57, $P_L$(%)=28-- --%Gravel=0.3-- --%Sand=15.5-- --%Silt=53.6-- --%Clay=30.6-- --A-7-6 (24)-- | | | 2 | 2 2 3 5 | 0.74 B | 36 |
| 914.8 | Stiff to very stiff, brown to gray SILTY CLAY LOAM, trace gravel; damp to moist --RDR 2-- | 5 | | 3 | 3 3 4 5 | 1.89 B | 18 |
| | | | | 4 | 2 3 3 4 | 2.13 B | 21 |
| 910.5 | Medium stiff, gray CLAY to SILTY CLAY, trace gravel; moist --RDR 2-- | 10 | | 5 | 3 3 3 7 | 0.66 B | 27 |
| 908.6 | Moist GRAVEL | | | | | | |
| 908.1 | Very stiff, pinkish brown CLAY LOAM to LOAM, trace gravel; damp to moist --RDR 2-- | | | 6 | 3 10 10 13 | 3.77 B | 9 |
| 906.3 | Boring terminated at 13.00 ft | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-10-2017** Complete Drilling: **10-10-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SGB-25

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 916.00 ft
North: 2032323.95 ft
East: 959972.76 ft
Station: 591+93.45
Offset: 108.52 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 915.5 | 6-inch thick, dark brown SILTY CLAY LOAM, trace gravel, some roots; damp | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Very stiff to hard, brown SILTY CLAY LOAM to CLAY LOAM, trace to little gravel; damp | | | | | | |
| | | --RDR 2-- | | | | | | |
| | | | | | 1 | 2 7 6 6 | 4.00 P | 12 |
| | | | | | 2 | 4 10 11 11 | 3.03 B | 8 |
| | | | 5 | | 3 | 4 7 9 11 | 4.67 B | 14 |
| | | | | | 4 | 9 10 11 14 | 3.25 P | 15 |
| | | | | | 5 | 4 6 9 11 | 6.72 B | 16 |
| | 906.0 | | 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: **10-10-2017** Complete Drilling: **10-10-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG SGB-26

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 910.40 ft
North: 2035550.54 ft
East: 957132.01 ft
Station: 426+84.45
Offset: 45.9 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 909.4 | 12-inch thick, ASPHALT --PAVEMENT-- | | | | | | |
| | 909.2 | 3-inch thick, brown GRAVELLY SAND --BASE COURSE-- | | | | | | |
| | | Hard, brown to gray SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | 1 | 7 6 7 8 | 8.36 B | 13 |
| | | | | | 2 | 6 6 6 6 | 4.10 B | 15 |
| | | | 5 | | 3 | 9 9 11 11 | 4.18 B | 14 |
| | | | | | 4 | 5 7 9 11 | 6.64 B | 16 |
| | | | 10 | | 5 | 5 8 10 12 | 8.86 B | 16 |
| | 899.4 | Boring terminated at 11.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-27-2017** Complete Drilling: **10-27-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG SGB-27

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 909.00 ft
North: 2035642.65 ft
East: 956900.32 ft
Station: 424+53.64
Offset: 47.96 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 908.8 | 3-inch thick, dark brown SILTY CLAY LOAM; damp --TOPSOIL-- | | | | | | |
| | | Medium stiff to very stiff, dark brown SILTY CLAY; damp --FILL-- | | | 1 | 2 2 4 5 | 0.57 B | 30 |
| | | --RDR 2-- | | | | | | |
| | 906.7 | Medium dense, brown GRAVELLY SAND; damp | | | 2 | 6 11 12 12 | 2.62 B | 31 |
| | 905.5 | Very stiff to hard, brown SILTY CLAY LOAM to SILTY LOAM, trace gravel; damp --RDR 2-- | 5 | | 3 | 12 8 9 12 | 5.08 B | 13 |
| | | | | | 4 | 8 8 9 10 | 4.51 B | 13 |
| | | | | | 5 | 5 9 13 14 | 2.62 B | 13 |
| | 899.0 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-18-2017** Complete Drilling: **10-18-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D25 ATV [93%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG SGB-28

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 906.40 ft
North: 2035541.01 ft
East: 956148.91 ft
Station: 417+00.76
Offset: 39.32 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 905.9 | 6-inch thick, brown SILTY LOAM and GRAVEL | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Very stiff to hard, dark brown and gray SILTY CLAY LOAM, trace gravel; damp | | | 1 | 5 7 5 6 | 3.25 P | 16 |
| | | --RDR 2-- | | | 2 | 3 4 7 5 | 2.00 P | 16 |
| | | | 5 | | 3 | 2 5 5 6 | 2.21 B | 15 |
| | | | | | 4 | 4 6 9 11 | 6.64 B | 16 |
| | 896.4 | | 10 | | 5 | 6 12 13 12 | 3.00 B | 16 |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-06-2017** Complete Drilling: **10-06-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG SGB-29

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 906.80 ft
North: 2035628.54 ft
East: 955844.03 ft
Station: 413+97.65
Offset: 54.14 LT

| 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, stiff, dark brown SILTY CLAY LOAM --TOPSOIL-- | | | 1 | 1 3 5 4 | 1.07 B | 27 |
| | 905.3 | Hard, brown SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | 2 | 4 5 5 6 | 5.41 B | 15 |
| | | | 5 | | 3 | 5 6 6 9 | 4.43 B | 15 |
| | | | | | 4 | 7 11 15 10 | 7.30 B | 14 |
| | 896.8 | | 10 | | 5 | 4 8 11 13 | 6.40 B | 14 |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-27-2017** Complete Drilling: **10-27-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

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

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# BORING LOG SGB-30

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 905.20 ft
North: 2035536.56 ft
East: 955550.97 ft
Station: 411+02.88
Offset: 32.11 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 904.7 | 6-inch thick, brown SILTY LOAM and GRAVEL | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Very stiff to hard, dark brown SILTY CLAY, trace gravel; damp | | | 1 | 5 9 7 4 | 4.59 B | 16 |
| | | --RDR 2-- | | | 2 | 4 5 5 6 | 2.75 P | 24 |
| | 901.0 | ▽ | | | | | | |
| | 900.7 | Gray GRAVEL; saturated | | | | | | |
| | | Stiff to hard, brown and gray SILTY CLAY LOAM, trace to little gravel; moist to damp | 5 | | 3 | 3 4 3 4 | 1.75 P | 20 |
| | | --RDR 2-- | | | 4 | 3 3 4 9 | 2.95 B | 17 |
| | | | | | 5 | 3 7 10 3 | 7.46 B | 15 |
| | 895.2 | | 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: **10-06-2017** Complete Drilling: **10-06-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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**

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# BORING LOG SGB-31

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 904.70 ft
North: 2035577.62 ft
East: 955259.49 ft
Station: 408+12.25
Offset: 14.63 LT

| Depth (ft) | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 0 | 904.4 | 4-inch thick, dark brown SILTY CLAY LOAM | | | | | |
| | 904.0 | --TOPSOIL-- | | | | | |
| | | Very stiff, dark brown CLAY LOAM, trace gravel; moist | | 1 | 5 3 4 4 | 2.00 P | 25 |
| | 903.2 | --2-inch gravel; wet-- | | | | | |
| | | Very stiff, brown to gray SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | 2 | 4 4 4 6 | 2.21 B | 15 |
| 5 | | | | 3 | 4 5 7 8 | 3.85 B | 16 |
| | | | | 4 | 4 7 8 10 | 3.85 B | 14 |
| | | | | 5 | 4 7 13 16 | 3.69 B | 16 |
| 10 | 894.7 | Boring terminated at 10.00 ft | | | | | |
| 15 | | | | | | | |

## GENERAL NOTES

Begin Drilling: **10-27-2017** Complete Drilling: **10-27-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **0.50 ft**
At Completion of Drilling: **1.50 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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# BORING LOG SGB-32

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 905.50 ft
North: 2035535.17 ft
East: 954946.93 ft
Station: 404+98.9
Offset: 21.67 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 905.0 | Brown GRAVELLY SILTY LOAM --TOPSOIL-- | | | | | | |
| | | Very stiff, black and brown CLAY to SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2-- --$L_L$(%)=57, $P_L$(%)=19-- --%Gravel=0.2-- --%Sand=19.2-- --%Silt=52.9-- --%Clay=27.7-- --A-7-6 (32)-- | | | 1 | 2 8 7 5 | 3.00 P | 23 |
| | | | | | 2 | 18 5 4 5 | 2.00 P | 27 |
| | | | 5 | | 3 | 3 4 9 9 | 2.00 P | 33 |
| | 900.0 | Stiff to very stiff, brown and gray, SILTY CLAY LOAM, trace to some gravel --RDR 2-- | | | 4 | 4 4 5 6 | 1.97 B | 17 |
| | 895.5 | | 10 | | 5 | 3 5 8 8 | 2.87 B | 16 |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-06-2017** Complete Drilling: **10-06-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 TMR [78%]**
Driller: **R&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SGB-33

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 910.10 ft
North: 2035440.00 ft
East: 957112.13 ft
Station: 506+04.89
Offset: 15.26 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | 19-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | 1 | 2 3 4 6 | 1.50 P | 35 |
| | 908.5 | Very stiff to hard, brown to gray SILTY CLAY LOAM, trace gravel; damp --RDR 2 to 3-- | | | 2 | 2 4 5 5 | 2.71 B | 15 |
| | | | 5 | | 3 | 3 5 7 8 | 5.25 B | 14 |
| | | | | | 4 | 6 9 12 13 | 3.44 S | 15 |
| | 900.1 | | 10 | | 5 | 5 9 12 14 | 6.64 S | 15 |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-17-2017** Complete Drilling: **11-17-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SGB-34

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 909.70 ft
North: 2035215.50 ft
East: 957274.79 ft
Station: 502+98.01
Offset: 16.56 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 908.5 | 14-inch thick, black SILTY CLAY LOAM, trace gravel; damp<br>--TOPSOIL-- | | | 1 | 2<br>2<br>3<br>5 | 1.50<br>P | 40 |
| | | Stiff to hard, brown SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp<br>--RDR 2--<br>--$L_L$(%)=32, $P_L$(%)=15--<br>--%Gravel=4.6--<br>--%Sand=18.0--<br>--%Silt=52.4--<br>--%Clay=25.0--<br>--A-6 (11)-- | | | 2 | 3<br>2<br>3<br>3 | 1.23<br>B | 17 |
| | | | 5 | | 3 | 3<br>3<br>5<br>6 | 3.94<br>B | 14 |
| | | | | | 4 | 4<br>5<br>8<br>10 | 5.17<br>B | 15 |
| | 899.7 | | 10 | | 5 | 4<br>8<br>11<br>13 | 6.89<br>B | 15 |
| | | 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: **11-17-2017** Complete Drilling: **11-17-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SGB-35

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 912.40 ft
North: 2031791.80 ft
East: 959658.40 ft
Station: 296+00.60
Offset: 14.16 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 911.7 | 9-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | | |
| | | Stiff, black and brown SILTY CLAY, trace gravel; damp --RDR 2-- | | | 1 | 2 2 2 4 | 2.00 P | 26 |
| | 910.1 | Medium dense, brown SILTY LOAM; wet | | | 2 | 5 4 6 6 | 1.00 P | 14 |
| | 908.9 | Stiff to hard, brown and gray SILTY CLAY LOAM, trace to little gravel; damp --RDR 2-- | 5 | | 3 | 7 8 9 9 | 4.76 B | 15 |
| | | | | | 4 | 6 5 6 7 | 2.46 B | 15 |
| | | | | | 5 | 3 4 5 6 | 1.89 B | 15 |
| | | | 10 | | 6 | 7 10 12 13 | 3.12 B | 12 |
| | 899.7 | | | | 7 | 4 4 11 10 | 1.31 B | 14 |
| | | Medium dense, brown GRAVELLY SANDY LOAM; wet --RDR 2-- | | | | | | |
| | 898.6 | Very stiff, gray SILTY CLAY LOAM, little gravel; damp --RDR 2-- | 15 | | | 11 12 | | |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | | | | 8 | 17 16 | 2.00 P | 15 |
| | 896.4 | Boring terminated at 16.00 ft | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-10-2017** Complete Drilling: **11-10-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **12.75 ft**
At Completion of Drilling: **6.70 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.

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# BORING LOG SGB-36

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 908.50 ft
North: 2031714.79 ft
East: 959366.73 ft
Station: 292+99.10
Offset: 24.48 LT

| Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 907.8 | 9-inch thick, black SILTY CLAY LOAM | | | | | | |
| | --TOPSOIL-- | | | | | | |
| | Stiff, black and gray CLAY to SILTY CLAY; damp | | | 1 | 2 2 4 4 | 1.25 P | 32 |
| | --RDR 2-- | | | | | | |
| | --$L_L$(%)=43, $P_L$(%)=17-- | | | | | | |
| | --%Gravel=0.0-- | | | | | | |
| | --%Sand=8.1-- | | | | | | |
| | --%Silt=55.0-- | | | 2 | 3 2 2 4 | 1.80 B | 23 |
| 905.0 | --%Clay=36.9-- | | | | | | |
| | --A-7-6 (25)-- | | | | | | |
| | Stiff to very stiff, brown SILTY CLAY to SILTY CLAY LOAM, trace to little gravel; damp | 5 | | 3 | 2 2 2 5 | 1.31 B | 18 |
| | --RDR 2-- | | | | | | |
| | | | | 4 | 5 6 8 11 | 3.77 B | 14 |
| | | 10 | | 5 | 3 3 7 17 | 2.87 B | 15 |
| | | | | 6 | 14 14 15 12 | 2.00 P | 15 |
| 896.0 | | | | | | | |
| | Very stiff, gray CLAY LOAM, trace gravel; damp | | | 7 | 3 4 7 7 | 2.21 B | 10 |
| | --RDR 2-- | 15 | | | 4 5 | | |

| Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | --interbedded silt-- | | | 8 | 7 9 | 2.30 B | 10 |
| 892.5 | Boring terminated at 16.00 ft | 20 | | | | | |
| | | 25 | | | | | |
| | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-10-2017** Complete Drilling: **11-10-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME55 TMR [85%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SGB-37

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 919.70 ft
North: 2031616.29 ft
East: 959073.71 ft
Station: 289+95.02
Offset: 31.75 RT

| Elevation (ft) | Depth (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 919.0 | 0 | 8-inch thick, black SILTY CLAY LOAM | | | | | |
| | | --TOPSOIL-- | | | | | |
| | | Stiff to very stiff, brown CLAY to SILTY CLAY, trace gravel; damp | | 1 | 2<br>2<br>3<br>3 | 2.25<br>P | 21 |
| | | --RDR 2-- | | | | | |
| | | | | 2 | 3<br>2<br>5<br>7 | 1.39<br>B | 21 |
| 916.0 | | Stiff to hard, brown SILTY CLAY LOAM to CLAY LOAM, trace to little gravel; damp | | | | | |
| | | --RDR 2 to 3-- | | 3 | 5<br>7<br>7<br>9 | 2.21<br>B | 10 |
| | | | | 4 | 12<br>12<br>14<br>13 | 1.00<br>P | 14 |
| | | | | 5 | 6<br>9<br>10<br>9 | 3.03<br>B | 10 |
| | 10 | | | 6 | 11<br>13<br>17<br>21 | 4.26<br>B | 9 |
| | | | | 7 | 4<br>8<br>14<br>16 | 4.02<br>B | 10 |
| | | --gray-- | | | | | |
| | 15 | | | | 9<br>13 | | |

| Elevation (ft) | Depth (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | 20 | | | 8 | 13<br>13 | 4.18<br>B | 9 |
| 903.7 | | Boring terminated at 16.00 ft | | | | | |
| | 25 | | | | | | |
| | 30 | | | | | | |

## GENERAL NOTES

Begin Drilling: **11-09-2017** Complete Drilling: **11-09-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SGB-38

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 914.80 ft
North: 2031704.16 ft
East: 958791.50 ft
Station: 287+04.56
Offset: 17.16 LT

| Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 914.1 | 8-inch thick, black SILTY CLAY LOAM | | | | | | |
| | --TOPSOIL-- | | | | | | |
| | Stiff, dark brown SILTY CLAY LOAM; damp | | | 1 | 2 2 3 2 | 1.48 B | 33 |
| 913.3 | --RDR 2-- | | | | | | |
| 912.5 | Brown, medium SAND; moist | | | | | | |
| | Gray SILTY CLAY LOAM; damp | | | 2 | 2 2 3 3 | NP | 12 |
| | --RDR 2-- | | | | | | |
| 911.6 | Loose, brown, medium SAND; moist to wet | | | | | | |
| | --RDR 2-- | | | | 3 3 4 5 | | |
| | | 5 | | 3 | | NP | 14 |
| 909.3 | ▽ | | | | | | |
| | Medium dense, brown GRAVELLY LOAM; wet | | | | 13 11 13 13 | | |
| | --RDR 2-- | | | 4 | | NP | 16 |
| 907.3 | | | | | | | |
| | Stiff to very stiff, gray SILTY CLAY LOAM to CLAY LOAM, trace gravel | | | | 2 4 5 7 | | |
| | --RDR 2-- | | | 5 | | 1.23 B | 10 |
| | | 10 | | | | | |
| | | | | | 9 10 18 17 | | |
| | | | | 6 | | 2.13 B | 17 |
| | | | | | 5 7 8 11 | | |
| | | | | 7 | | 2.87 B | 9 |
| | | 15 | | | 4 3 | | |
| | | | | | | | |
| | | 20 | | | | | |
| | | | | | | | |
| | | 25 | | | | | |
| | | | | | | | |
| | | 30 | | | | | |
| 898.8 | Boring terminated at 16.00 ft | | | 8 | 8 12 | 2.87 B | 13 |

## GENERAL NOTES

Begin Drilling: **11-09-2017** Complete Drilling: **11-09-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SGB-39

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 913.80 ft
North: 2031791.28 ft
East: 958497.50 ft
Station: 284+00.27
Offset: 22.9 RT

| Elevation (ft) | Depth (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 913.1 | | 8-inch thick, black SILTY CLAY LOAM --TOPSOIL-- | | | | | |
| | | Medium stiff to stiff, brown SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | 1 | 2 2 3 3 | 1.56 B | 24 |
| | | --$L_L$(%)=27, $P_L$(%)=15-- --%Gravel=3.7-- --%Sand=24.0-- --%Silt=51.5-- --%Clay=20.7-- --A-6 (6)-- | | 2 | 3 3 4 4 | 0.90 B | 14 |
| 910.3 | | Very stiff, brown to gray SILTY CLAY LOAM to CLAY LOAM, trace gravel; damp --RDR 2-- | | 3 | 3 3 6 7 | 3.53 B | 12 |
| | 5 | | | 4 | 3 5 6 7 | 2.05 B | 11 |
| 906.3 | | Brown LOAM; wet | | | | | |
| 905.8 | | Stiff to hard, brown and gray SILTY CLAY LOAM to CLAY LOAM, trace gravel; damp --RDR 2-- | | 5 | 2 4 5 7 | 1.89 B | 12 |
| | 10 | | | 6 | 6 8 9 9 | 2.71 B | 14 |
| 900.8 | | --sand lenses; wet-- | | 7 | 4 4 5 7 | 1.15 B | 11 |
| | 15 | | | 8 | 5 8 | | |
| 897.8 | | Boring terminated at 16.00 ft | | 8 | 7 7 | 6.31 B | 14 |
| | 20 | | | | | | |
| | 25 | | | | | | |
| | 30 | | | | | | |

## GENERAL NOTES

Begin Drilling: **11-09-2017** Complete Drilling: **11-09-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **7.50 ft**
At Completion of Drilling: **11.10 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.

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# BORING LOG SGB-40

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 918.50 ft
North: 2032006.06 ft
East: 958289.31 ft
Station: 281+04.76
Offset: 12.42 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 917.8 | 7-inch thick, dark brown SILTY CLAY LOAM | | | | | | |
| | | --TOPSOIL-- | | | | | | |
| | | Very stiff to hard, brown and gray SILTY CLAY LOAM, trace gravel; damp | | | 1 | 3 3 4 6 | 2.21 B | 14 |
| | | --RDR 2-- | | | | | | |
| | | --$L_L$(%)=29, $P_L$(%)=15-- | | | | | | |
| | | --%Gravel=2.3-- | | | | | | |
| | | --%Sand=10.2-- | | | 2 | 4 6 8 10 | 3.85 B | 14 |
| | | --%Silt=59.1-- | | | | | | |
| | | --%Clay=28.4-- | | | | | | |
| | | --A-6 (11)-- | | | | | | |
| | | | 5 | | 3 | 6 8 13 15 | 6.89 B | 13 |
| | | --interbedded silt; damp-- | | | | | | |
| | | --hard drilling, 7.5 to 8 feet-- | | | 4 | 6 9 13 14 | 6.81 B | 15 |
| | 911.0 | Stiff to hard, brown CLAY LOAM, trace to little gravel; damp | | | | | | |
| | | --RDR 2-- | | | | 6 10 13 12 | | |
| | | | 10 | | 5 | | 4.51 B | 10 |
| | | | | | 6 | 13 13 16 16 | 5.74 B | 9 |
| | | | | | 7 | 5 8 9 11 | 2.79 B | 11 |
| | | | 15 | | | 3 9 | | |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | --interbedded sand; moist-- | | | 8 | 10 7 | 1.80 S | 11 |
| | 902.5 | Boring terminated at 16.00 ft | | | | | | |
| | | | 20 | | | | | |
| | | | 25 | | | | | |
| | | | 30 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-08-2017** Complete Drilling: **11-08-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SGB-41

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 915.60 ft
North: 2032156.88 ft
East: 958031.39 ft
Station: 278+04.09
Offset: 11.68 RT

| Depth (ft) | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | | 15-inch thick, very stiff, dark brown SILTY CLAY LOAM, trace roots; damp | | | | | |
| | 914.4 | --TOPSOIL-- | | | | | |
| | | --RDR 2-- | | 1 | 1 2 3 3 | 2.13 B | 22 |
| | | Very stiff, brown to gray SILTY CLAY; damp | | | | | |
| | | --RDR 2-- | | 2 | 3 4 7 9 | 3.03 B | 19 |
| 5 | | | | 3 | 6 7 9 9 | 3.12 B | 21 |
| | 908.6 | | | 4 | 5 4 7 11 | 3.28 B | 20 |
| | | Brown, coarse SAND; wet to saturated | | | | | |
| | | --RDR 2-- | | | | | |
| | 906.9 | | | | 5 5 8 9 | | |
| | | Very stiff, brown SILTY CLAY LOAM, trace gravel; damp | | 5 | | 3.03 B | 14 |
| | 905.9 | --RDR 2-- | | | | | |
| 10 | | Brown, medium SAND; saturated | | | | | |
| | 905.1 | | | | 6 8 9 7 | | |
| | | Stiff to very stiff, gray SILTY CLAY LOAM, trace gravel; damp | | 6 | | 1.97 B | 15 |
| | | --RDR 2-- | | | | | |
| | | | | 7 | 5 7 9 11 | 3.12 B | 15 |
| 15 | | | | | 4 6 | | |

| Depth (ft) | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| | | | | 8 | 11 11 | 2.54 B | 13 |
| | 899.6 | Boring terminated at 16.00 ft | | | | | |
| 20 | | | | | | | |
| 25 | | | | | | | |
| 30 | | | | | | | |

## GENERAL NOTES

Begin Drilling: **11-08-2017** Complete Drilling: **11-08-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **7.00 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.

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# BORING LOG SGB-42

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 907.40 ft
North: 2032242.18 ft
East: 957666.54 ft
Station: 274+29.45
Offset: 29.03 LT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | 26-inch thick, black SILTY CLAY LOAM, trace gravel --TOPSOIL-- | | | 1 | 2 3 3 5 | 1.07 B | 35 |
| | 905.2 | Stiff, brown to gray SILT CLAY, trace gavel; damp to moist --RDR 2-- | | | 2 | 3 3 3 4 | 1.07 B | 27 |
| | | --clay, sand, and gravel seams-- | | | | 2 2 3 5 | | |
| | 902.7 | GRAVEL; moist | 5 | | 3 | | 1.50 P | 17 |
| | 901.9 | Hard, brown SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | 4 | 5 7 8 10 | 5.82 S | 14 |
| | | | | | 5 | 4 6 8 10 | 7.22 S | 14 |
| | 897.4 | | 10 | | | | | |
| | | Boring terminated at 10.00 ft | | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling: **11-27-2017** Complete Drilling: **11-27-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

WANGENGINC 1951301.GPJ WANGENG.GDT 9/20/18

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# BORING LOG SGB-43

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 917.30 ft
North: 2032204.18 ft
East: 958251.96 ft
Station: 401+38.37
Offset: 11.04 RT

| Elevation (ft) | Depth (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 916.9 | 0 | 5-inch thick, dark brown SILTY CLAY LOAM --TOPSOIL-- | | | | | |
| | | Stiff to very stiff, dark brown to brown SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | 1 | 2 3 3 4 | 1.07 B | 28 |
| | | | | 2 | 3 4 7 9 | 3.36 S | 20 |
| 913.5 | | Stiff to very stiff, brown to gray CLAY LOAM to SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | | | |
| | 5 | | | 3 | 3 7 9 13 | 3.36 S | 12 |
| | | | | 4 | 5 12 8 19 | 2.54 B | 13 |
| | 10 | | | 5 | 4 7 8 9 | 2.87 B | 12 |
| | | | | 6 | 9 11 11 9 | 1.07 B | 11 |
| | | | | 7 | 3 5 7 9 | 2.71 B | 12 |
| | 15 | | | | 4 6 | | |
| 901.3 | | Boring terminated at 16.00 ft | | 8 | 7 10 | 3.03 B | 10 |
| | 20 | | | | | | |
| | 25 | | | | | | |
| | 30 | | | | | | |

## GENERAL NOTES

Begin Drilling: **11-08-2017** Complete Drilling: **11-08-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&K** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SGB-44

**WEI Job No.: 195-13-01**

Client **Strand Associates, Inc.**
Project **IL 47 at IL 176 and Pleasant Valley Road**
Location **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 918.70 ft
North: 2032362.61 ft
East: 958556.18 ft
Station: 405+01.37
Offset: 19.05 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 918.6 | 13-inch thick, black SILTY CLAY LOAM, trace gravel<br>--TOPSOIL-- | | | 1 | 2<br>2<br>3<br>3 | 1.15<br>B | 23 |
| | 917.6 | Stiff to hard, orange brown to brown LOAM to CLAY LOAM, trace gravel; damp<br>--RDR 2--<br>--$L_L$(%)=26, $P_L$(%)=12--<br>--%Gravel=8.2--<br>--%Sand=36.2--<br>--%Silt=43.9--<br>--%Clay=11.7--<br>--A-6 (4)-- | | | 2 | 2<br>2<br>5<br>5 | 1.00<br>P | 12 |
| | | | 5 | | 3 | 3<br>5<br>8<br>9 | 1.80<br>B | 11 |
| | | | | | 4 | 7<br>9<br>12<br>15 | 4.76<br>B | 10 |
| | | | | | 5 | 3<br>5<br>11<br>14 | 3.12<br>B | 9 |
| | 908.7 | Boring terminated at 10.00 ft | 10 | | | | | |
| | | | 15 | | | | | |

## GENERAL NOTES

Begin Drilling **11-27-2017** Complete Drilling **11-27-2017**
Drilling Contractor **Wang Testing Services** Drill Rig **D50 ATV [88%]**
Driller **K&N** Logger **T. Rothschild** Checked by **C. Marin**
Drilling Method **2.25 IDA HSA; 140 lb autohammer; 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.

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# BORING LOG SIGN-01

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 917.80 ft
North: 2032008.39 ft
East: 959921.11 ft
Station: 589+34.67
Offset: 76.3 LT

| Depth (ft) | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|
| 0 | 917.4 | 5-inch thick, black to dark brown SILTY CLAY LOAM --TOPSOIL-- | | | | | |
| | | Hard, brown SILTY CLAY LOAM; trace gravel; damp --FILL-- | | 1 | 4 8 11 | 8.53 B | 14 |
| | 914.8 | Very stiff to hard, pinkish brown to gray CLAY LOAM to SILTY LOAM, trace to little gravel; damp --RDR 2-- | | 2 | 5 8 9 | 5.74 B | 9 |
| 5 | | | | 3 | 7 9 12 | 3.61 B | 9 |
| 10 | | | | 4 | 7 9 11 | 4.10 B | 9 |
| | | | | 5 | 11 11 12 | NR | |
| 15 | | | | 6 | 6 7 12 | 3.61 S | 9 |
| 20 | | | | 7 | 5 7 10 | 2.38 B | 9 |
| | | | | 8 | 5 8 10 | 2.38 B | 10 |
| 25 | | | | 9 | 5 6 8 | 2.46 B | 9 |
| | | | | 10 | 8 9 11 | 2.13 B | 9 |
| | | | | 11 | 9 9 12 | NA | |
| 30 | 888.1 | | | 12 | 5 7 14 | 2.87 B | 10 |

## GENERAL NOTES

Begin Drilling: **10-23-2017** Complete Drilling: **10-23-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **29.75 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.

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# BORING LOG SIGN-01

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 917.80 ft
North: 2032008.39 ft
East: 959921.11 ft
Station: 589+34.67
Offset: 76.3 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, gray SANDY GRAVEL; saturated --RDR 2-- | | | | | | |
| | 886.1 | | | | | | | |
| | | Stiff, gray SILTY CLAY LOAM, trace gravel; damp --RDR 2-- | | | | | | |
| | | | | | 13 | 6<br>6<br>10 | 1.97<br>B | 13 |
| | 882.8 | | 35 | | | | | |
| | | Boring terminated at 35.00 ft | | | | | | |
| | | | 40 | | | | | |
| | | | 45 | | | | | |

## GENERAL NOTES

Begin Drilling: **10-23-2017** Complete Drilling: **10-23-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **29.75 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.

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# BORING LOG SIGN-02

**WEI Job No.: 195-13-01**

Client: **Strand Associates, Inc.**
Project: **IL 47 at IL 176 and Pleasant Valley Road**
Location: **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 922.10 ft
North: 2031940.45 ft
East: 960140.06 ft
Station: 587+99.20
Offset: 108.14 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 921.8 | 4-inch thick, dark brown SILTY CLAY LOAM; damp --TOPSOIL-- | | | | | | |
| | | Stiff to very stiff, brown SILTY CLAY LOAM to SILTY LOAM, trace gravel; damp --RDR 2-- | | | 1 | 5 6 7 | 1.31 B | 10 |
| | | | 5 | | 2 | 4 8 8 | 3.36 B | 10 |
| | 916.6 | Stiff to hard, brown to gray SILTY CLAY; damp --RDR 2-- | | | 3 | 4 5 7 | 4.10 B | 21 |
| | | | 10 | | 4 | 4 6 5 | 2.87 B | 23 |
| | | --sand lenses; wet-- | | | 5 | 2 4 4 | 1.39 B | 21 |
| | 908.1 | Loose, brown to gray SILTY LOAM; wet --clay seams-- | 15 | | 6 | 3 4 5 | NP | 17 |

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type / recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | 906.6 | Very stiff to hard, gray CLAY LOAM to SILTY LOAM, trace gravel; damp --RDR 2-- | | | 7 | 3 5 7 | 5.25 B | 13 |
| | | | 20 | | 8 | 8 8 11 | 4.10 B | 13 |
| | | | | | 9 | 6 8 10 | 3.12 B | 10 |
| | | | 25 | | 10 | 5 7 9 | 2.05 B | 9 |
| | | | | | 11 | 8 8 12 | 2.13 B | 10 |
| | | | 30 | | 12 | 7 8 10 | 2.05 B | 10 |

## GENERAL NOTES

Begin Drilling: **10-23-2017** Complete Drilling: **10-23-2017**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D50 ATV [88%]**
Driller: **K&N** Logger: **T. Rothschild** Checked by: **C. Marin**
Drilling Method: **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling: **14.00 ft**
At Completion of Drilling: **23.50 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.

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# BORING LOG SIGN-02

**WEI Job No.: 195-13-01**

Client **Strand Associates, Inc.**
Project **IL 47 at IL 176 and Pleasant Valley Road**
Location **McHenry County, Illinois**

Datum: NAVD 88
Elevation: 922.10 ft
North: 2031940.45 ft
East: 960140.06 ft
Station: 587+99.20
Offset: 108.14 RT

| Profile | Elevation (ft) | SOIL AND ROCK DESCRIPTION | Depth (ft) | Sample Type recovery | Sample No. | SPT Values (blw/6 in) | Qu (tsf) | Moisture Content (%) |
|---|---|---|---|---|---|---|---|---|
| | | --sand lenses; damp-- | | | | | | |
| | 887.6 | | | | 13 | 7<br>7<br>6 | 2.87<br>B | 12 |
| | 887.1 | Gray GRAVELLY SAND; saturated | 35 | | | | | |
| | | --RDR 2-- | | | | | | |
| | | Boring terminated at 35.00 ft | | | | | | |
| | | | 40 | | | | | |
| | | | 45 | | | | | |

## GENERAL NOTES

Begin Drilling **10-23-2017** Complete Drilling **10-23-2017**
Drilling Contractor **Wang Testing Services** Drill Rig **D50 ATV [88%]**
Driller **K&N** Logger **T. Rothschild** Checked by **C. Marin**
Drilling Method **3.25 IDA HSA; 140 lb autohammer; Boring backfilled upon completion**

## WATER LEVEL DATA

While Drilling ▽ **14.00 ft**
At Completion of Drilling ▼ **23.50 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.

# APPENDIX B

Illinois Department of Transportation

# Summary Report on Pavement, Base and Subbase Design

State Job Number: D-91-011-14 Project: IL 47 at IL Route 176 Route: IL 47 at IL 176 North

Section: IL 47, 176E, 176W & PVRD City or County: McHenry County Date: 8/24/2018

ADT: NA Year: _____ Design Period: _____ Class Highway: NA

Passenger Cars Per Day: _____ Trucks S.U. Per Day: _____ Trucks M.U. Per Day: _____

Pavement Structure: HMA Pavement (FD) 10.5" (IL Route 47)

Type Surface Course: Polymerized hot-mix asphalt, Mix "E", N70 Thickness: 2"

Type Base Course: Hot-mix asphatl base course, IL-12, N90 Thickness: 6.25"

Type Subbase Material: _____ Thickness: _____

| Sta. to Sta. | 565+79 to 660+91 | 300+00 to 316+67 | 404+32 to 429+00 | 273+28 to 300+00 |
|---|---|---|---|---|
| *Sta. of Test | 606+98 | 302+43 | 422+04 | 281+05 |
| *Drainage Class | Very Poor | Very Poor | Very Poor | Very Poor |
| *Ave. Frost Penetration | 42 in | 42 in | 42 in | 42 in |
| Illinois Textural Classification | Silty Clay | Silty Clay | Silty Clay Loam | Silty Caly Loam |
| Classification and Group Index (AASHTO M 145) | A-7-6 (35) | A-7-6 (27) | A-7-6 (23) | A-6 (11) |
| *Percent Silt (AASHTO T 88) | 54.4 | 53.6 | 52.4 | 59.1 |
| *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: See Typical Pavement Section (Appendix D)

Illinois Department of Transportation

# Summary Report on Pavement, Base and Subbase Design

State Job Number: D-91-011-14 Project: IL 47 at IL Route 176 Route: IL 47 at IL 176 North

Section: Connector and Swanson City or County: McHenry County Date: 8/24/2018

ADT: NA Year: _____ Design Period: _____ Class Highway: NA

Passenger Cars Per Day: _____ Trucks S.U. Per Day: _____ Trucks M.U. Per Day: _____

Pavement Structure: _____

Type Surface Course: Hot-mix asphalt surface course, Mix "D", N70 Thickness: 2"

Type Base Course: NA Thickness: NA

Type Subbase Material: NA Thickness: NA

| Sta. to Sta. | 400+00 to 405+13 | 502+17 to 507+66 | + to + | + to + |
|---|---|---|---|---|
| *Sta. of Test | 405+01.37 | 502+98 | | |
| *Drainage Class | Poor | Very Poor | | |
| *Ave. Frost Penetration | 42 in | 42 in | | |
| Illinois Textural Classification | Loam | Silty Clay Loam | | |
| Classification and Group Index (AASHTO M 145) | A-6 (4) | A-6 (11) | | |
| *Percent Silt (AASHTO T 88) | 43.9 | 52.4 | | |
| *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: _____

# SOIL TEST DATA

**PROJECT**
195-13-01

**ROUTE**
IL 47 at IL 176 and Pleasant Valley Road

**SECTION**
IL 47 (Sta. 565+78.88 to Sta. 660+90.62)

**COUNTY**
McHenry County

| Lab. No. | SGB-03 No.2 | SGB-07 No.1 | BIO-02 No.2 | CUL-03 No.3 | SGB-12 No.2 |
|---|---|---|---|---|---|
| Station ft) | 572+02.81 | 584+01.06 | 595+92.46 | 598+83.67 | 604+08.32 |
| Offset (ft) | 36.74 RT | 30.00 RT | 95.75 RT | 91.63 RT | 36.1 RT |
| Depth (ft) | 2 | 0 | 3.5 | 6 | 2 |
| AASHTO M 145 Classification and Group Index | A-6 (10) | A-7-6 (13) | A-4 (3) | A-6 (9) | A-6 (17) |
| Illinois Textural Classification (Illinois Method) | Silty Clay | Clay Loam | Silty Clay Loam | Silty Clay Loam | Silty Clay |
| Gradation--Passing 1" Sieve % | | | | | |
| --"-- 3/4" Sieve % | | | | | |
| --"-- 1/2" Sieve % | 100.0 | 100.0 | 100.0 | 100.0 | |
| --"-- No.4 Sieve % | 99.9 | 96.4 | 98.0 | 97.8 | 100.0 |
| --"-- No.10 Sieve % | 97.9 | 91.5 | 94.4 | 95.8 | 100.0 |
| --"-- No.40 Sieve % | 94.5 | 83.7 | 87.6 | 91.8 | 99.8 |
| --"-- No.100 Sieve % | 90.8 | 72.8 | 77.3 | 87.7 | 99.4 |
| --"-- No.200 Sieve % | 87.2 | 67.3 | 71.0 | 84.4 | 98.7 |
| Sand % (AASHTO T 88) | 10.8 | 24.2 | 23.4 | 11.4 | 1.3 |
| Silt % (AASHTO T 88) | 57.2 | 45.7 | 51.7 | 61.3 | 64.3 |
| Clay % (AASHTO T 88) | 30.0 | 21.6 | 19.3 | 23.1 | 34.4 |
| Liquid limit % (AASHTO T 89) | 28.0 | 44.0 | 22.0 | 26.0 | 33.0 |
| Plasticity index % (AASHTO T 90) | 15.0 | 21.0 | 9.0 | 13.0 | 18.0 |
| IBR % (Illinois Method) | | | | | |
| Standard Dry Density % (AASHTO T 99) | | | | | |
| Optimum Moisture % (AASHTO T 99) | | | | | |
| Subgrade Support Rating | POOR | POOR | POOR | POOR | FAIR |
| Insitu Moisture % (AASHTO T 99) | 14 | 44 | 14 | 21 | 21 |

# SOIL TEST DATA

**PROJECT**
195-13-01

**ROUTE**
IL 47 at IL 176 and Pleasant Valley Road

**SECTION**
IL 47 (Sta. 565+78.88 to Sta. 660+90.62)

**COUNTY**
McHenry County

| Lab. No. | BIO-03 No.1 | BIO-06 No.3 | SGB-13 No.3 | PT2-05ST No.2 | BIO-09 No.1 |
|---|---|---|---|---|---|
| Station ft) | 606+98.28 | 609+91.50 | 613+03.41 | 613+15.40 | 614+57.56 |
| Offset (ft) | 63.63 LT | 63.47 RT | 43.35 LT | 73.33 LT | 84.81 RT |
| Depth (ft) | 1 | 6 | 4 | 4 | 1 |
| AASHTO M 145 Classification and Group Index | A-7-6 (35) | A-6 (7) | A-7-5 (50) | A-7-5 (56) | A-4 (0) |
| Illinois Textural Classification (Illinois Method) | Silty Clay | Silty Clay Loam | Silty Loam | Silty Clay Loam | Silty Clay Loam |
| Gradation--Passing 1" Sieve % | | | | | |
| --"-- 3/4" Sieve % | | | | | 100.0 |
| --"-- 1/2" Sieve % | | 100.0 | | | 97.4 |
| --"-- No.4 Sieve % | | 98.5 | 100.0 | | 97.2 |
| --"-- No.10 Sieve % | 100.0 | 96.8 | 99.9 | 100.0 | 95.9 |
| --"-- No.40 Sieve % | 97.5 | 92.8 | 99.0 | 99.6 | 91.9 |
| --"-- No.100 Sieve % | 95.0 | 87.5 | 97.4 | 99.0 | 87.0 |
| --"-- No.200 Sieve % | 93.6 | 81.5 | 96.0 | 97.8 | 81.0 |
| Sand % (AASHTO T 88) | 6.4 | 15.4 | 3.9 | 2.2 | 14.8 |
| Silt % (AASHTO T 88) | 54.4 | 57.1 | 78.1 | 76.8 | 60.0 |
| Clay % (AASHTO T 88) | 39.2 | 24.3 | 17.9 | 21.1 | 21.0 |
| Liquid limit % (AASHTO T 89) | 51.0 | 26.0 | 74.0 | 79.0 | 18.0 |
| Plasticity index % (AASHTO T 90) | 35.0 | 11.0 | 44.0 | 48.0 | 3.0 |
| IBR % (Illinois Method) | | | | | |
| Standard Dry Density % (AASHTO T 99) | | | | | |
| Optimum Moisture % (AASHTO T 99) | | | | | |
| Subgrade Support Rating | FAIR | POOR | POOR | POOR | POOR |
| Insitu Moisture % (AASHTO T 99) | 24 | 16 | 86 | 86 | 16 |

# SOIL TEST DATA

**ROUTE**
IL 47 at IL 176 and Pleasant Valley Road

**PROJECT**
195-13-01

**SECTION**
IL 47 (Sta. 565+78.88 to Sta. 660+90.62)

**COUNTY**
McHenry County

| Lab. No. | BIO-11 No.3 | DPB-01 No.2 | BIO-14 No.1 | CUL-06 No.2 | BIO-20 No.1 |
|---|---|---|---|---|---|
| Station ft) | 624+09.48 | 625+11.39 | 625+92.36 | 628+59.36 | 637+45.83 |
| Offset (ft) | 53.09 LT | 243.62 RT | 45.81 RT | 91.5 RT | 65.08 RT |
| Depth (ft) | 6 | 2 | 1 | 3.5 | 1 |
| AASHTO M 145 Classification and Group Index | A-6 (7) | A-6 (12) | A-7-6 (28) | A-7-6 (26) | A-6 (9) |
| Illinois Textural Classification (Illinois Method) | Silty Clay Loam | Silty Clay Loam | Silty Clay Loam | Silty Clay Loam | Clay Loam |
| Gradation--Passing 1" Sieve % | | | | | |
| --"-- 3/4" Sieve % | | | | | |
| --"-- 1/2" Sieve % | | 100.0 | | | 100.0 |
| --"-- No.4 Sieve % | 100.0 | 96.4 | 100.0 | 100.0 | 91.8 |
| --"-- No.10 Sieve % | 98.6 | 94.0 | 99.9 | 99.7 | 90.4 |
| --"-- No.40 Sieve % | 95.1 | 91.0 | 98.3 | 98.2 | 85.3 |
| --"-- No.100 Sieve % | 90.3 | 86.6 | 94.3 | 94.6 | 67.7 |
| --"-- No.200 Sieve % | 84.8 | 81.6 | 92.0 | 92.7 | 60.7 |
| Sand % (AASHTO T 88) | 13.8 | 12.4 | 7.9 | 7.0 | 29.7 |
| Silt % (AASHTO T 88) | 60.2 | 53.6 | 63.5 | 67.1 | 42.1 |
| Clay % (AASHTO T 88) | 24.6 | 28.0 | 28.5 | 25.6 | 18.6 |
| Liquid limit % (AASHTO T 89) | 24.0 | 32.0 | 45.0 | 49.0 | 31.0 |
| Plasticity index % (AASHTO T 90) | 11.0 | 16.0 | 30.0 | 25.0 | 20.0 |
| IBR % (Illinois Method) | | | | | |
| Standard Dry Density % (AASHTO T 99) | | | | | |
| Optimum Moisture % (AASHTO T 99) | | | | | |
| Subgrade Support Rating | POOR | POOR | POOR | POOR | POOR |
| Insitu Moisture % (AASHTO T 99) | 14 | 20 | 21 | 52 | 21 |

# SOIL TEST DATA

**ROUTE**
IL 47 at IL 176 and Pleasant Valley Road

**PROJECT**
195-13-01

**SECTION**
IL 47 (Sta. 565+78.88 to Sta. 660+90.62)

**COUNTY**
McHenry County

| Lab. No. | BIO-21 No.1 | SGB-16 No.2 | BIO-25 No.2 | CUL-08 No.3 | CUL-09 No.2 |
|---|---|---|---|---|---|
| Station ft) | 639+25.5 | 645+07.72 | 650+05.98 | 654+12.54 | 654+38.09 |
| Offset (ft) | 64.85 RT | 27.06 RT | 76.76 RT | 88.35 LT | 91.1 RT |
| Depth (ft) | 1 | 2 | 3.5 | 6 | 3.5 |
| AASHTO M 145 Classification and Group Index | A-6 (15) | A-4 (3) | A-6 (19) | A-4 (3) | A-7-6 (28) |
| Illinois Textural Classification (Illinois Method) | Silty Clay Loam | Clay Loam | Silty Clay | Silty Loam | Silty Clay |
| Gradation--Passing 1" Sieve % | | | | | |
| --"-- 3/4" Sieve % | | | | | |
| --"-- 1/2" Sieve % | 100.0 | 100.0 | 100.0 | 100.0 | |
| --"-- No.4 Sieve % | 99.8 | 98.9 | 98.4 | 98.9 | 100.0 |
| --"-- No.10 Sieve % | 97.9 | 96.4 | 97.5 | 96.3 | 99.9 |
| --"-- No.40 Sieve % | 93.7 | 89.1 | 95.5 | 88.7 | 98.8 |
| --"-- No.100 Sieve % | 86.4 | 76.7 | 93.1 | 77.0 | 95.9 |
| --"-- No.200 Sieve % | 81.5 | 69.0 | 91.6 | 71.2 | 93.0 |
| Sand % (AASHTO T 88) | 16.4 | 27.4 | 5.9 | 25.1 | 6.9 |
| Silt % (AASHTO T 88) | 55.6 | 47.0 | 49.6 | 53.5 | 51.8 |
| Clay % (AASHTO T 88) | 25.9 | 21.9 | 42.0 | 17.7 | 41.2 |
| Liquid limit % (AASHTO T 89) | 35.0 | 22.0 | 38.0 | 22.0 | 48.0 |
| Plasticity index % (AASHTO T 90) | 20.0 | 9.0 | 20.0 | 10.0 | 28.0 |
| IBR % (Illinois Method) | | | | | |
| Standard Dry Density % (AASHTO T 99) | | | | | |
| Optimum Moisture % (AASHTO T 99) | | | | | |
| Subgrade Support Rating | POOR | POOR | FAIR | POOR | FAIR |
| Insitu Moisture % (AASHTO T 99) | 22 | 13 | 18 | 13 | 28 |

# SOIL TEST DATA

**PROJECT**
195-13-01

**ROUTE**
IL 47 at IL 176 and Pleasant Valley Road

**SECTION**
IL 176 E (Sta. 300+00.00 to Sta. 316+66.72)

**COUNTY**
McHenry County

| Lab. No. | SGB-24 No.2 | SGB-23 No.2 | BIO-29 No.1 | SGB-21ST No.2 | SGB-21 No.3 |
|---|---|---|---|---|---|
| Station ft) | 302+43.20 | 304+93.81 | 307+86.56 | 310+94.67 | 310+95.85 |
| Offset (ft) | 162.28 LT | 44.39 RT | 32.15 LT | 19.43 LT | 20.27 LT |
| Depth (ft) | 3 | 2 | 1 | 6 | 4 |
| AASHTO M 145 Classification and Group Index | A-7-6 (27) | A-6 (12) | A-7-6 (41) | A-6 (4) | A-6 (9) |
| Illinois Textural Classification (Illinois Method) | Silty Clay | Clay Loam | Silty Clay | Clay Loam | Clay Loam |
| Gradation--Passing 1" Sieve % | | | | | |
| --"-- 3/4" Sieve % | | | | | |
| --"-- 1/2" Sieve % | | 100.0 | | 100.0 | 100.0 |
| --"-- No.4 Sieve % | 100.0 | 98.1 | 100.0 | 99.1 | 99.6 |
| --"-- No.10 Sieve % | 99.7 | 96.6 | 99.7 | 96.8 | 95.0 |
| --"-- No.40 Sieve % | 97.1 | 90.3 | 98.0 | 88.0 | 83.6 |
| --"-- No.100 Sieve % | 88.4 | 75.0 | 92.6 | 74.0 | 67.0 |
| --"-- No.200 Sieve % | 84.2 | 69.1 | 90.3 | 66.3 | 61.4 |
| Sand % (AASHTO T 88) | 15.4 | 27.5 | 9.5 | 30.5 | 33.6 |
| Silt % (AASHTO T 88) | 53.6 | 41.3 | 51.0 | 46.3 | 40.1 |
| Clay % (AASHTO T 88) | 30.6 | 27.7 | 39.3 | 20.0 | 21.2 |
| Liquid limit % (AASHTO T 89) | 57.0 | 35.0 | 67.0 | 24.0 | 34.0 |
| Plasticity index % (AASHTO T 90) | 29.0 | 21.0 | 40.0 | 11.0 | 20.0 |
| IBR % (Illinois Method) | | | | | |
| Standard Dry Density % (AASHTO T 99) | | | | | |
| Optimum Moisture % (AASHTO T 99) | | | | | |
| Subgrade Support Rating | FAIR | POOR | FAIR | POOR | POOR |
| Insitu Moisture % (AASHTO T 99) | 36 | 14 | 34 | 18 | 25 |

# SOIL TEST DATA

**PROJECT**
195-13-01

**ROUTE**
IL 47 at IL 176 and Pleasant Valley Road

**SECTION**
IL 176 E (Sta. 300+00.00 to Sta. 316+66.72)

**COUNTY**
McHenry County

| Lab. No. | SGB-20 No.2 |
|---|---|
| Station ft) | 313+99.52 |
| Offset (ft) | 30.18 RT |
| Depth (ft) | 2 |
| AASHTO M 145 Classification and Group Index | A-7-6 (24) |
| 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 % | 97.5 |
| --"-- No.40 Sieve % | 92.3 |
| --"-- No.100 Sieve % | 83.4 |
| --"-- No.200 Sieve % | 79.0 |
| Sand % (AASHTO T 88) | 18.5 |
| Silt % (AASHTO T 88) | 50.1 |
| Clay % (AASHTO T 88) | 28.9 |
| Liquid limit % (AASHTO T 89) | 52.0 |
| Plasticity index % (AASHTO T 90) | 30.0 |
| IBR % (Illinois Method) | |
| Standard Dry Density % (AASHTO T 99) | |
| Optimum Moisture % (AASHTO T 99) | |
| Subgrade Support Rating | POOR |
| Insitu Moisture % (AASHTO T 99) | 35 |

# SOIL TEST DATA

**PROJECT**
195-13-01

**ROUTE**
IL 47 at IL 176 and Pleasant Valley Road

**SECTION**
IL 176 W (Sta. 404+31.61 to Sta. 429+00.00)

**COUNTY**
McHenry County

| Lab. No. | SGB-32 No.2 | BIO-33 No.1 |
|---|---|---|
| Station ft) | 404+98.9 | 422+04.22 |
| Offset (ft) | 21.67 RT | 51.85 RT |
| Depth (ft) | 2 | 1 |
| AASHTO M 145 Classification and Group Index | A-7-6 (32) | A-7-6 (23) |
| Illinois Textural Classification (Illinois Method) | Silty Clay Loam | Silty Clay Loam |
| Gradation--Passing 1" Sieve % | | |
| --"-- 3/4" Sieve % | | |
| --"-- 1/2" Sieve % | | 100.0 |
| --"-- No.4 Sieve % | 100.0 | 99.2 |
| --"-- No.10 Sieve % | 99.8 | 98.5 |
| --"-- No.40 Sieve % | 96.2 | 94.0 |
| --"-- No.100 Sieve % | 84.3 | 79.8 |
| --"-- No.200 Sieve % | 80.7 | 76.1 |
| Sand % (AASHTO T 88) | 19.1 | 22.4 |
| Silt % (AASHTO T 88) | 52.7 | 52.4 |
| Clay % (AASHTO T 88) | 28.0 | 23.7 |
| Liquid limit % (AASHTO T 89) | 57.0 | 49.0 |
| Plasticity index % (AASHTO T 90) | 38.0 | 31.0 |
| IBR % (Illinois Method) | | |
| Standard Dry Density % (AASHTO T 99) | | |
| Optimum Moisture % (AASHTO T 99) | | |
| Subgrade Support Rating | POOR | POOR |
| Insitu Moisture % (AASHTO T 99) | 27 | 24 |

# SOIL TEST DATA

**ROUTE**
IL 47 at IL 176 and Pleasant Valley Road

**PROJECT**
195-13-01

**SECTION**
PVRD (Sta. 273+28.03 to Sta. 300+00.00)

**COUNTY**
McHenry County

| Lab. No. | DPB-05 No.2 | SGB-40 No.2 | SGB-39 No.2 | DPB-07 No.2 | SGB-36 No.2 |
|---|---|---|---|---|---|
| Station ft) | 280+66.81 | 281+04.76 | 284+00.27 | 290+60.28 | 292+99.10 |
| Offset (ft) | 90.31 RT | 12.42 LT | 22.9 RT | 115.01 LT | 24.48 LT |
| Depth (ft) | 2 | 2 | 2 | 2 | 2 |
| AASHTO M 145 Classification and Group Index | A-6 (17) | A-6 (11) | A-6 (6) | A-4 (2) | A-7-6 (25) |
| Illinois Textural Classification (Illinois Method) | Silty Clay | Silty Clay Loam | Silty Clay Loam | NA | Silty Clay |
| Gradation--Passing 1" Sieve % | | | | | |
| --"-- 3/4" Sieve % | | | | | |
| --"-- 1/2" Sieve % | 100.0 | 100.0 | 100.0 | 100.0 | |
| --"-- No.4 Sieve % | 99.8 | 99.2 | 98.4 | 98.9 | |
| --"-- No.10 Sieve % | 99.3 | 97.7 | 96.3 | 95.0 | 100.0 |
| --"-- No.40 Sieve % | 97.1 | 94.3 | 89.9 | 84.7 | 99.4 |
| --"-- No.100 Sieve % | 95.6 | 91.0 | 79.3 | 70.0 | 95.6 |
| --"-- No.200 Sieve % | 94.5 | 87.5 | 72.2 | 62.5 | 91.9 |
| Sand % (AASHTO T 88) | 4.9 | 10.2 | 24.0 | 32.5 | 8.1 |
| Silt % (AASHTO T 88) | 62.2 | 59.1 | 51.5 | 47.5 | 55.0 |
| Clay % (AASHTO T 88) | 32.3 | 28.4 | 20.7 | 15.0 | 36.9 |
| Liquid limit % (AASHTO T 89) | 35.0 | 29.0 | 27.0 | 21.0 | 43.0 |
| Plasticity index % (AASHTO T 90) | 18.0 | 13.0 | 12.0 | 8.0 | 26.0 |
| IBR % (Illinois Method) | | | | | |
| Standard Dry Density % (AASHTO T 99) | | | | | |
| Optimum Moisture % (AASHTO T 99) | | | | | |
| Subgrade Support Rating | FAIR | POOR | POOR | POOR | FAIR |
| Insitu Moisture % (AASHTO T 99) | 18 | 14 | 14 | 16 | 23 |

# SOIL TEST DATA

**PROJECT**
195-13-01

**ROUTE**
IL 47 at IL 176 and Pleasant Valley Road

**SECTION**
PVRD (Sta. 273+28.03 to Sta. 300+00.00)

**COUNTY**
McHenry County

| Lab. No. | BIO-35 No.2 |
|---|---|
| Station ft) | 294+97.57 |
| Offset (ft) | 51.19 RT |
| Depth (ft) | 3.5 |
| AASHTO M 145 Classification and Group Index | A-4 (0) |
| Illinois Textural Classification (Illinois Method) | Loam |
| Gradation--Passing 1" Sieve % | |
| --"-- 3/4" Sieve % | |
| --"-- 1/2" Sieve % | 100.0 |
| --"-- No.4 Sieve % | 99.7 |
| --"-- No.10 Sieve % | 96.4 |
| --"-- No.40 Sieve % | 85.5 |
| --"-- No.100 Sieve % | 69.4 |
| --"-- No.200 Sieve % | 58.2 |
| Sand % (AASHTO T 88) | 38.2 |
| Silt % (AASHTO T 88) | 47.8 |
| Clay % (AASHTO T 88) | 10.5 |
| Liquid limit % (AASHTO T 89) | 0.0 |
| Plasticity index % (AASHTO T 90) | 0.0 |
| IBR % (Illinois Method) | |
| Standard Dry Density % (AASHTO T 99) | |
| Optimum Moisture % (AASHTO T 99) | |
| Subgrade Support Rating | POOR |
| Insitu Moisture % (AASHTO T 99) | 17 |

# SOIL TEST DATA

**PROJECT**
195-13-01

**ROUTE**
IL 47 at IL 176 and Pleasant Valley Road

**SECTION**
Connector Road (Sta. 400+00.00 to Sta. 405+13.25)

**COUNTY**
McHenry County

| Lab. No. | SGB-44 No.2 |
|---|---|
| Station ft) | 405+01.37 |
| Offset (ft) | 19.05 RT |
| Depth (ft) | 2 |
| AASHTO M 145 Classification and Group Index | A-6 (4) |
| Illinois Textural Classification (Illinois Method) | Loam |
| Gradation--Passing 1" Sieve % | |
| --"-- 3/4" Sieve % | |
| --"-- 1/2" Sieve % | 100.0 |
| --"-- No.4 Sieve % | 96.0 |
| --"-- No.10 Sieve % | 91.8 |
| --"-- No.40 Sieve % | 80.7 |
| --"-- No.100 Sieve % | 63.8 |
| --"-- No.200 Sieve % | 55.6 |
| Sand % (AASHTO T 88) | 36.2 |
| Silt % (AASHTO T 88) | 43.9 |
| Clay % (AASHTO T 88) | 11.7 |
| 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) | 12 |

# SOIL TEST DATA

**PROJECT**
195-13-01

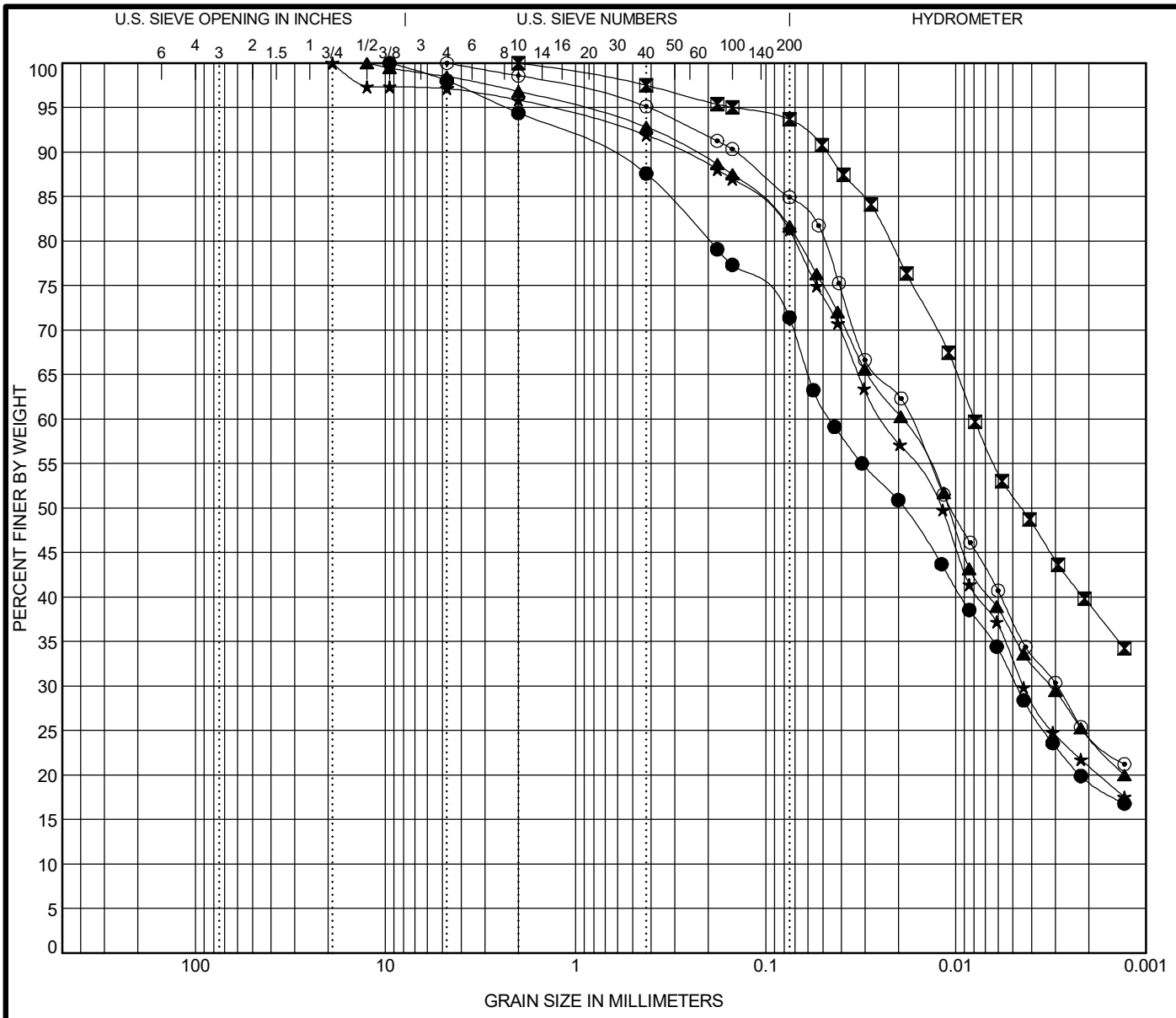
**ROUTE**
IL 47 at IL 176 and Pleasant Valley Road

**SECTION**
Swanson Rd (Sta. 502+16.66 to Sta. 507+65.50)

**COUNTY**
McHenry County

| Lab. No. | SGB-34 No.2 | |
|---|---|---|
| Station ft) | 502+98.01 | |
| Offset (ft) | 16.56 RT | |
| Depth (ft) | 2 | |
| AASHTO M 145 Classification and Group Index | A-6 (11) | |
| Illinois Textural Classification (Illinois Method) | Silty Clay Loam | |
| Gradation--Passing 1" Sieve % | | |
| --"-- 3/4" Sieve % | 100 | |
| --"-- 1/2" Sieve % | 97.7 | |
| --"-- No.4 Sieve % | 96.9 | |
| --"-- No.10 Sieve % | 95.4 | |
| --"-- No.40 Sieve % | 91.1 | |
| --"-- No.100 Sieve % | 83.0 | |
| --"-- No.200 Sieve % | 77.4 | |
| Sand % (AASHTO T 88) | 18.0 | |
| Silt % (AASHTO T 88) | 52.4 | |
| Clay % (AASHTO T 88) | 25.0 | |
| Liquid limit % (AASHTO T 89) | 32.0 | |
| Plasticity index % (AASHTO T 90) | 18.0 | |
| IBR % (Illinois Method) | | |
| Standard Dry Density % (AASHTO T 99) | | |
| Optimum Moisture % (AASHTO T 99) | | |
| Subgrade Support Rating | POOR | |
| Insitu Moisture % (AASHTO T 99) | 17 | 24 |

# APPENDIX C




| COBBLES | GRAVEL | SAND | | SILT AND CLAY |
|---|---|---|---|---|
| | | coarse | fine | |

| Specimen Identification | | IDH Classification | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|
| ● BIO-02#2 | 3.5 ft | **Silty Clay Loam** | **22** | **13** | **9** | | |
| ⊠ BIO-03#1 | 1.0 ft | **Silty Clay** | **51** | **16** | **35** | | |
| ▲ BIO-06#3 | 6.0 ft | **Silty Clay Loam** | **26** | **14** | **12** | | |
| ★ BIO-09#1 | 1.0 ft | **Silty Clay Loam** | **18** | **14** | **4** | | |
| ⊙ BIO-11#3 | 6.0 ft | **Silty Clay Loam** | **24** | **12** | **12** | | |

| Specimen Identification | | D100 | D60 | D30 | D10 | %Gravel | %Sand | %Silt | %Clay |
|---|---|---|---|---|---|---|---|---|---|
| ● BIO-02#2 | 3.5 ft | **9.5** | **0.046** | **0.005** | | **5.6** | **23.4** | **51.7** | **19.3** |
| ⊠ BIO-03#1 | 1.0 ft | **2** | **0.008** | | | **0.0** | **6.4** | **54.4** | **39.2** |
| ▲ BIO-06#3 | 6.0 ft | **12.5** | **0.019** | **0.003** | | **3.2** | **15.4** | **57.1** | **24.3** |
| ★ BIO-09#1 | 1.0 ft | **19** | **0.024** | **0.004** | | **4.1** | **14.8** | **60.0** | **21.0** |
| ⊙ BIO-11#3 | 6.0 ft | **4.75** | **0.017** | **0.003** | | **1.4** | **13.8** | **60.2** | **24.6** |

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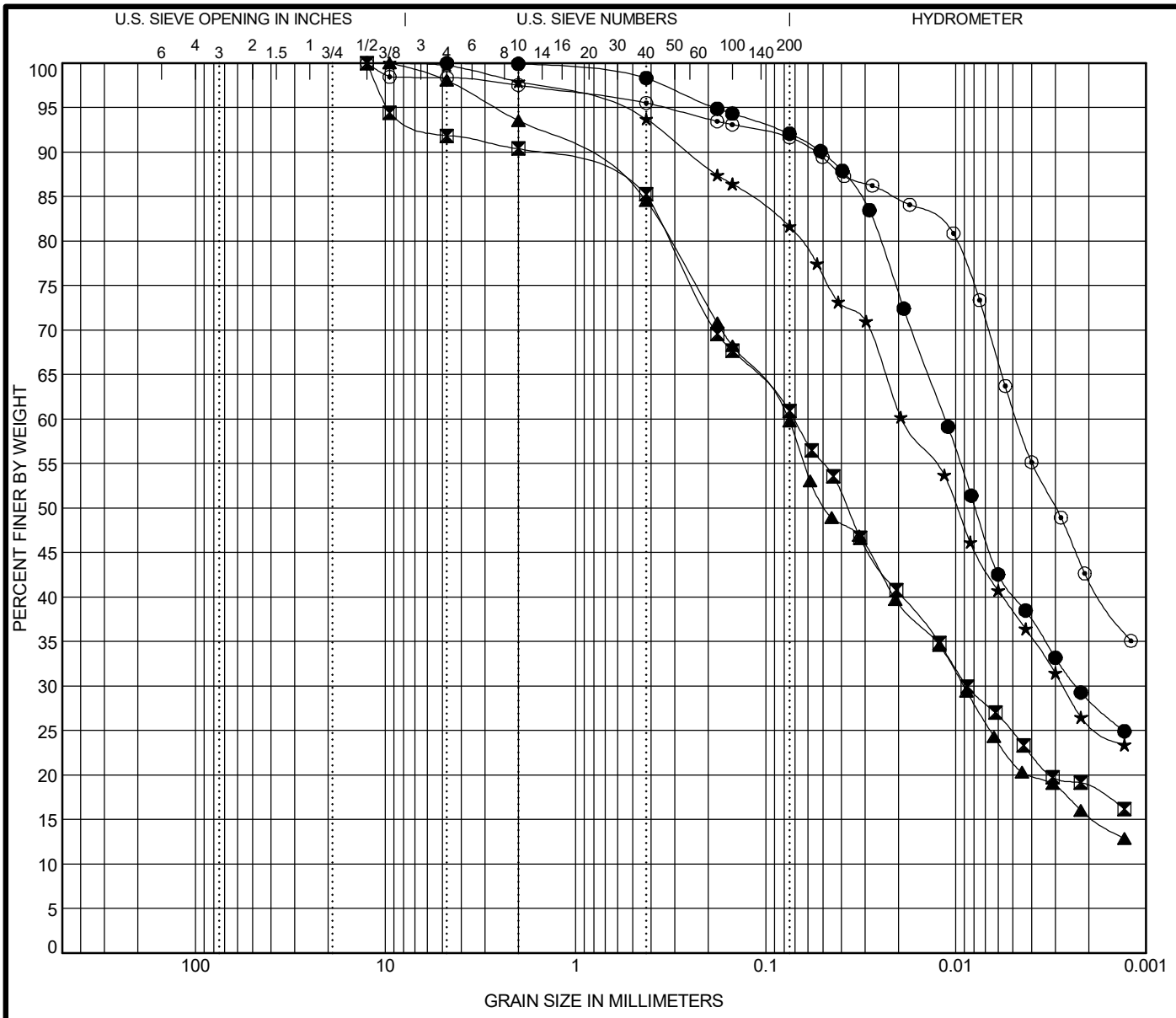
# GRAIN SIZE DISTRIBUTION

Project: IL 47 at IL 176 and Pleasant Valley Road

Location: McHenry County, Illinois

Number: 195-13-01




| COBBLES | GRAVEL | SAND | | SILT AND CLAY |
|---|---|---|---|---|
| | | coarse | fine | |

| Specimen Identification | | IDH Classification | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|
| ● BIO-14#1 | 1.0 ft | **Silty Clay Loam** | **45** | **15** | **30** | | |
| ⊠ BIO-20#1 | 1.0 ft | **Clay Loam** | **31** | **11** | **20** | | |
| ▲ BIO-20#6 | 13.5 ft | **Loam** | **20** | **10** | **10** | | |
| ★ BIO-21#1 | 1.0 ft | **Silty Clay Loam** | **35** | **15** | **20** | | |
| ⊙ BIO-25#2 | 3.5 ft | **Silty Clay** | **38** | **18** | **20** | | |

| Specimen Identification | | D100 | D60 | D30 | D10 | %Gravel | %Sand | %Silt | %Clay |
|---|---|---|---|---|---|---|---|---|---|
| ● BIO-14#1 | 1.0 ft | **4.75** | **0.011** | **0.002** | | **0.1** | **7.9** | **63.5** | **28.5** |
| ⊠ BIO-20#1 | 1.0 ft | **12.5** | **0.071** | **0.009** | | **9.6** | **29.7** | **42.1** | **18.6** |
| ▲ BIO-20#6 | 13.5 ft | **9.5** | **0.076** | **0.009** | | **6.5** | **34.1** | **44.0** | **15.5** |
| ★ BIO-21#1 | 1.0 ft | **9.5** | **0.019** | **0.003** | | **2.1** | **16.4** | **55.6** | **25.9** |
| ⊙ BIO-25#2 | 3.5 ft | **12.5** | **0.005** | | | **2.5** | **5.9** | **49.6** | **42.0** |

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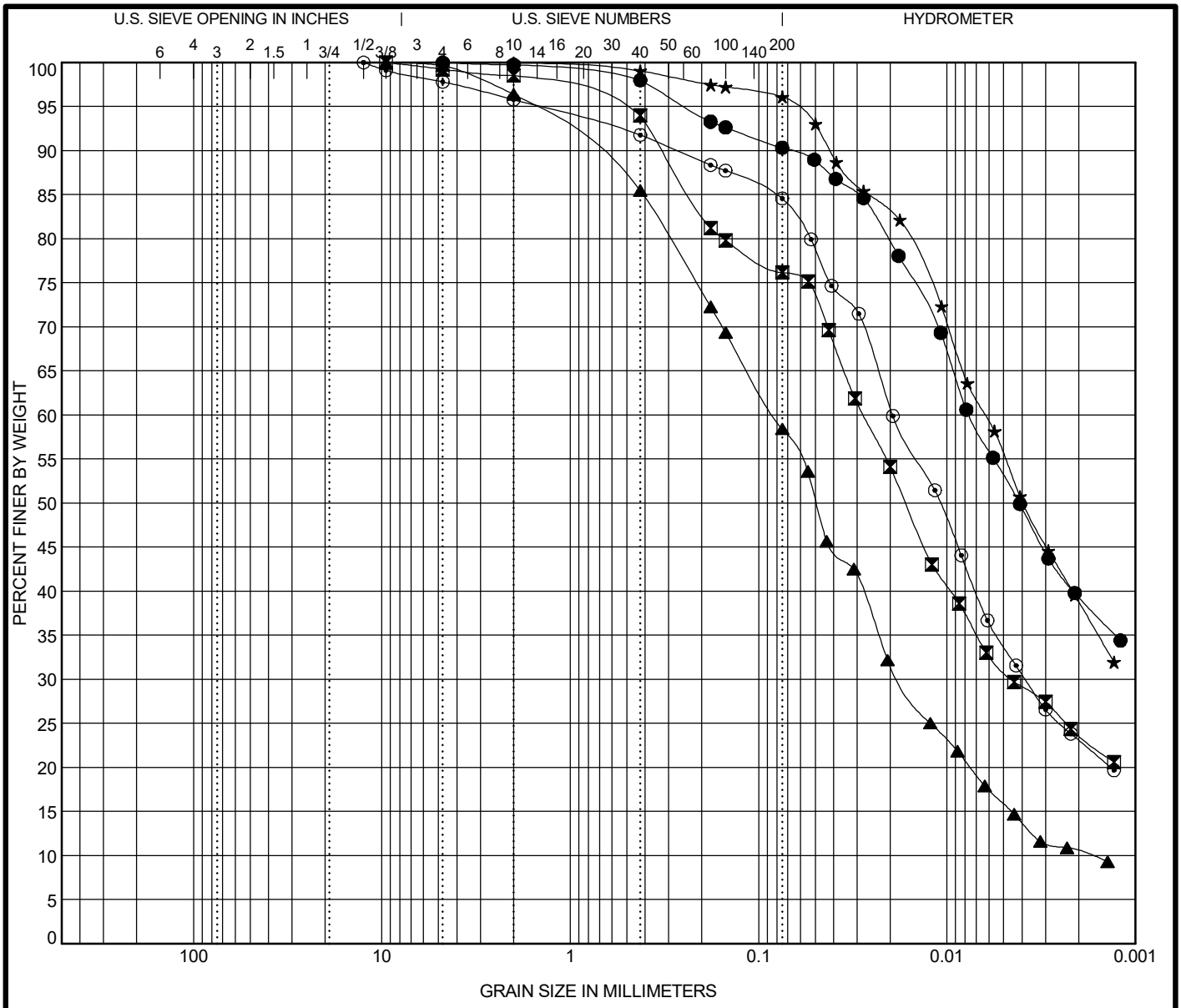
# GRAIN SIZE DISTRIBUTION

Project: IL 47 at IL 176 and Pleasant Valley Road

Location: McHenry County, Illinois

Number: 195-13-01




| COBBLES | GRAVEL | SAND | | SILT AND CLAY |
|---|---|---|---|---|
| | | coarse | fine | |

| | Specimen Identification | | IDH Classification | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|---|
| ● | BIO-29#1 | 1.0 ft | **Silty Clay** | **67** | **27** | **40** | | |
| ⊠ | BIO-33#1 | 1.0 ft | **Silty Clay Loam** | **49** | **18** | **31** | | |
| ▲ | BIO-35#2 | 3.5 ft | **Loam** | **NP** | **NP** | **NP** | **2.17** | **47.77** |
| ★ | CUL-02#5 | 11.0 ft | **Silty Clay** | **38** | **19** | **19** | | |
| ⊙ | CUL-03#3 | 6.0 ft | **Silty Clay Loam** | **26** | **13** | **13** | | |

| | Specimen Identification | | D100 | D60 | D30 | D10 | %Gravel | %Sand | %Silt | %Clay |
|---|---|---|---|---|---|---|---|---|---|---|
| ● | BIO-29#1 | 1.0 ft | **4.75** | **0.008** | | | **0.3** | **9.5** | **51.0** | **39.3** |
| ⊠ | BIO-33#1 | 1.0 ft | **9.5** | **0.028** | **0.005** | | **1.5** | **22.4** | **52.4** | **23.7** |
| ▲ | BIO-35#2 | 3.5 ft | **9.5** | **0.083** | **0.018** | **0.002** | **3.6** | **38.2** | **47.8** | **10.5** |
| ★ | CUL-02#5 | 11.0 ft | **4.75** | **0.006** | | | **0.1** | **3.9** | **57.2** | **38.8** |
| ⊙ | CUL-03#3 | 6.0 ft | **12.5** | **0.019** | **0.004** | | **4.2** | **11.4** | **61.3** | **23.1** |

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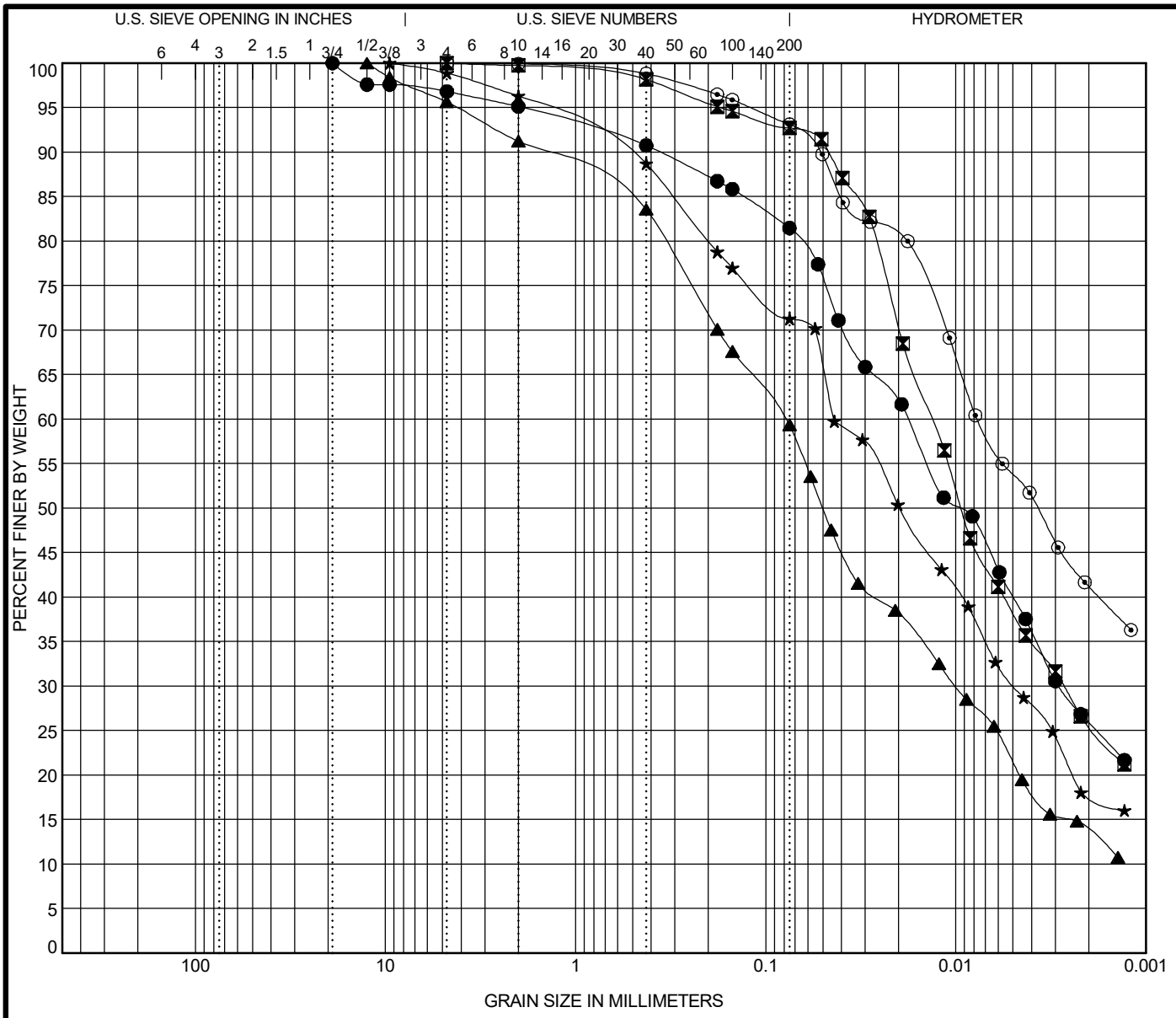
# GRAIN SIZE DISTRIBUTION

Project: IL 47 at IL 176 and Pleasant Valley Road

Location: McHenry County, Illinois

Number: 195-13-01




| COBBLES | GRAVEL | SAND | | SILT AND CLAY |
|---|---|---|---|---|
| | | coarse | fine | |

| Specimen Identification | | | IDH Classification | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|---|
| ● | CUL-05#4 | 8.5 ft | **Silty Clay Loam** | **28** | **13** | **15** | | |
| ⊠ | CUL-06#2 | 3.5 ft | **Silty Clay Loam** | **49** | **24** | **25** | | |
| ▲ | CUL-07#11 | 26.0 ft | **Loam** | **20** | **12** | **8** | | |
| ★ | CUL-08#3 | 6.0 ft | **Silty Loam** | **22** | **13** | **9** | | |
| ⊙ | CUL-09#2 | 3.5 ft | **Silty Clay** | **48** | **20** | **28** | | |

| Specimen Identification | | | D100 | D60 | D30 | D10 | %Gravel | %Sand | %Silt | %Clay |
|---|---|---|---|---|---|---|---|---|---|---|
| ● | CUL-05#4 | 8.5 ft | **19** | **0.018** | **0.003** | | **4.9** | **13.8** | **55.4** | **25.9** |
| ⊠ | CUL-06#2 | 3.5 ft | **4.75** | **0.013** | **0.003** | | **0.3** | **7.0** | **67.1** | **25.6** |
| ▲ | CUL-07#11 | 26.0 ft | **12.5** | **0.079** | **0.01** | | **8.8** | **32.2** | **45.4** | **13.7** |
| ★ | CUL-08#3 | 6.0 ft | **9.5** | **0.044** | **0.005** | | **3.7** | **25.1** | **53.5** | **17.7** |
| ⊙ | CUL-09#2 | 3.5 ft | **4.75** | **0.008** | | | **0.1** | **6.9** | **51.8** | **41.2** |

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Telephone: 630 953-9928
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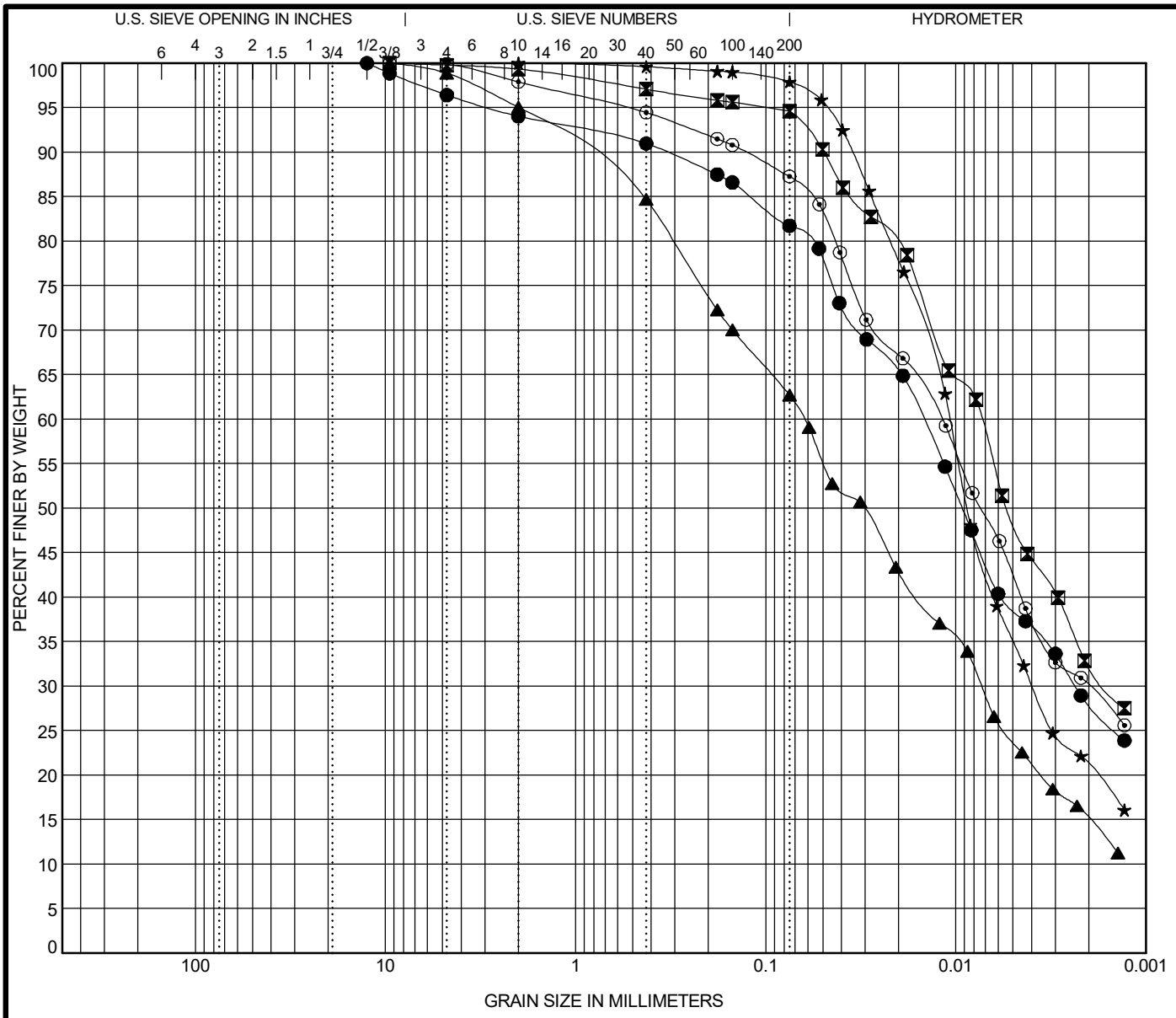
# GRAIN SIZE DISTRIBUTION

Project: IL 47 at IL 176 and Pleasant Valley Road

Location: McHenry County, Illinois

Number: 195-13-01




| COBBLES | GRAVEL | SAND | | SILT AND CLAY |
|---|---|---|---|---|
| | | coarse | fine | |

| | Specimen Identification | | IDH Classification | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|---|
| ● | DPB-01#2 | 2.0 ft | **Silty Clay Loam** | **32** | **15** | **17** | | |
| ⊠ | DPB-05#2 | 2.0 ft | **Silty Clay** | **35** | **17** | **18** | | |
| ▲ | DPB-07#2 | 2.0 ft | **NA** | **21** | **13** | **8** | | |
| ★ | PT2-05ST#2 | 4.0 ft | **Silty Clay Loam** | **79** | **31** | **48** | | |
| ⊙ | SGB-03#2 | 2.0 ft | **Silty Clay** | **28** | **14** | **14** | | |

| | Specimen Identification | | D100 | D60 | D30 | D10 | %Gravel | %Sand | %Silt | %Clay |
|---|---|---|---|---|---|---|---|---|---|---|
| ● | DPB-01#2 | 2.0 ft | **12.5** | **0.015** | **0.002** | | **6.0** | **12.4** | **53.6** | **28.0** |
| ⊠ | DPB-05#2 | 2.0 ft | **9.5** | **0.007** | **0.002** | | **0.7** | **4.9** | **62.2** | **32.3** |
| ▲ | DPB-07#2 | 2.0 ft | **9.5** | **0.063** | **0.007** | | **5.0** | **32.5** | **47.5** | **15.0** |
| ★ | PT2-05ST#2 | 4.0 ft | **2** | **0.011** | **0.004** | | **0.0** | **2.2** | **76.8** | **21.1** |
| ⊙ | SGB-03#2 | 2.0 ft | **9.5** | **0.012** | **0.002** | | **2.1** | **10.8** | **57.2** | **30.0** |

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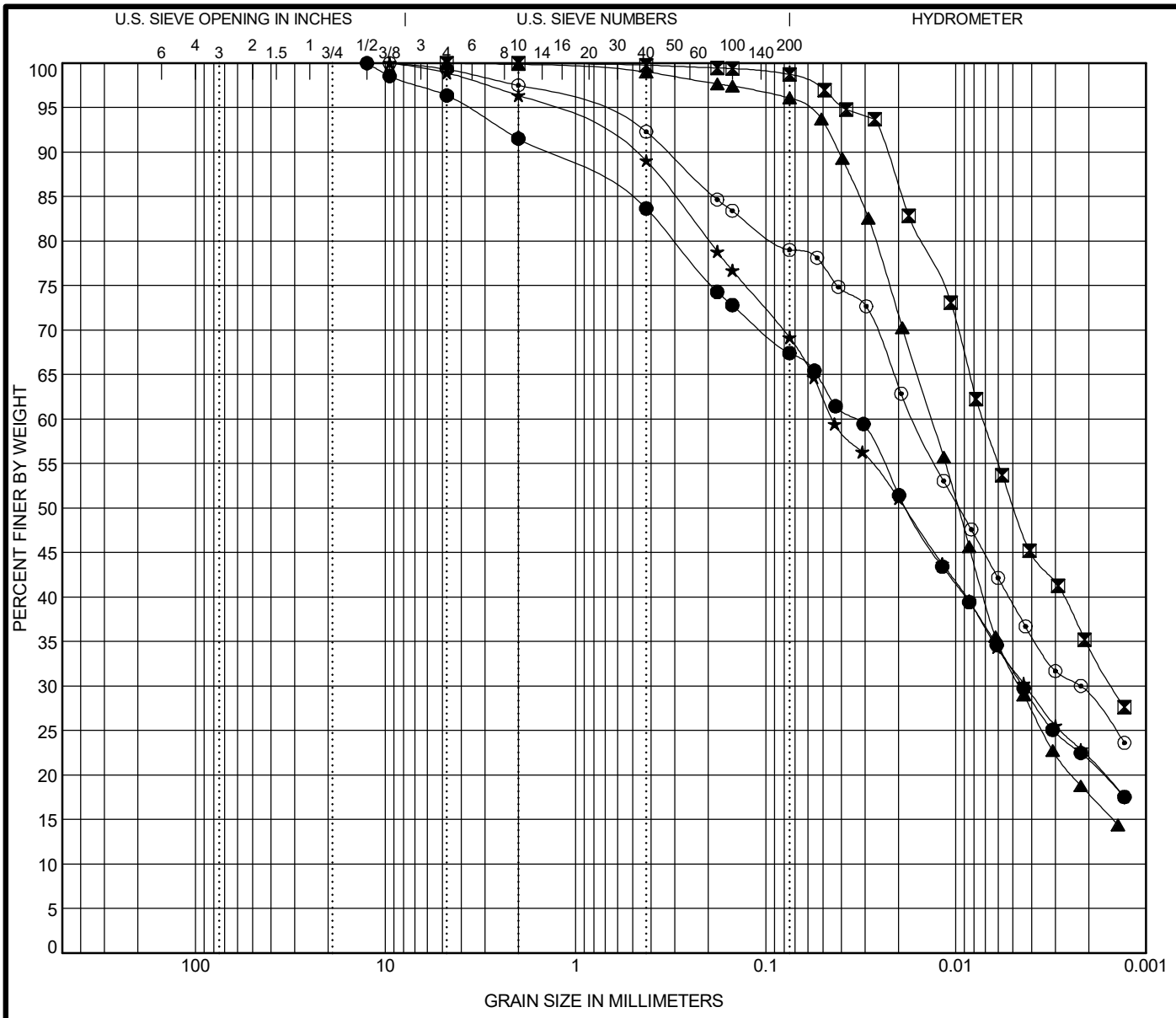


| COBBLES | GRAVEL | SAND | | SILT AND CLAY |
|---|---|---|---|---|
| | | coarse | fine | |

| | Specimen Identification | | IDH Classification | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|---|
| ● | SGB-07#1 | 0.0 ft | Clay Loam | 44 | 22 | 22 | | |
| ⊠ | SGB-12#2 | 2.0 ft | Silty Clay | 33 | 15 | 18 | | |
| ▲ | SGB-13#3 | 4.0 ft | Silty Loam | 74 | 30 | 44 | | |
| ★ | SGB-16#2 | 2.0 ft | Clay Loam | 22 | 13 | 9 | | |
| ⊙ | SGB-20#2 | 2.0 ft | Silty Clay Loam | 52 | 22 | 30 | | |

| | Specimen Identification | | D100 | D60 | D30 | D10 | %Gravel | %Sand | %Silt | %Clay |
|---|---|---|---|---|---|---|---|---|---|---|
| ● | SGB-07#1 | 0.0 ft | 12.5 | 0.034 | 0.004 | | 8.5 | 24.2 | 45.7 | 21.6 |
| ⊠ | SGB-12#2 | 2.0 ft | 4.75 | 0.007 | 0.002 | | 0.0 | 1.3 | 64.3 | 34.4 |
| ▲ | SGB-13#3 | 4.0 ft | 4.75 | 0.013 | 0.005 | | 0.1 | 3.9 | 78.1 | 17.9 |
| ★ | SGB-16#2 | 2.0 ft | 9.5 | 0.045 | 0.004 | | 3.6 | 27.4 | 47.0 | 21.9 |
| ⊙ | SGB-20#2 | 2.0 ft | 9.5 | 0.017 | 0.002 | | 2.5 | 18.5 | 50.1 | 28.9 |

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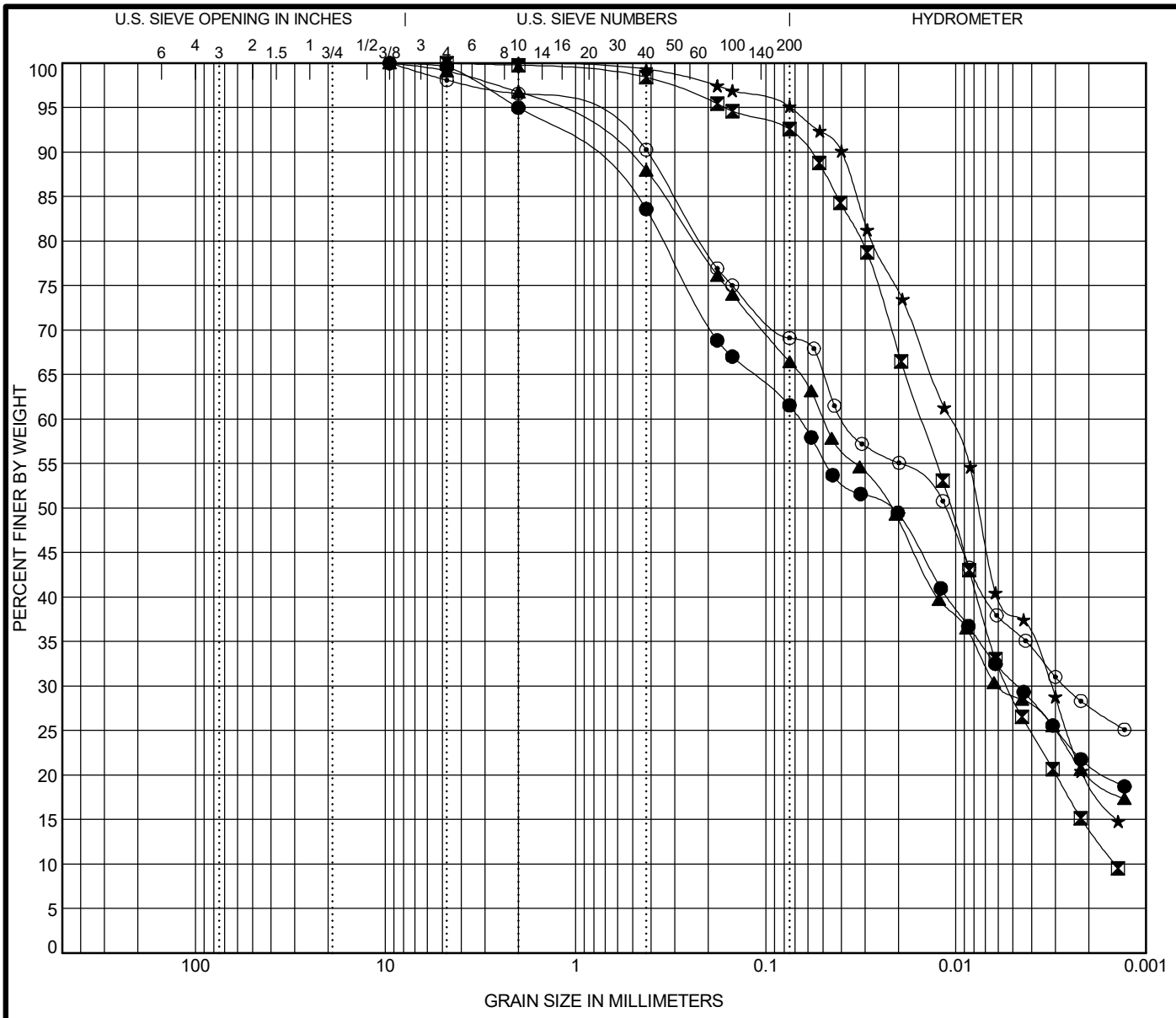


| COBBLES | GRAVEL | SAND | | SILT AND CLAY |
|---|---|---|---|---|
| | | coarse | fine | |

| | Specimen Identification | | IDH Classification | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|---|
| ● | SGB-21#3 | 4.0 ft | **Clay Loam** | **34** | **15** | **19** | | |
| ⊠ | SGB-21#8 | 14.0 ft | **Silty Loam** | **74** | **36** | **38** | **1.29** | **10.44** |
| ▲ | SGB-21ST#2 | 6.0 ft | **Clay Loam** | **24** | **13** | **11** | | |
| ★ | SGB-21ST#4 | 14.0 ft | **Silty Loam** | **72** | **40** | **32** | | |
| ⊙ | SGB-23#2 | 2.0 ft | **Clay Loam** | **35** | **14** | **21** | | |

| | Specimen Identification | | D100 | D60 | D30 | D10 | %Gravel | %Sand | %Silt | %Clay |
|---|---|---|---|---|---|---|---|---|---|---|
| ● | SGB-21#3 | 4.0 ft | **9.5** | **0.067** | **0.005** | | **5.0** | **33.6** | **40.1** | **21.2** |
| ⊠ | SGB-21#8 | 14.0 ft | **4.75** | **0.015** | **0.005** | **0.001** | **0.2** | **7.3** | **78.5** | **14.0** |
| ▲ | SGB-21ST#2 | 6.0 ft | **9.5** | **0.05** | **0.006** | | **3.2** | **30.5** | **46.3** | **20.0** |
| ★ | SGB-21ST#4 | 14.0 ft | **2** | **0.011** | **0.003** | | **0.0** | **5.0** | **75.8** | **19.2** |
| ⊙ | SGB-23#2 | 2.0 ft | **9.5** | **0.039** | **0.003** | | **3.4** | **27.5** | **41.3** | **27.7** |

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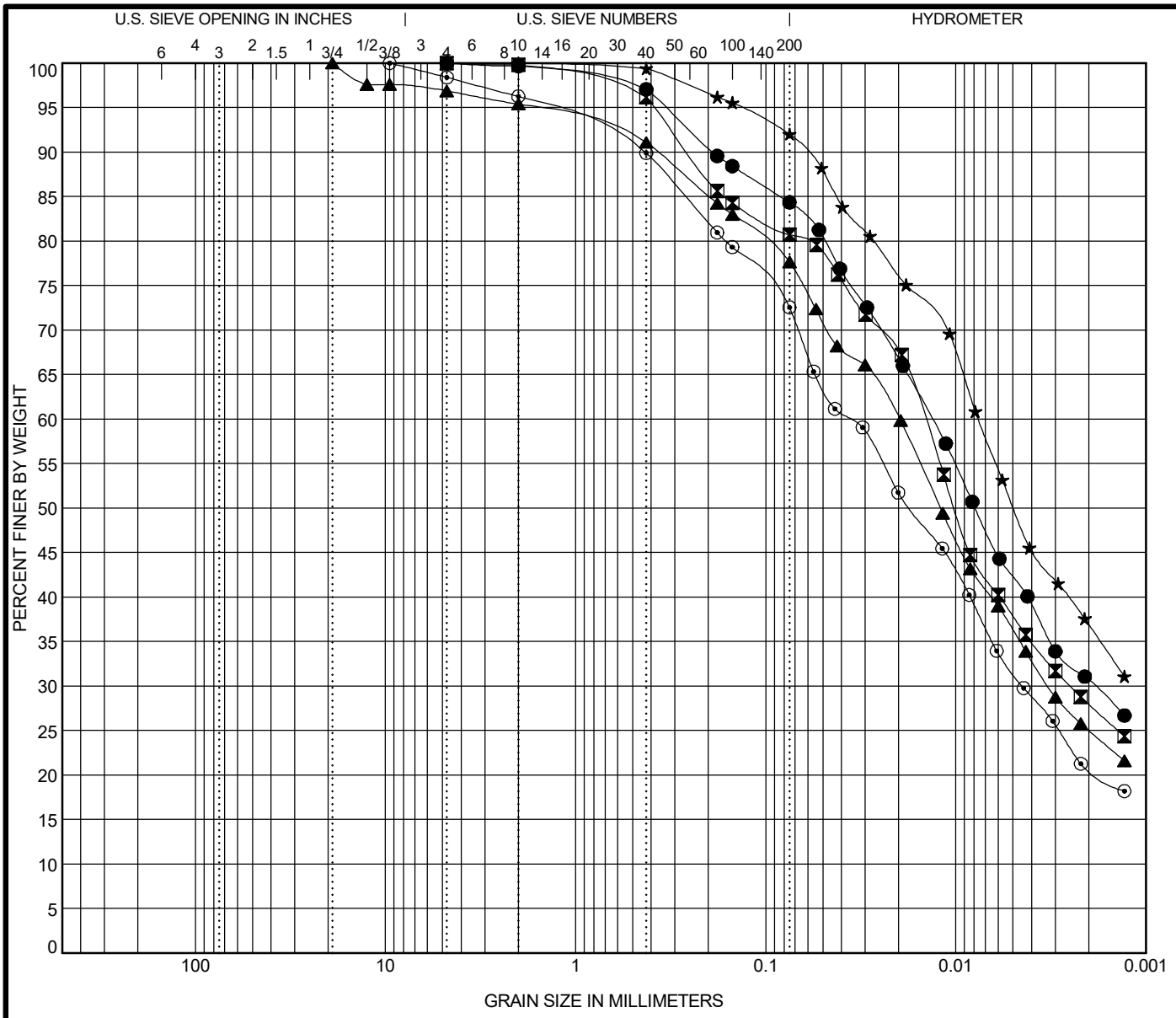


| COBBLES | GRAVEL | SAND | | SILT AND CLAY |
|---|---|---|---|---|
| | | coarse | fine | |

| | Specimen Identification | | IDH Classification | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|---|
| ● | SGB-24#2 | 3.0 ft | **Silty Clay** | **57** | **28** | **29** | | |
| ⊠ | SGB-32#2 | 2.0 ft | **Silty Clay Loam** | **57** | **19** | **38** | | |
| ▲ | SGB-34#2 | 2.0 ft | **Silty Clay Loam** | **32** | **15** | **17** | | |
| ★ | SGB-36#2 | 2.0 ft | **Silty Clay** | **43** | **17** | **26** | | |
| ⊙ | SGB-39#2 | 2.0 ft | **Silty Clay Loam** | **27** | **15** | **12** | | |

| | Specimen Identification | | D100 | D60 | D30 | D10 | %Gravel | %Sand | %Silt | %Clay |
|---|---|---|---|---|---|---|---|---|---|---|
| ● | SGB-24#2 | 3.0 ft | **4.75** | **0.013** | **0.002** | | **0.3** | **15.4** | **53.6** | **30.6** |
| ⊠ | SGB-32#2 | 2.0 ft | **4.75** | **0.015** | **0.003** | | **0.2** | **19.1** | **52.7** | **28.0** |
| ▲ | SGB-34#2 | 2.0 ft | **19** | **0.02** | **0.003** | | **4.6** | **18.0** | **52.4** | **25.0** |
| ★ | SGB-36#2 | 2.0 ft | **2** | **0.008** | | | **0.0** | **8.1** | **55.0** | **36.9** |
| ⊙ | SGB-39#2 | 2.0 ft | **9.5** | **0.036** | **0.004** | | **3.7** | **24.0** | **51.5** | **20.7** |

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# GRAIN SIZE DISTRIBUTION

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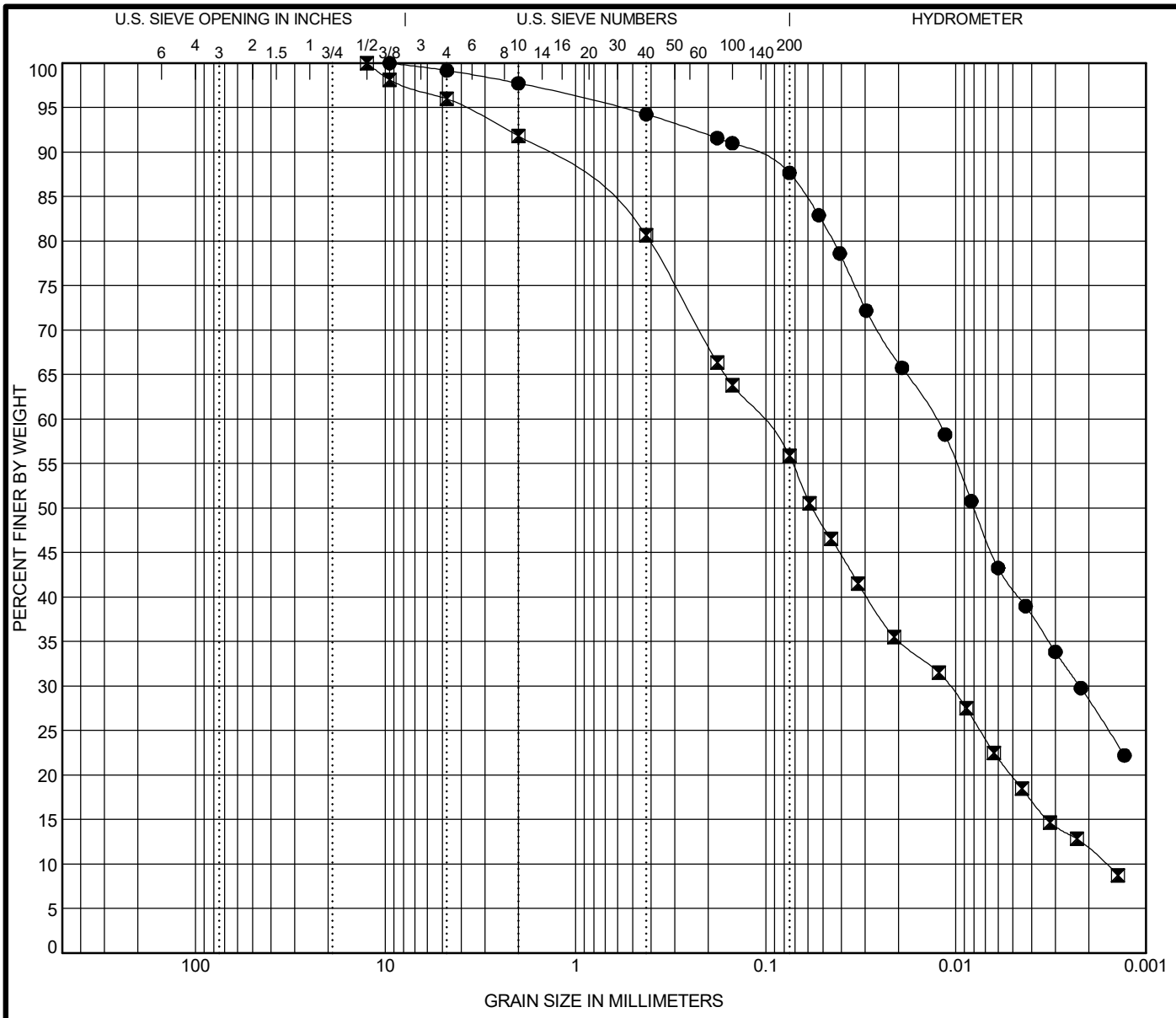
Location: McHenry County, Illinois

Number: 195-13-01




| COBBLES | GRAVEL | SAND | | SILT AND CLAY |
|---|---|---|---|---|
| | | coarse | fine | |

| | Specimen Identification | | IDH Classification | LL | PL | PI | Cc | Cu |
|---|---|---|---|---|---|---|---|---|
| ● | SGB-40#2 | 2.0 ft | **Silty Clay Loam** | **29** | **15** | **14** | | |
| ⊠ | SGB-44#2 | 2.0 ft | **Loam** | **26** | **12** | **14** | **0.67** | **65.82** |

| | Specimen Identification | | D100 | D60 | D30 | D10 | %Gravel | %Sand | %Silt | %Clay |
|---|---|---|---|---|---|---|---|---|---|---|
| ● | SGB-40#2 | 2.0 ft | **9.5** | **0.013** | **0.002** | | **2.3** | **10.2** | **59.1** | **28.4** |
| ⊠ | SGB-44#2 | 2.0 ft | **12.5** | **0.107** | **0.011** | **0.002** | **8.2** | **36.2** | **43.9** | **11.7** |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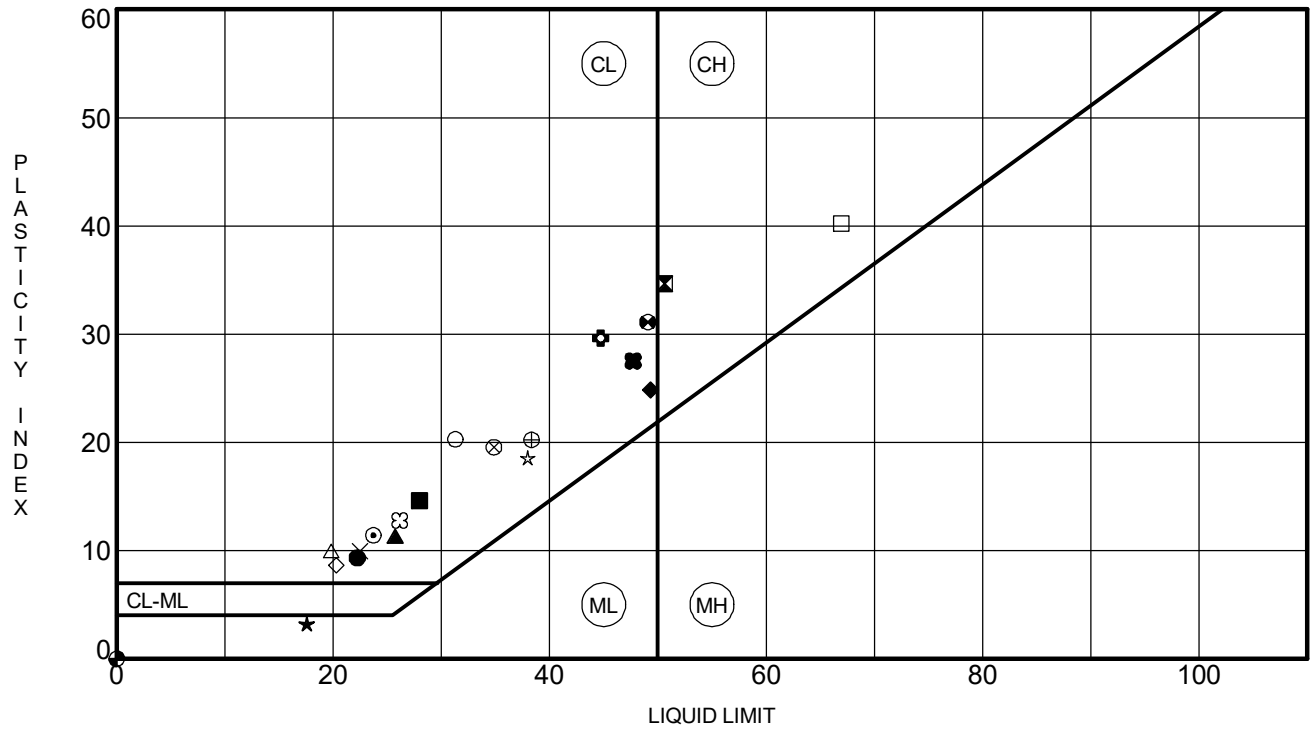
Location: McHenry County, Illinois

Number: 195-13-01




| Specimen Identification | | | LL | PL | PI | Fines | IDH Classification |
|---|---|---|---|---|---|---|---|
| ● | BIO-02#2 | 3.5 ft | 22 | 13 | 9 | 71 | Silty Clay Loam |
| ⊠ | BIO-03#1 | 1.0 ft | 51 | 16 | 35 | 94 | Silty Clay |
| ▲ | BIO-06#3 | 6.0 ft | 26 | 14 | 12 | 82 | Silty Clay Loam |
| ★ | BIO-09#1 | 1.0 ft | 18 | 14 | 4 | 81 | Silty Clay Loam |
| ⊙ | BIO-11#3 | 6.0 ft | 24 | 12 | 12 | 85 | Silty Clay Loam |
| ✿ | BIO-14#1 | 1.0 ft | 45 | 15 | 30 | 92 | Silty Clay Loam |
| ○ | BIO-20#1 | 1.0 ft | 31 | 11 | 20 | 61 | Clay Loam |
| △ | BIO-20#6 | 13.5 ft | 20 | 10 | 10 | 60 | Loam |
| ⊗ | BIO-21#1 | 1.0 ft | 35 | 15 | 20 | 82 | Silty Clay Loam |
| ⊕ | BIO-25#2 | 3.5 ft | 38 | 18 | 20 | 92 | Silty Clay |
| □ | BIO-29#1 | 1.0 ft | 67 | 27 | 40 | 90 | Silty Clay |
| ✽ | BIO-33#1 | 1.0 ft | 49 | 18 | 31 | 76 | Silty Clay Loam |
| ◕ | BIO-35#2 | 3.5 ft | NP | NP | NP | 58 | Loam |
| ☆ | CUL-02#5 | 11.0 ft | 38 | 19 | 19 | 96 | Silty Clay |
| ⊠ | CUL-03#3 | 6.0 ft | 26 | 13 | 13 | 85 | Silty Clay Loam |
| ■ | CUL-05#4 | 8.5 ft | 28 | 13 | 15 | 81 | Silty Clay Loam |
| ◆ | CUL-06#2 | 3.5 ft | 49 | 24 | 25 | 93 | Silty Clay Loam |
| ◇ | CUL-07#11 | 26.0 ft | 20 | 12 | 8 | 59 | Loam |
| ╳ | CUL-08#3 | 6.0 ft | 22 | 13 | 9 | 71 | Silty Loam |
| ✖ | CUL-09#2 | 3.5 ft | 48 | 20 | 28 | 93 | Silty Clay |

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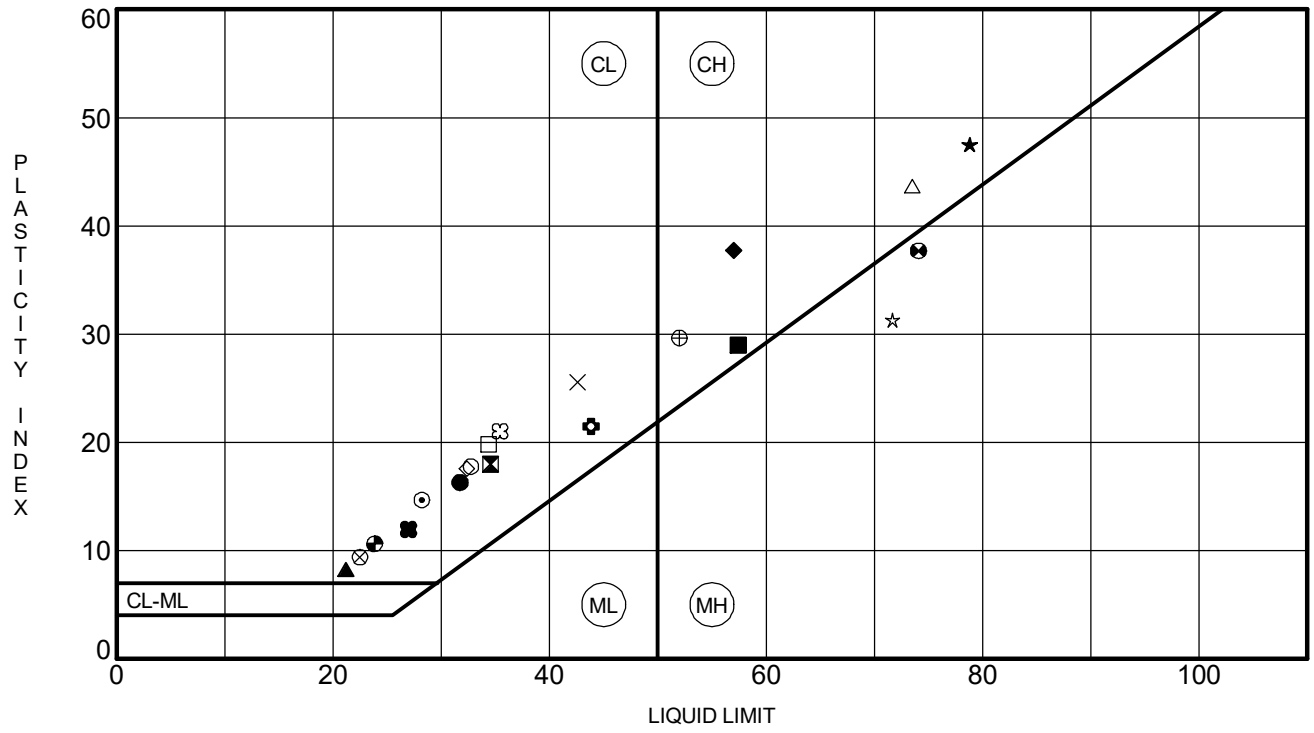
## ATTERBERG LIMITS' RESULTS

Project: IL 47 at IL 176 and Pleasant Valley Road

Location: McHenry County, Illinois

Number: 195-13-01




| Specimen Identification | | | LL | PL | PI | Fines | IDH Classification |
|---|---|---|---|---|---|---|---|
| ● | DPB-01#2 | 2.0 ft | 32 | 15 | 17 | 82 | Silty Clay Loam |
| ⊠ | DPB-05#2 | 2.0 ft | 35 | 17 | 18 | 95 | Silty Clay |
| ▲ | DPB-07#2 | 2.0 ft | 21 | 13 | 8 | 63 | NA |
| ★ | PT2-05ST#2 | 4.0 ft | 79 | 31 | 48 | 98 | Silty Clay Loam |
| ⊙ | SGB-03#2 | 2.0 ft | 28 | 14 | 14 | 87 | Silty Clay |
| ✿ | SGB-07#1 | 0.0 ft | 44 | 22 | 22 | 67 | Clay Loam |
| ○ | SGB-12#2 | 2.0 ft | 33 | 15 | 18 | 99 | Silty Clay |
| △ | SGB-13#3 | 4.0 ft | 74 | 30 | 44 | 96 | Silty Loam |
| ⊗ | SGB-16#2 | 2.0 ft | 22 | 13 | 9 | 69 | Clay Loam |
| ⊕ | SGB-20#2 | 2.0 ft | 52 | 22 | 30 | 79 | Silty Clay Loam |
| □ | SGB-21#3 | 4.0 ft | 34 | 15 | 19 | 62 | Clay Loam |
| ⊛ | SGB-21#8 | 14.0 ft | 74 | 36 | 38 | 93 | Silty Loam |
| ◕ | SGB-21ST#2 | 6.0 ft | 24 | 13 | 11 | 66 | Clay Loam |
| ☆ | SGB-21ST#4 | 14.0 ft | 72 | 40 | 32 | 95 | Silty Loam |
| ⊠ | SGB-23#2 | 2.0 ft | 35 | 14 | 21 | 69 | Clay Loam |
| ■ | SGB-24#2 | 3.0 ft | 57 | 28 | 29 | 84 | Silty Clay |
| ◆ | SGB-32#2 | 2.0 ft | 57 | 19 | 38 | 81 | Silty Clay Loam |
| ◇ | SGB-34#2 | 2.0 ft | 32 | 15 | 17 | 78 | Silty Clay Loam |
| × | SGB-36#2 | 2.0 ft | 43 | 17 | 26 | 92 | Silty Clay |
| ✖ | SGB-39#2 | 2.0 ft | 27 | 15 | 12 | 73 | Silty Clay Loam |

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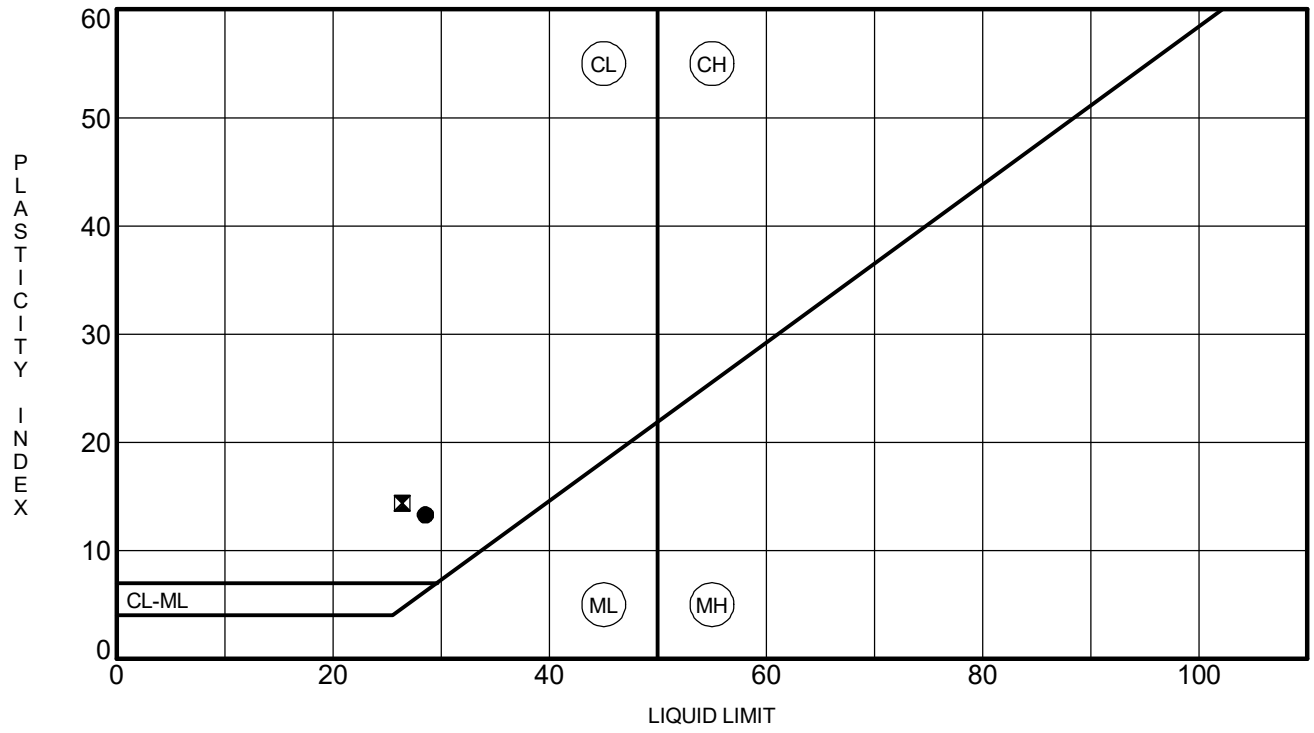
Location: McHenry County, Illinois

Number: 195-13-01




| | Specimen Identification | | LL | PL | PI | Fines | IDH Classification |
|---|---|---|---|---|---|---|---|
| ● | **SGB-40#2** | **2.0 ft** | **29** | **15** | **14** | **88** | **Silty Clay Loam** |
| ⊠ | **SGB-44#2** | **2.0 ft** | **26** | **12** | **14** | **56** | **Loam** |

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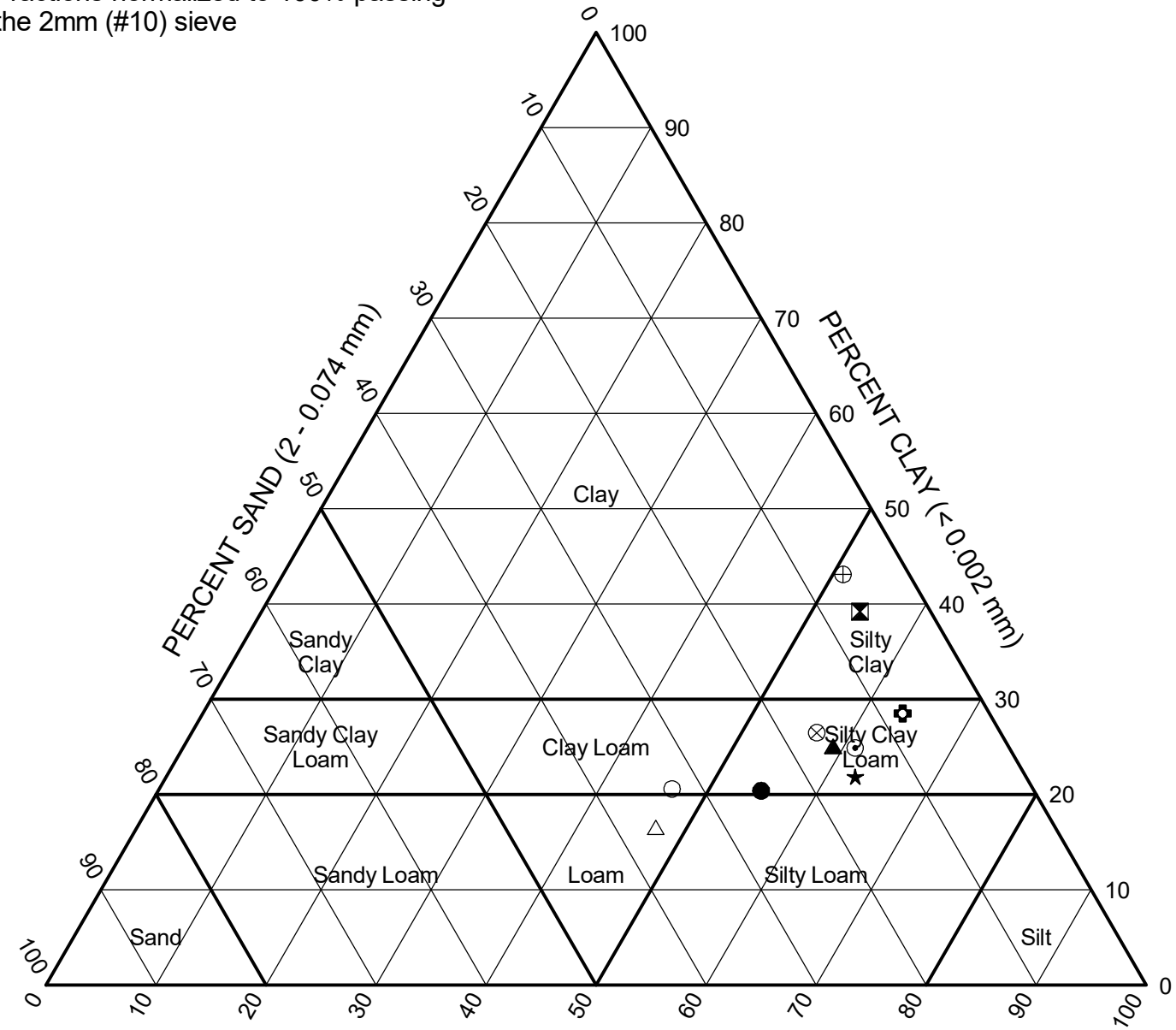
## ATTERBERG LIMITS' RESULTS

Project: IL 47 at IL 176 and Pleasant Valley Road

Location: McHenry County, Illinois

Number: 195-13-01

Fractions normalized to 100% passing the 2mm (#10) sieve




| | Sample | Depth (ft) | Sand (%) | Silt (%) | Clay (%) | Classification | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | IL DOT | AASHTO | ASTM |
| ● | **BIO-02#2** | **3.5** | **24.8** | **54.8** | **20.4** | **Silty Clay Loam** | **A-4 (3)** | **CL** |
| ⊠ | **BIO-03#1** | **1.0** | **6.4** | **54.4** | **39.2** | **Silty Clay** | **A-7-6 (35)** | **CH** |
| ▲ | **BIO-06#3** | **6.0** | **15.9** | **59.0** | **25.1** | **Silty Clay Loam** | **A-6 (7)** | **CL** |
| ★ | **BIO-09#1** | **1.0** | **15.4** | **62.6** | **21.9** | **Silty Clay Loam** | **A-4 (0)** | **CL-ML** |
| ⊙ | **BIO-11#3** | **6.0** | **14.0** | **61.1** | **24.9** | **Silty Clay Loam** | **A-6 (7)** | **CL** |
| ✿ | **BIO-14#1** | **1.0** | **7.9** | **63.6** | **28.5** | **Silty Clay Loam** | **A-7-6 (28)** | **CL** |
| ○ | **BIO-20#1** | **1.0** | **32.9** | **46.6** | **20.6** | **Clay Loam** | **A-6 (9)** | **CL** |
| △ | **BIO-20#6** | **13.5** | **36.5** | **47.1** | **16.6** | **Loam** | **A-4 (3)** | **CL** |
| ⊗ | **BIO-21#1** | **1.0** | **16.8** | **56.8** | **26.5** | **Silty Clay Loam** | **A-6 (15)** | **CL** |
| ⊕ | **BIO-25#2** | **3.5** | **6.1** | **50.9** | **43.1** | **Silty Clay** | **A-6 (19)** | **CL** |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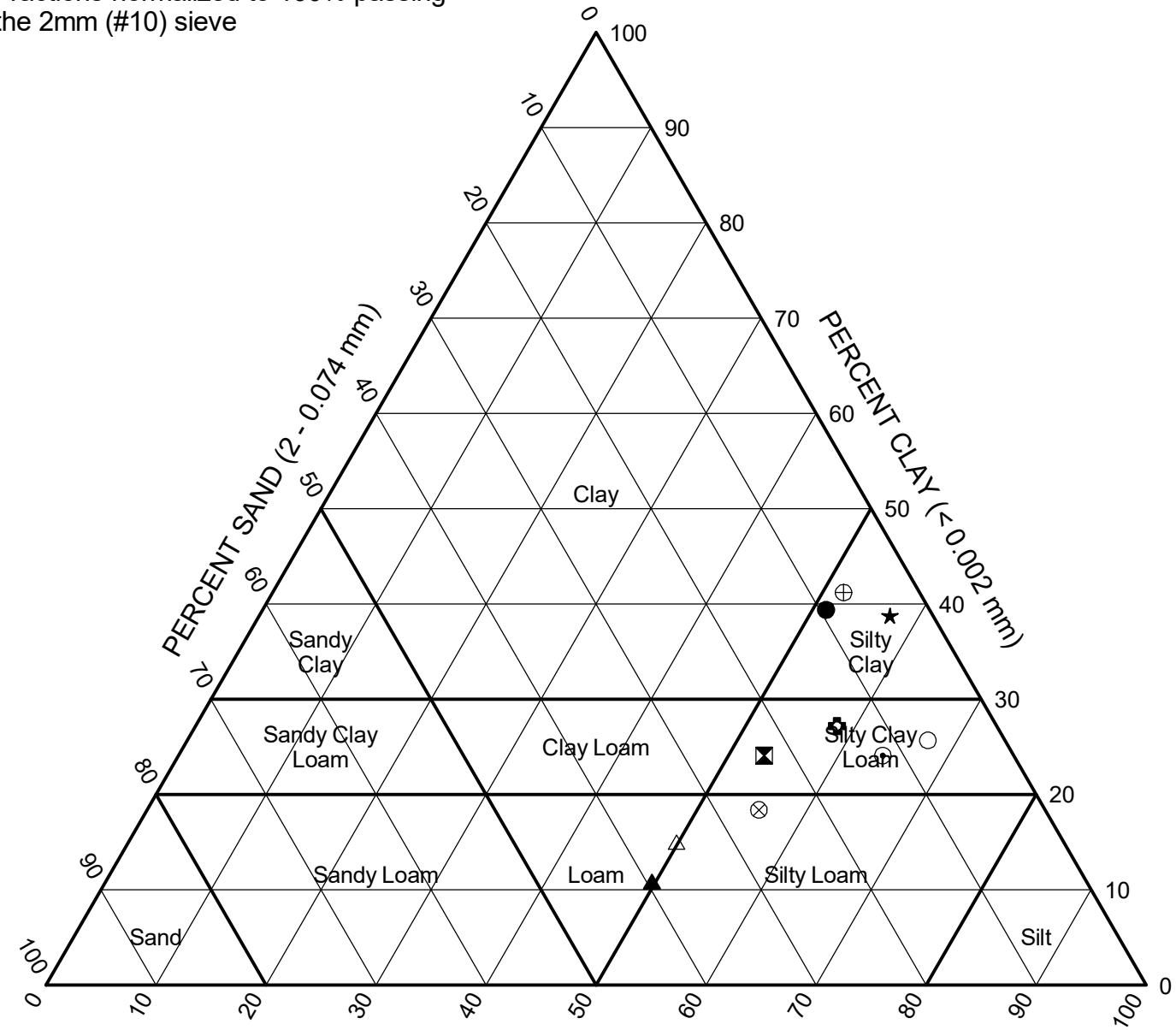
## IDH Textural Classification Chart

Project: IL 47 at IL 176 and Pleasant Valley Road

Location: McHenry County, Illinois

Number: 195-13-01

Fractions normalized to 100% passing the 2mm (#10) sieve




| | Sample | Depth (ft) | Sand (%) | Silt (%) | Clay (%) | Classification | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | IL DOT | AASHTO | ASTM |
| ● | BIO-29#1 | 1.0 | 9.5 | 51.2 | 39.4 | Silty Clay | A-7-6 (41) | CH |
| ⊠ | BIO-33#1 | 1.0 | 22.7 | 53.2 | 24.1 | Silty Clay Loam | A-7-6 (23) | CL |
| ▲ | BIO-35#2 | 3.5 | 39.6 | 49.6 | 10.9 | Loam | A-4 (0) | ML |
| ★ | CUL-02#5 | 11.0 | 3.9 | 57.3 | 38.8 | Silty Clay | A-6 (19) | CL |
| ⊙ | CUL-03#3 | 6.0 | 11.9 | 64.0 | 24.1 | Silty Clay Loam | A-6 (9) | CL |
| ✿ | CUL-05#4 | 8.5 | 14.5 | 58.3 | 27.2 | Silty Clay Loam | A-6 (10) | CL |
| ○ | CUL-06#2 | 3.5 | 7.0 | 67.3 | 25.7 | Silty Clay Loam | A-7-6 (26) | CL |
| △ | CUL-07#11 | 26.0 | 35.3 | 49.8 | 15.0 | Loam | A-4 (2) | CL |
| ⊗ | CUL-08#3 | 6.0 | 26.1 | 55.6 | 18.4 | Silty Loam | A-4 (3) | CL |
| ⊕ | CUL-09#2 | 3.5 | 6.9 | 51.9 | 41.2 | Silty Clay | A-7-6 (28) | CL |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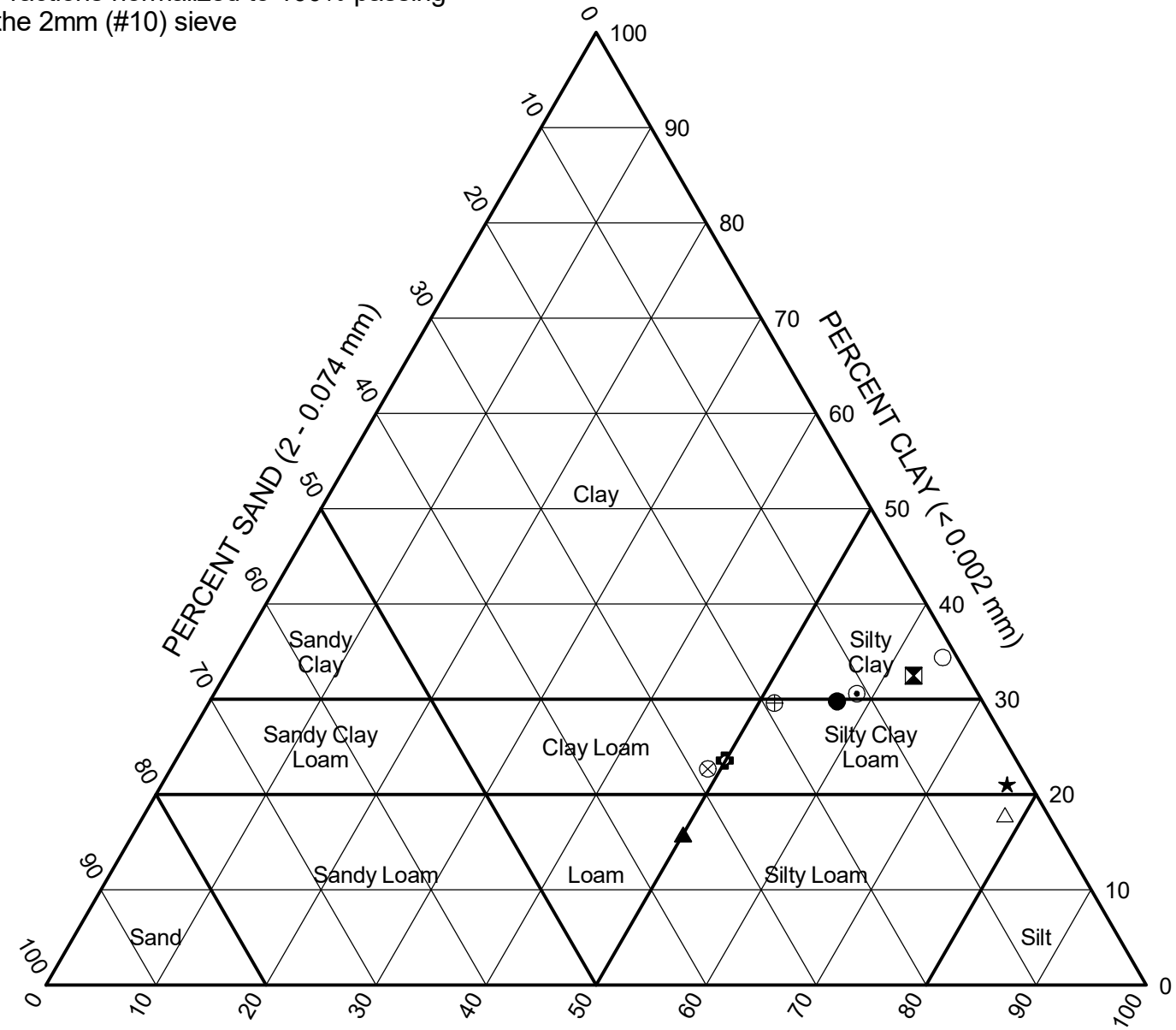
# IDH Textural Classification Chart

Project: IL 47 at IL 176 and Pleasant Valley Road

Location: McHenry County, Illinois

Number: 195-13-01

Fractions normalized to 100% passing the 2mm (#10) sieve




| | Sample | Depth (ft) | Sand (%) | Silt (%) | Clay (%) | Classification | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | IL DOT | AASHTO | ASTM |
| ● | DPB-01#2 | 2.0 | 13.2 | 57.0 | 29.8 | Silty Clay Loam | A-6 (12) | CL |
| ⊠ | DPB-05#2 | 2.0 | 4.9 | 62.6 | 32.5 | Silty Clay | A-6 (17) | CL |
| ▲ | DPB-07#2 | 2.0 | 34.2 | 50.0 | 15.8 | NA | A-4 (2) | CL |
| ★ | PT2-05ST#2 | 4.0 | 2.2 | 76.8 | 21.1 | Silty Clay Loam | A-7-5 (56) | CH |
| ⊙ | SGB-03#2 | 2.0 | 11.0 | 58.4 | 30.6 | Silty Clay | A-6 (10) | CL |
| ✿ | SGB-07#1 | 0.0 | 26.4 | 49.9 | 23.6 | Clay Loam | A-7-6 (13) | CL |
| ○ | SGB-12#2 | 2.0 | 1.3 | 64.3 | 34.4 | Silty Clay | A-6 (17) | CL |
| △ | SGB-13#3 | 4.0 | 3.9 | 78.2 | 17.9 | Silty Loam | A-7-5 (50) | CH |
| ⊗ | SGB-16#2 | 2.0 | 28.4 | 48.8 | 22.7 | Clay Loam | A-4 (3) | CL |
| ⊕ | SGB-20#2 | 2.0 | 19.0 | 51.4 | 29.6 | Silty Clay Loam | A-7-6 (24) | CH |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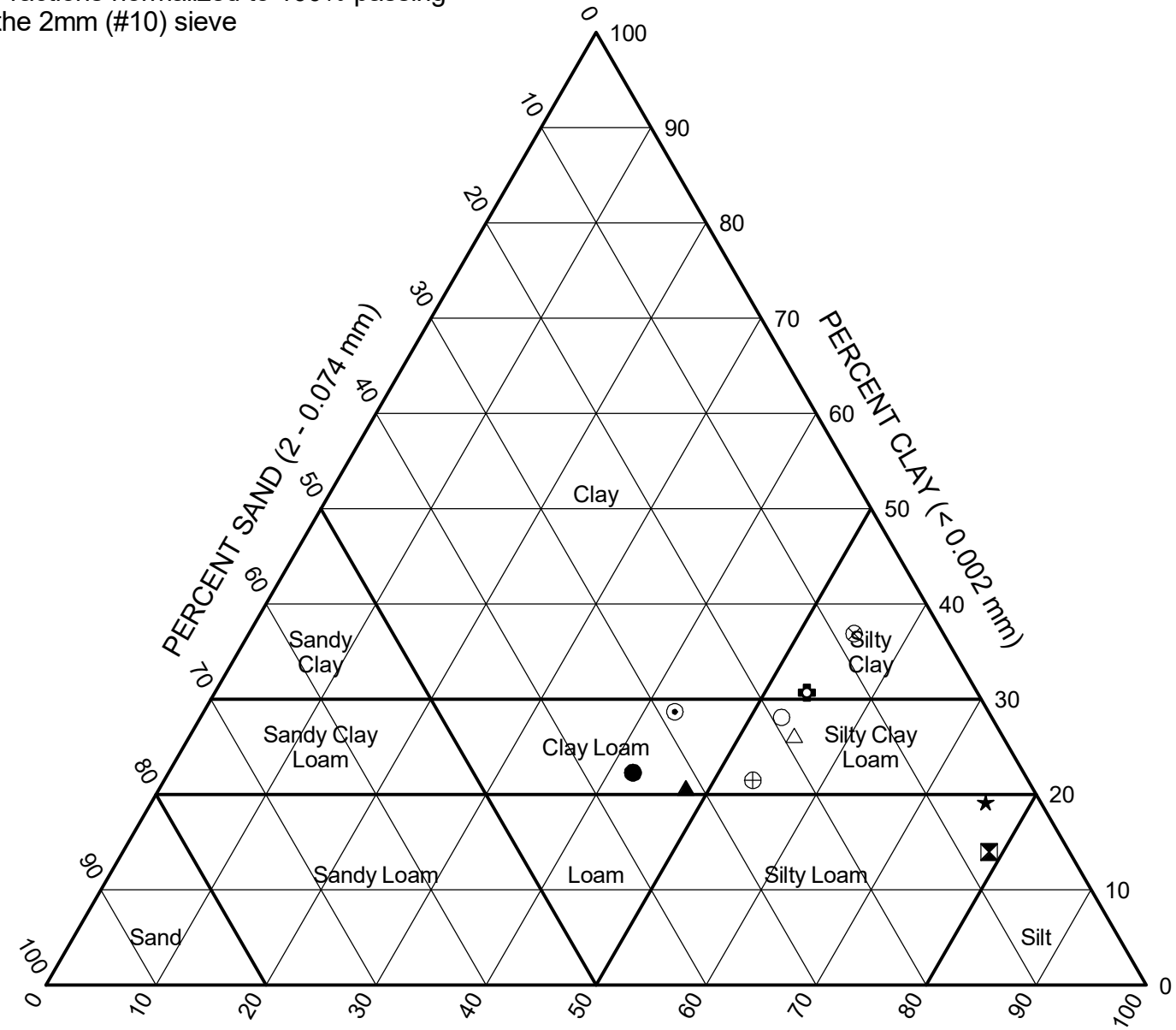
## IDH Textural Classification Chart

Project: IL 47 at IL 176 and Pleasant Valley Road

Location: McHenry County, Illinois

Number: 195-13-01

Fractions normalized to 100% passing the 2mm (#10) sieve




| | Sample | Depth (ft) | Sand (%) | Silt (%) | Clay (%) | Classification | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | IL DOT | AASHTO | ASTM |
| ● | SGB-21#3 | 4.0 | 35.4 | 42.2 | 22.3 | Clay Loam | A-6 (9) | CL |
| ⊠ | SGB-21#8 | 14.0 | 7.3 | 78.7 | 14.0 | Silty Loam | A-7-5 (43) | MH |
| ▲ | SGB-21ST#2 | 6.0 | 31.5 | 47.8 | 20.7 | Clay Loam | A-6 (4) | CL |
| ★ | SGB-21ST#4 | 14.0 | 5.0 | 75.8 | 19.2 | Silty Loam | A-7-5 (39) | MH |
| ⊙ | SGB-23#2 | 2.0 | 28.5 | 42.8 | 28.7 | Clay Loam | A-6 (12) | CL |
| ✿ | SGB-24#2 | 3.0 | 15.4 | 53.8 | 30.7 | Silty Clay | A-7-6 (27) | CH |
| ○ | SGB-32#2 | 2.0 | 19.1 | 52.8 | 28.1 | Silty Clay Loam | A-7-6 (32) | CH |
| △ | SGB-34#2 | 2.0 | 18.9 | 54.9 | 26.2 | Silty Clay Loam | A-6 (11) | CL |
| ⊗ | SGB-36#2 | 2.0 | 8.1 | 55.0 | 36.9 | Silty Clay | A-7-6 (25) | CL |
| ⊕ | SGB-39#2 | 2.0 | 24.9 | 53.5 | 21.5 | Silty Clay Loam | A-6 (6) | CL |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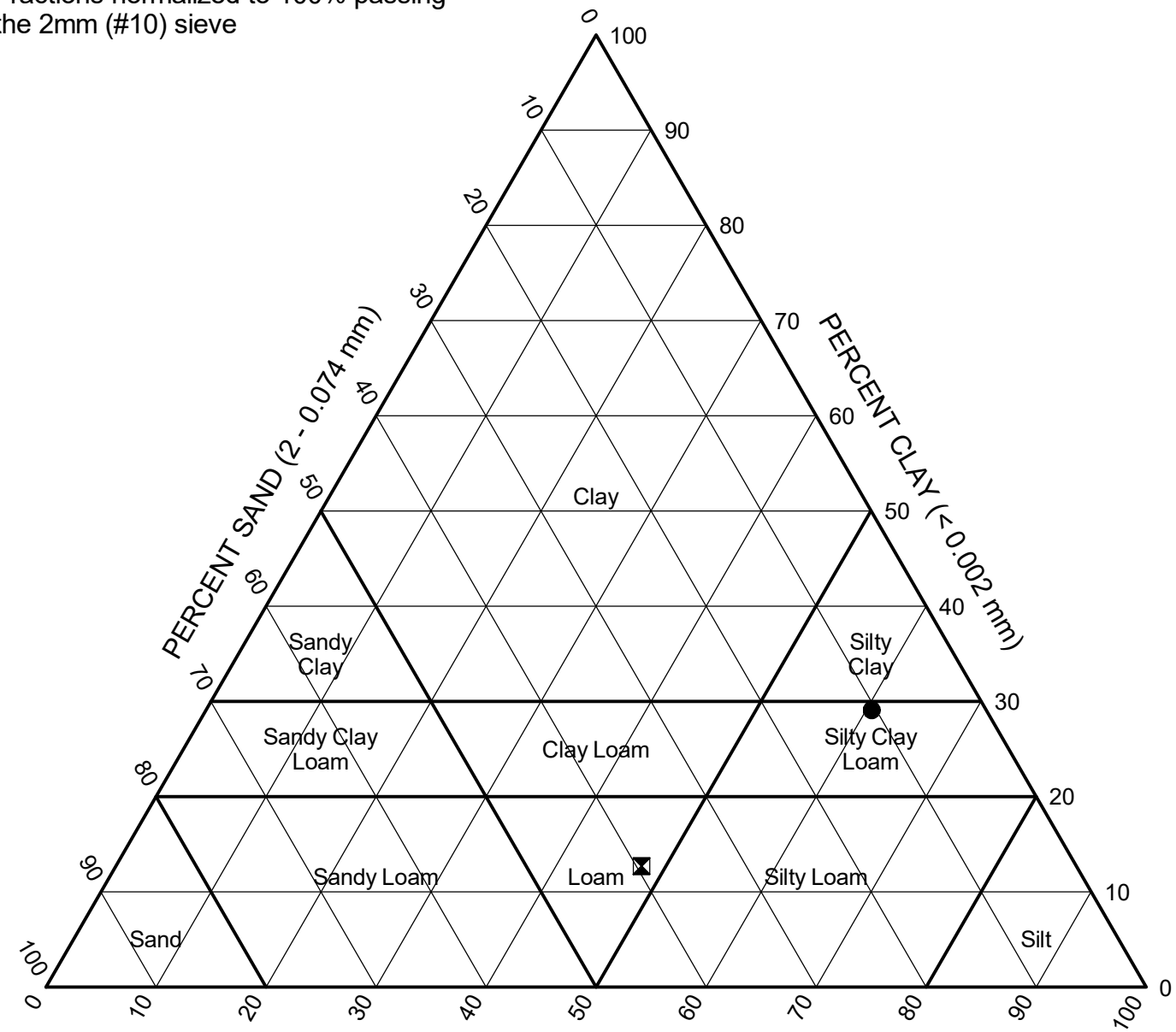
# IDH Textural Classification Chart

Project: IL 47 at IL 176 and Pleasant Valley Road

Location: McHenry County, Illinois

Number: 195-13-01

Fractions normalized to 100% passing the 2mm (#10) sieve




| | Sample | Depth (ft) | Sand (%) | Silt (%) | Clay (%) | Classification | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | IL DOT | AASHTO | ASTM |
| ● | **SGB-40#2** | **2.0** | **10.4** | **60.5** | **29.1** | **Silty Clay Loam** | **A-6 (11)** | **CL** |
| ⊠ | **SGB-44#2** | **2.0** | **39.4** | **47.8** | **12.7** | **Loam** | **A-6 (4)** | **CL** |
| | | | | | | | | |
| | | | | | | | | |
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# IDH Textural Classification Chart

Project: IL 47 at IL 176 and Pleasant Valley Road

Location: McHenry County, Illinois

Number: 195-13-01

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# ONE-DIMENSIONAL CONSOLIDATION TEST
## AASHTO T 216 / ASTM D 2435

**Project:** Illinois Route 47
**Client:** Strand Associates, Inc.
**Soil Sample ID:** Boring CUL-02ST, ST#1, 9 to 11 feet
**Sample Description:** Gray SI CLAY

**Tested by:** M. Snider
**Prepared by:** M. Snider
**Test date:** 12/15/2017
**WEI:** 195-13-01

| | | | |
|---|---|---|---|
| Initial sample height = | 0.787 in | Ring diameter = | 2.505 in |
| Initial sample mass = | 110.25 g | Ring mass = | 63.49 g |
| Initial water content = | 44.02% | Initial sample and ring mass = | 173.74 g |
| Initial dry unit weight = | 75.20 pcf | Tare mass = | 63.49 g |
| Initial void ratio = | 1.157 | Final ring and sample mass = | 161.65 g |
| Initial degree of saturation = | 98.89% | Mass of wet sample and tare = | 162.18 g |
| | | Mass of dry sample and tare = | 140.04 g |
| Final sample mass = | 98.69 g | Initial dial reading = | 0.01000 in |
| Final dry sample mass = | 76.55 g | Final dial reading = | 0.18018 in |
| Final water content = | 28.92% | LL= | % |
| Final dry unit weight = | 95.95 pcf | PL= | % |
| Final void ratio = | 0.691 | % 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 $C_c$ = | 0.448 | **Preconsolidation pressure,$s_C$** | |
| Field corrected $C_c$ = | 0.491 | Casagrande Method = | 1835 psf |
| Swelling index $C_s$ = | 0.112 | **Over-Consolidation Ratio (OCR) =** | 1.31 |

| 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 | 100.0 | 0.00932 | 0.00047 | -0.03 | 1.158 | N/A | N/A | 720 |
| 2 | 200.0 | 0.01015 | 0.00066 | 0.10 | 1.155 | 0.1200 | 0.00 | 720 |
| 3 | 500.0 | 0.01597 | 0.00087 | 0.87 | 1.139 | 0.0506 | 0.14 | 720 |
| 4 | 1000.0 | 0.03003 | 0.00138 | 2.72 | 1.099 | 0.0267 | 0.37 | 960 |
| 5 | 2000.0 | 0.05713 | 0.00198 | 6.24 | 1.023 | 0.0205 | 0.79 | 960 |
| 6 | 4000.0 | 0.09524 | 0.00425 | 11.37 | 0.912 | 0.0190 | 0.98 | 1440 |
| 7 | 8000.0 | 0.13865 | 0.00648 | 17.17 | 0.787 | 0.0195 | 1.28 | 1440 |
| 8 | 16000.0 | 0.18529 | 0.00903 | 23.42 | 0.652 | 0.0194 | 1.42 | 1440 |
| 9 | 32000.0 | 0.22799 | 0.01063 | 29.05 | 0.531 | 0.0212 | 0.91 | 720 |
| 10 | 8000.0 | 0.22479 | 0.00809 | 28.32 | 0.546 | N/A | N/A | 2880 |
| 11 | 2000.0 | 0.20759 | 0.00386 | 25.60 | 0.605 | N/A | N/A | 720 |
| 12 | 500.0 | 0.18180 | 0.00183 | 22.06 | 0.681 | N/A | N/A | 1440 |

Prepared by: _____ Date: 1/24/18

Checked by: _____ Date: 1/31/18



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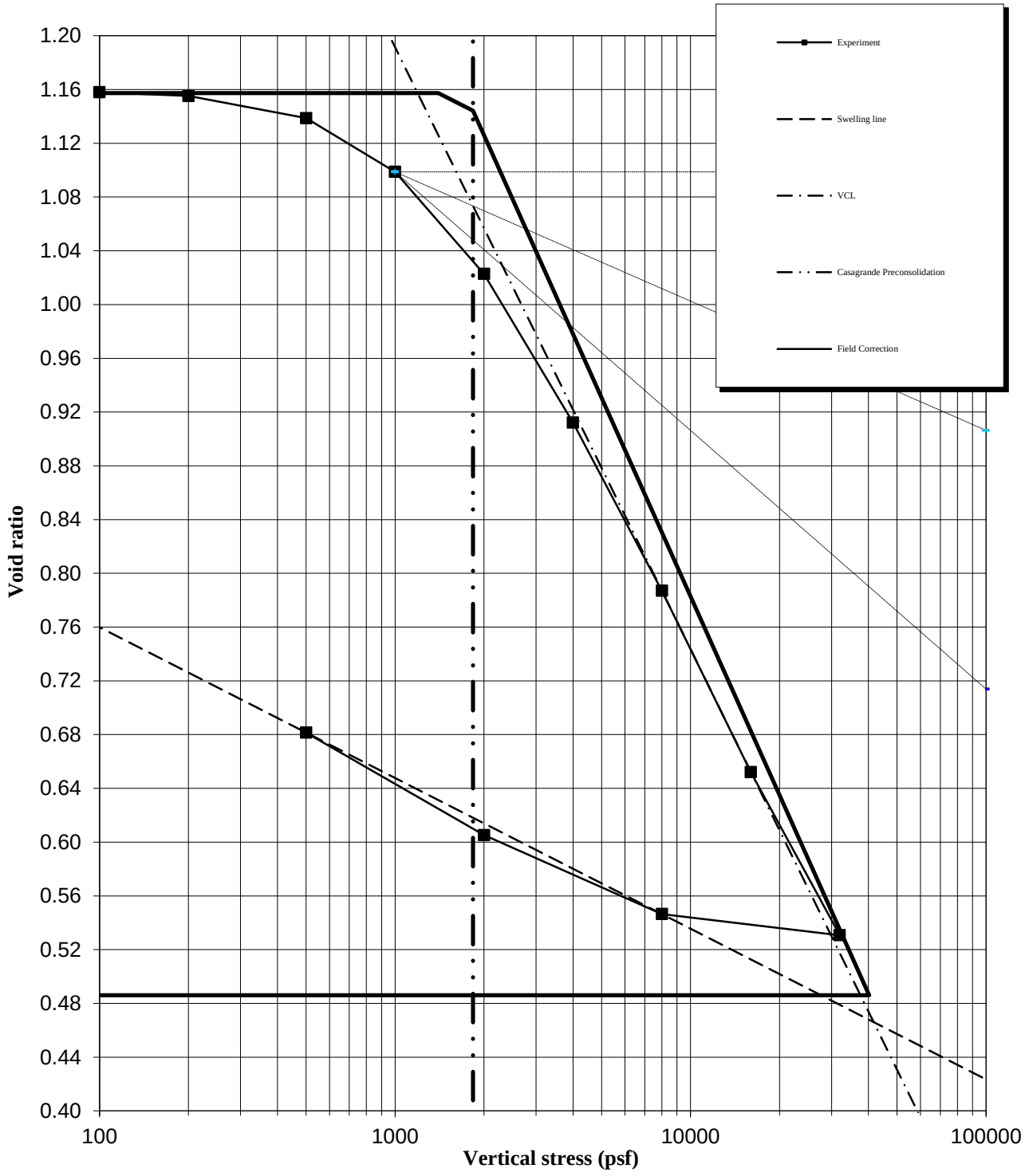
# CONSOLIDATION CURVE

## Sample CUL-02ST, ST#1, 9 to 11 feet



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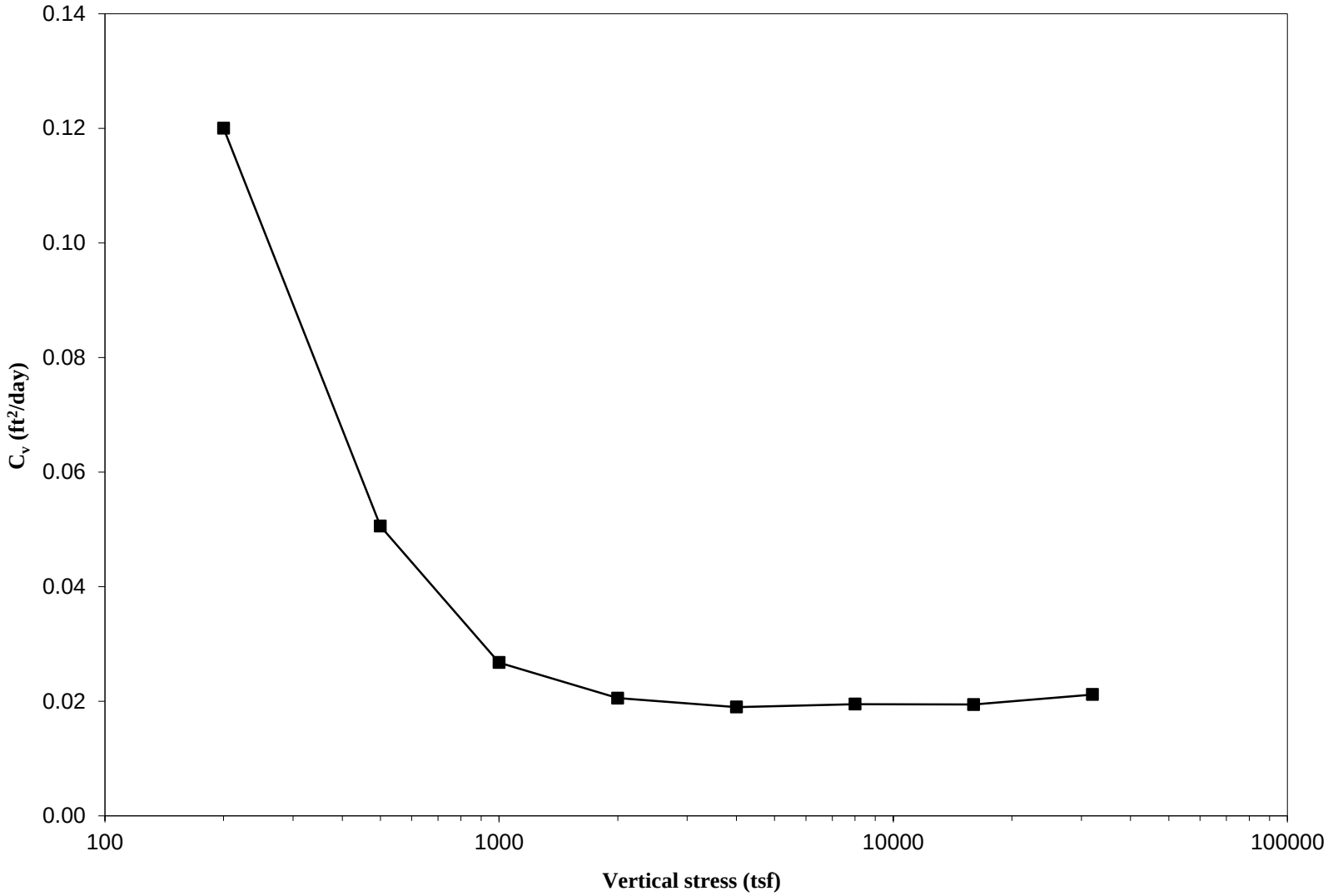
# CONSOLIDATION COEFFICIENT ($C_v$) vs. VERTICAL STRESS

**Sample CUL-02ST, ST#1, 9 to 11 feet**

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# ONE-DIMENSIONAL CONSOLIDATION TEST

## AASHTO T 216 / ASTM D 2435

**Project:** Illinois Route 47
**Client:** Strand Associates, Inc.
**Soil Sample ID:** Boring CUL-05ST, ST#1, 7 to 9 feet
**Sample Description:** Gray SI CLAY

**Tested by:** M. Snider
**Prepared by:** M. Snider
**Test date:** 12/15/2017
**WEI:** 195-13-01

| | | | |
|---|---|---|---|
| Initial sample height = | 0.968 in | Ring diameter = | 2.498 in |
| Initial sample mass = | 179.85 g | Ring mass = | 109.45 g |
| Initial water content = | 15.61% | Initial sample and ring mass = | 289.30 g |
| Initial dry unit weight = | 124.95 pcf | Tare mass = | 80.66 g |
| Initial void ratio = | 0.378 | Final ring and sample mass = | 284.17 g |
| Initial degree of saturation = | 100.00% | Mass of wet sample and tare = | 255.12 g |
| | | Mass of dry sample and tare = | 236.23 g |
| Final sample mass = | 174.46 g | Initial dial reading = | 0.01000 in |
| Final dry sample mass = | 155.57 g | Final dial reading = | 0.08080 in |
| Final water content = | 12.14% | LL = | % |
| Final dry unit weight = | 134.81 pcf | PL = | % |
| Final void ratio = | 0.278 | % Sand = | |
| Final degree of saturation = | 100.00% | % Silt = | |
| Estimated specific gravity = | 2.76 | % Clay = | |
| | | **In-Situ Vertical Effective Stress =** | 1500 psf |

**Compression and Swelling Indices**

| | |
|---|---|
| Compression index $C_c$ = | 0.073 |
| Field corrected $C_c$ = | 0.093 |
| Swelling index $C_s$ = | 0.011 |

**Preconsolidation pressure, $s_C$**

| | |
|---|---|
| Casagrande Method = | 3615 psf |
| **Over-Consolidation Ratio (OCR) =** | 2.41 |

| 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 | 100.0 | 0.01792 | 0.00010 | 0.83 | 0.367 | N/A | N/A | 720 |
| 2 | 200.0 | 0.02293 | 0.00023 | 1.36 | 0.360 | 0.1107 | 0.02 | 720 |
| 3 | 500.0 | 0.03028 | 0.00058 | 2.16 | 0.349 | 0.2168 | 0.04 | 720 |
| 4 | 1000.0 | 0.03752 | 0.00090 | 2.94 | 0.338 | 0.2297 | 0.04 | 960 |
| 5 | 2000.0 | 0.04474 | 0.00135 | 3.73 | 0.327 | 0.2003 | 0.07 | 960 |
| 6 | 4000.0 | 0.05195 | 0.00193 | 4.53 | 0.316 | 0.2185 | 0.10 | 1440 |
| 7 | 8000.0 | 0.06182 | 0.00253 | 5.61 | 0.301 | 0.2066 | 0.15 | 1440 |
| 8 | 16000.0 | 0.07452 | 0.00324 | 7.00 | 0.282 | 0.2020 | 0.18 | 1440 |
| 9 | 32000.0 | 0.08912 | 0.00413 | 8.60 | 0.260 | 0.2132 | 0.05 | 720 |
| 10 | 8000.0 | 0.08896 | 0.00295 | 8.46 | 0.262 | N/A | N/A | 2880 |
| 11 | 2000.0 | 0.08540 | 0.00198 | 7.99 | 0.268 | N/A | N/A | 720 |
| 12 | 500.0 | 0.08170 | 0.00123 | 7.53 | 0.275 | N/A | N/A | 1440 |

Prepared by: M.L Date: 1/2 & 1/8

Checked by: AS Date: 1/31/18



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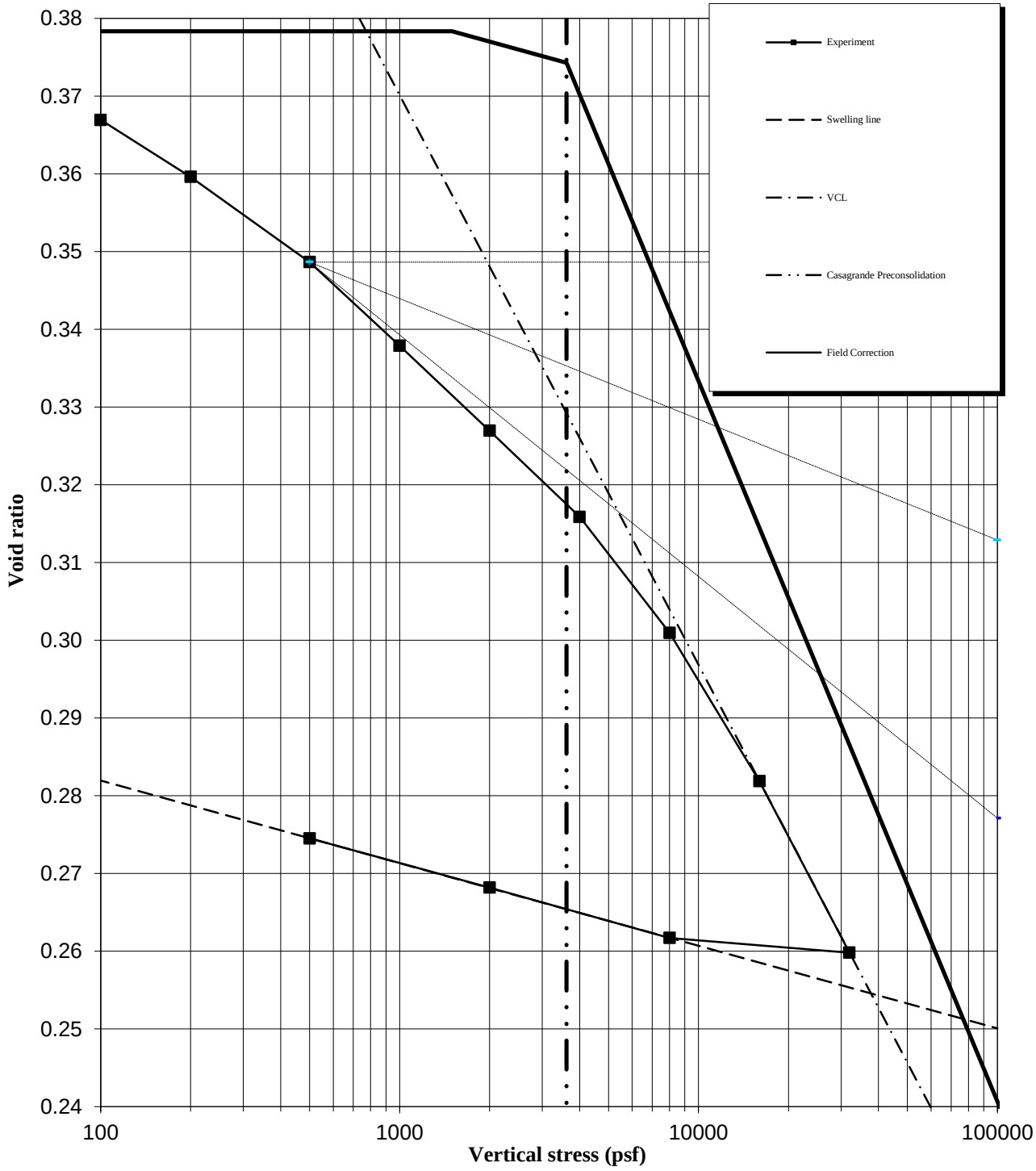
# CONSOLIDATION CURVE

## Sample CUL-05ST, ST#1, 7 to 9 feet



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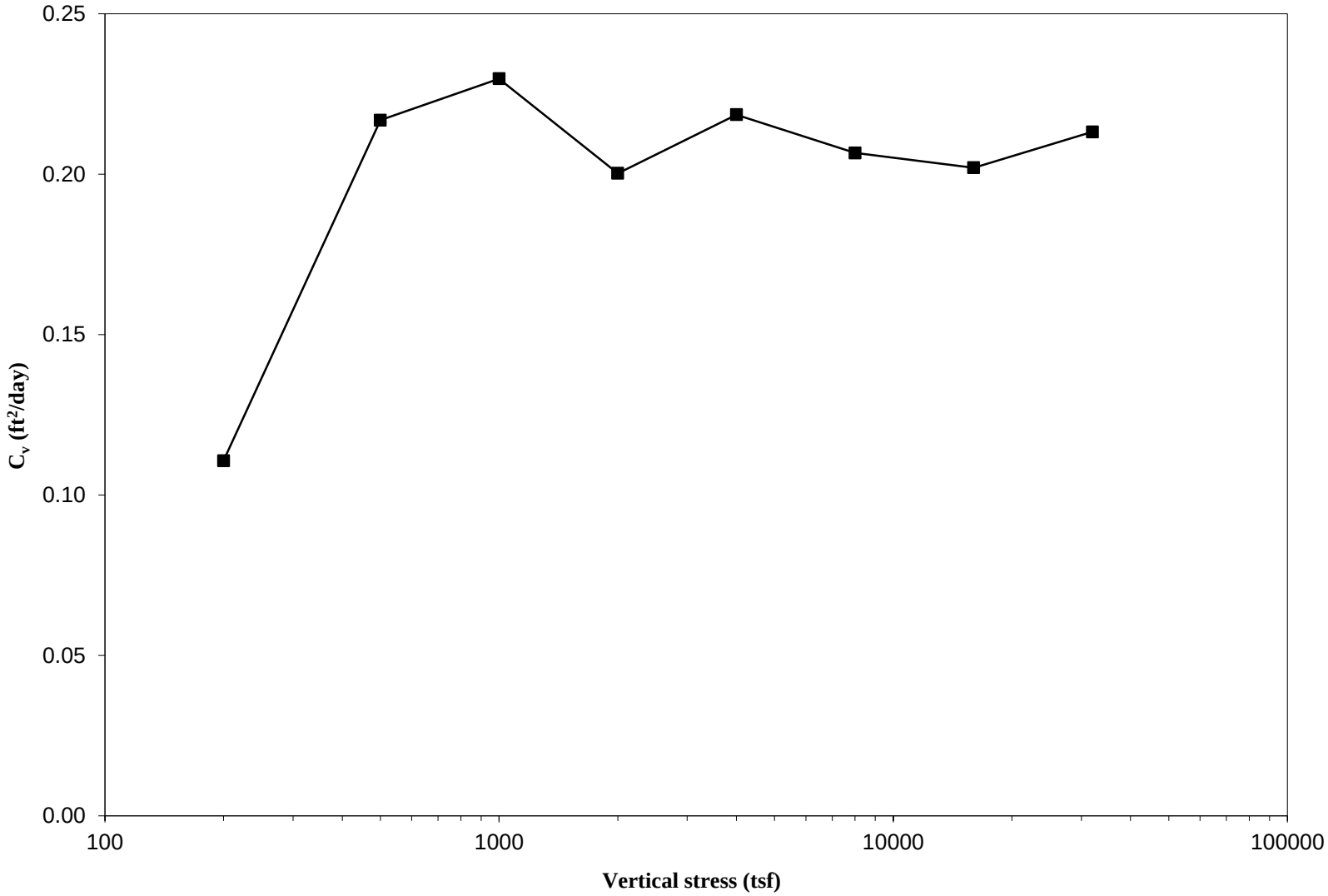
# CONSOLIDATION COEFFICIENT ($C_v$) vs. VERTICAL STRESS

**Sample CUL-05ST, ST#1, 7 to 9 feet**

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# ONE-DIMENSIONAL CONSOLIDATION TEST

## AASHTO T 216 / ASTM D 2435

**Project:** Illinois Route 47
**Client:** Strand Associates, Inc.
**Soil Sample ID:** Boring PT2-05, ST#2, 4 to 6 feet
**Sample Description:** Gray ORGANIC SI LOAM

**Tested by:** M. Snider
**Prepared by:** M. Snider
**Test date:** 1/4/2018
**WEI:** 195-13-01

| | | | |
|---|---|---|---|
| Initial sample height = | 0.975 in | Ring diameter = | 2.501 in |
| Initial sample mass = | 112.14 g | Ring mass = | 109.54 g |
| Initial water content = | 100.54% | Initial sample and ring mass = | 221.68 g |
| Initial dry unit weight = | 44.48 pcf | Tare mass = | 77.90 g |
| Initial void ratio = | 2.507 | Final ring and sample mass = | 188.67 g |
| Initial degree of saturation = | 100.26% | Mass of wet sample and tare = | 156.96 g |
| | | Mass of dry sample and tare = | 133.82 g |
| Final sample mass = | 79.06 g | Initial dial reading = | 0.01000 in |
| Final dry sample mass = | 55.92 g | Final dial reading = | 0.47368 in |
| Final water content = | 41.38% | LL = | % |
| Final dry unit weight = | 84.82 pcf | PL = | % |
| Final void ratio = | 0.839 | % Sand = | |
| Final degree of saturation = | 100.00% | % Silt = | |
| Estimated specific gravity = | 2.50 | % Clay = | |
| | | **In-Situ Vertical Effective Stress =** | 350 psf |

**Compression and Swelling Indices**

| | | | |
|---|---|---|---|
| Compression index $C_c$ = | 1.175 | **Preconsolidation pressure,$s_C$** | |
| Field corrected $C_c$ = | 1.361 | Casagrande Method = | 378 psf |
| Swelling index $C_s$ = | 0.143 | **Over-Consolidation Ratio (OCR) =** | 1.08 |

| 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 | 0.01412 | 0.00005 | 0.43 | 2.492 | N/A | N/A | 720 |
| 2 | 100.0 | 0.02580 | 0.00010 | 1.63 | 2.450 | 0.0420 | 0.19 | 720 |
| 3 | 200.0 | 0.05020 | 0.00023 | 4.15 | 2.362 | 0.0661 | 0.38 | 720 |
| 4 | 500.0 | 0.10527 | 0.00058 | 9.83 | 2.162 | 0.0373 | 1.82 | 720 |
| 5 | 1000.0 | 0.20268 | 0.00090 | 19.85 | 1.811 | 0.0136 | 2.40 | 1440 |
| 6 | 2000.0 | 0.30120 | 0.00135 | 30.01 | 1.455 | 0.0112 | 2.67 | 1440 |
| 7 | 4000.0 | 0.38620 | 0.00193 | 38.78 | 1.147 | 0.0105 | 2.46 | 1440 |
| 8 | 8000.0 | 0.45360 | 0.00253 | 45.76 | 0.902 | 0.0093 | 1.85 | 1440 |
| 9 | 16000.0 | 0.50624 | 0.00324 | 51.23 | 0.710 | 0.0096 | 1.59 | 1440 |
| 10 | 32000.0 | 0.52348 | 0.00413 | 53.09 | 0.645 | 0.0486 | 0.27 | 1440 |
| 11 | 8000.0 | 0.52308 | 0.00295 | 52.93 | 0.651 | N/A | N/A | 1440 |
| 12 | 2000.0 | 0.50589 | 0.00198 | 51.06 | 0.716 | N/A | N/A | 1440 |
| 13 | 500.0 | 0.47692 | 0.00123 | 48.01 | 0.823 | N/A | N/A | 1440 |

Prepared by: _____ Date: 1/24/18

Checked by: _____ Date: 1/31/18



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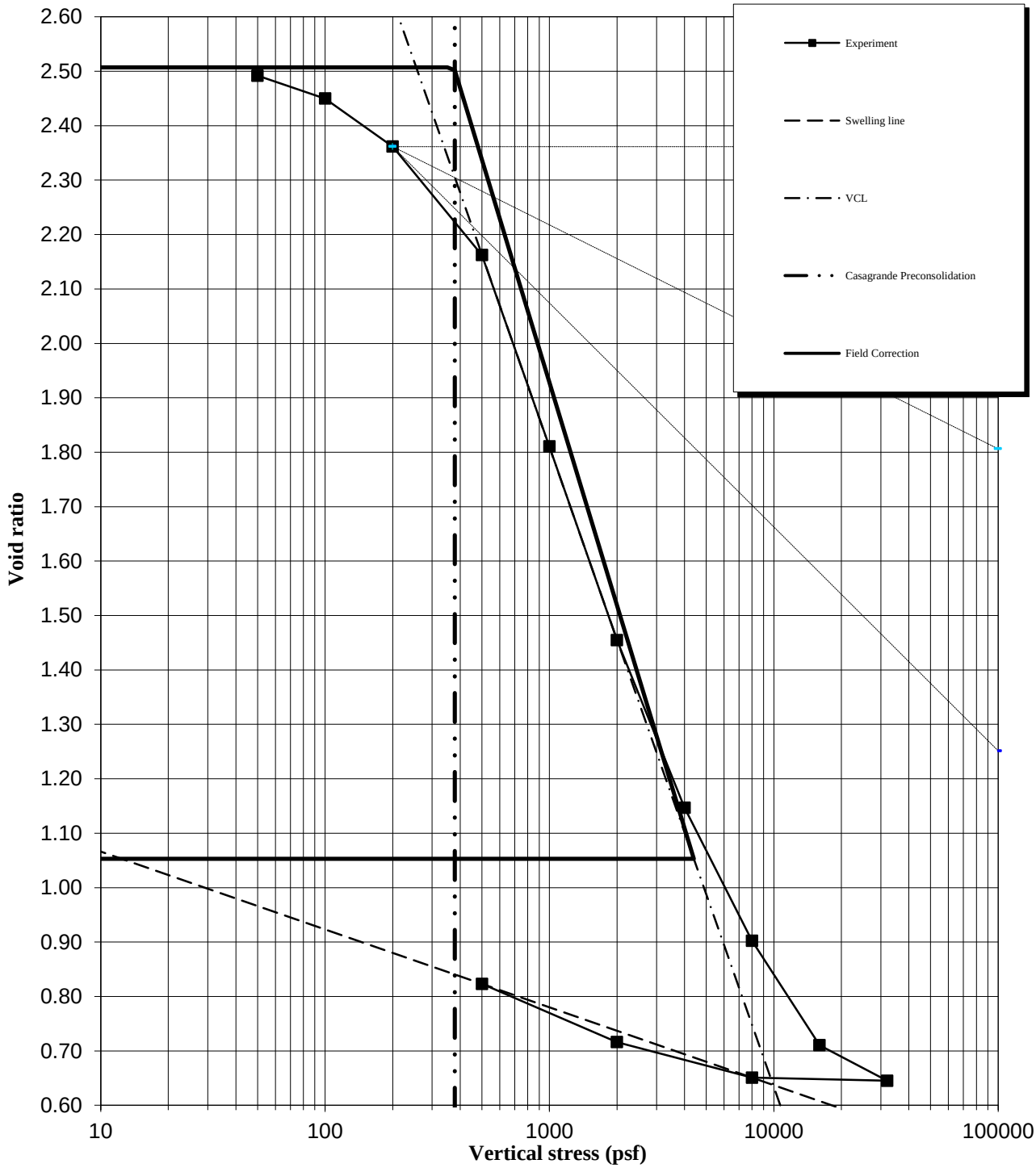
# CONSOLIDATION CURVE

## Sample PT2-05, ST#2, 4 to 6 feet



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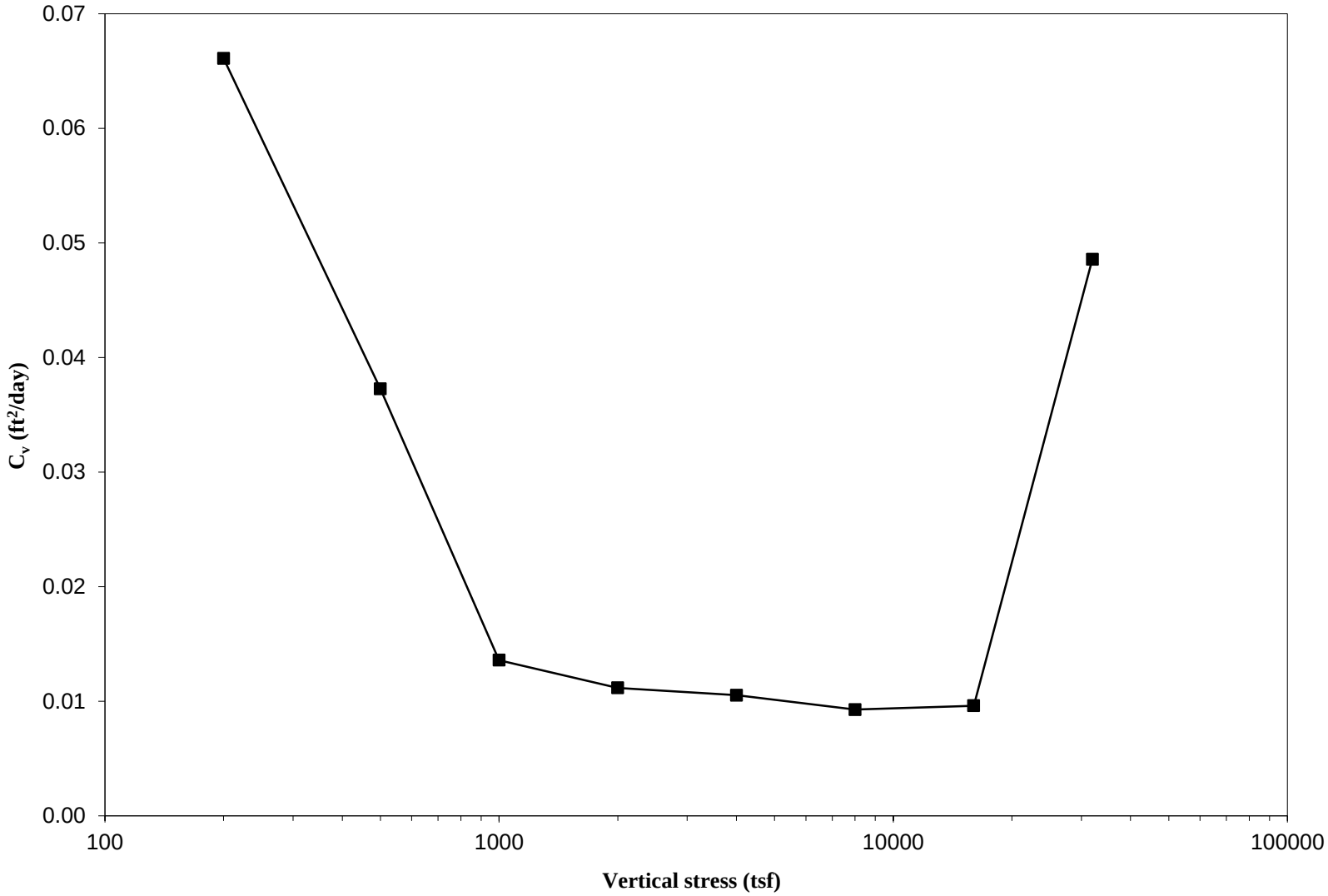
# CONSOLIDATION COEFFICIENT ($C_v$) vs. VERTICAL STRESS

**Sample PT2-05, ST#2, 4 to 6 feet**

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# ONE-DIMENSIONAL CONSOLIDATION TEST

## AASHTO T 216 / ASTM D 2435

**Project:** Illinois Route 47
**Client:** Strand Associates, Inc.
**Soil Sample ID:** Boring SGB-21ST, ST#4, 14 to 16 feet
**Sample Description:** Gray ORGANIC SI LOAM

**Tested by:** M. Snider
**Prepared by:** M. Snider
**Test date:** 12/21/2017
**WEI:** 195-13-01

| | | | |
|---|---|---|---|
| Initial sample height = | 0.993 in | Ring diameter = | 2.498 in |
| Initial sample mass = | 113.25 g | Ring mass = | 109.82 g |
| Initial water content = | 84.78% | Initial sample and ring mass = | 223.07 g |
| Initial dry unit weight = | 47.99 pcf | Tare mass = | 79.30 g |
| Initial void ratio = | 2.251 | Final ring and sample mass = | 198.36 g |
| Initial degree of saturation = | 94.16% | Mass of wet sample and tare = | 167.70 g |
| | | Mass of dry sample and tare = | 140.59 g |
| Final sample mass = | 88.40 g | Initial dial reading = | 0.01000 in |
| Final dry sample mass = | 61.29 g | Final dial reading = | 0.38505 in |
| Final water content = | 44.23% | LL = | 72 % |
| Final dry unit weight = | 77.11 pcf | PL = | 40 % |
| Final void ratio = | 1.023 | % Sand = | 5.0 |
| Final degree of saturation = | 100.00% | % Silt = | 75.8 |
| Estimated specific gravity = | 2.50 | % Clay = | 19.2 |
| | | **In-Situ Vertical Effective Stress =** | 1200 psf |

**Compression and Swelling Indices**

| | | | |
|---|---|---|---|
| Compression index $C_c$ = | 0.852 | **Preconsolidation pressure,$s_C$** | |
| Field corrected $C_c$ = | 1.038 | Casagrande Method = | 1391 psf |
| Swelling index $C_s$ = | 0.146 | **Over-Consolidation Ratio (OCR) =** | 1.16 |

| 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 | 0.01026 | 0.00005 | 0.03 | 2.250 | N/A | N/A | 1440 |
| 2 | 100.0 | 0.01430 | 0.00010 | 0.44 | 2.236 | 0.4465 | 0.08 | 1440 |
| 3 | 200.0 | 0.01912 | 0.00023 | 0.94 | 2.220 | 0.0053 | 0.25 | 1440 |
| 4 | 500.0 | 0.04574 | 0.00058 | 3.66 | 2.132 | 0.1472 | 0.47 | 720 |
| 5 | 1000.0 | 0.09096 | 0.00090 | 8.24 | 1.983 | 0.1170 | 0.89 | 1440 |
| 6 | 2000.0 | 0.14749 | 0.00135 | 13.98 | 1.796 | 0.0913 | 1.58 | 1440 |
| 7 | 4000.0 | 0.22828 | 0.00193 | 22.18 | 1.530 | 0.0425 | 2.34 | 720 |
| 8 | 8000.0 | 0.30293 | 0.00253 | 29.75 | 1.284 | 0.0350 | 2.57 | 1440 |
| 9 | 16000.0 | 0.37205 | 0.00324 | 36.79 | 1.055 | 0.0314 | 1.83 | 720 |
| 10 | 32000.0 | 0.43400 | 0.00413 | 43.11 | 0.849 | 0.0226 | 2.13 | 720 |
| 11 | 8000.0 | 0.43807 | 0.00295 | 43.41 | 0.840 | N/A | N/A | 1440 |
| 12 | 2000.0 | 0.41801 | 0.00198 | 41.29 | 0.909 | N/A | N/A | 1440 |
| 13 | 500.0 | 0.38608 | 0.00123 | 38.00 | 1.016 | N/A | N/A | 1440 |

Prepared by: _____ Date: 1/24/18

Checked by: _____ Date: 1/31/18



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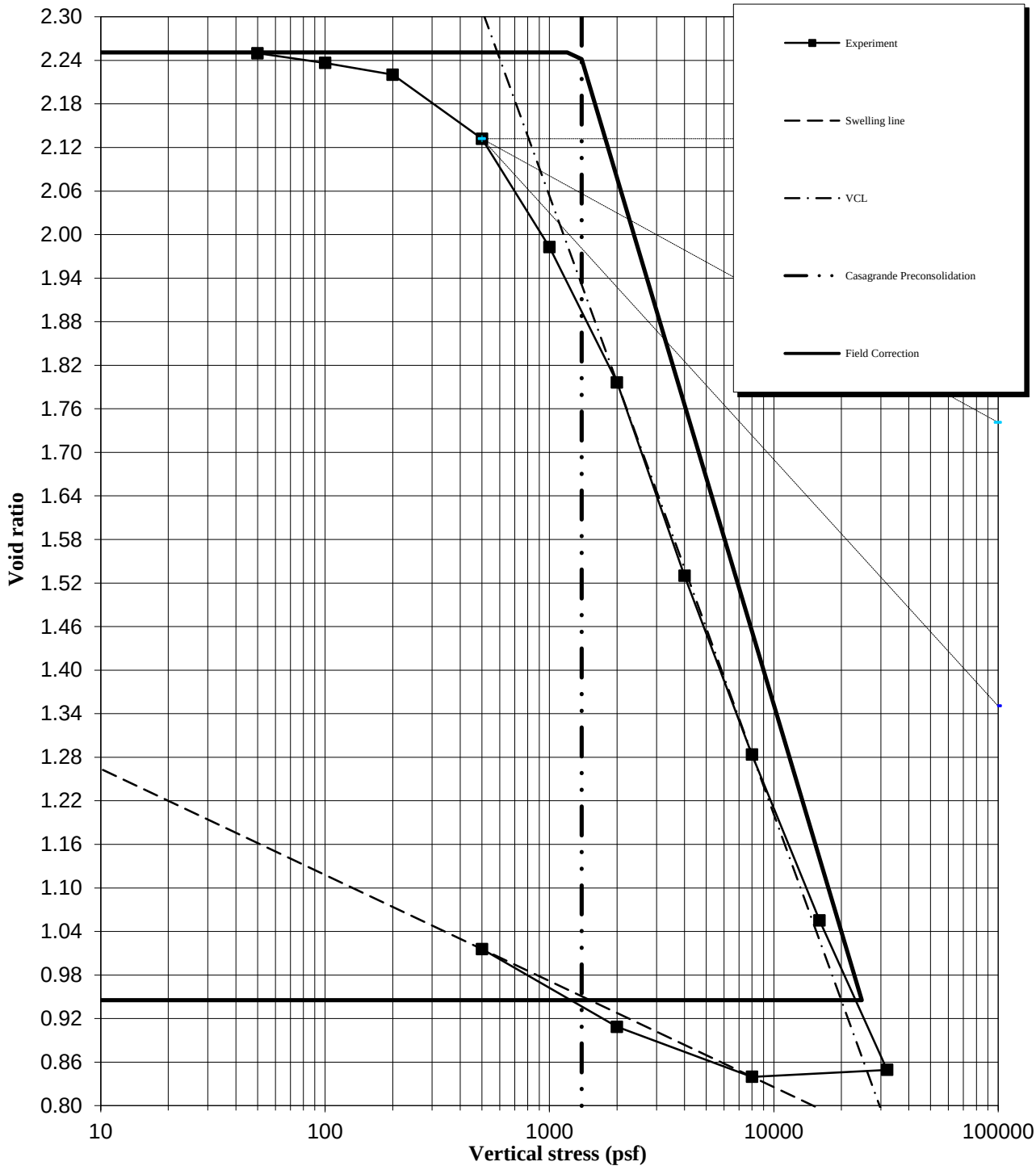
# CONSOLIDATION CURVE

## Sample SGB-21ST, ST#4, 14 to 16 feet



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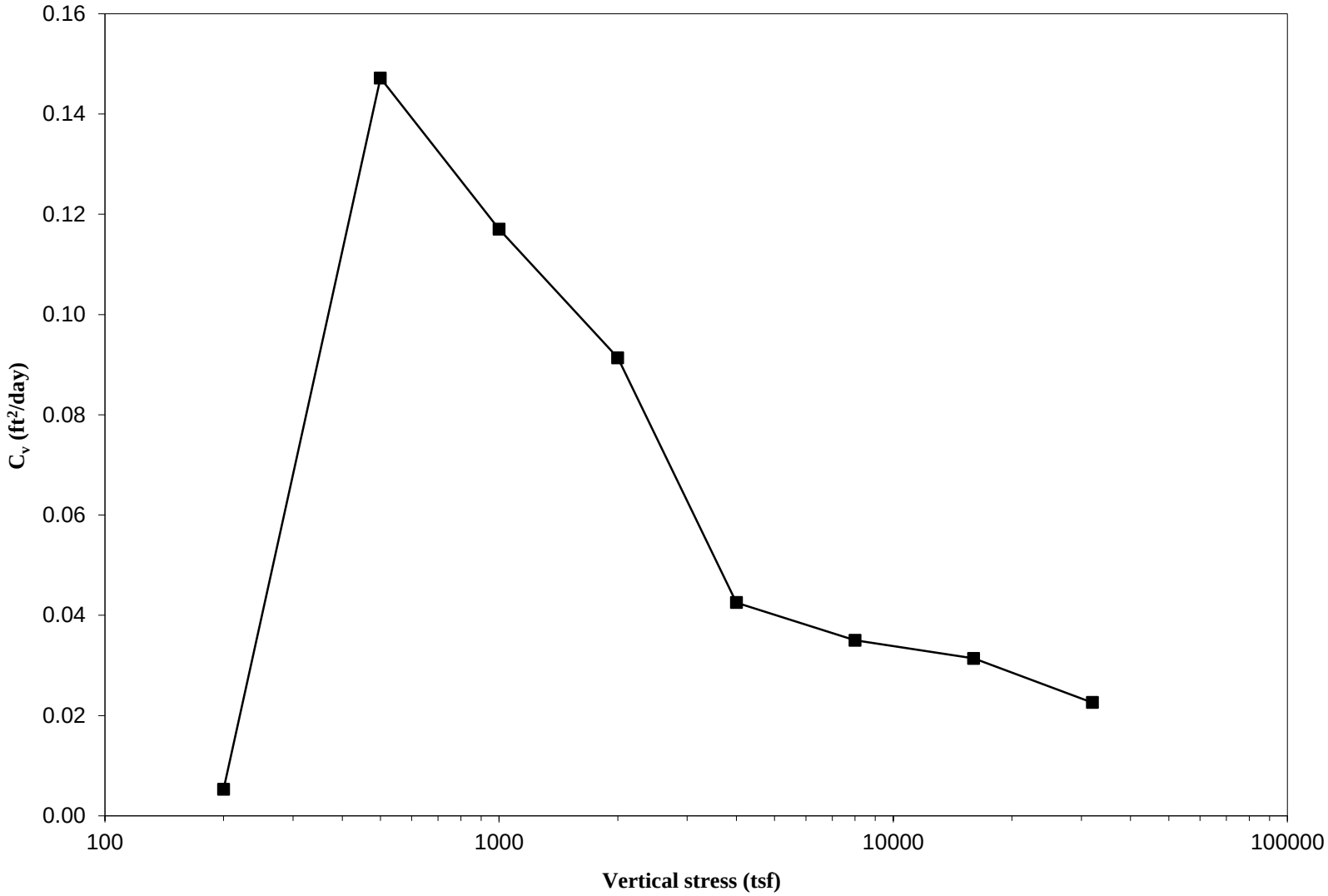
# CONSOLIDATION COEFFICIENT ($C_v$) vs. VERTICAL STRESS

**Sample SGB-21ST, ST#4, 14 to 16 feet**




AASHTO R18

# Organic Content - Loss On Ignition

## ASTM D 2974, Method C

AASHTO R18

**Client:** *Strand*
**Project:** *IL 47*
**WEI Job:** *195-13-01*
**Type/Condition:** *SS*
**Testing Furnace Temp °C.:** *440*

**Analyst:** *A. Mohammed*
**Date Received:** *Various*
**Date Tested:** *10/3/2017*

| Sample No./ Depth | CUL-02Alt S#4 (8.5-10ft.) | CUL-05Alt S#3 (6-7.5ft.) | SGB-13 S#3 (4-6ft.) | SGB-21 S#8 (14-16ft.) | SGB-23 S#5 (8-10ft.) |
|---|---|---|---|---|---|
| Description | Silty Clay | Silty Clay Loam | Silty Loam | Silty Loam | Silty Clay |
| wet soil + tare | 68.89 | 50.13 | 58.19 | 64.28 | 78.06 |
| Dry Soil + Tare | 57.59 | 45.41 | 51.48 | 54.04 | 61.13 |
| Tare Mass | 36.44 | 36.87 | 43.33 | 43.33 | 41.88 |
| w (%) | 53 | 55 | 82 | 96 | 88 |
| Dry Soil + Tare | 57.59 | 45.41 | 51.48 | 54.04 | 61.13 |
| Ash+ Tare | 56.12 | 44.57 | 50.54 | 52.28 | 58.14 |
| Tare Mass | 36.44 | 36.87 | 43.33 | 43.33 | 41.88 |
| Ash Content (%) | 93 | 90 | 88 | 84 | 84 |
| Organic Content (%) | 7.0 | 9.8 | 11.5 | 16.4 | 15.5 |

Prepared by: _____ Date: 11.20.17

Checked by: _____ Date: 11/29/17

**WANG ENGINEERING, INC.**
1145 N. Main Street, Lombard, IL 60148

AASHTO R18

# Organic Content - Loss On Ignition

## ASTM D 2974, Method C

**Client:** *Strand*
**Project:** *IL 47*
**WEI Job:** *195-13-01*
**Type/Condition:** *SS*
**Testing Furnace Temp °C.:** *440*

**Analyst:** *A. Mohammed*
**Date Received:** *12/12/2017*
**Date Tested:** *12/20/17*

| Sample No./ Depth | PT1-06 S#3 (4-6ft.) | PT2-06 S#3 (4-6ft.) | | | |
|---|---|---|---|---|---|
| Description | Silty Clay | Silty Clay | | | |
| wet soil + tare | 74.38 | 73.45 | | | |
| Dry Soil + Tare | 55.95 | 57.47 | | | |
| Tare Mass | 41.98 | 43.42 | | | |
| w (%) | 132 | 114 | | | |
| Dry Soil + Tare | 55.95 | 57.47 | | | |
| Ash+ Tare | 54.48 | 55.88 | | | |
| Tare Mass | 41.98 | 43.42 | | | |
| Ash Content (%) | 89 | 89 | | | |
| Organic Content (%) | 10.5 | 11.3 | | | |

Prepared by: Jcm Date: 12.27.17

Checked by: AL Date: 12/28/17

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1145 N. Main Street, Lombard, IL 60148

Wang Engineering

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:** Strand
**Project:** IL 47
**WEI Job:** 195-13-01
**Type/Condition:** SS
**Testing Furnace Temp °C.:** 440

**Analyst Name:** A. Mohammed
**Date Received:** 11/21/2017
**Date Tested:** 12/5/2017
**Soil Sample ID:** BIO-28, No. 3 (6.0-7.5 ft.)
**Sample Description:** Black Silt

| Moisture Content | Wet soil + tare (g) | Dry Soil + tare (g) | Tare mass (g) | w (%) |
|---|---|---|---|---|
| oven-dry method | 77.96 | 65.98 | 43.38 | 53 |

| Ash Content | Dry Soil + tare (g) | Ash + tare (g) | Tare mass (g) | Ash Content (%) |
|---|---|---|---|---|
| Loss On Ignition | 65.98 | 63.05 | 43.38 | 87 |

**Organic Content (%)= 13.0**

Prepared by: _____ Date: 12.20.17

Checked by: _____ Date: 12/20/17



AASHTO R18

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# ORGANIC CONTENT in SOILS by LOSS on IGNITION

**ASTM D 2974, Method C**

**Client:** Strand
**Project:** IL 47
**WEI Job:** 195-13-01
**Type/Condition:** SS
**Testing Furnace Temp °C.:** 440

**Analyst Name:** A. Mohammed
**Date Received:** 12/15/2017
**Date Tested:** 1/4/2018
**Soil Sample ID:** PT2-05ST, ST#2 (4.0-6.0 f
**Sample Description:** Gray Silty Clay Loam

| Moisture Content | Wet soil + tare (g) | Dry Soil + tare (g) | Tare mass (g) | w (%) |
|---|---|---|---|---|
| oven-dry method | 82.11 | 58.8 | 36.85 | 106 |

| Ash Content | Dry Soil + tare (g) | Ash + tare (g) | Tare mass (g) | Ash Content (%) |
|---|---|---|---|---|
| Loss On Ignition | 58.8 | 56.37 | 36.85 | 89 |

**Organic Content (%)=** **11.1**

Prepared by: _____ Date: 1.10.18

Checked by: _____ Date: 2/8/18



AASHTO R18

AASHTO R18

# Organic Content - Loss On Ignition
## ASTM D 2974, Method C

**Client:** *Strand*
**Project:** *IL 47*
**WEI Job:** *195-13-01*
**Type/Condition:** *SS*
**Testing Furnace Temp °C.:** *440*

**Analyst:** *A. Mohammed*
**Date Received:** *12/20/2017*
**Date Tested:** *12/26/17*

| Sample No./ Depth | SGB-21ST s#3(12-14ft.) middle | SGB-21ST s#3(12-14ft.) bottom | SGB-21ST s#4(14-16ft.) | | |
|---|---|---|---|---|---|
| Description | Silt | Silty Loam | Silty Loam | | |
| wet soil + tare | 76.36 | 72.05 | 102.99 | | |
| Dry Soil + Tare | 58.17 | 55.36 | 75.5 | | |
| Tare Mass | 41.97 | 36.45 | 43.38 | | |
| w (%) | 112 | 88 | 86 | | |
| Dry Soil + Tare | 58.17 | 55.36 | 75.5 | | |
| Ash+ Tare | 54.79 | 52.52 | 70.84 | | |
| Tare Mass | 41.97 | 36.45 | 43.38 | | |
| Ash Content (%) | 79 | 85 | 85 | | |
| Organic Content (%) | 20.9 | 15.0 | 14.5 | | |

Prepared by: _____ Date: 1.16.18

Checked by: _____ Date: 2/8/18

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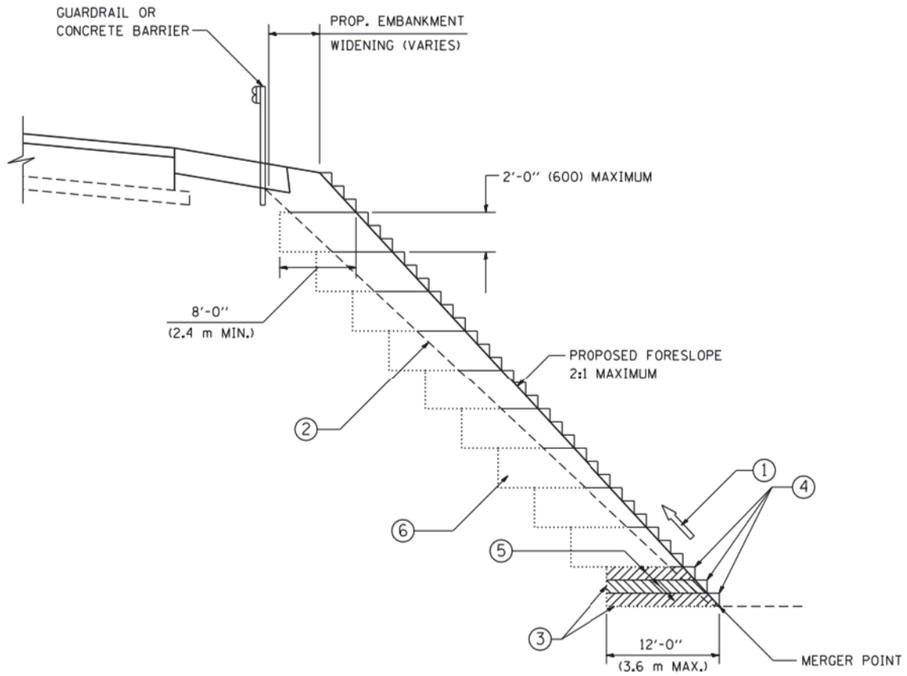
# APPENDIX D




# 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.

| | | | |
|---|---|---|---|
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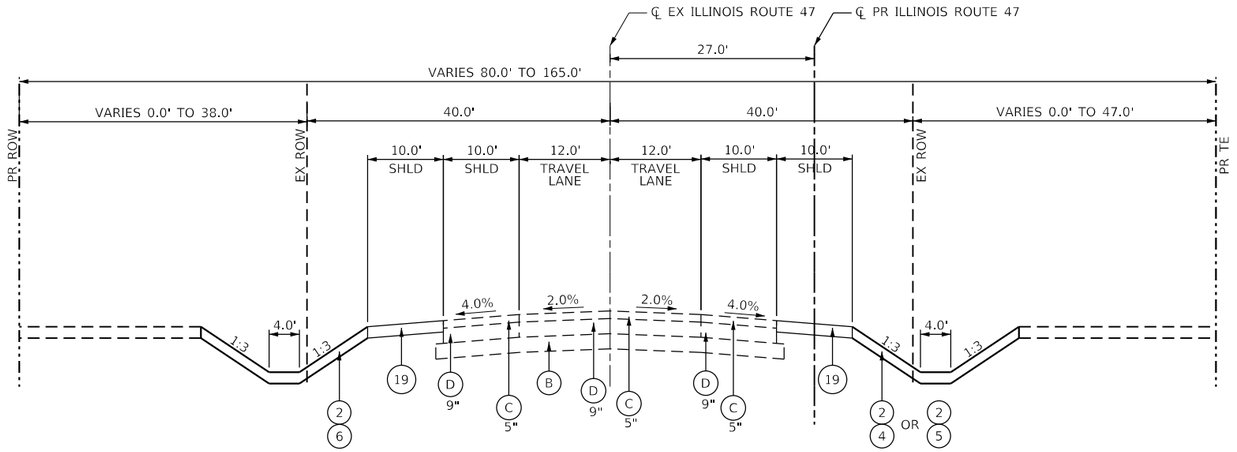
| | | DRAWN - CADD | REVISED - |
| | PLOT SCALE = 50.0000 ' / IN. | CHECKED - S.E.B. | REVISED - |
| | PLOT DATE = 1/4/2008 | DATE - 06-16-04 | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**BENCHING DETAIL**
**FOR EMBANKMENT WIDENING**

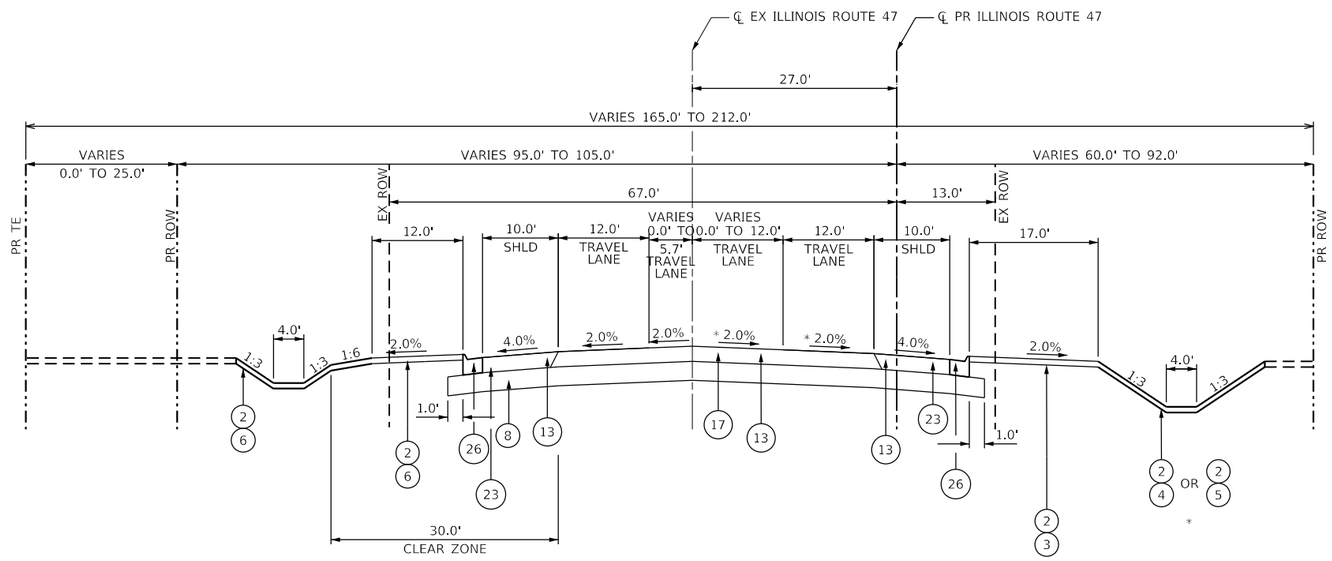
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

| 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 | | |




## ILLINOIS ROUTE 47 PROPOSED TYPICAL SECTION

STA. 558+92.07 TO STA. 565+80.11
* SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS




## ILLINOIS ROUTE 47 PROPOSED TYPICAL SECTION

STA. 565+80.11 TO STA. 572+39.12
* SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS

## EXISTING LEGEND

- (A) EXISTING TOPSOIL, 15"
- (B) EXISTING AGGREGATE SUBBASE, VARIES
- (C) EXISTING HMA PAVEMENT, VARIES
- (D) EXISTING PCC PAVEMENT, VARIES
- (E) EXISTING AGGREGATE SHOULDERS
- (F) EXISTING HMA SHOULDERS, VARIES
- (G) EXISTING COMBINATION CONCRETE CURB AND GUTTER
- (H) EXISTING PCC MEDIAN
- (I) EXISTING STEEL PLATE BEAM GUARDRAIL

## REMOVAL LEGEND

- (a) PAVEMENT REMOVAL
- (b) COMBINATION CURB AND GUTTER REMOVAL
- (c) MEDIAN REMOVAL
- (d) PAVED SHOULDER REMOVAL
- (e) GUARDRAIL REMOVAL
- (f) TOPSOIL EXCAVATION
- REMOVAL ITEMS

## PROPOSED LEGEND

- (1) GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (NOT USED)
- (2) TOPSOIL PLACEMENT
- (3) SEEDING, CLASS 2A
- (4) SEEDING, CLASS 4
- (5) SEEDING, CLASS 4B
- (6) SODDING, SALT TOLERANT
- (7) AGGREGATE SUBGRADE IMPROVEMENT (NOT USED)
- (8) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (9) ~~SUBBASE GRANULAR MATERIAL, TYPE B, 2"~~
- (10) SUBBASE GRANULAR MATERIAL, TYPE C
- (11) ~~AGGREGATE BASE COURSE, TYPE B, 4"~~
- (12) ~~BITUMINOUS MATERIALS (PRIME COAT)~~
- (13) BITUMINOUS MATERIALS (TACK COAT)
- (14) ~~HOT-MIX ASPHALT SURFACE COURSE, MIX~~ "D", N50
- (15) HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 7"
- (16) HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"
- (17) HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10 1/2"
- (18) ~~PORTLAND CEMENT CONCRETE SIDEWALK, 5"~~
- (19) AGGREGATE SHOULDERS, TYPE B, 10"
- (20) HOT-MIX ASPHALT SHOULDERS, 7"
- (21) HOT-MIX ASPHALT SHOULDERS, 8"
- (22) HOT-MIX ASPHALT SHOULDERS, 10"
- (23) HOT-MIX ASPHALT SHOULDERS, 10 1/2"
- (24) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.06
- (25) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12
- (26) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.24
- (27) CONCRETE MEDIAN SURFACE, 6 INCH
- (28) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
- (29) CONCRETE MEDIAN, TYPE SM-4.12
- (30) CONCRETE MEDIAN, TYPE SM-4.24
- (31) HIGH TENSION CABLE MEDIAN BARRIER
- (32) CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL)

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JOLIET, ILLINOIS 60431
(815) 744-4200

| | | |
|---|---|---|
| USER NAME = JakeSc | DESIGNED - | REVISED - |
| | DRAWN - | REVISED - |
| PLOT SCALE = 20.0000 ft / in. | CHECKED - | REVISED - |
| PLOT DATE = 9/20/2018 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 47**
**TYPICAL SECTIONS**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 473 | 28 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS FED. AID PROJECT | | | |

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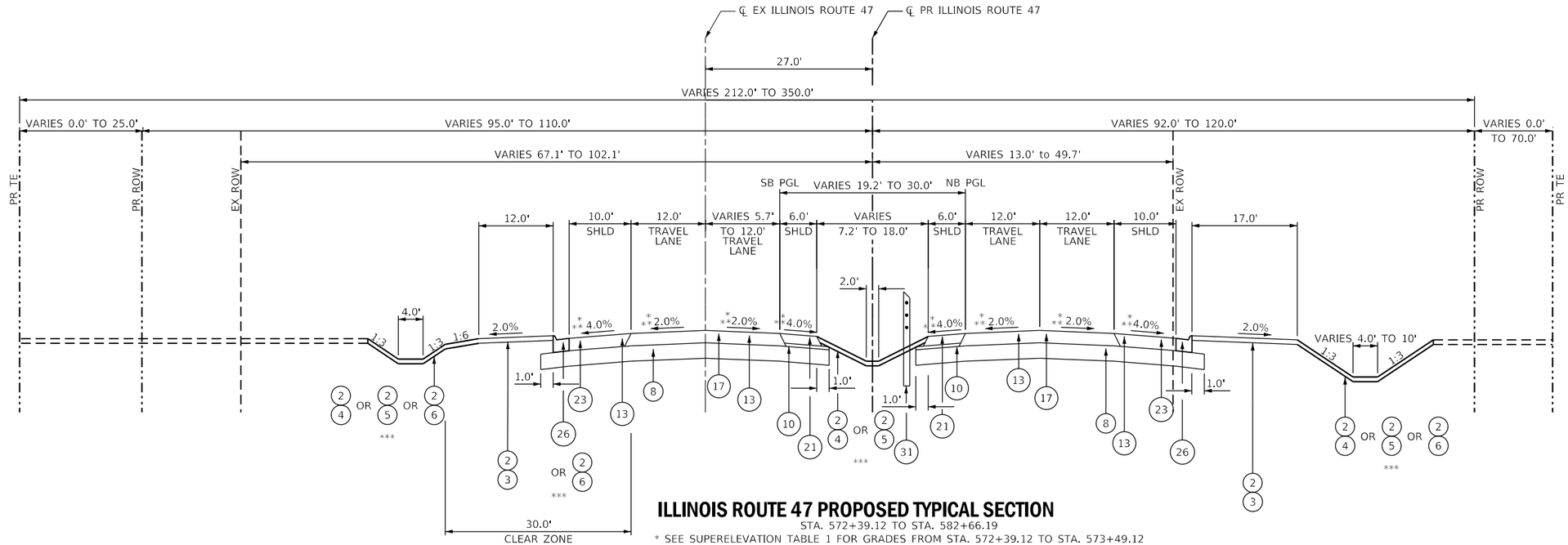
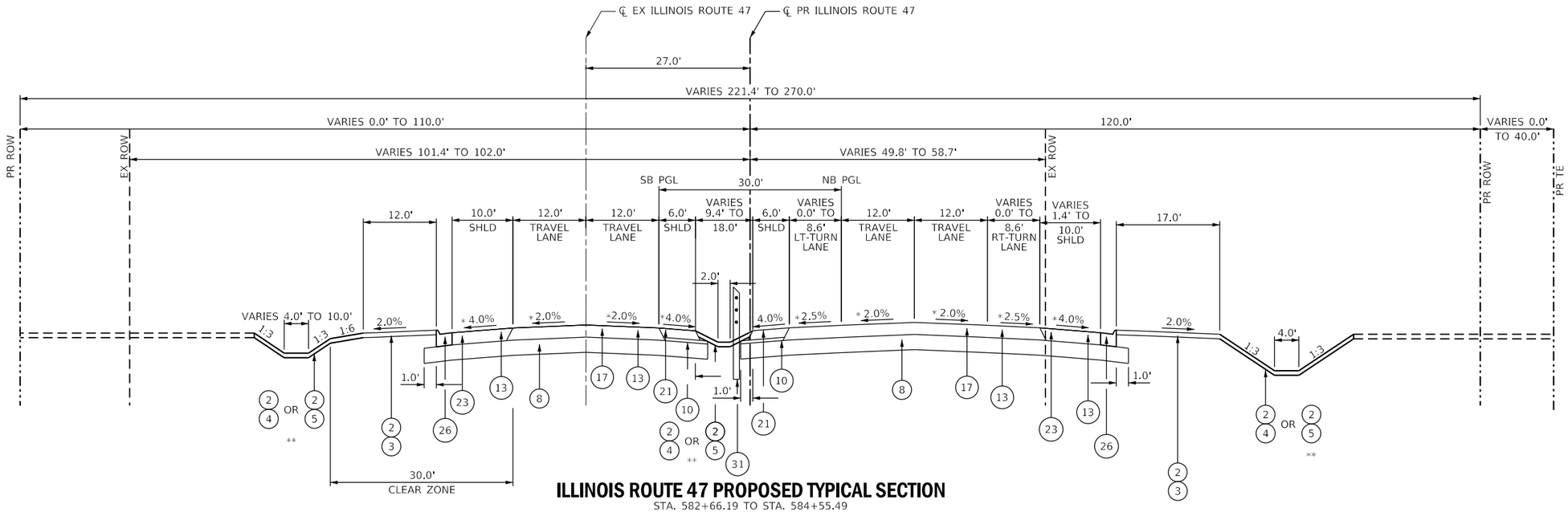



## ILLINOIS ROUTE 47 PROPOSED TYPICAL SECTION

STA. 572+39.12 TO STA. 582+66.19
* SEE SUPERELEVATION TABLE 1 FOR GRADES FROM STA. 572+39.12 TO STA. 573+49.12
** SEE SUPERELEVATION TABLES 3 AND 4 FOR GRADES FROM STA. 580+97.62 TO STA. 596+45.47
*** SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS




## ILLINOIS ROUTE 47 PROPOSED TYPICAL SECTION

STA. 582+66.19 TO STA. 584+55.49
* SEE SUPERELEVATION TABLES 3 AND 4 FOR GRADES FROM STA. 580+97.62 TO STA. 596+45.47
** SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS

## PROPOSED LEGEND

1. GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (NOT USED)
2. TOPSOIL PLACEMENT
3. SEEDING, CLASS 2A
4. SEEDING, CLASS 4
5. SEEDING, CLASS 4B
6. SODDING, SALT TOLERANT
7. AGGREGATE SUBGRADE IMPROVEMENT (NOT USED)
8. AGGREGATE SUBGRADE IMPROVEMENT, 12"
9. ~~SUBBASE GRANULAR MATERIAL, TYPE B, 2"~~
10. SUBBASE GRANULAR MATERIAL, TYPE C
11. ~~AGGREGATE BASE COURSE, TYPE B, 4"~~
12. ~~BITUMINOUS MATERIALS (PRIME COAT)~~
13. BITUMINOUS MATERIALS (TACK COAT)
14. ~~HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50~~
15. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 7"
16. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"
17. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10 1/2"
18. ~~PORTLAND CEMENT CONCRETE SIDEWALK, 5"~~
19. AGGREGATE SHOULDERS, TYPE B, 10"
20. HOT-MIX ASPHALT SHOULDERS, 7"
21. HOT-MIX ASPHALT SHOULDERS, 8"
22. HOT-MIX ASPHALT SHOULDERS, 10"
23. HOT-MIX ASPHALT SHOULDERS, 10 1/2"
24. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.06
25. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12
26. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.24
27. CONCRETE MEDIAN SURFACE, 6 INCH
28. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
29. CONCRETE MEDIAN, TYPE SM-4.12
30. CONCRETE MEDIAN, TYPE SM-4.24
31. HIGH TENSION CABLE MEDIAN BARRIER
32. CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL)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| | | | |
|---|---|---|---|
| USER NAME = JakeSc | DESIGNED - | REVISED - | |
| | DRAWN - | REVISED - | |
| PLOT SCALE = 20.0000 ft / in. | CHECKED - | REVISED - | |
| PLOT DATE = 9/20/2018 | DATE - | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 47**
**TYPICAL SECTIONS**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 473 | 29 |
| | | CONTRACT NO. 62B43 | | |
| | | ILLINOIS | FED. AID PROJECT | |

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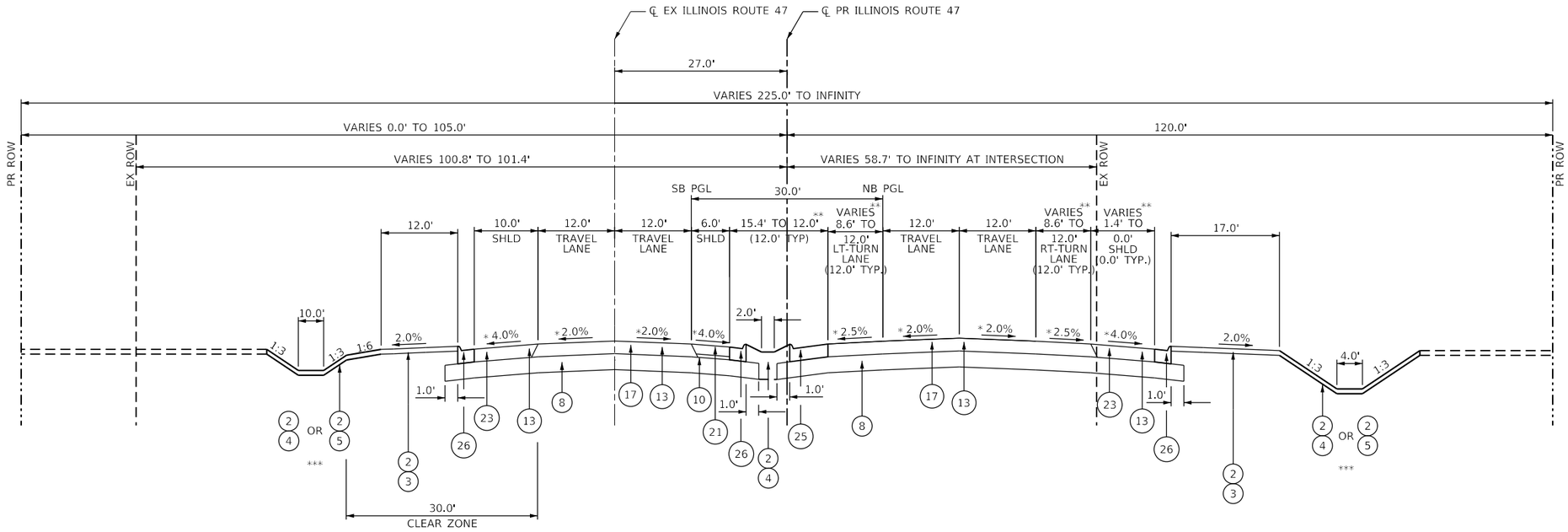
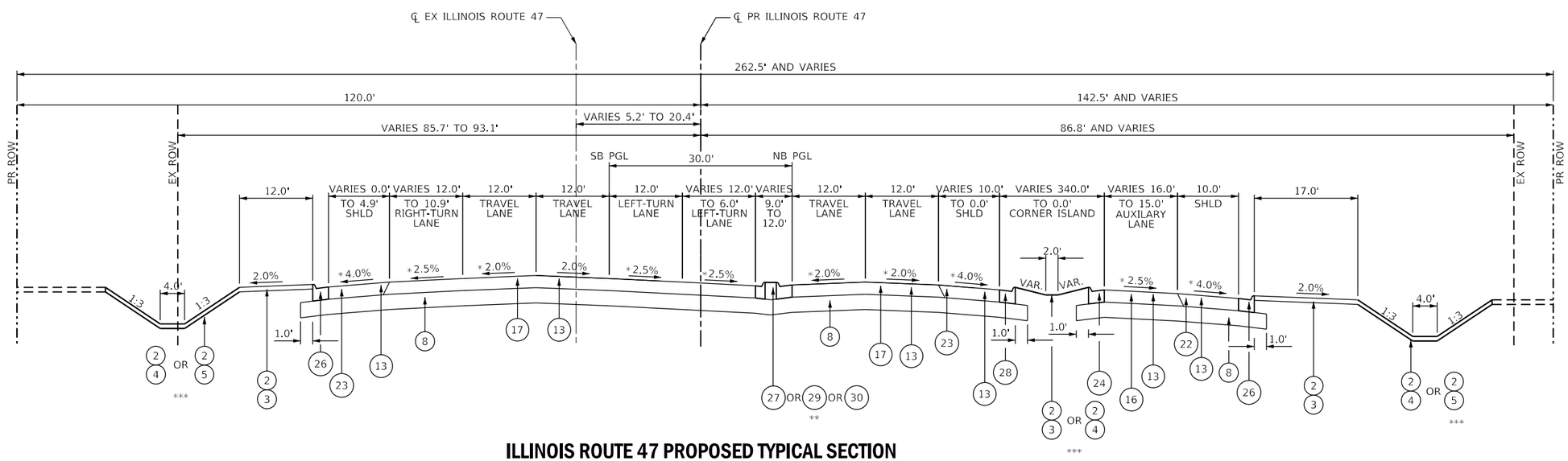



## ILLINOIS ROUTE 47 PROPOSED TYPICAL SECTION

STA. 584+55.49 TO STA. 588+59.19
* SEE SUPERELEVATION TABLES 3 AND 4 FOR GRADES FROM STA. 580+97.62 TO STA. 596+45.47
** SEE PLAN AND PROFILE SHEETS FOR VARIABLE LOCATIONS
*** SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS




## ILLINOIS ROUTE 47 PROPOSED TYPICAL SECTION

STA. 588+59.19 TO STA. 593+53.88
* SEE SUPERELEVATION TABLES 3 AND 4 FOR GRADES FROM STA. 580+97.62 TO STA. 596+45.47
** SEE PLAN SHEETS FOR SPECIFIC LOCATIONS
*** SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS

## PROPOSED LEGEND

1. GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (NOT USED)
2. TOPSOIL PLACEMENT
3. SEEDING, CLASS 2A
4. SEEDING, CLASS 4
5. SEEDING, CLASS 4B
6. SODDING, SALT TOLERANT
7. AGGREGATE SUBGRADE IMPROVEMENT (NOT USED)
8. AGGREGATE SUBGRADE IMPROVEMENT, 12"
9. ~~SUBBASE GRANULAR MATERIAL, TYPE B, 2"~~
10. SUBBASE GRANULAR MATERIAL, TYPE C
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13. BITUMINOUS MATERIALS (TACK COAT)
14. ~~HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50~~
15. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 7"
16. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"
17. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10 1/2"
18. ~~PORTLAND CEMENT CONCRETE SIDEWALK, 5"~~
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(815) 744-4200

| | | | |
|---|---|---|---|
| USER NAME = JakeSc | DESIGNED - | REVISED - | |
| | DRAWN - | REVISED - | |
| PLOT SCALE = 20.0000 ft / in. | CHECKED - | REVISED - | |
| PLOT DATE = 9/20/2018 | DATE - | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 47**
**TYPICAL SECTIONS**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 473 | 30 |
| | | CONTRACT NO. 62B43 | | |
| | | ILLINOIS | FED. AID PROJECT | |

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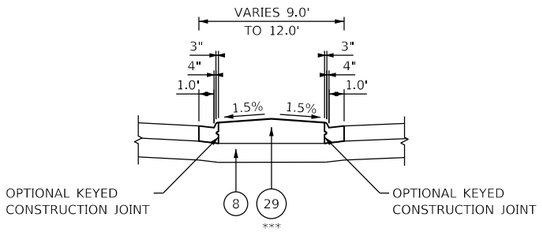
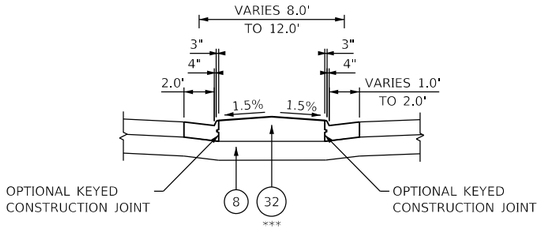


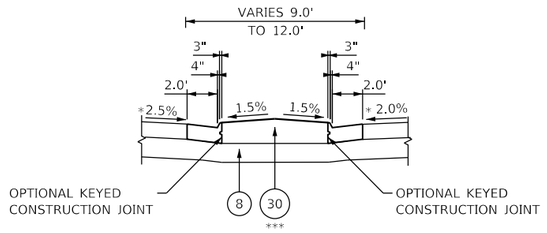

**PROPOSED CONCRETE MEDIAN, TYPE SM-4.12**

*** SEE PLAN SHEETS FOR SPECIFIC LOCATIONS



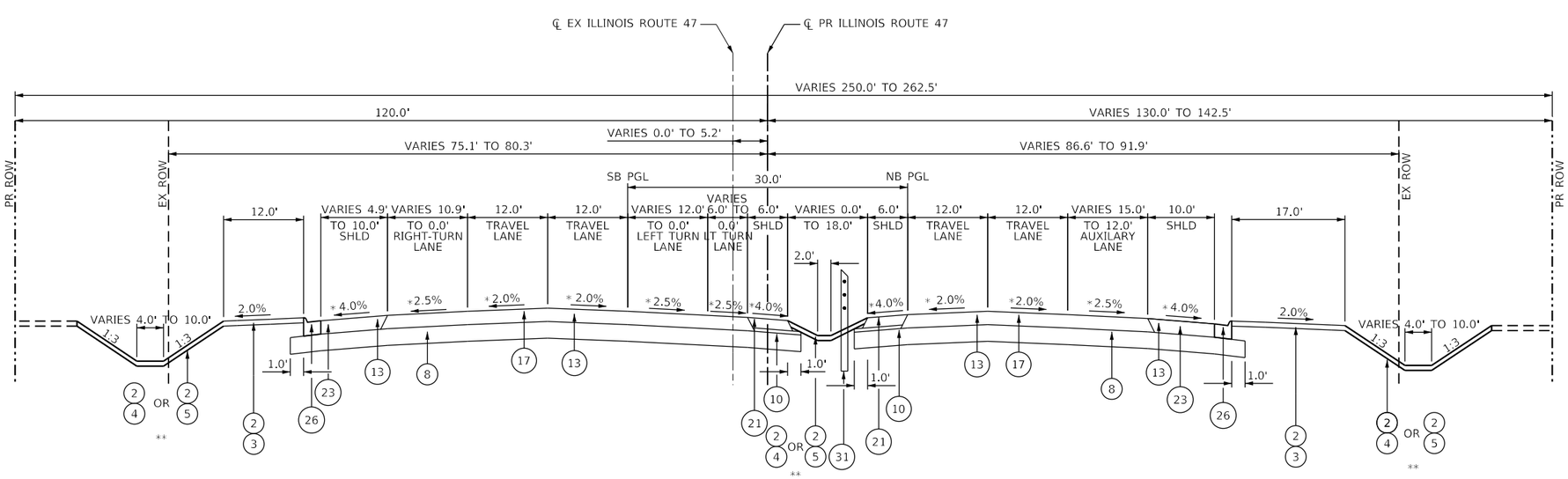

**PROPOSED CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL)**

*** SEE PLAN SHEETS FOR SPECIFIC LOCATIONS




**PROPOSED CONCRETE MEDIAN, TYPE SM-4.24**

*** SEE PLAN SHEETS FOR SPECIFIC LOCATIONS




**ILLINOIS ROUTE 47 PROPOSED TYPICAL SECTION**

STA. 593+53.88 TO STA. 595+78.70

* SEE SUPERELEVATION TABLES 3 AND 4 FOR GRADES FROM STA. 580+97.62 TO STA. 596+45.47

** SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS

## PROPOSED LEGEND

1. GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (NOT USED)
2. TOPSOIL PLACEMENT
3. SEEDING, CLASS 2A
4. SEEDING, CLASS 4
5. SEEDING, CLASS 4B
6. SODDING, SALT TOLERANT
7. AGGREGATE SUBGRADE IMPROVEMENT (NOT USED)
8. AGGREGATE SUBGRADE IMPROVEMENT, 12"
9. ~~SUBBASE GRANULAR MATERIAL, TYPE B, 2"~~
10. SUBBASE GRANULAR MATERIAL, TYPE C
11. ~~AGGREGATE BASE COURSE, TYPE B, 4"~~
12. ~~BITUMINOUS MATERIALS (PRIME COAT)~~
13. BITUMINOUS MATERIALS (TACK COAT)
14. ~~HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50~~
15. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 7"
16. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"
17. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10 1/2"
18. ~~PORTLAND CEMENT CONCRETE SIDEWALK, 5"~~
19. AGGREGATE SHOULDERS, TYPE B, 10"
20. HOT-MIX ASPHALT SHOULDERS, 7"
21. HOT-MIX ASPHALT SHOULDERS, 8"
22. HOT-MIX ASPHALT SHOULDERS, 10"
23. HOT-MIX ASPHALT SHOULDERS, 10 1/2"
24. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.06
25. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12
26. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.24
27. CONCRETE MEDIAN SURFACE, 6 INCH
28. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
29. CONCRETE MEDIAN, TYPE SM-4.12
30. CONCRETE MEDIAN, TYPE SM-4.24
31. HIGH TENSION CABLE MEDIAN BARRIER
32. CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL)

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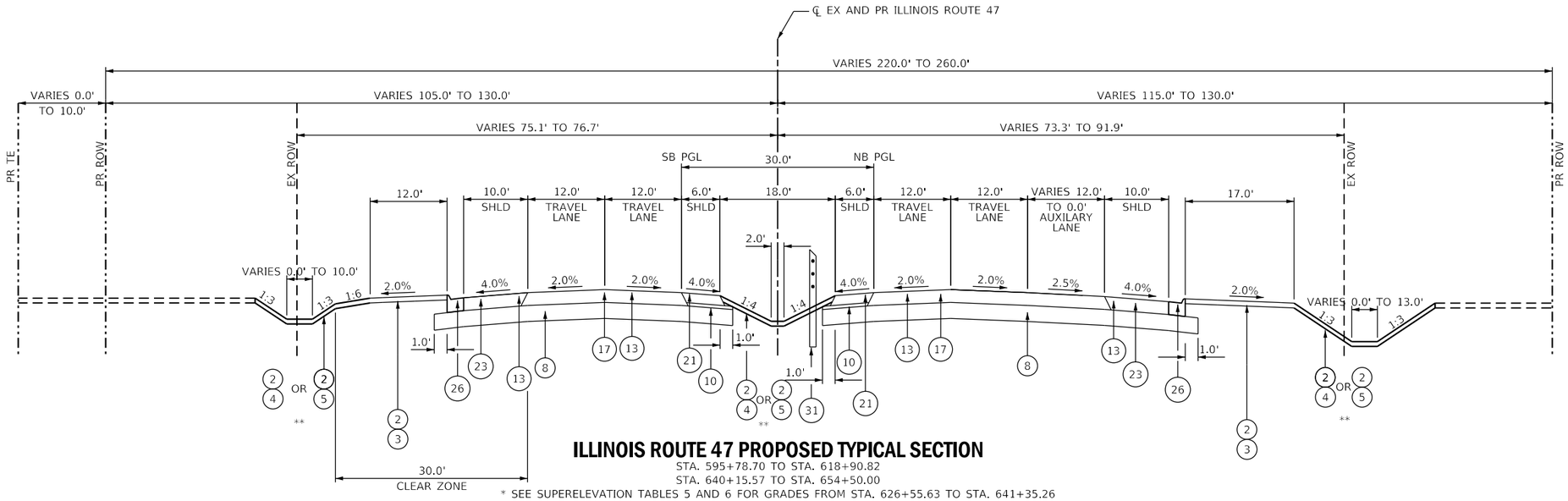
| | DRAWN - | REVISED - |
| PLOT SCALE = 20.0000 ft / in. | CHECKED - | REVISED - |
| PLOT DATE = 9/20/2018 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 47**
**TYPICAL SECTIONS**

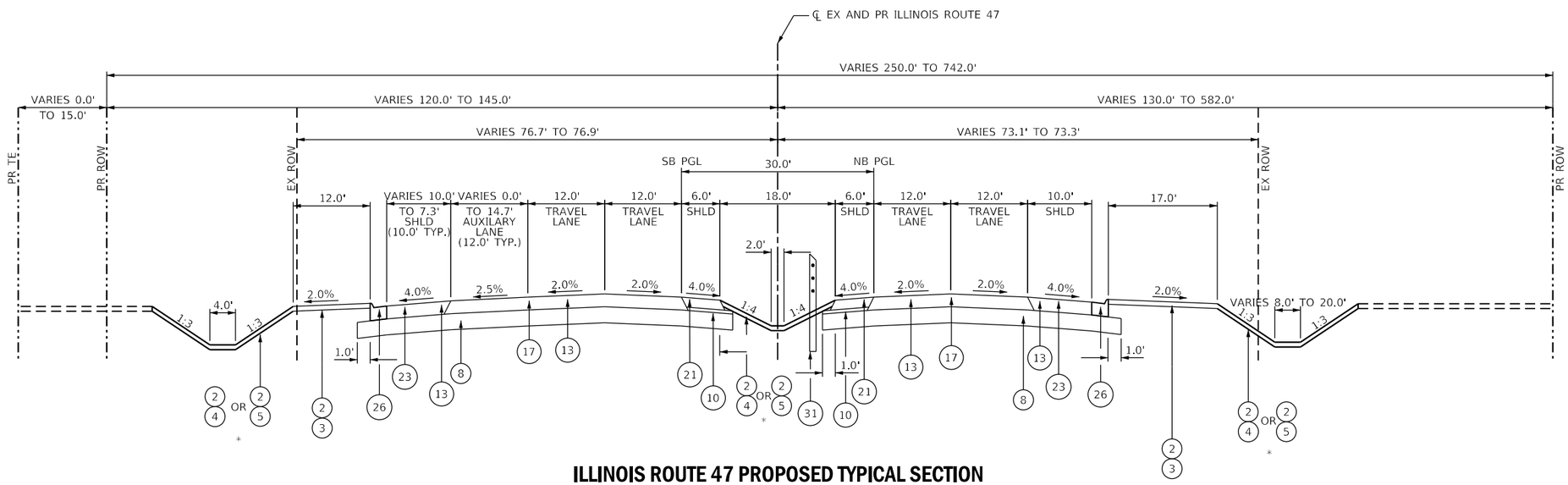
SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 473 | 31 |
| | | CONTRACT NO. 62B43 | | |
| | | ILLINOIS | FED. AID PROJECT | |




## ILLINOIS ROUTE 47 PROPOSED TYPICAL SECTION

STA. 595+78.70 TO STA. 618+90.82
STA. 640+15.57 TO STA. 654+50.00
* SEE SUPERELEVATION TABLES 5 AND 6 FOR GRADES FROM STA. 626+55.63 TO STA. 641+35.26
** SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS




## ILLINOIS ROUTE 47 PROPOSED TYPICAL SECTION

STA. 618+90.82 TO STA. 626+54.46
* SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS

## PROPOSED LEGEND

1. GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (NOT USED)
2. TOPSOIL PLACEMENT
3. SEEDING, CLASS 2A
4. SEEDING, CLASS 4
5. SEEDING, CLASS 4B
6. SODDING, SALT TOLERANT
7. AGGREGATE SUBGRADE IMPROVEMENT (NOT USED)
8. AGGREGATE SUBGRADE IMPROVEMENT, 12"
9. ~~SUBBASE GRANULAR MATERIAL, TYPE B, 2"~~
10. SUBBASE GRANULAR MATERIAL, TYPE C
11. ~~AGGREGATE BASE COURSE, TYPE B, 4"~~
12. ~~BITUMINOUS MATERIALS (PRIME COAT)~~
13. BITUMINOUS MATERIALS (TACK COAT)
14. ~~HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50~~
15. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 7"
16. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"
17. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10 1/2"
18. ~~PORTLAND CEMENT CONCRETE SIDEWALK, 5"~~
19. AGGREGATE SHOULDERS, TYPE B, 10"
20. HOT-MIX ASPHALT SHOULDERS, 7"
21. HOT-MIX ASPHALT SHOULDERS, 8"
22. HOT-MIX ASPHALT SHOULDERS, 10"
23. HOT-MIX ASPHALT SHOULDERS, 10 1/2"
24. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.06
25. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12
26. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.24
27. CONCRETE MEDIAN SURFACE, 6 INCH
28. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
29. CONCRETE MEDIAN, TYPE SM-4.12
30. CONCRETE MEDIAN, TYPE SM-4.24
31. HIGH TENSION CABLE MEDIAN BARRIER
32. CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL)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| PLOT DATE = 9/20/2018 | DATE - | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 47**
**TYPICAL SECTIONS**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 473 | 32 |
| | | CONTRACT NO. 62B43 | | |
| | | ILLINOIS | FED. AID PROJECT | |

MODEL: Default
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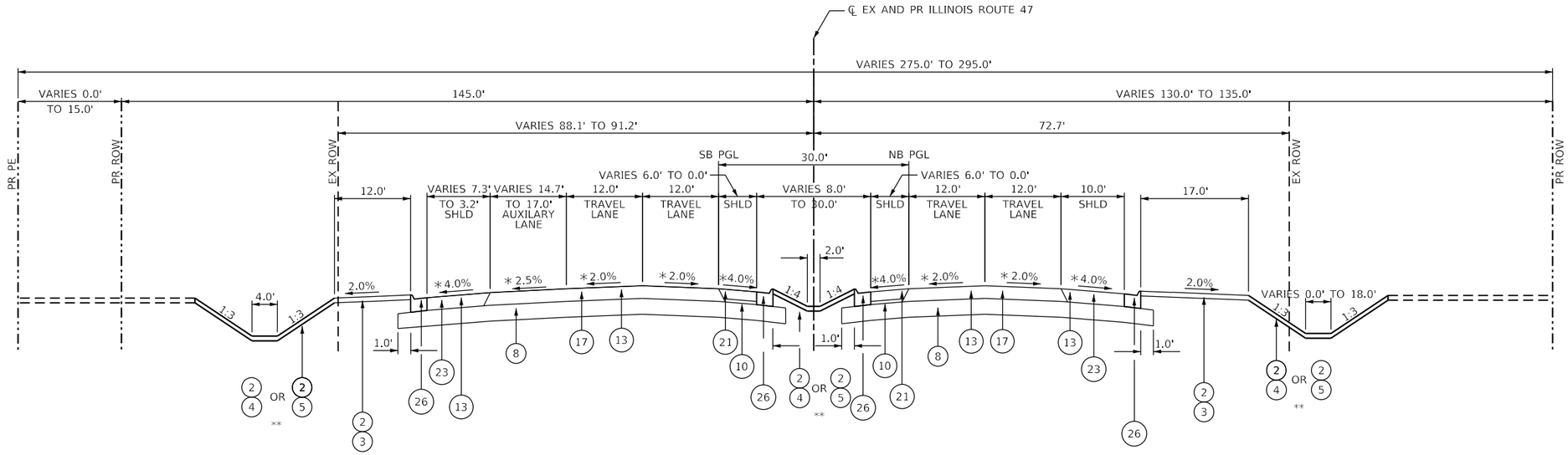
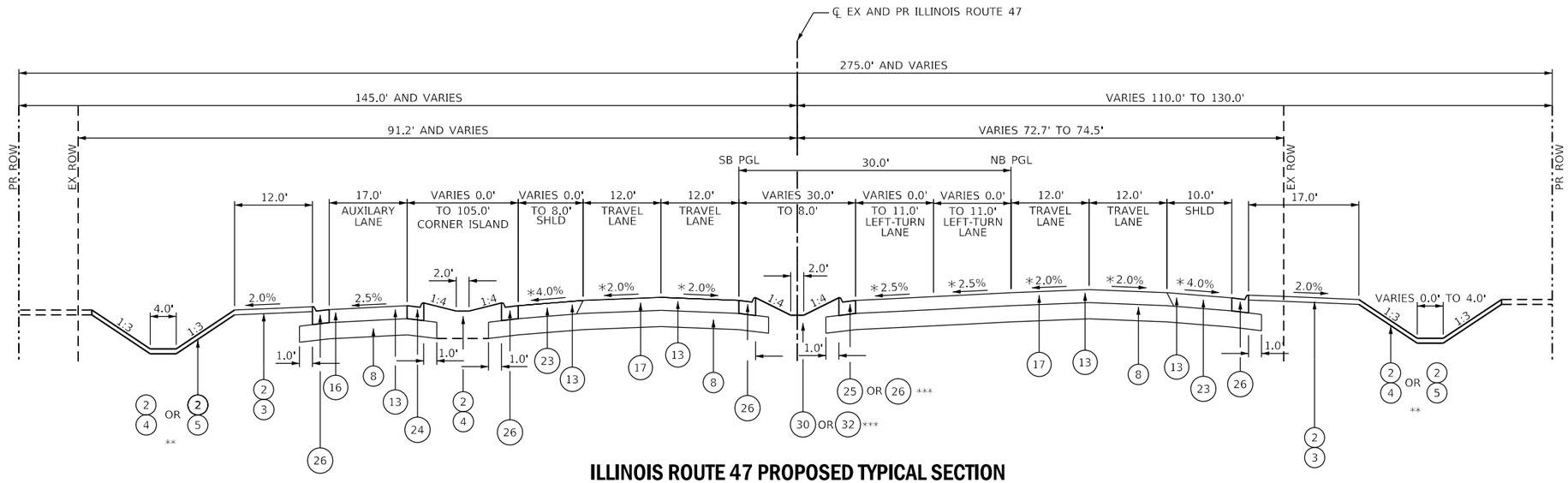



## ILLINOIS ROUTE 47 PROPOSED TYPICAL SECTION

STA. 626+54.46 TO STA. 627+74.37
* SEE SUPERELEVATION TABLES 5 AND 6 FOR GRADES FROM STA. 626+55.63 TO STA. 641+35.26
** SEE LANDSCAPING SHEETS FOR SPECIFIC LOCARIONS




## ILLINOIS ROUTE 47 PROPOSED TYPICAL SECTION

STA. 627+74.37 TO STA. 633+84.58
* SEE SUPERELEVATION TABLES 5 AND 6 FOR GRADES FROM STA. 626+55.63 TO STA. 641+35.26
** SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS
*** SEE PLAN SHEETS FOR SPECIFIC LOCATIONS

## PROPOSED LEGEND

1. GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (NOT USED)
2. TOPSOIL PLACEMENT
3. SEEDING, CLASS 2A
4. SEEDING, CLASS 4
5. SEEDING, CLASS 4B
6. SODDING, SALT TOLERANT
7. AGGREGATE SUBGRADE IMPROVEMENT (NOT USED)
8. AGGREGATE SUBGRADE IMPROVEMENT, 12"
9. ~~SUBBASE GRANULAR MATERIAL, TYPE B, 2"~~
10. SUBBASE GRANULAR MATERIAL, TYPE C
11. ~~AGGREGATE BASE COURSE, TYPE B, 4"~~
12. ~~BITUMINOUS MATERIALS (PRIME COAT)~~
13. BITUMINOUS MATERIALS (TACK COAT)
14. ~~HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50~~
15. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 7"
16. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"
17. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10 1/2"
18. ~~PORTLAND CEMENT CONCRETE SIDEWALK, 5"~~
19. AGGREGATE SHOULDERS, TYPE B, 10"
20. HOT-MIX ASPHALT SHOULDERS, 7"
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24. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.06
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26. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.24
27. CONCRETE MEDIAN SURFACE, 6 INCH
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 47**
**TYPICAL SECTIONS**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 473 | 33 |
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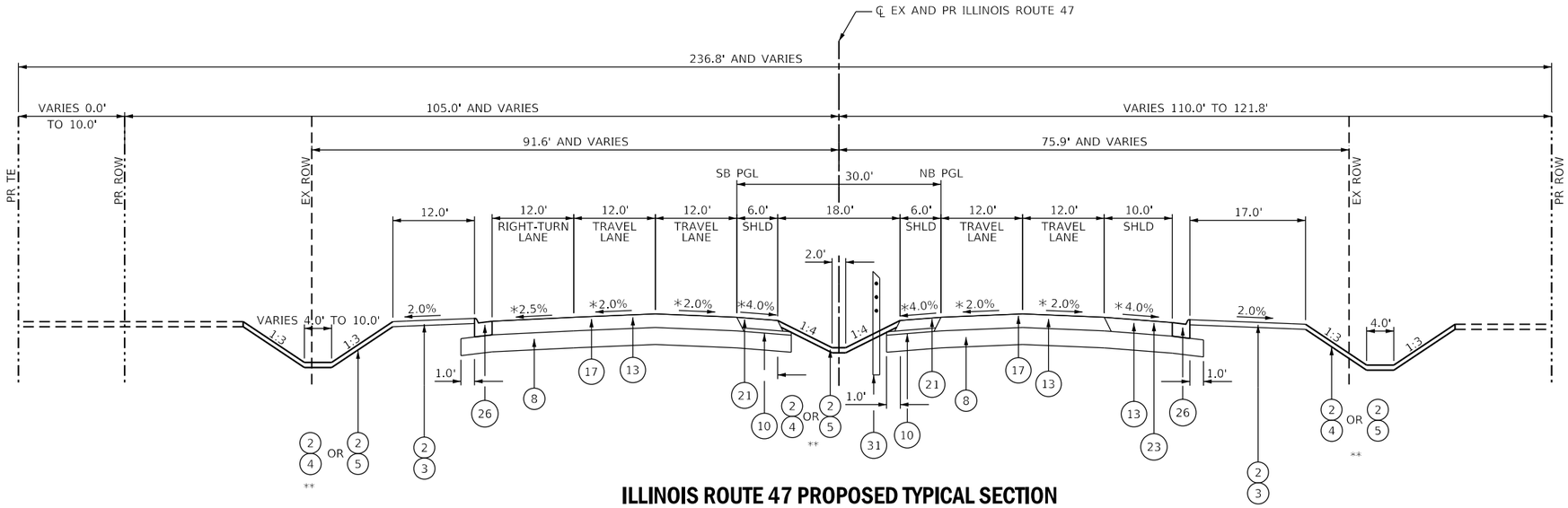
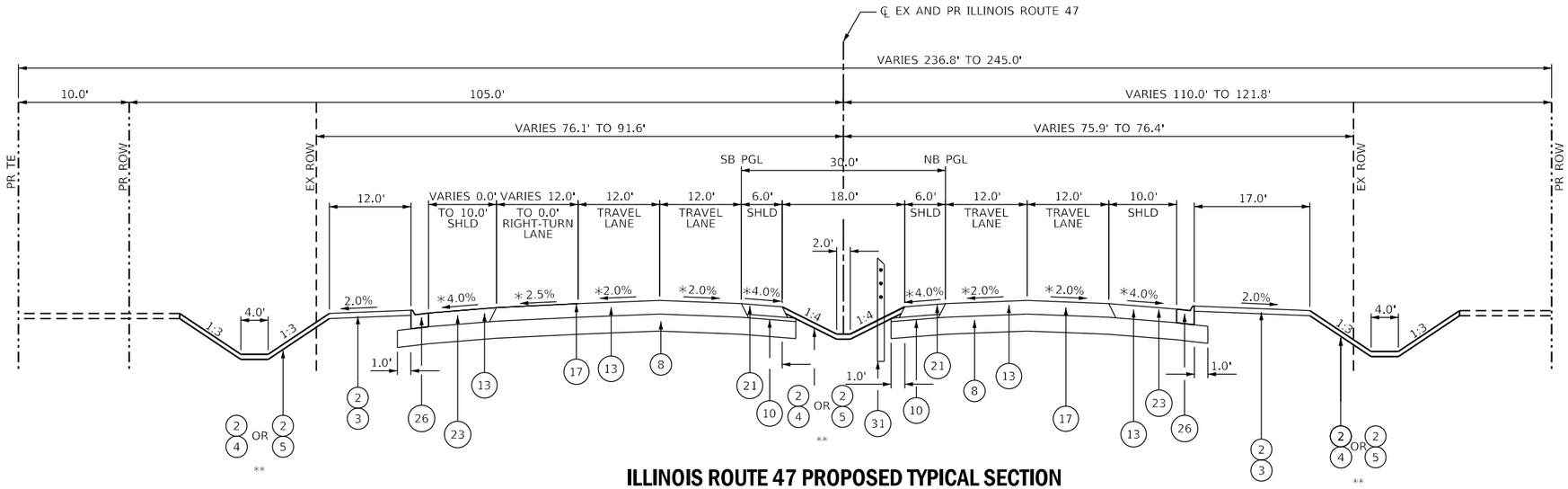



## ILLINOIS ROUTE 47 PROPOSED TYPICAL SECTION

STA. 633+84.58 TO STA. 637+56.08

* SEE SUPERELEVATION TABLES 5 AND 6 FOR GRADES FROM STA. 626+55.63 TO STA. 641+35.26

** SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS




## ILLINOIS ROUTE 47 PROPOSED TYPICAL SECTION

STA. 637+56.08 TO STA. 640+15.57

* SEE SUPERELEVATION TABLES 5 AND 6 FOR GRADES FROM STA. 626+55.63 TO STA. 641+35.26

** SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS

## PROPOSED LEGEND

1. GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (NOT USED)
2. TOPSOIL PLACEMENT
3. SEEDING, CLASS 2A
4. SEEDING, CLASS 4
5. SEEDING, CLASS 4B
6. SODDING, SALT TOLERANT
7. AGGREGATE SUBGRADE IMPROVEMENT (NOT USED)
8. AGGREGATE SUBGRADE IMPROVEMENT, 12"
9. ~~SUBBASE GRANULAR MATERIAL, TYPE B, 2"~~
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12. ~~BITUMINOUS MATERIALS (PRIME COAT)~~
13. BITUMINOUS MATERIALS (TACK COAT)
14. ~~HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50~~
15. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 7"
16. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"
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18. ~~PORTLAND CEMENT CONCRETE SIDEWALK, 5"~~
19. AGGREGATE SHOULDERS, TYPE B, 10"
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24. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.06
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 47**
**TYPICAL SECTIONS**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
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| | | CONTRACT NO. 62B43 | | |
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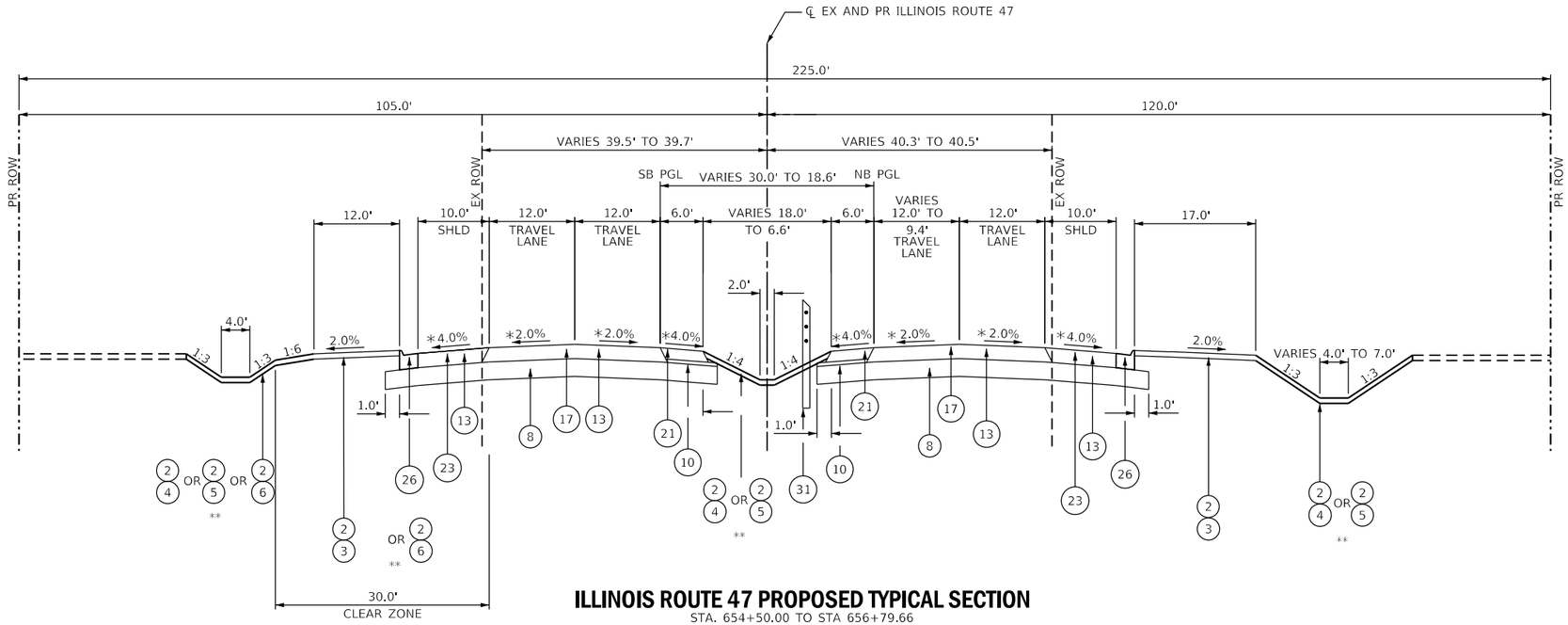
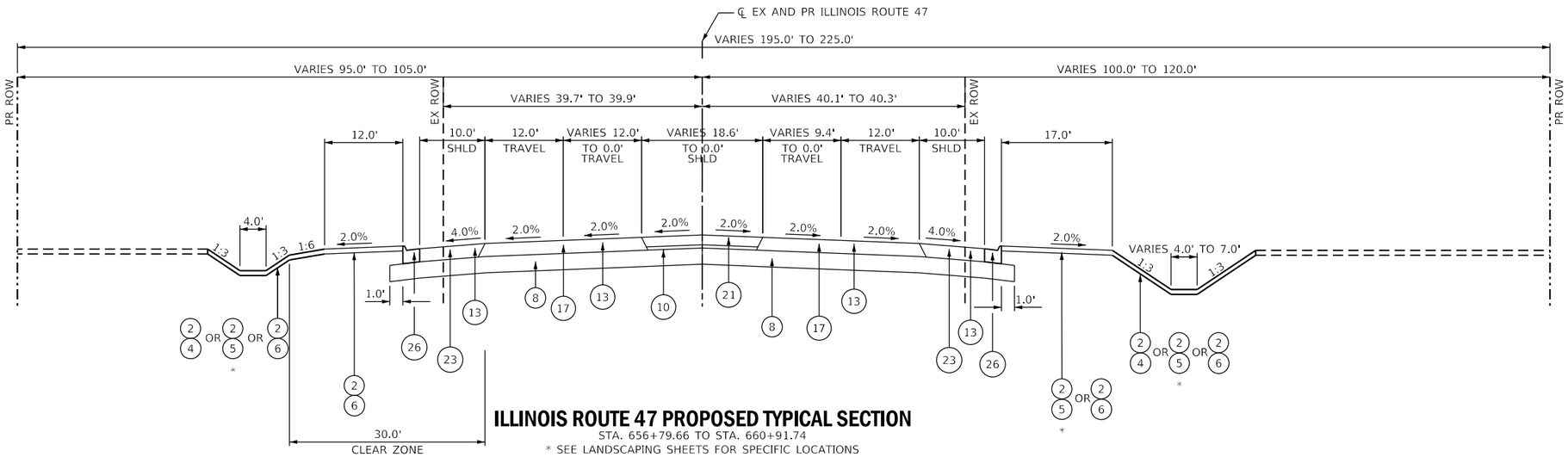



## ILLINOIS ROUTE 47 PROPOSED TYPICAL SECTION

STA. 654+50.00 TO STA 656+79.66

* SEE SUPERELEVATION TABLE 2 FOR GRADES FROM STA. 655+69.66 TO STA. 656+79.66

** SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS




## ILLINOIS ROUTE 47 PROPOSED TYPICAL SECTION

STA. 656+79.66 TO STA. 660+91.74

* SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS

## PROPOSED LEGEND

1. GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (NOT USED)
2. TOPSOIL PLACEMENT
3. SEEDING, CLASS 2A
4. SEEDING, CLASS 4
5. SEEDING, CLASS 4B
6. SODDING, SALT TOLERANT
7. AGGREGATE SUBGRADE IMPROVEMENT (NOT USED)
8. AGGREGATE SUBGRADE IMPROVEMENT, 12"
9. ~~SUBBASE GRANULAR MATERIAL, TYPE B, 2"~~
10. SUBBASE GRANULAR MATERIAL, TYPE C
11. ~~AGGREGATE BASE COURSE, TYPE B, 4"~~
12. ~~BITUMINOUS MATERIALS (PRIME COAT)~~
13. BITUMINOUS MATERIALS (TACK COAT)
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15. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 7"
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18. ~~PORTLAND CEMENT CONCRETE SIDEWALK, 5"~~
19. AGGREGATE SHOULDERS, TYPE B, 10"
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 47**
**TYPICAL SECTIONS**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 473 | 35 |
| | | CONTRACT NO. 62B43 | | |
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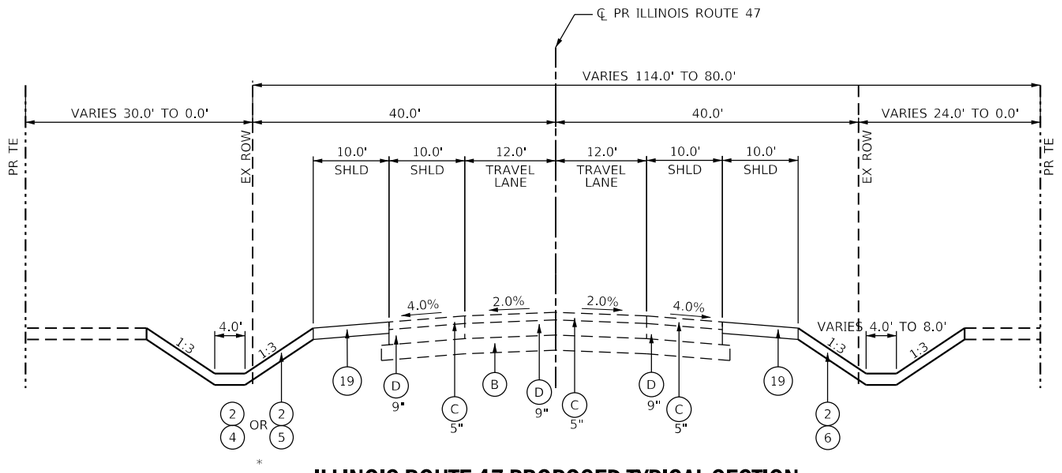


## ILLINOIS ROUTE 47 PROPOSED TYPICAL SECTION

STA. 660+91.74 TO STA. 668+44.34

* SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS

## EXISTING LEGEND

- (A) EXISTING TOPSOIL, 15"
- (B) EXISTING AGGREGATE SUBBASE, VARIES
- (C) EXISTING HMA PAVEMENT, VARIES
- (D) EXISTING PCC PAVEMENT, VARIES
- (E) EXISTING AGGREGATE SHOULDERS
- (F) EXISTING HMA SHOULDERS, VARIES
- (G) EXISTING COMBINATION CONCRETE CURB AND GUTTER
- (H) EXISTING PCC MEDIAN
- (I) EXISTING STEEL PLATE BEAM GUARDRAIL

## REMOVAL LEGEND

- (a) PAVEMENT REMOVAL
- (b) COMBINATION CURB AND GUTTER REMOVAL
- (c) MEDIAN REMOVAL
- (d) PAVED SHOULDER REMOVAL
- (e) GUARDRAIL REMOVAL
- (f) TOPSOIL EXCAVATION
- ⊠ REMOVAL ITEMS

## PROPOSED LEGEND

- (1) GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (NOT USED)
- (2) TOPSOIL PLACEMENT
- (3) SEEDING, CLASS 2A
- (4) SEEDING, CLASS 4
- (5) SEEDING, CLASS 4B
- (6) SODDING, SALT TOLERANT
- (7) AGGREGATE SUBGRADE IMPROVEMENT (NOT USED)
- (8) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (9) ~~SUBBASE GRANULAR MATERIAL, TYPE B, 2"~~
- (10) SUBBASE GRANULAR MATERIAL, TYPE C
- (11) ~~AGGREGATE BASE COURSE, TYPE B, 4"~~
- (12) ~~BITUMINOUS MATERIALS (PRIME COAT)~~
- (13) BITUMINOUS MATERIALS (TACK COAT)
- (14) ~~HOT-MIX ASPHALT SURFACE COURSE, MIX "~~D", N50
- (15) HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 7"
- (16) HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"
- (17) HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10 1/2"
- (18) ~~PORTLAND CEMENT CONCRETE SIDEWALK, 5"~~
- (19) AGGREGATE SHOULDERS, TYPE B, 10"
- (20) HOT-MIX ASPHALT SHOULDERS, 7"
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- (22) HOT-MIX ASPHALT SHOULDERS, 10"
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- (24) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.06
- (25) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12
- (26) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.24
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**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 47**
**TYPICAL SECTIONS**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 473 | 36 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS FED. AID PROJECT | | | |

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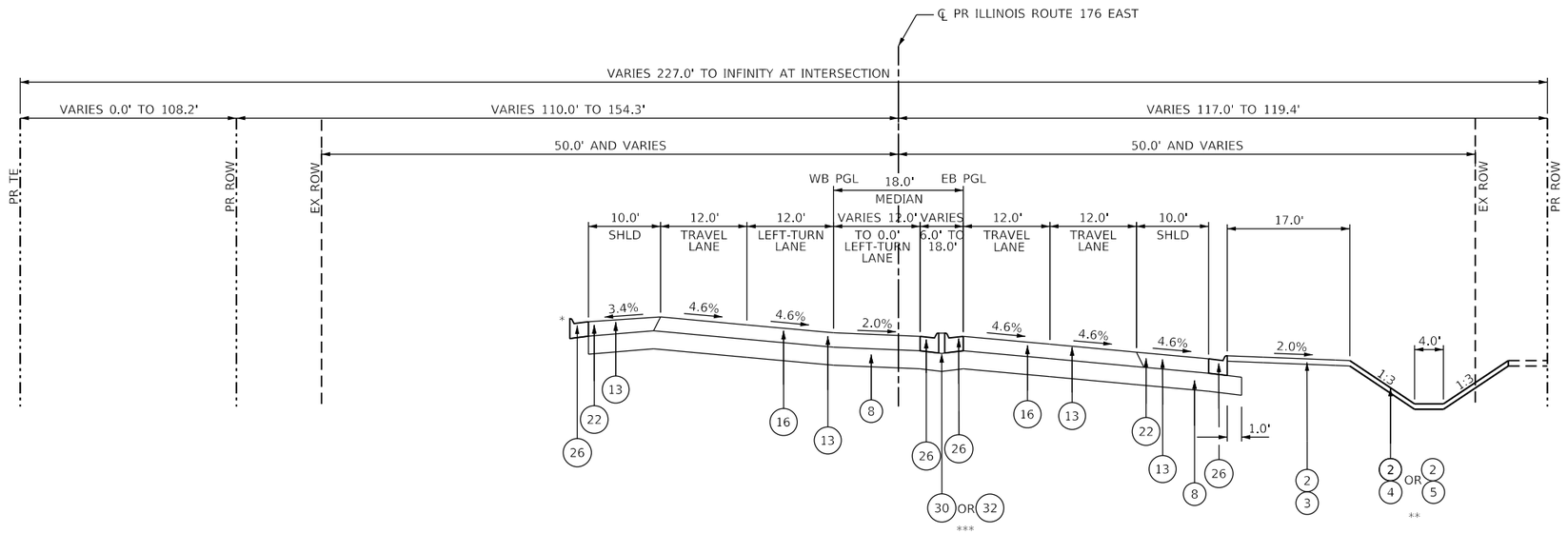



## ILLINOIS ROUTE 176 EAST SUPERELEVATION TYPICAL SECTION

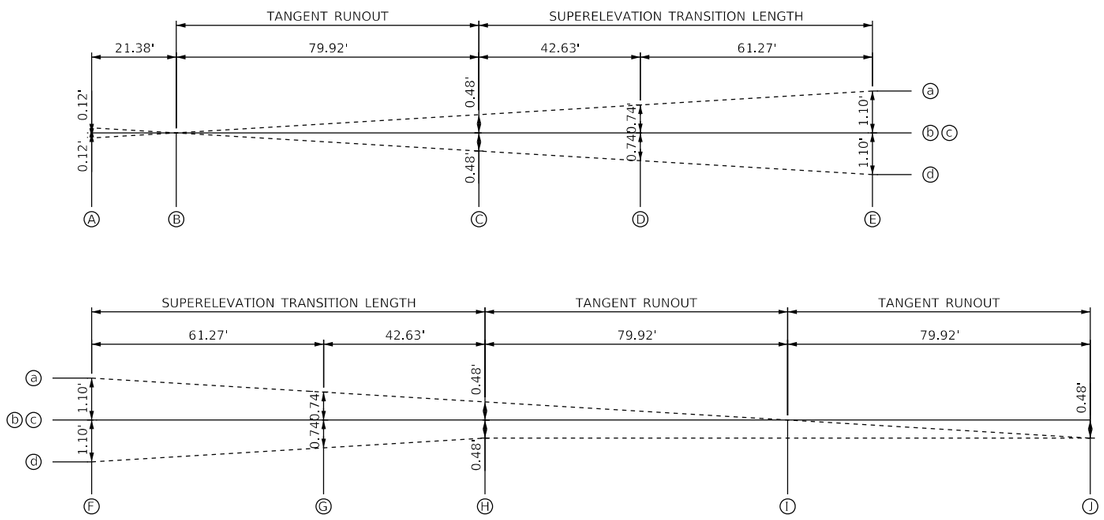
STA. 300+00.00 TO STA. 308+17.20

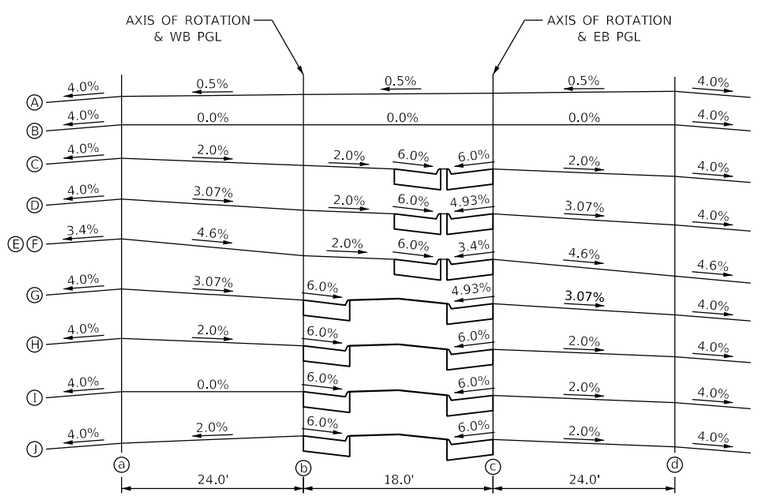
* SEE CROSS SECTIONS FOR CORNER ISLAND DETAIL

** SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS

*** SEE PLAN SHEETS FOR SPECIFIC LOCATIONS

| | STATION | a | d |
|---|---|---|---|
| A | 300+39.13 | 0.50% | -0.50% |
| B | 300+60.51 | 0.00% | 0.00% |
| C | 301+40.43 | -2.00% | 2.00% |
| D | 301+83.05 | -3.07% | 3.07% |
| E | 302+44.32 | -4.60% | 4.60% |
| F | 305+53.47 | -4.60% | 4.60% |
| G | 306+14.74 | -3.07% | 3.07% |
| H | 306+57.37 | -2.00% | 2.00% |
| I | 307+37.28 | 0.00% | 2.00% |
| J | 308+17.20 | 2.00% | 2.00% |




## PROPOSED LEGEND

1. GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (NOT USED)
2. TOPSOIL PLACEMENT
3. SEEDING, CLASS 2A
4. SEEDING, CLASS 4
5. SEEDING, CLASS 4B
6. SODDING, SALT TOLERANT
7. AGGREGATE SUBGRADE IMPROVEMENT (NOT USED)
8. AGGREGATE SUBGRADE IMPROVEMENT, 12"
9. ~~SUBBASE GRANULAR MATERIAL, TYPE B, 2"~~
10. SUBBASE GRANULAR MATERIAL, TYPE C
11. ~~AGGREGATE BASE COURSE, TYPE B, 4"~~
12. ~~BITUMINOUS MATERIALS (PRIME COAT)~~
13. BITUMINOUS MATERIALS (TACK COAT)
14. ~~HOT-MIX ASPHALT SURFACE COURSE, MIX~~ "D", N50
15. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 7"
16. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"
17. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10 1/2"
18. ~~PORTLAND CEMENT CONCRETE SIDEWALK, 5"~~
19. AGGREGATE SHOULDERS, TYPE B, 10"
20. HOT-MIX ASPHALT SHOULDERS, 7"
21. HOT-MIX ASPHALT SHOULDERS, 8"
22. HOT-MIX ASPHALT SHOULDERS, 10"
23. HOT-MIX ASPHALT SHOULDERS, 10 1/2"
24. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.06
25. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12
26. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.24
27. CONCRETE MEDIAN SURFACE, 6 INCH
28. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
29. CONCRETE MEDIAN, TYPE SM-4.12
30. CONCRETE MEDIAN, TYPE SM-4.24
31. HIGH TENSION CABLE MEDIAN BARRIER
32. CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL)

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(815) 744-4200

| | | |
|---|---|---|
| USER NAME = JakeSc | DESIGNED - | REVISED - |
| | DRAWN - | REVISED - |
| PLOT SCALE = 20.0000 ft / in. | CHECKED - | REVISED - |
| PLOT DATE = 9/20/2018 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 176 EAST**
**TYPICAL SECTIONS**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 473 | 40 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS FED. AID PROJECT | | | |

MODEL: Default
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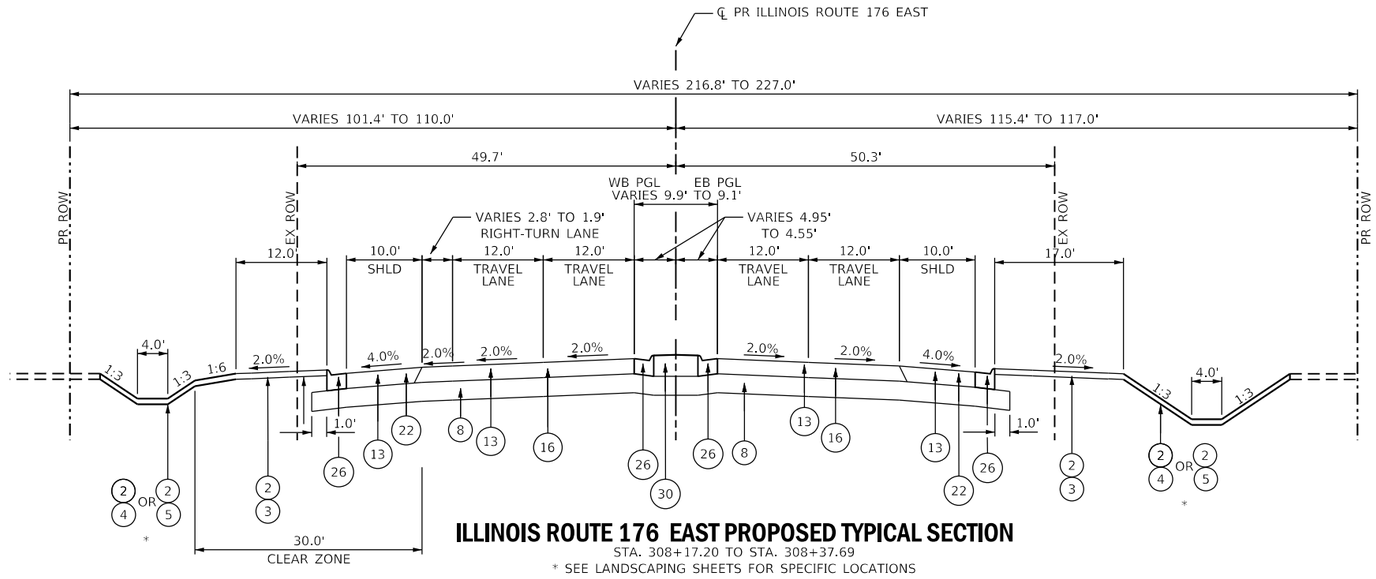
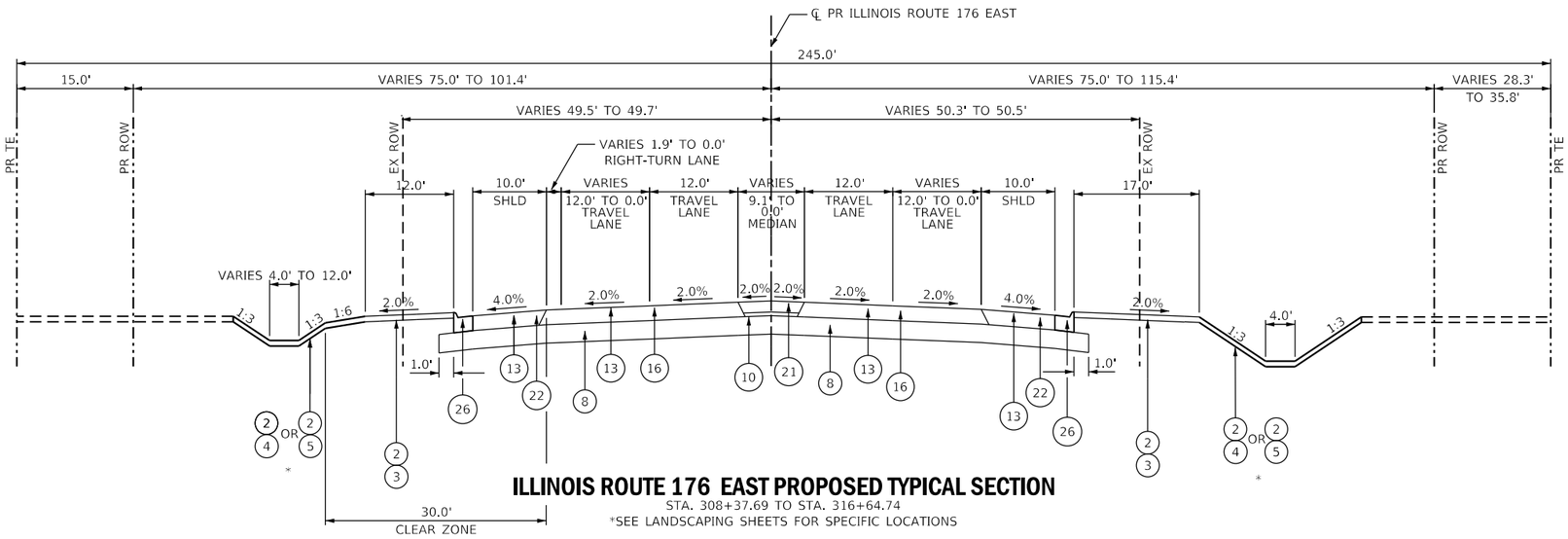



## ILLINOIS ROUTE 176 EAST PROPOSED TYPICAL SECTION

STA. 308+17.20 TO STA. 308+37.69

* SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS




## ILLINOIS ROUTE 176 EAST PROPOSED TYPICAL SECTION

STA. 308+37.69 TO STA. 316+64.74

*SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS

## PROPOSED LEGEND

1. GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (NOT USED)
2. TOPSOIL PLACEMENT
3. SEEDING, CLASS 2A
4. SEEDING, CLASS 4
5. SEEDING, CLASS 4B
6. SODDING, SALT TOLERANT
7. AGGREGATE SUBGRADE IMPROVEMENT (NOT USED)
8. AGGREGATE SUBGRADE IMPROVEMENT, 12"
9. ~~SUBBASE GRANULAR MATERIAL, TYPE B, 2"~~
10. SUBBASE GRANULAR MATERIAL, TYPE C
11. ~~AGGREGATE BASE COURSE, TYPE B, 4"~~
12. ~~BITUMINOUS MATERIALS (PRIME COAT)~~
13. BITUMINOUS MATERIALS (TACK COAT)
14. ~~HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50~~
15. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 7"
16. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"
17. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10 1/2"
18. ~~PORTLAND CEMENT CONCRETE SIDEWALK, 5"~~
19. AGGREGATE SHOULDERS, TYPE B, 10"
20. HOT-MIX ASPHALT SHOULDERS, 7"
21. HOT-MIX ASPHALT SHOULDERS, 8"
22. HOT-MIX ASPHALT SHOULDERS, 10"
23. HOT-MIX ASPHALT SHOULDERS, 10 1/2"
24. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.06
25. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12
26. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.24
27. CONCRETE MEDIAN SURFACE, 6 INCH
28. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
29. CONCRETE MEDIAN, TYPE SM-4.12
30. CONCRETE MEDIAN, TYPE SM-4.24
31. HIGH TENSION CABLE MEDIAN BARRIER
32. CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL)

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| | | |
|---|---|---|
| USER NAME = JakeSc | DESIGNED - | REVISED - |
| | DRAWN - | REVISED - |
| PLOT SCALE = 20.0000 ft / in. | CHECKED - | REVISED - |
| PLOT DATE = 9/20/2018 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 176 EAST**
**TYPICAL SECTIONS**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 473 | 41 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS FED. AID PROJECT | | | |

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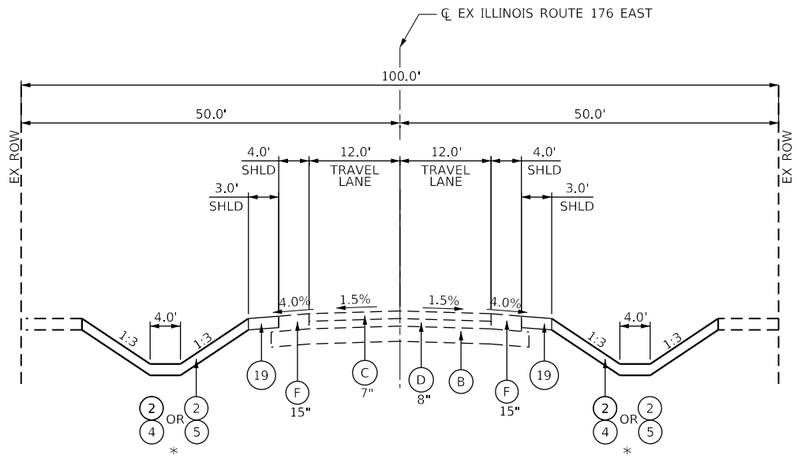
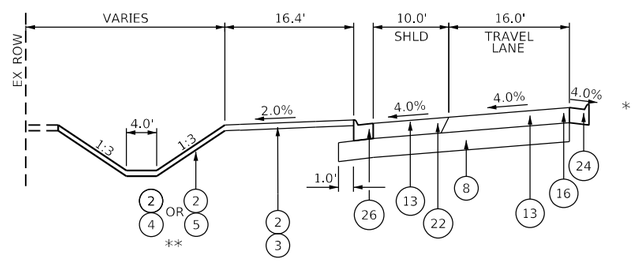



## ILLINOIS ROUTE 176 EAST PROPOSED TYPICAL SECTION

STA. 316+64.74 TO STA. 324+00.00

* SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS




## ILLINOIS ROUTE 176 EAST RIGHT TURN BYPASS PROPOSED TYPICAL SECTION

* SEE CROSS SECTIONS FOR CORNER ISLAND DETAIL

** SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS

## EXISTING LEGEND

- (A) EXISTING TOPSOIL, 15"
- (B) EXISTING AGGREGATE SUBBASE, VARIES
- (C) EXISTING HMA PAVEMENT, VARIES
- (D) EXISTING PCC PAVEMENT, VARIES
- (E) EXISTING AGGREGATE SHOULDERS
- (F) EXISTING HMA SHOULDERS, VARIES
- (G) EXISTING COMBINATION CONCRETE CURB AND GUTTER
- (H) EXISTING PCC MEDIAN
- (I) EXISTING STEEL PLATE BEAM GUARDRAIL

## REMOVAL LEGEND

- (a) PAVEMENT REMOVAL
- (b) COMBINATION CURB AND GUTTER REMOVAL
- (c) MEDIAN REMOVAL
- (d) PAVED SHOULDER REMOVAL
- (e) GUARDRAIL REMOVAL
- (f) TOPSOIL EXCAVATION
- ⊠ REMOVAL ITEMS

## PROPOSED LEGEND

- (1) GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (NOT USED)
- (2) TOPSOIL PLACEMENT
- (3) SEEDING, CLASS 2A
- (4) SEEDING, CLASS 4
- (5) SEEDING, CLASS 4B
- (6) SODDING, SALT TOLERANT
- (7) AGGREGATE SUBGRADE IMPROVEMENT (NOT USED)
- (8) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (9) ~~SUBBASE GRANULAR MATERIAL, TYPE B, 2"~~
- (10) SUBBASE GRANULAR MATERIAL, TYPE C
- (11) ~~AGGREGATE BASE COURSE, TYPE B, 4"~~
- (12) ~~BITUMINOUS MATERIALS (PRIME COAT)~~
- (13) BITUMINOUS MATERIALS (TACK COAT)
- (14) ~~HOT-MIX ASPHALT SURFACE COURSE, MIX "~~D", N50
- (15) HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 7"
- (16) HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"
- (17) HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10 1/2"
- (18) ~~PORTLAND CEMENT CONCRETE SIDEWALK, 5"~~
- (19) AGGREGATE SHOULDERS, TYPE B, 10"
- (20) HOT-MIX ASPHALT SHOULDERS, 7"
- (21) HOT-MIX ASPHALT SHOULDERS, 8"
- (22) HOT-MIX ASPHALT SHOULDERS, 10"
- (23) HOT-MIX ASPHALT SHOULDERS, 10 1/2"
- (24) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.06
- (25) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12
- (26) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.24
- (27) CONCRETE MEDIAN SURFACE, 6 INCH
- (28) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
- (29) CONCRETE MEDIAN, TYPE SM-4.12
- (30) CONCRETE MEDIAN, TYPE SM-4.24
- (31) HIGH TENSION CABLE MEDIAN BARRIER
- (32) CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL)

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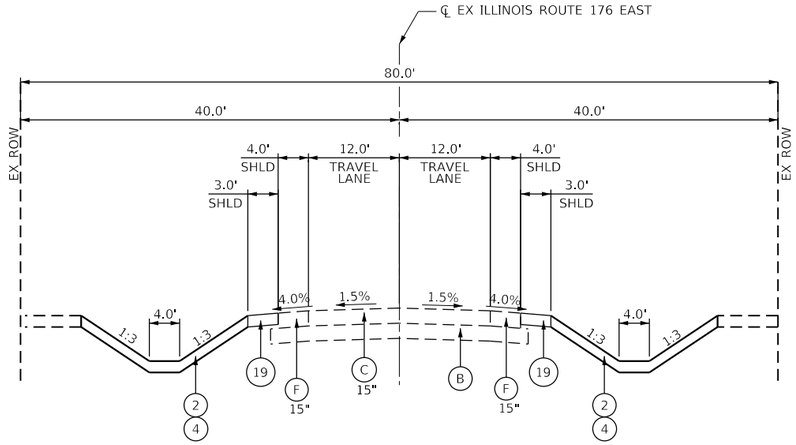
| | | | |
|---|---|---|---|
| USER NAME = JakeSc | DESIGNED - | REVISED - | |
| | DRAWN - | REVISED - | |
| PLOT SCALE = 20.0000 ft / in. | CHECKED - | REVISED - | |
| PLOT DATE = 9/20/2018 | DATE - | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 176 EAST**
**TYPICAL SECTIONS**

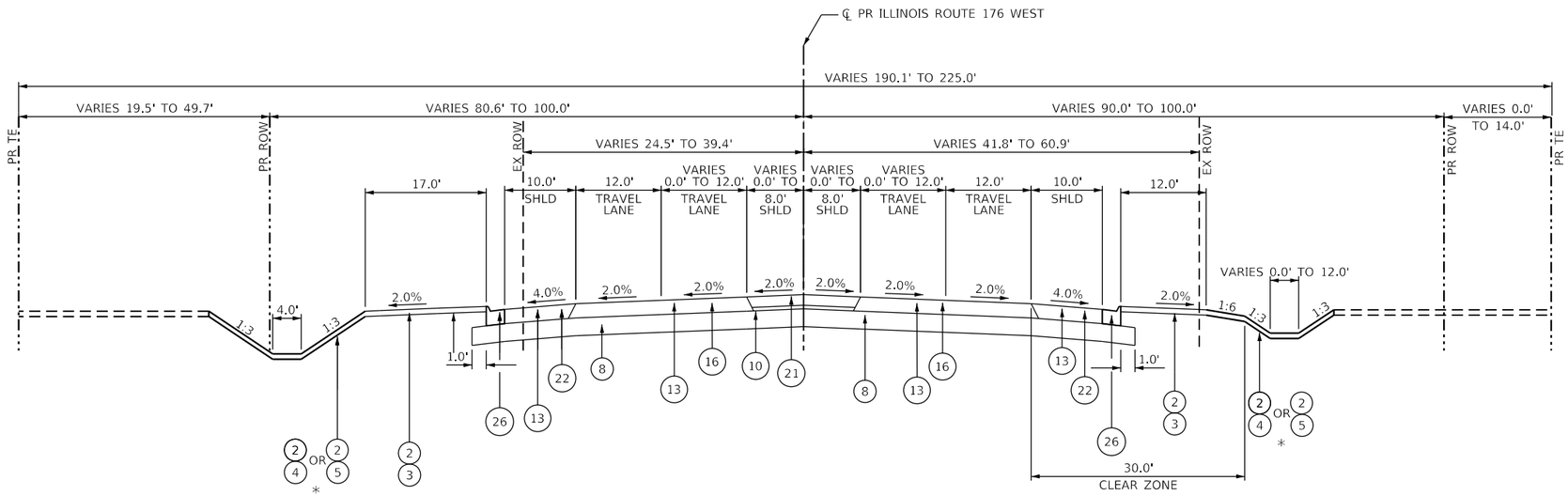
SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 473 | 42 |
| | | CONTRACT NO. 62B43 | | |
| | | ILLINOIS | FED. AID PROJECT | |




## ILLINOIS ROUTE 176 WEST PROPOSED TYPICAL SECTION

STA. 397+85.34 TO STA. 404+20.04




## ILLINOIS ROUTE 176 WEST PROPOSED TYPICAL SECTION

STA. 404+20.04 TO STA. 415+47.95

* SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS

## EXISTING LEGEND

- (A) EXISTING TOPSOIL, 15"
- (B) EXISTING AGGREGATE SUBBASE, VARIES
- (C) EXISTING HMA PAVEMENT, VARIES
- (D) EXISTING PCC PAVEMENT, VARIES
- (E) EXISTING AGGREGATE SHOULDERS
- (F) EXISTING HMA SHOULDERS, VARIES
- (G) EXISTING COMBINATION CONCRETE CURB AND GUTTER
- (H) EXISTING PCC MEDIAN
- (I) EXISTING STEEL PLATE BEAM GUARDRAIL

## REMOVAL LEGEND

- (a) PAVEMENT REMOVAL
- (b) COMBINATION CURB AND GUTTER REMOVAL
- (c) MEDIAN REMOVAL
- (d) PAVED SHOULDER REMOVAL
- (e) GUARDRAIL REMOVAL
- (f) TOPSOIL EXCAVATION
- ⊠ REMOVAL ITEMS

## PROPOSED LEGEND

- (1) GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (NOT USED)
- (2) TOPSOIL PLACEMENT
- (3) SEEDING, CLASS 2A
- (4) SEEDING, CLASS 4
- (5) SEEDING, CLASS 4B
- (6) SODDING, SALT TOLERANT
- (7) AGGREGATE SUBGRADE IMPROVEMENT (NOT USED)
- (8) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (9) ~~SUBBASE GRANULAR MATERIAL, TYPE B, 2"~~
- (10) SUBBASE GRANULAR MATERIAL, TYPE C
- (11) ~~AGGREGATE BASE COURSE, TYPE B, 4"~~
- (12) ~~BITUMINOUS MATERIALS (PRIME COAT)~~
- (13) BITUMINOUS MATERIALS (TACK COAT)
- (14) ~~HOT-MIX ASPHALT SURFACE COURSE, MIX~~ "D", N50
- (15) HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 7"
- (16) HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"
- (17) HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10 1/2"
- (18) ~~PORTLAND CEMENT CONCRETE SIDEWALK, 5"~~
- (19) AGGREGATE SHOULDERS, TYPE B, 10"
- (20) HOT-MIX ASPHALT SHOULDERS, 7"
- (21) HOT-MIX ASPHALT SHOULDERS, 8"
- (22) HOT-MIX ASPHALT SHOULDERS, 10"
- (23) HOT-MIX ASPHALT SHOULDERS, 10 1/2"
- (24) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.06
- (25) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12
- (26) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.24
- (27) CONCRETE MEDIAN SURFACE, 6 INCH
- (28) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
- (29) CONCRETE MEDIAN, TYPE SM-4.12
- (30) CONCRETE MEDIAN, TYPE SM-4.24
- (31) HIGH TENSION CABLE MEDIAN BARRIER
- (32) CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL)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| | | |
|---|---|---|
| USER NAME = JakeSc | DESIGNED - | REVISED - |
| | DRAWN - | REVISED - |
| PLOT SCALE = 20.0000 ft / in. | CHECKED - | REVISED - |
| PLOT DATE = 9/20/2018 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 176 WEST**
**TYPICAL SECTIONS**

SCALE: | SHEET OF SHEETS | STA. TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 473 | 43 |
| | | CONTRACT NO. 62B43 | | |
| | | ILLINOIS FED. AID PROJECT | | |

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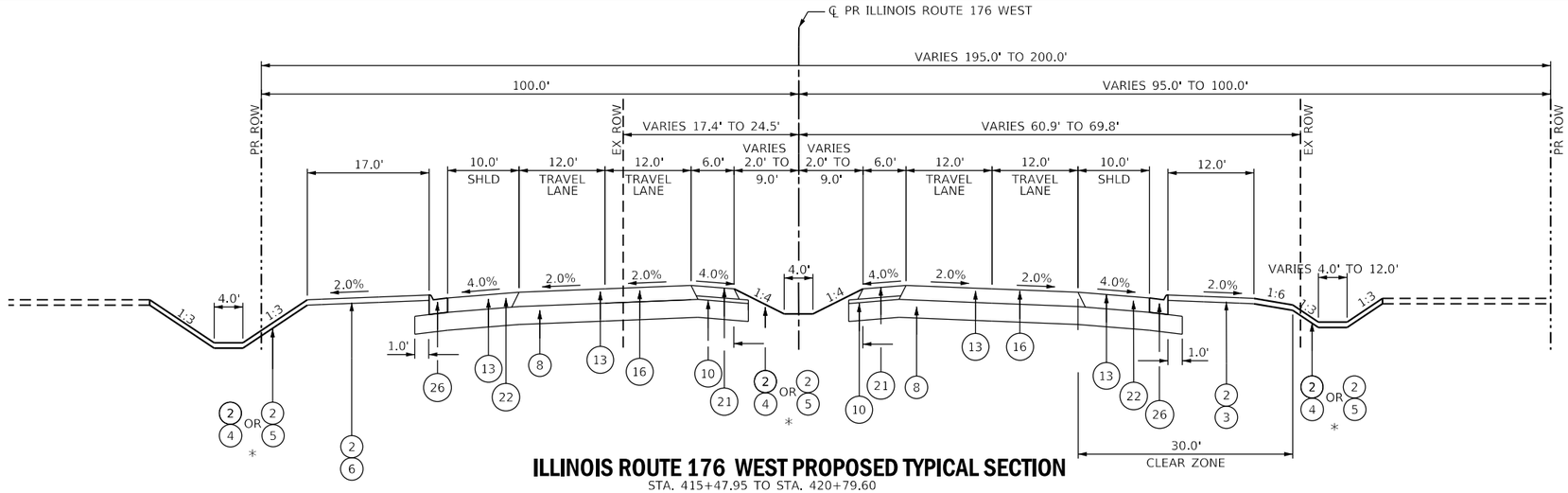
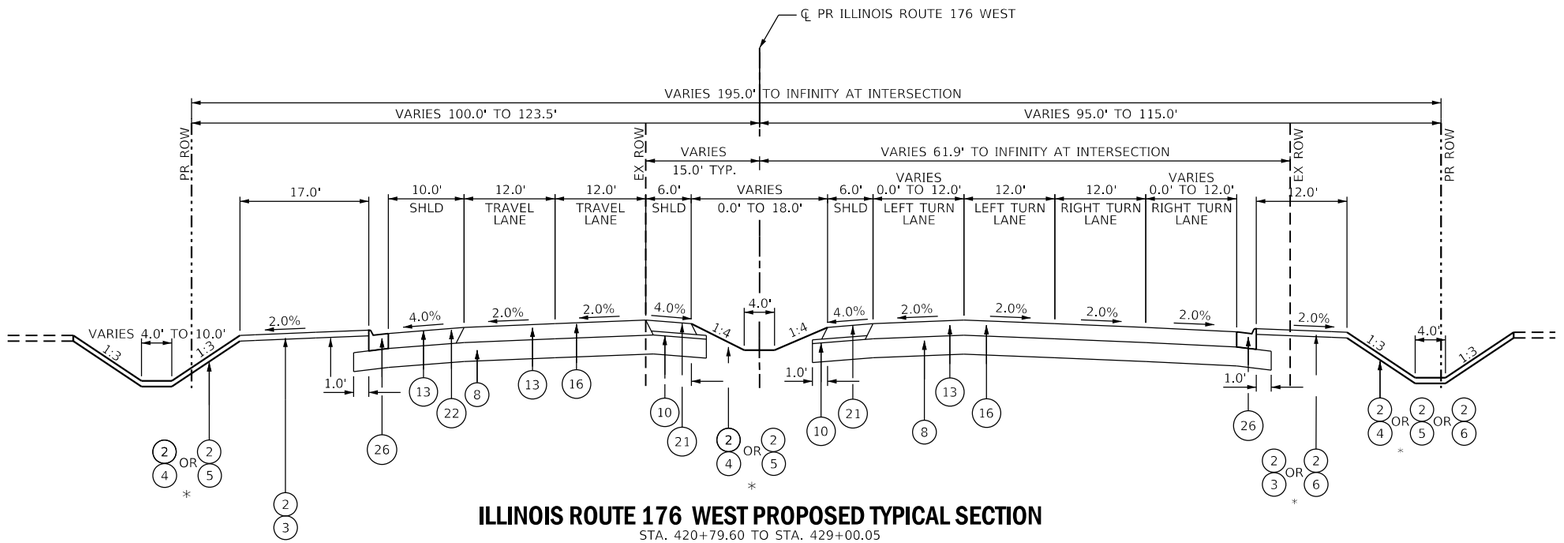



## ILLINOIS ROUTE 176 WEST PROPOSED TYPICAL SECTION

STA. 415+47.95 TO STA. 420+79.60

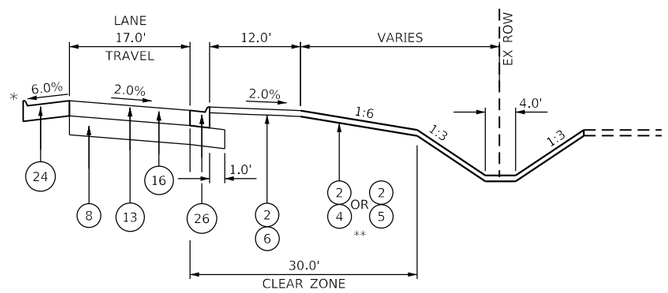
* SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS




## ILLINOIS ROUTE 176 WEST PROPOSED TYPICAL SECTION

STA. 420+79.60 TO STA. 429+00.05

* SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS




## ILLINOIS ROUTE 176 WEST RIGHT TURN BYPASS PROPOSED TYPICAL SECTION

* SEE CROSS SECTIONS FOR CORNER ISLAND DETAIL

** SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS

## PROPOSED LEGEND

1. GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (NOT USED)
2. TOPSOIL PLACEMENT
3. SEEDING, CLASS 2A
4. SEEDING, CLASS 4
5. SEEDING, CLASS 4B
6. SODDING, SALT TOLERANT
7. AGGREGATE SUBGRADE IMPROVEMENT (NOT USED)
8. AGGREGATE SUBGRADE IMPROVEMENT, 12"
9. ~~SUBBASE GRANULAR MATERIAL, TYPE B, 2"~~
10. SUBBASE GRANULAR MATERIAL, TYPE C
11. ~~AGGREGATE BASE COURSE, TYPE B, 4"~~
12. ~~BITUMINOUS MATERIALS (PRIME COAT)~~
13. BITUMINOUS MATERIALS (TACK COAT)
14. ~~HOT-MIX ASPHALT SURFACE COURSE, MIX~~ "D", N50
15. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 7"
16. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"
17. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10 1/2"
18. ~~PORTLAND CEMENT CONCRETE SIDEWALK, 5"~~
19. AGGREGATE SHOULDERS, TYPE B, 10"
20. HOT-MIX ASPHALT SHOULDERS, 7"
21. HOT-MIX ASPHALT SHOULDERS, 8"
22. HOT-MIX ASPHALT SHOULDERS, 10"
23. HOT-MIX ASPHALT SHOULDERS, 10 1/2"
24. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.06
25. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12
26. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.24
27. CONCRETE MEDIAN SURFACE, 6 INCH
28. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
29. CONCRETE MEDIAN, TYPE SM-4.12
30. CONCRETE MEDIAN, TYPE SM-4.24
31. HIGH TENSION CABLE MEDIAN BARRIER
32. CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL)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(815) 744-4200

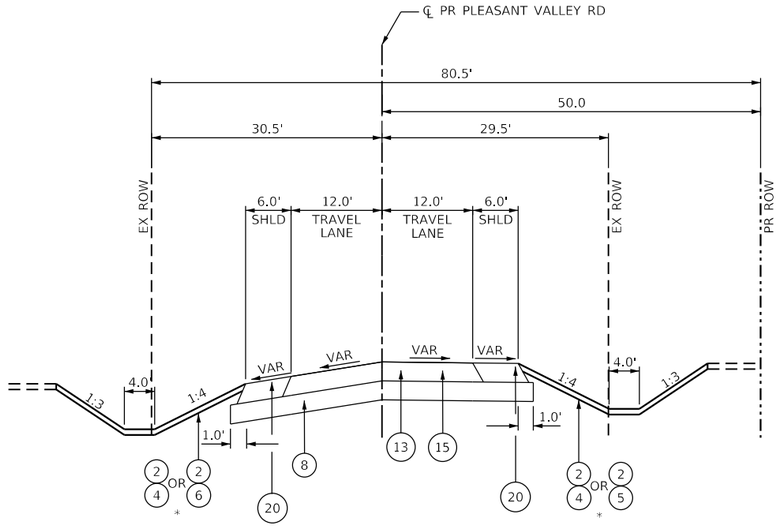

| | | |
|---|---|---|
| USER NAME = JakeSc | DESIGNED - | REVISED - |
| | DRAWN - | REVISED - |
| PLOT SCALE = 20.0000 ft / in. | CHECKED - | REVISED - |
| PLOT DATE = 9/20/2018 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**ILLINOIS ROUTE 176 WEST**
**TYPICAL SECTIONS**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 473 | 44 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS FED. AID PROJECT | | | |

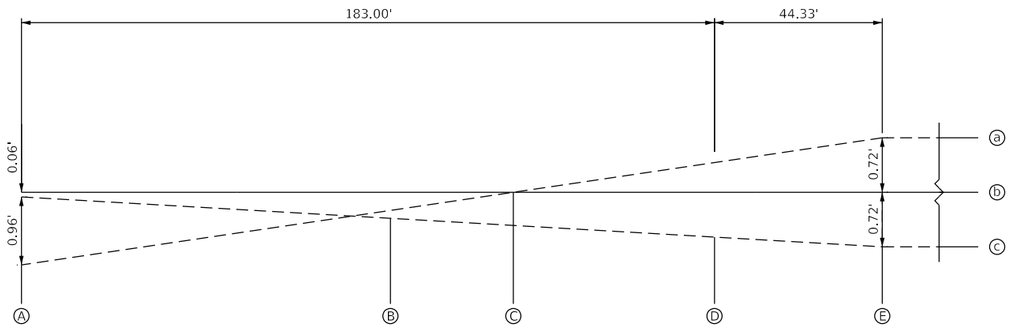


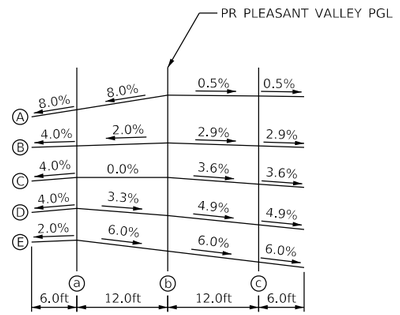

## PLEASANT VALLEY ROAD SUPERELEVATION TYPICAL SECTION

STA. 273+28.41 TO STA. 275+55.74

* SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS

| | STATION | a | c |
|---|---|---|---|
| A | 273+28.41 | 8.00% | 0.50% |
| B | 274+25.84 | 2.00% | 2.86% |
| C | 274+58.31 | 0.00% | 3.64% |
| D | 275+11.41 | -3.26% | 4.92% |
| E | 275+55.74 | -6.00% | 6.00% |




## PROPOSED LEGEND

1. GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (NOT USED)
2. TOPSOIL PLACEMENT
3. SEEDING, CLASS 2A
4. SEEDING, CLASS 4
5. SEEDING, CLASS 4B
6. SODDING, SALT TOLERANT
7. AGGREGATE SUBGRADE IMPROVEMENT (NOT USED)
8. AGGREGATE SUBGRADE IMPROVEMENT, 12"
9. ~~SUBBASE GRANULAR MATERIAL, TYPE B, 2"~~
10. SUBBASE GRANULAR MATERIAL, TYPE C
11. ~~AGGREGATE BASE COURSE, TYPE B, 4"~~
12. ~~BITUMINOUS MATERIALS (PRIME COAT)~~
13. BITUMINOUS MATERIALS (TACK COAT)
14. ~~HOT-MIX ASPHALT SURFACE COURSE, MIX "~~D", N50
15. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 7"
16. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"
17. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10 1/2"
18. ~~PORTLAND CEMENT CONCRETE SIDEWALK, 5"~~
19. AGGREGATE SHOULDERS, TYPE B, 10"
20. HOT-MIX ASPHALT SHOULDERS, 7"
21. HOT-MIX ASPHALT SHOULDERS, 8"
22. HOT-MIX ASPHALT SHOULDERS, 10"
23. HOT-MIX ASPHALT SHOULDERS, 10 1/2"
24. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.06
25. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12
26. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.24
27. CONCRETE MEDIAN SURFACE, 6 INCH
28. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
29. CONCRETE MEDIAN, TYPE SM-4.12
30. CONCRETE MEDIAN, TYPE SM-4.24
31. HIGH TENSION CABLE MEDIAN BARRIER
32. CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL)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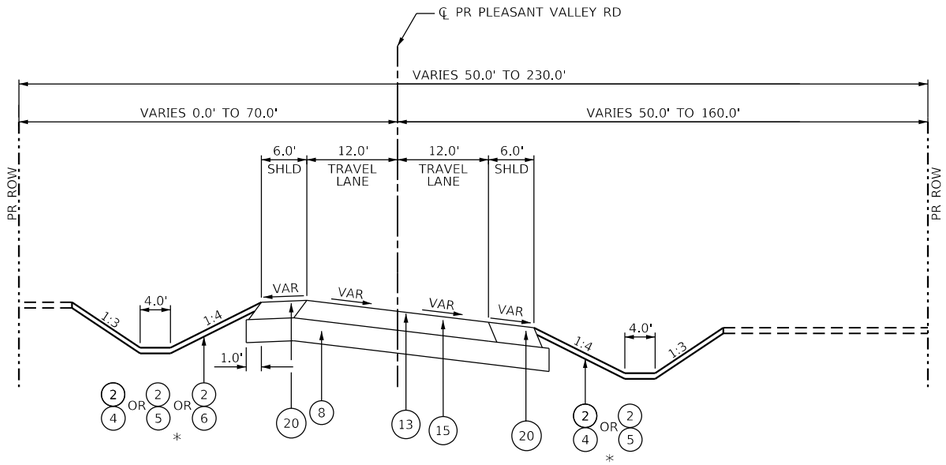
| | | |
|---|---|---|
| USER NAME = JakeSc | DESIGNED - | REVISED - |
| | DRAWN - | REVISED - |
| PLOT SCALE = 20.0000 ft / in. | CHECKED - | REVISED - |
| PLOT DATE = 9/20/2018 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**PLEASANT VALLEY ROAD**
**TYPICAL SECTIONS**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

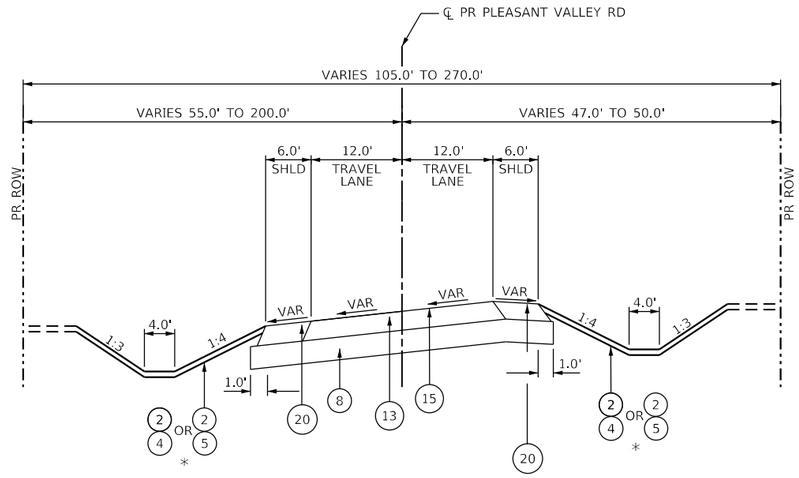
| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 473 | 45 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |




## PLEASANT VALLEY ROAD SUPERELEVATION TYPICAL SECTION

STA. 275+55.74 TO STA. 281+26.20

* SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS




## PLEASANT VALLEY ROAD SUPERELEVATION TYPICAL SECTION

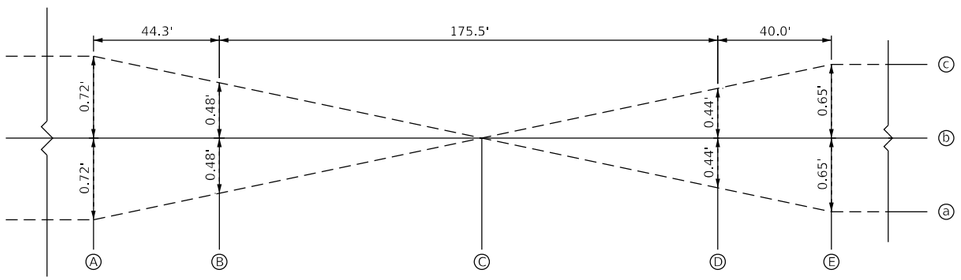
STA. 281+26.20 TO STA. 290+53.01 (WB)

STA. 281+26.20 TO STA. 292+24.29 (EB)

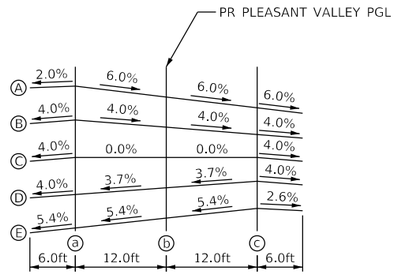
* SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS

## PROPOSED LEGEND

1. GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (NOT USED)
2. TOPSOIL PLACEMENT
3. SEEDING, CLASS 2A
4. SEEDING, CLASS 4
5. SEEDING, CLASS 4B
6. SODDING, SALT TOLERANT
7. AGGREGATE SUBGRADE IMPROVEMENT (NOT USED)
8. AGGREGATE SUBGRADE IMPROVEMENT, 12"
9. ~~SUBBASE GRANULAR MATERIAL, TYPE B, 2"~~
10. SUBBASE GRANULAR MATERIAL, TYPE C
11. ~~AGGREGATE BASE COURSE, TYPE B, 4"~~
12. ~~BITUMINOUS MATERIALS (PRIME COAT)~~
13. BITUMINOUS MATERIALS (TACK COAT)
14. ~~HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50~~
15. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 7"
16. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"
17. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10 1/2"
18. ~~PORTLAND CEMENT CONCRETE SIDEWALK, 5"~~
19. AGGREGATE SHOULDERS, TYPE B, 10"
20. HOT-MIX ASPHALT SHOULDERS, 7"
21. HOT-MIX ASPHALT SHOULDERS, 8"
22. HOT-MIX ASPHALT SHOULDERS, 10"
23. HOT-MIX ASPHALT SHOULDERS, 10 1/2"
24. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.06
25. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12
26. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.24
27. CONCRETE MEDIAN SURFACE, 6 INCH
28. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
29. CONCRETE MEDIAN, TYPE SM-4.12
30. CONCRETE MEDIAN, TYPE SM-4.24
31. HIGH TENSION CABLE MEDIAN BARRIER
32. CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL)




| | STATION | a | c |
|---|---|---|---|
| A | 279+89.45 | -6.00% | 6.00% |
| B | 280+33.78 | -4.01% | 4.01% |
| C | 281+26.20 | 0.00% | 0.00% |
| D | 282+09.28 | 3.65% | -3.65% |
| E | 282+49.28 | 5.40% | -5.40% |

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| | DRAWN - | REVISED - |
| PLOT SCALE = 20.0000 ft / in. | CHECKED - | REVISED - |
| PLOT DATE = 9/20/2018 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

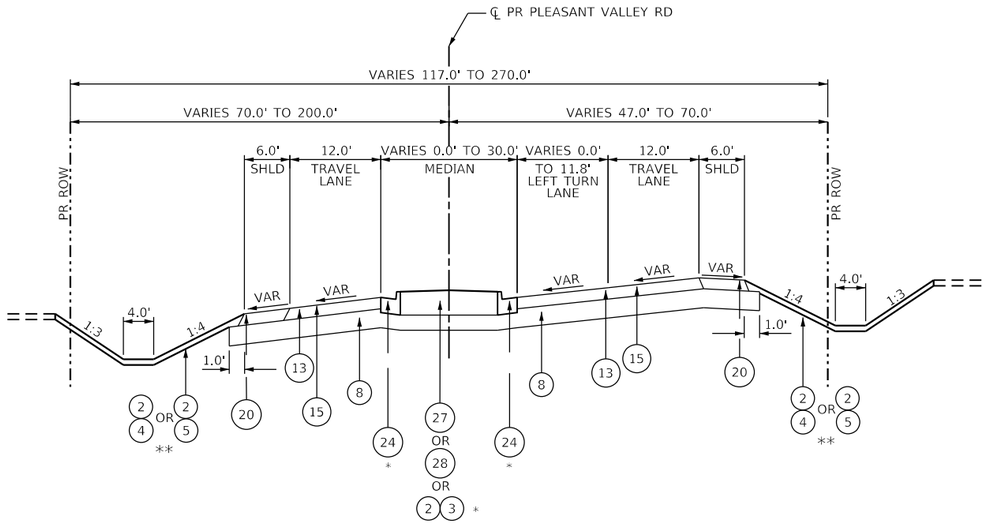
**PLEASANT VALLEY ROAD**
**TYPICAL SECTIONS**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 473 | 46 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |

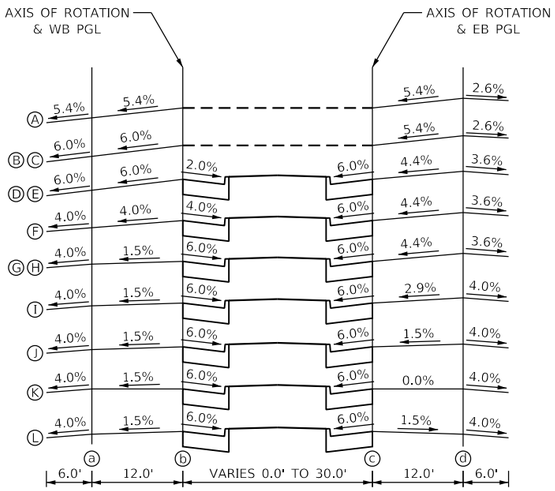
## PROPOSED LEGEND

1. GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (NOT USED)
2. TOPSOIL PLACEMENT
3. SEEDING, CLASS 2A
4. SEEDING, CLASS 4
5. SEEDING, CLASS 4B
6. SODDING, SALT TOLERANT
7. AGGREGATE SUBGRADE IMPROVEMENT (NOT USED)
8. AGGREGATE SUBGRADE IMPROVEMENT, 12"
9. ~~SUBBASE GRANULAR MATERIAL, TYPE B, 2"~~
10. SUBBASE GRANULAR MATERIAL, TYPE C
11. ~~AGGREGATE BASE COURSE, TYPE B, 4"~~
12. ~~BITUMINOUS MATERIALS (PRIME COAT)~~
13. BITUMINOUS MATERIALS (TACK COAT)
14. ~~HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50~~
15. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 7"
16. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"
17. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10 1/2"
18. ~~PORTLAND CEMENT CONCRETE SIDEWALK, 5"~~
19. AGGREGATE SHOULDERS, TYPE B, 10"
20. HOT-MIX ASPHALT SHOULDERS, 7'
21. HOT-MIX ASPHALT SHOULDERS, 8'
22. HOT-MIX ASPHALT SHOULDERS, 10"
23. HOT-MIX ASPHALT SHOULDERS, 10 1/2"
24. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.06
25. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12
26. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.24
27. CONCRETE MEDIAN SURFACE, 6 INCH
28. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
29. CONCRETE MEDIAN, TYPE SM-4.12
30. CONCRETE MEDIAN, TYPE SM-4.24
31. HIGH TENSION CABLE MEDIAN BARRIER
32. CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL)

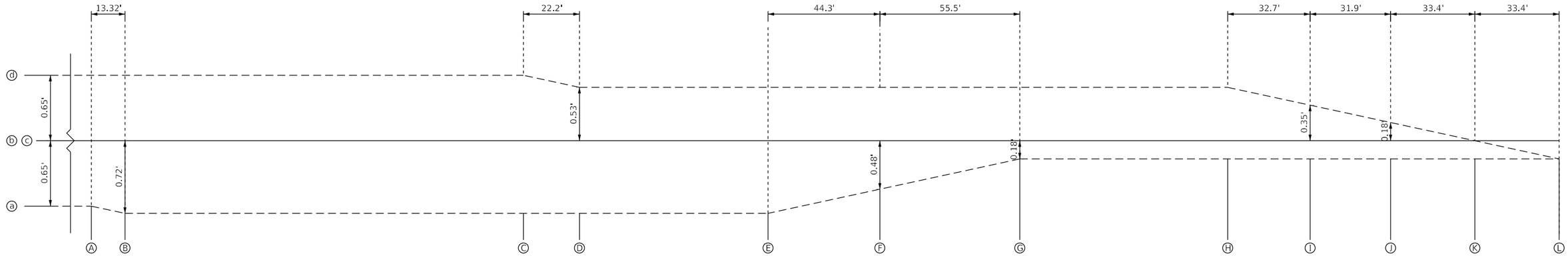



## PLEASANT VALLEY ROAD SUPERELEVATION TYPICAL SECTION

STA. 290+53.01 TO STA. 293+69.57 (WB)
STA. 292+24.29 to STA. 296+34.86 (EB)
* SEE PLAN SHEETS FOR SPECIFIC LOCATIONS
** SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS




| | STATION | a | d |
|---|---|---|---|
| A | 290+53.01 | 5.40% | -5.40% |
| B | 290+66.33 | 6.00% | -5.40% |
| C | 292+24.29 | 6.00% | -5.40% |
| D | 292+46.49 | 6.00% | -4.40% |
| E | 292+69.77 | 6.00% | -4.40% |
| F | 293+14.10 | 4.00% | -4.40% |
| G | 293+69.57 | 1.50% | -4.40% |
| H | 295+03.46 | 1.50% | -4.40% |
| I | 295+36.13 | 1.50% | -2.93% |
| J | 295+68.05 | 1.50% | -1.50% |
| K | 296+01.46 | 1.50% | 0.00% |
| L | 296+34.86 | 1.50% | 1.50% |




| | | | |
|---|---|---|---|
| STRAND ASSOCIATES® 1170 SOUTH HOUBOLT ROAD JOLIET, ILLINOIS 60431 (815) 744-4200 | USER NAME = JakeSc | DESIGNED - | REVISED - |
| | | DRAWN - | REVISED - |
| | PLOT SCALE = 20.0000 ft / in. | CHECKED - | REVISED - |
| | PLOT DATE = 9/20/2018 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**PLEASANT VALLEY ROAD**
**TYPICAL SECTIONS**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 473 | 47 |
| | | CONTRACT NO. 62B43 | | |
| | | ILLINOIS FED. AID PROJECT | | |

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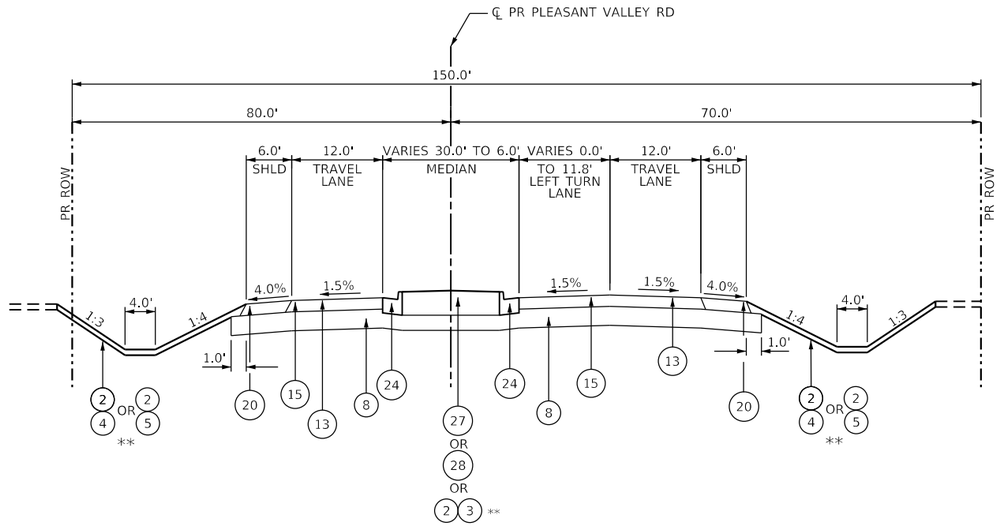
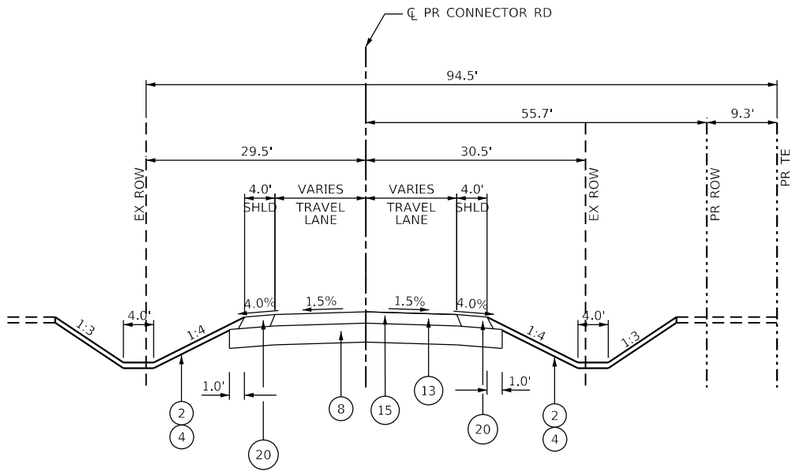



## PLEASANT VALLEY ROAD SUPERELEVATION TYPICAL SECTION

STA. 293+69.57 TO STA. 300+00.00 (WB)
STA. 296+34.86 TO STA. 300+00.00 (EB)
* SEE PLAN SHEETS FOR SPECIFIC LOCATIONS
** SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS




## CONNECTOR ROAD CUL-DE-SAC PROPOSED TYPICAL SECTION

## PROPOSED LEGEND

1. GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (NOT USED)
2. TOPSOIL PLACEMENT
3. SEEDING, CLASS 2A
4. SEEDING, CLASS 4
5. SEEDING, CLASS 4B
6. SODDING, SALT TOLERANT
7. AGGREGATE SUBGRADE IMPROVEMENT (NOT USED)
8. AGGREGATE SUBGRADE IMPROVEMENT, 12"
9. ~~SUBBASE GRANULAR MATERIAL, TYPE B, 2"~~
10. SUBBASE GRANULAR MATERIAL, TYPE C
11. ~~AGGREGATE BASE COURSE, TYPE B, 4"~~
12. ~~BITUMINOUS MATERIALS (PRIME COAT)~~
13. BITUMINOUS MATERIALS (TACK COAT)
14. ~~HOT-MIX ASPHALT SURFACE COURSE, MIX "~~D", N50
15. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 7"
16. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"
17. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10 1/2"
18. ~~PORTLAND CEMENT CONCRETE SIDEWALK, 5"~~
19. AGGREGATE SHOULDERS, TYPE B, 10"
20. HOT-MIX ASPHALT SHOULDERS, 7"
21. HOT-MIX ASPHALT SHOULDERS, 8"
22. HOT-MIX ASPHALT SHOULDERS, 10"
23. HOT-MIX ASPHALT SHOULDERS, 10 1/2"
24. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.06
25. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12
26. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.24
27. CONCRETE MEDIAN SURFACE, 6 INCH
28. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
29. CONCRETE MEDIAN, TYPE SM-4.12
30. CONCRETE MEDIAN, TYPE SM-4.24
31. HIGH TENSION CABLE MEDIAN BARRIER
32. CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL)

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| USER NAME = JakeSc | DESIGNED - | REVISED - |
| | DRAWN - | REVISED - |
| PLOT SCALE = 20.0000 ft / in. | CHECKED - | REVISED - |
| PLOT DATE = 9/20/2018 | DATE - | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**PLEASANT VALLEY ROAD**
**TYPICAL SECTIONS**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 473 | 48 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS FED. AID PROJECT | | | |

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## IDOT DISTRICT ONE
## HOT-MIX ASPHALT REQUIREMENTS

| MIXTURE TYPE | AIR VOIDS @ NDES | QUALITY MANAGEMENT PROGRAM (QMP) |
|---|---|---|
| HMA PAVEMENT (FD) 10 1/2" (IL ROUTE 47) | | |
| POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, MIX "E", N70, (IL-9.5mm): 2" | 4% @ 70 GYR | QC/QA or PFP |
| POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N90: 2 1/4" | 4% @ 90 GYR | QC/QA or PFP |
| HOT-MIX ASPHALT BASE COURSE, IL-19.0, N90: 6 1/4" | 4% @ 90 GYR | QC/QA or PFP |
| HMA PAVEMENT (FD) 10" (IL ROUTE 176) | | |
| POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, MIX "E", N70, (IL-9.5mm): 2" | 4% @ 70 GYR | QC/QA or PFP |
| POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N90: 2 1/4" | 4% @ 90 GYR | QC/QA or PFP |
| HOT-MIX ASPHALT BASE COURSE, IL-19.0, N90: 5 3/4" | 4% @ 90 GYR | QC/QA or PFP |
| HMA PAVEMENT (FD) 7" (PLEASANT VALLEY RD, CONNECTOR RD, & SWANSON RD) | | |
| HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70, (IL-9.5mm): 2" | 4% @ 70 GYR | QC/QA or PFP |
| HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70: 5" | 4% @ 70 GYR | QC/QA or PFP |
| HMA SHOULDERS 8" (INTERIOR) - IL ROUTE 47 | | |
| POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, MIX "E", N70, (IL-9.5mm): 2" | 4% @ 70 GYR | QC/QA |
| POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N90: 2 1/4" | 4% @ 90 GYR | QC/QA |
| HOT-MIX ASPHALT BASE COURSE, IL-19.0, N90: 3 3/4" | 4% @ 90 GYR | QC/QA |
| HMA SHOULDERS 10 1/2" (EXTERIOR) - IL ROUTE 47 | | |
| POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, MIX "E", N70, (IL-9.5mm): 2" | 4% @ 70 GYR | QC/QA |
| POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N90: 2 1/4" | 4% @ 90 GYR | QC/QA |
| HOT-MIX ASPHALT BASE COURSE, IL-19.0, N90: 6 1/4" | 4% @ 90 GYR | QC/QA |
| HMA SHOULDERS 8" (INTERIOR) - IL ROUTE 176 | | |
| POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, MIX "E", N70, (IL-9.5mm): 2" | 4% @ 70 GYR | QC/QA |
| POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N90: 2 1/4" | 4% @ 90 GYR | QC/QA |
| HOT-MIX ASPHALT BASE COURSE, IL-19.0, N90: 3 3/4" | 4% @ 90 GYR | QC/QA |
| HMA SHOULDERS 10" (EXTERIOR) - IL ROUTE 176 | | |
| POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, MIX "E", N70, (IL-9.5 mm): 2" | 4% @ 70 GYR | QC/QA |
| POLYMERIZED HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N90: 2 1/4" | 4% @ 90 GYR | QC/QA |
| HOT-MIX ASPHALT BASE COURSE, IL-19.0, N90: 5 3/4" | 4% @ 90 GYR | QC/QA |
| HMA SHOULDERS 6" (EXTERIOR) - (PLEASANT VALLEY ROAD, CONNECTOR RD, & SWANSON RD) | | |
| HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70, (IL-9.5 mm): 2" | 4% @ 70 GYR | QC/QA |
| HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70: 4" | 4% @ 70 GYR | QC/QA |
| PRIVATE ENTRANCES | | |
| HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50, (IL-9.5mm): 2" | 4% @ 50 GYR | QC/QA |
| HOT-MIX ASPHALT BASE COURSE, IL-19.0, 6" | 4% @ 50 GYR | QC/QA |
| COMMERCIAL ENTRANCES | | |
| HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50, (IL-9.5mm): 2" | 4% @ 50 GYR | QC/QA |
| HOT-MIX ASPHALT BASE COURSE, IL-19.0, 8" | 4% @ 50 GYR | QC/QA |
| TEMPORARY PAVEMENT (OPTION 1) | | |
| HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70, (IL-9.5mm): 2" | 4% @ 70 GYR | QC/QA |
| HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70: 8" | 4% @ 70 GYR | QC/QA |
| SHARED-USE PATH | | |
| HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50, (IL-9.5mm): 3" | 4% @ 50 GYR | QC/QA |
| CLASS D PATCHING | | |
| CLASS D PATCH (HMA BINDER IL-19mm) | 4% @ 70 GYR | QC/QA |
| QMP DESIGNATION: QUALITY CONTROL/QUALITY ASSURANCE (QC/QA); PAY FOR PERFORMANCE (PFP) | | |

NOTES:

THE UNIT WEIGHT USED TO CALCULATE HOT-MIX ASPHALT MIXTURE QUANTITIES IS 112 LBS/SQ YD/IN.

THE "AC TYPE" FOR POLYMERIZED HOT-MIX ASPHALT MIXES SHALL BE "SBS/SBR PG 76-22" AND FOR NON-POLYMERIZED HOT-MIX ASPHALT THE "AC TYPE" SHALL BE "PG 64-22" UNLESS MODIFIED BY DISTRICT ONE SPECIAL PROVISIONS.

FOR USE OF RECYCLED MATERIALS SEE SPECIAL PROVISIONS.

QUALITY MANAGEMENT PROGRAM (QMP) IDENTIFIES THE PARTICULAR QUALITY CONTROL SPECIFICATION THAT APPLIES TO THE HOT-MIX ASPHALT MIXTURE.

IF THE CONTRACTOR CHOOSES TO USE PORTLAND CEMENT CONCRETE FOR TEMPORARY PAVEMENT, THE THICKNESS SHALL BE 8". "PCC TEMPORARY PAVEMENT SHALL CONSIST OF CLASS PV CONCRETE MEETING THE REQUIREMENTS OF ART. 1020 OF THE STANDARD SPECIFICATIONS. TEMPORARY PCC PAVEMENT DOES NOT REQUIRE DOWEL BARS."

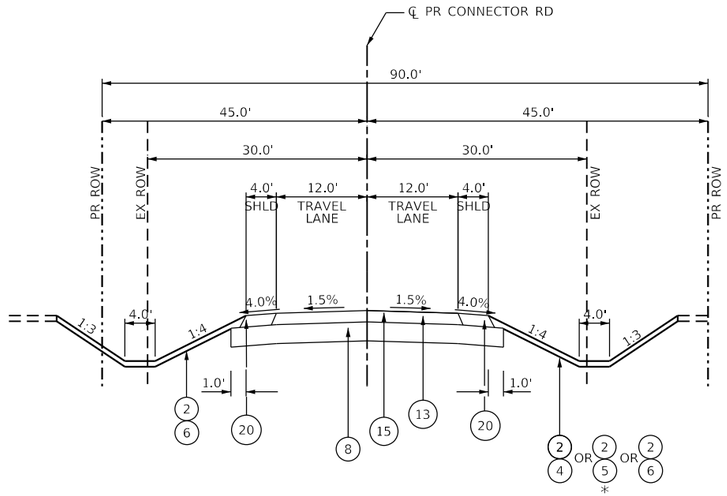
THE SUBGRADE STABILITY SHALL BE VERIFIED BY PROOF ROLLING WITH A FULLY LOADED TANDEM-AXLE TRUCK.

AGGREGATE SUBGRADE IMPROVEMENT (CU YD) HAS BEEN PROVIDED FOR USE AT THE LOCATIONS INDICATED FOR SOILS THAT TEND TO BE UNSTABLE AND/OR UNSUITABLE. THE ACTUAL NEED FOR REMOVAL AND REPLACEMENT WITH ASI WILL BE DETERMINED IN THE FIELD AT THE TIME OF CONSTRUCTION BY THE GEOTECHNICAL ENGINEER. ALL POTENTIALLY UNSTABLE SOILS SHOULD BE TESTED WITH A STATIC OR DYNAMIC CONE PENETROMETER AND TREATED IN ACCORDANCE WITH ARTICLE 301.04 OF THE SSRBC AND IDOT SUBGRADE STABILITY MANUAL. IF UNSTABLE AND/OR UNSUITABLE SOILS ARE NOT ENCOUNTERED, THEN THE QUANTITY SHALL BE DEDUCTED AND NO ADDITIONAL COMPENSATION WILL BE DUE TO THE CONTRACTOR.

ANY AGGREGATE SUBGRADE IMPROVEMENT CONTAMINATED AND/OR DAMAGED BY THE CONTRACTOR'S VEHICLES AND/OR EQUIPMENTS IS TO BE REMOVED AND REPLACED AS DIRECT BY THE ENGINEER AT CONTRACTOR EXPENSE.

PIPE UNDERDRAINS SHALL BE INSTALLED ACCORDING TO SECTION 601 OF THE SSRBC AND STANDARD 601001-05. TOP OF PIPE UNDERDRAINS SHALL BE PLACED MINIMUM 6" BELOW THE AGGREGATE SUBGRADE IMPROVEMENT LAYER. THE COST OF MAKING PIPE UNDERDRAIMS CONNECTIONS TO DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE COST OF THE PIPE UNDERDRAINS.

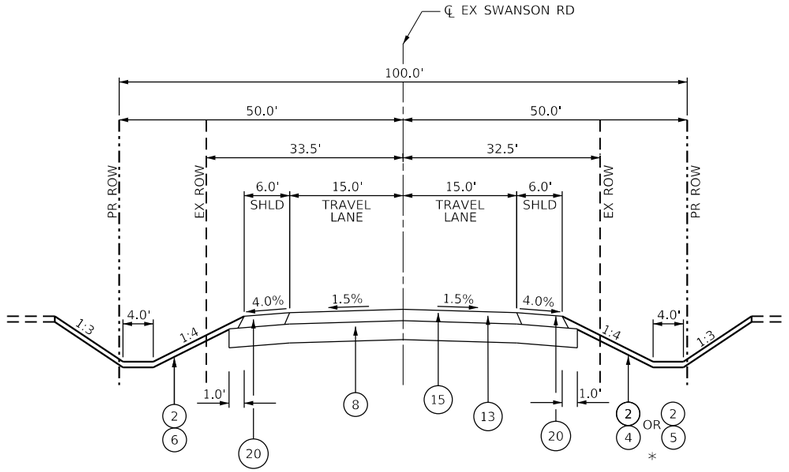
BACKFILLING STORM SEWER CONSTRUCTED UNDER THE ROADWAY SPECIFIED UNDER ART. 550.07(b, c) OF THE SSRBC WILL NOT BE ALLOWED.




## CONNECTOR ROAD PROPOSED TYPICAL SECTION

STA. 400+00.00 TO STA. 405+13.92

* SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS




## SWANSON ROAD PROPOSED TYPICAL SECTION

STA. 502+16.66 TO STA. 507+65.50

* SEE LANDSCAPING SHEETS FOR SPECIFIC LOCATIONS

## PROPOSED LEGEND

1. GEOTECHNICAL FABRIC FOR GROUND STABILIZATION (NOT USED)
2. TOPSOIL PLACEMENT
3. SEEDING, CLASS 2A
4. SEEDING, CLASS 4
5. SEEDING, CLASS 4B
6. SODDING, SALT TOLERANT
7. AGGREGATE SUBGRADE IMPROVEMENT (NOT USED)
8. AGGREGATE SUBGRADE IMPROVEMENT, 12"
9. ~~SUBBASE GRANULAR MATERIAL, TYPE B, 2"~~
10. SUBBASE GRANULAR MATERIAL, TYPE C
11. ~~AGGREGATE BASE COURSE, TYPE B, 4"~~
12. ~~BITUMINOUS MATERIALS (PRIME COAT)~~
13. BITUMINOUS MATERIALS (TACK COAT)
14. ~~HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N50~~
15. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 7"
16. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10"
17. HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 10 1/2"
18. ~~PORTLAND CEMENT CONCRETE SIDEWALK, 5"~~
19. AGGREGATE SHOULDERS, TYPE B, 10"
20. HOT-MIX ASPHALT SHOULDERS, 7"
21. HOT-MIX ASPHALT SHOULDERS, 8"
22. HOT-MIX ASPHALT SHOULDERS, 10"
23. HOT-MIX ASPHALT SHOULDERS, 10 1/2"
24. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.06
25. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.12
26. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-4.24
27. CONCRETE MEDIAN SURFACE, 6 INCH
28. COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
29. CONCRETE MEDIAN, TYPE SM-4.12
30. CONCRETE MEDIAN, TYPE SM-4.24
31. HIGH TENSION CABLE MEDIAN BARRIER
32. CONCRETE MEDIAN, TYPE SM-6.12 (SPECIAL)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| | | | |
|---|---|---|---|
| USER NAME = JakeSc | DESIGNED - | REVISED - | |
| | DRAWN - | REVISED - | |
| PLOT SCALE = 20.0000 ft / in. | CHECKED - | REVISED - | |
| PLOT DATE = 9/20/2018 | DATE - | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**CONNECTOR ROAD AND SWANSON ROAD TYPICAL SECTIONS**

SCALE: | SHEET OF SHEETS | STA. | TO STA.

| F.A. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 473 | 49 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS FED. AID PROJECT | | | |

MODEL: Default
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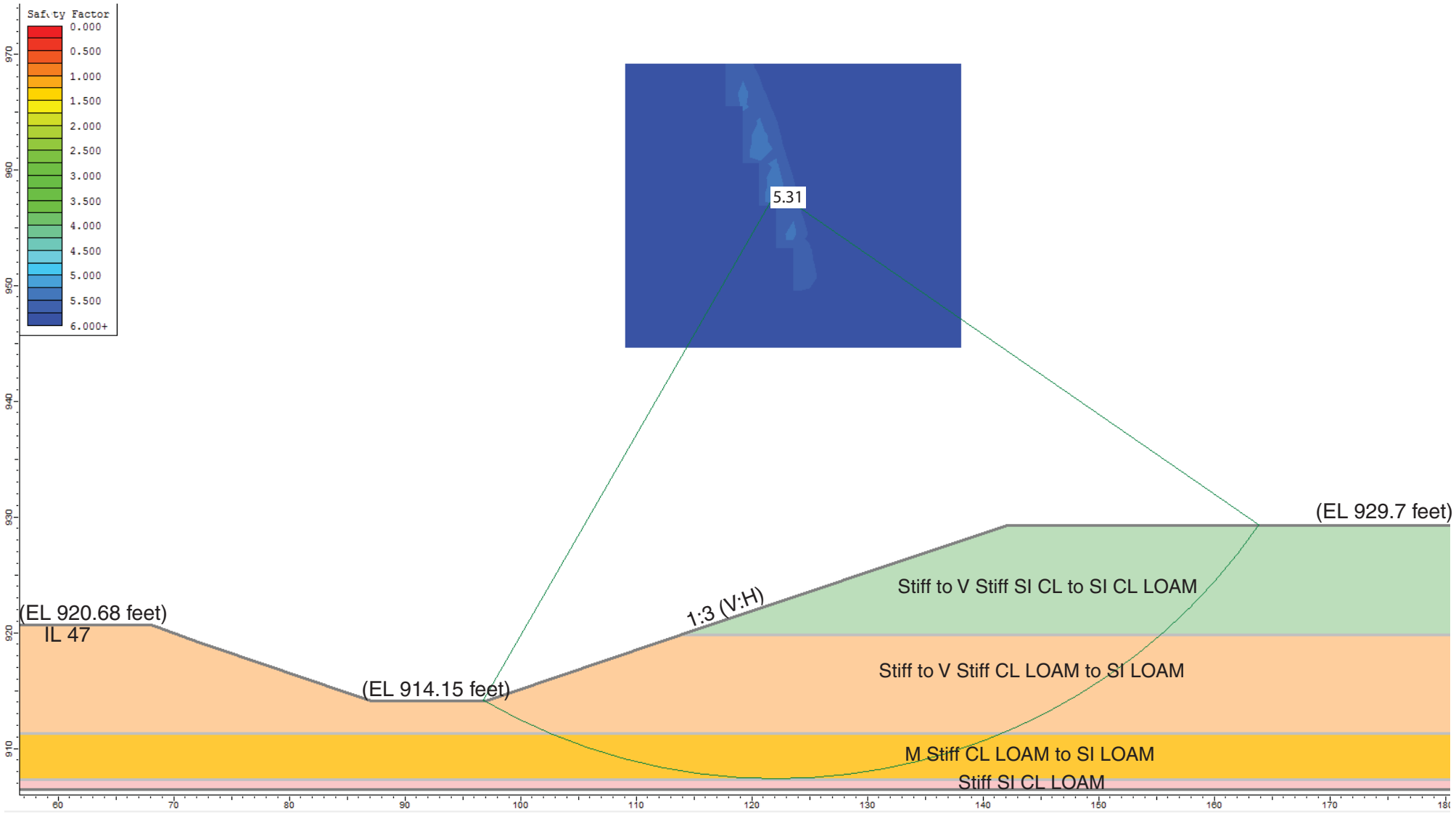
# APPENDIX E




## Undrained Analysis, Sta: 577+00.00, Ref Borings: SGB-03, SGB-04 and SGB-05

| Layer ID | Description | Total Unit Weight (pcf) | Undrained Cohesion (psf) | Undrained Friction Angle (degrees) |
|---|---|---|---|---|
| 1 | Stiff to V Stiff SI CL to SI CL LOAM | 120 | 2400 | 0 |
| 2 | Stiff to V Stiff CL LOAM to SI LOAM | 120 | 1700 | 0 |
| 3 | M Stiff CL LOAM to SI LOAM | 115 | 780 | 0 |
| 4 | Stiff SI CL LOAM | 120 | 1400 | 0 |

GLOBAL STABILITY: IL 47 AT IL 176 AND PLEASANT VALLEY ROAD, MCHENRY COUNTY, ILLINOIS

SCALE: GRAPHICAL | APPENDIX E-1 | DRAWN BY: RKC | CHECKED BY: A. Kurnia

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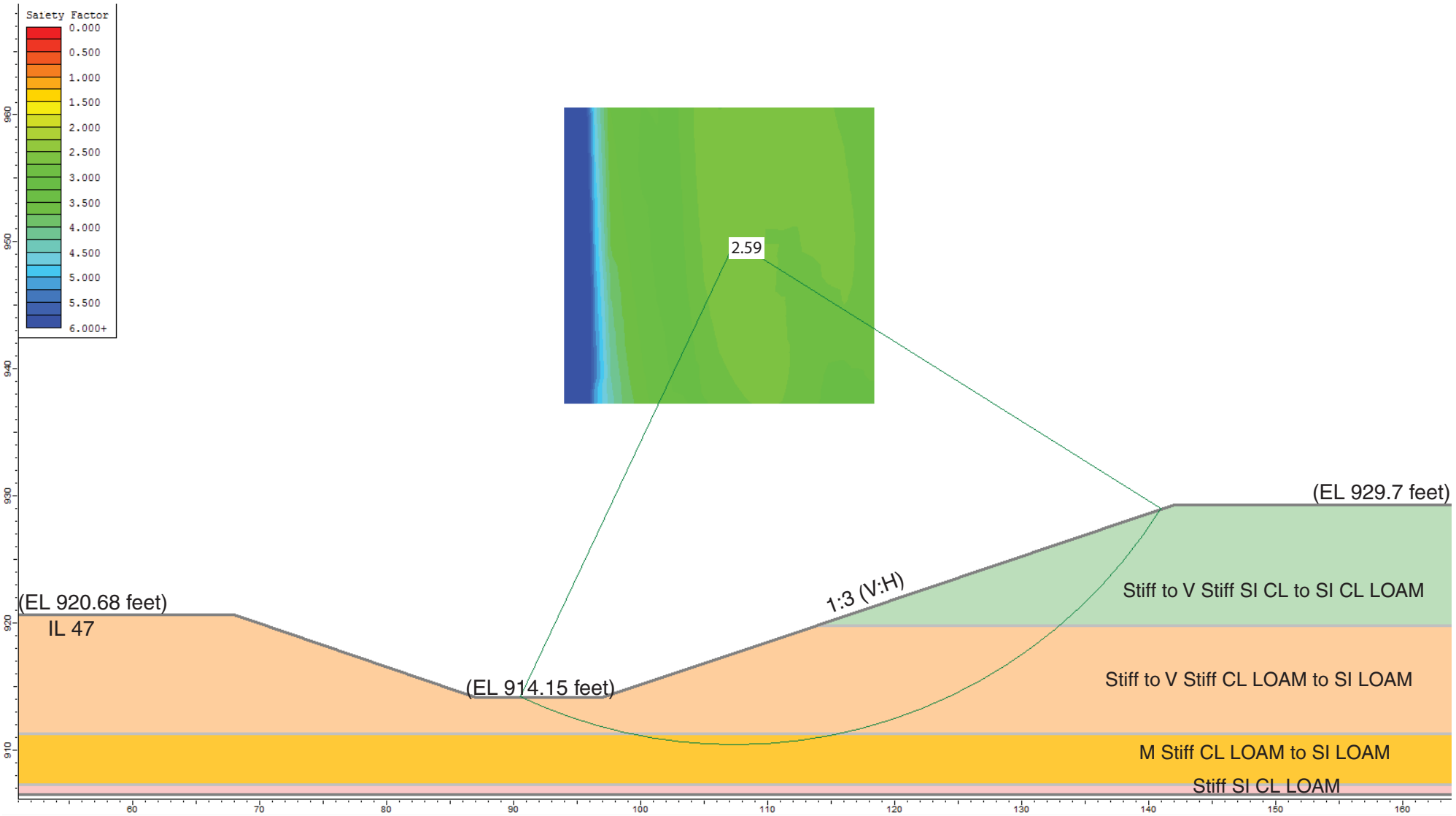
FOR STRAND ASSOCIATES, INC. | 195-13-01




Drained Analysis, Sta: 577+00.00, Ref Borings: SGB-03, SGB-04 and SGB-05

| Layer ID | Description | Total Unit Weight (pcf) | Drained Cohesion (psf) | Drained Friction Angle (degrees) |
|---|---|---|---|---|
| 1 | Stiff to V Stiff SI CL to SI CL LOAM | 120 | 100 | 31 |
| 2 | Stiff to V Stiff CL LOAM to SI LOAM | 120 | 100 | 31 |
| 3 | M Stiff CL LOAM to SI LOAM | 115 | 0 | 29 |
| 4 | Stiff SI CL LOAM | 120 | 100 | 31 |

GLOBAL STABILITY: IL 47 AT IL 176 AND PLEASANT VALLEY ROAD, MCHENRY COUNTY, ILLINOIS

SCALE: GRAPHICAL | APPENDIX E-2 | DRAWN BY: RKC CHECKED BY: A. Kurnia

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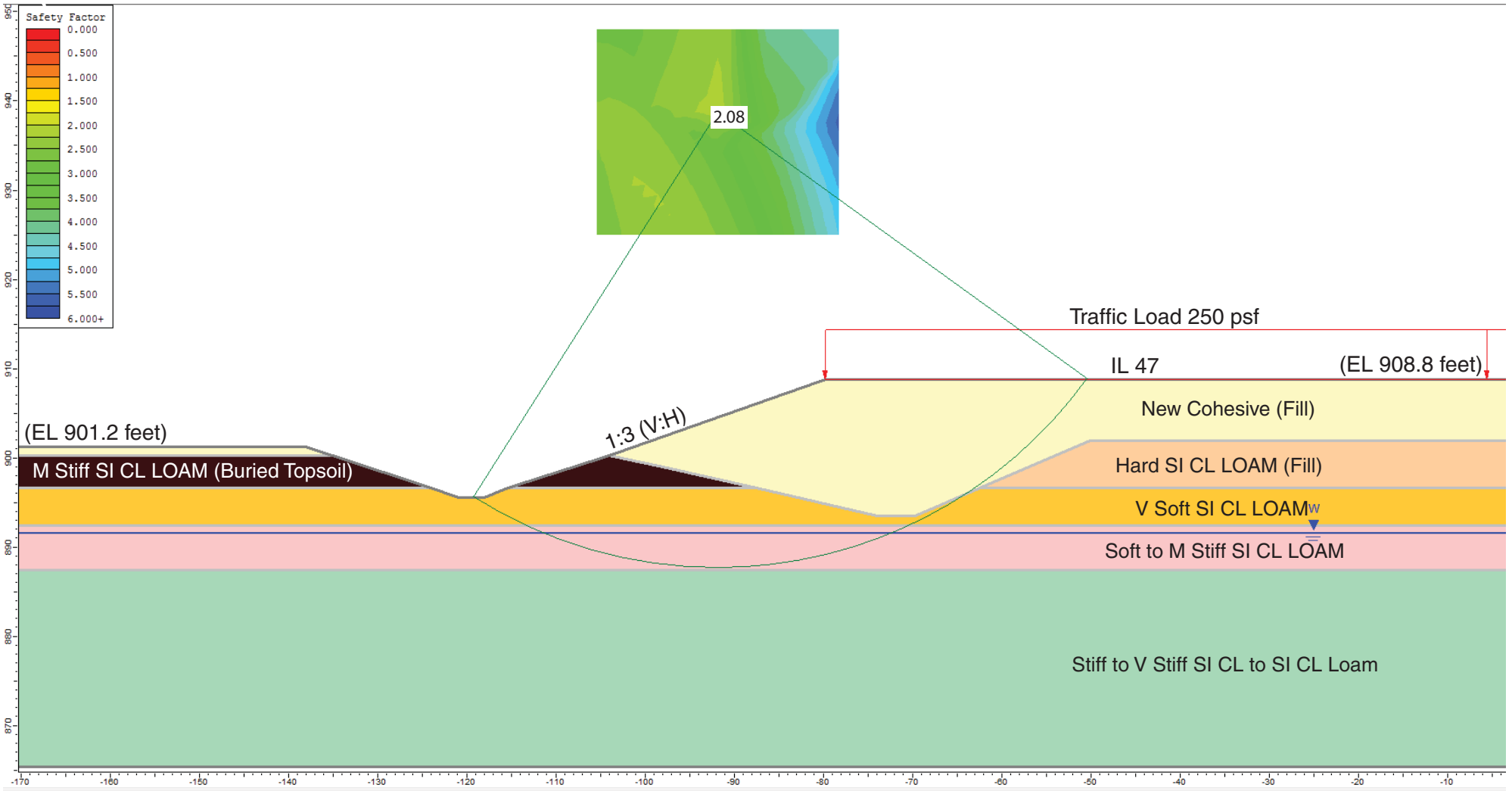
FOR STRAND ASSOCIATES, INC. | 195-13-01




## Undrained Analysis, Sta: 627+00.00, Ref Borings: CUL-04, CUL-05 and CUL-05ST

| Layer ID | Description | Total Unit Weight (pcf) | Undrained Cohesion (psf) | Undrained Friction Angle (degrees) |
|---|---|---|---|---|
| 1 | New Cohesive Fill | 125 | 1000 | 0 |
| 2 | M Stiff SI CL LOAM (Buried Topsoil) | 115 | 660 | 0 |
| 3 | Hard SI CL LOAM (Fill) | 120 | 4500 | 0 |
| 4 | V Soft SI CL LOAM | 110 | 250 | 0 |
| 5 | Soft to M Stiff SI CL LOAM | 115 | 530 | 0 |
| 6 | Stiff to V Stiff SI CL to SI CL Loam | 120 | 1780 | 0 |

GLOBAL STABILITY: IL 47 AT IL 176 AND PLEASANT VALLEY ROAD, MCHENRY COUNTY, ILLINOIS

SCALE: GRAPHICAL | APPENDIX E-3 | DRAWN BY: RKC CHECKED BY: A. Kurnia

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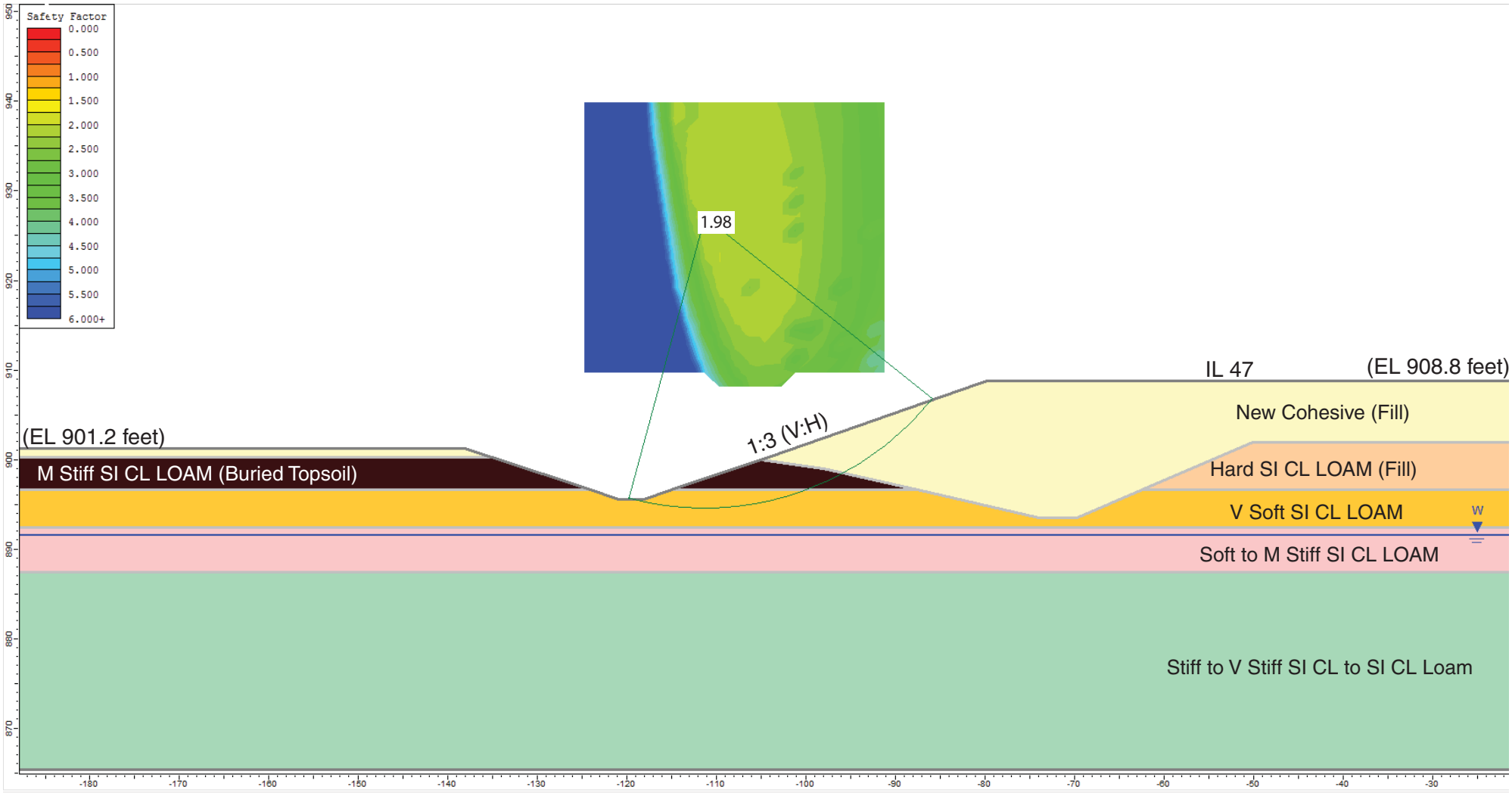


## Drained Analysis, Sta: 627+00.00, Ref Borings: CUL-04, CUL-05 and CUL-05ST

| Layer ID | Description | Total Unit Weight (pcf) | Drained Cohesion (psf) | Drained Friction Angle (degrees) |
|---|---|---|---|---|
| 1 | New Cohesive Fill | 125 | 100 | 30 |
| 2 | M Stiff SI CL LOAM (Buried Topsoil) | 115 | 0 | 29 |
| 3 | Hard SI CL LOAM (Fill) | 120 | 100 | 31 |
| 4 | V Soft SI CL LOAM | 110 | 0 | 27 |
| 5 | Soft to M Stiff SI CL LOAM | 115 | 0 | 29 |
| 6 | Stiff to V Stiff SI CL to SI CL Loam | 120 | 100 | 31 |

GLOBAL STABILITY: IL 47 AT IL 176 AND PLEASANT VALLEY ROAD, MCHENRY COUNTY, ILLINOIS

SCALE: GRAPHICAL | APPENDIX E-4 | DRAWN BY: RKC CHECKED BY: A. Kurnia

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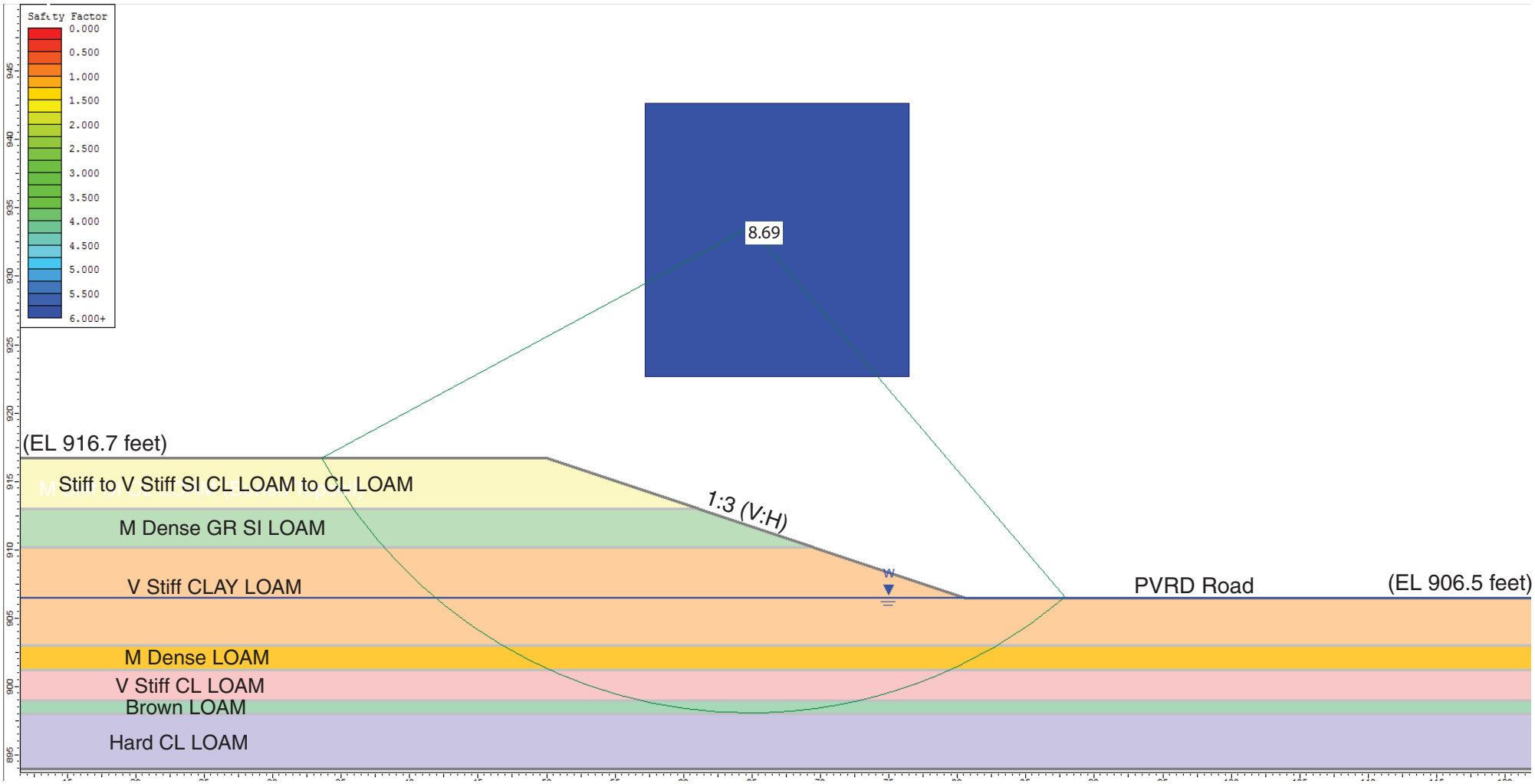


## Undrained Analysis, Sta: 289+31.00, Ref Borings: DPB-06

| Layer ID | Description | Total Unit Weight (pcf) | Undrained Cohesion (psf) | Undrained Friction Angle (degrees) |
|---|---|---|---|---|
| 1 | Stiff to V Stiff SI CL LOAM to CL LOAM | 120 | 1900 | 0 |
| 2 | M Dense GR SI LOAM | 115 | 0 | 30 |
| 3 | V Stiff CLAY LOAM | 120 | 2800 | 0 |
| 4 | M Dense LOAM | 115 | 0 | 30 |
| 5 | V Stiff CL LOAM | 120 | 2200 | 0 |
| 6 | Brown LOAM | 115 | 0 | 30 |
| 7 | Hard CL LOAM | 120 | 4900 | 0 |

GLOBAL STABILITY: IL 47 AT IL 176 AND PLEASANT VALLEY ROAD, MCHENRY COUNTY, ILLINOIS

SCALE: GRAPHICAL | APPENDIX E-5 | DRAWN BY: RKC | CHECKED BY: A. Kurnia

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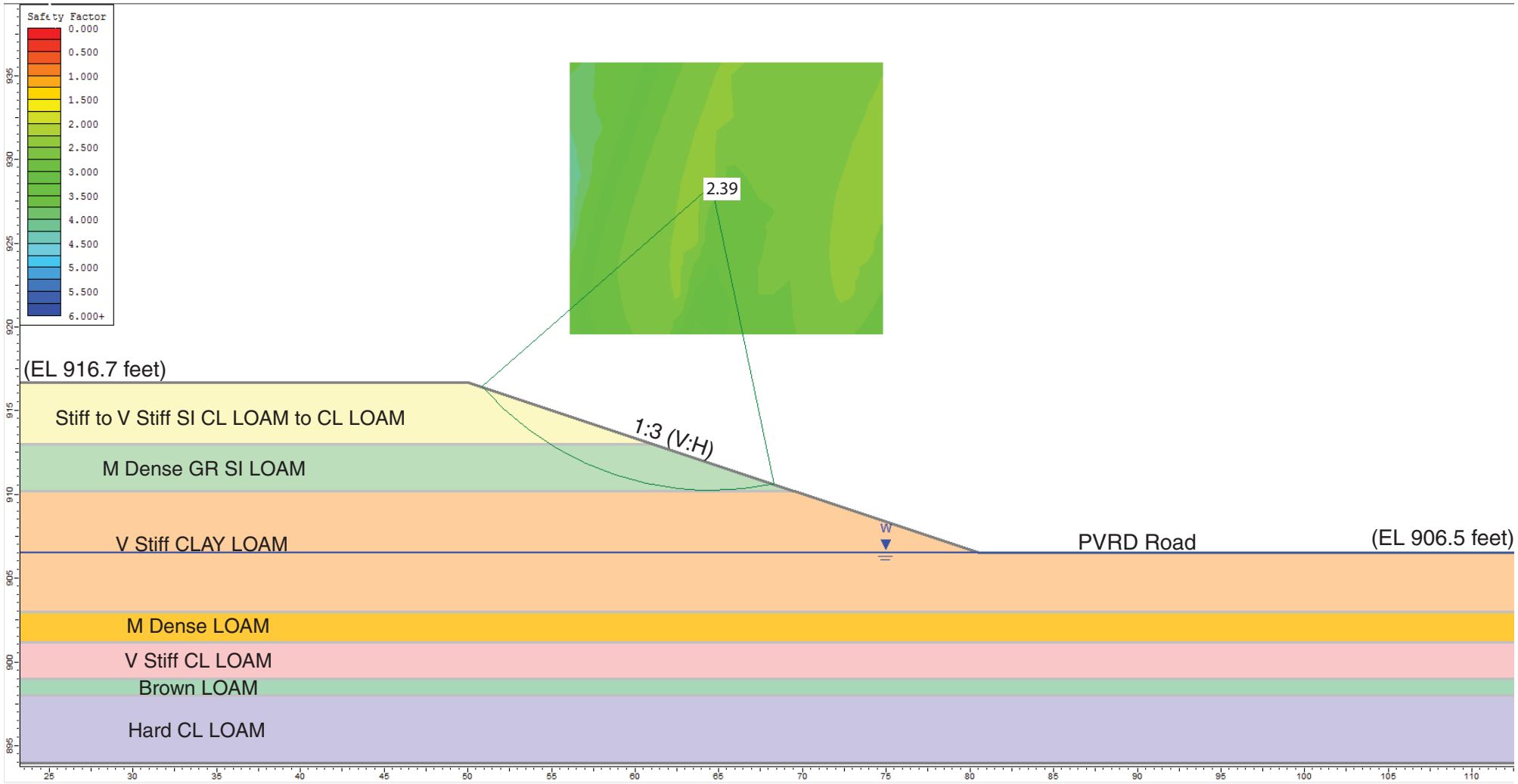


## Drained Analysis, Sta: 289+31.00, Ref Borings: DPB-06

| Layer ID | Description | Total Unit Weight (pcf) | Drained Cohesion (psf) | Drained Friction Angle (degrees) |
|---|---|---|---|---|
| 1 | Stiff to V Stiff SI CL LOAM to CL LOAM | 120 | 100 | 31 |
| 2 | M Dense GR SI LOAM | 115 | 0 | 31 |
| 3 | V Stiff CLAY LOAM | 120 | 100 | 31 |
| 4 | M Dense LOAM | 115 | 0 | 30 |
| 5 | V Stiff CL LOAM | 120 | 100 | 31 |
| 6 | Brown LOAM | 115 | 0 | 30 |
| 7 | Hard CL LOAM | 120 | 100 | 31 |

GLOBAL STABILITY: IL 47 AT IL 176 AND PLEASANT VALLEY ROAD, MCHENRY COUNTY, ILLINOIS

SCALE: GRAPHICAL | APPENDIX E-6 | DRAWN BY: RKC CHECKED BY: A. Kurnia

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FOR STRAND ASSOCIATES, INC. | 195-13-01

# APPENDIX F

# APPENDIX F

## BORING LOCATION PLAN AND SOIL PROFILE
## IL 47 AT IL 176 AND PLEASANT VALLEY ROAD

## ROADWAY GEOTECHNICAL REPORT
## IL 47 AT IL 176 AND PLEASANT VALLEY ROAD
## SECTION 105-N-2 (15), CONTRACT 62B43
## MCHENRY COUNTY, ILLINOIS

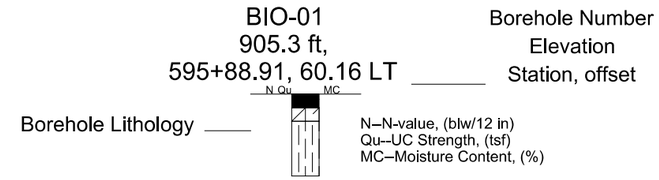
FOR
STRAND ASSOCIATES, INC.
1170 HOUBOLT ROAD, JOLIET, IL 60431
(815) 744-4200

PREPARED BY
WANG ENGINEERING
1145 NORTH MAIN STREET
LOMBARD, IL 60148

SEPTEMBER 24, 2018
WANG PROJECT 195-13-01

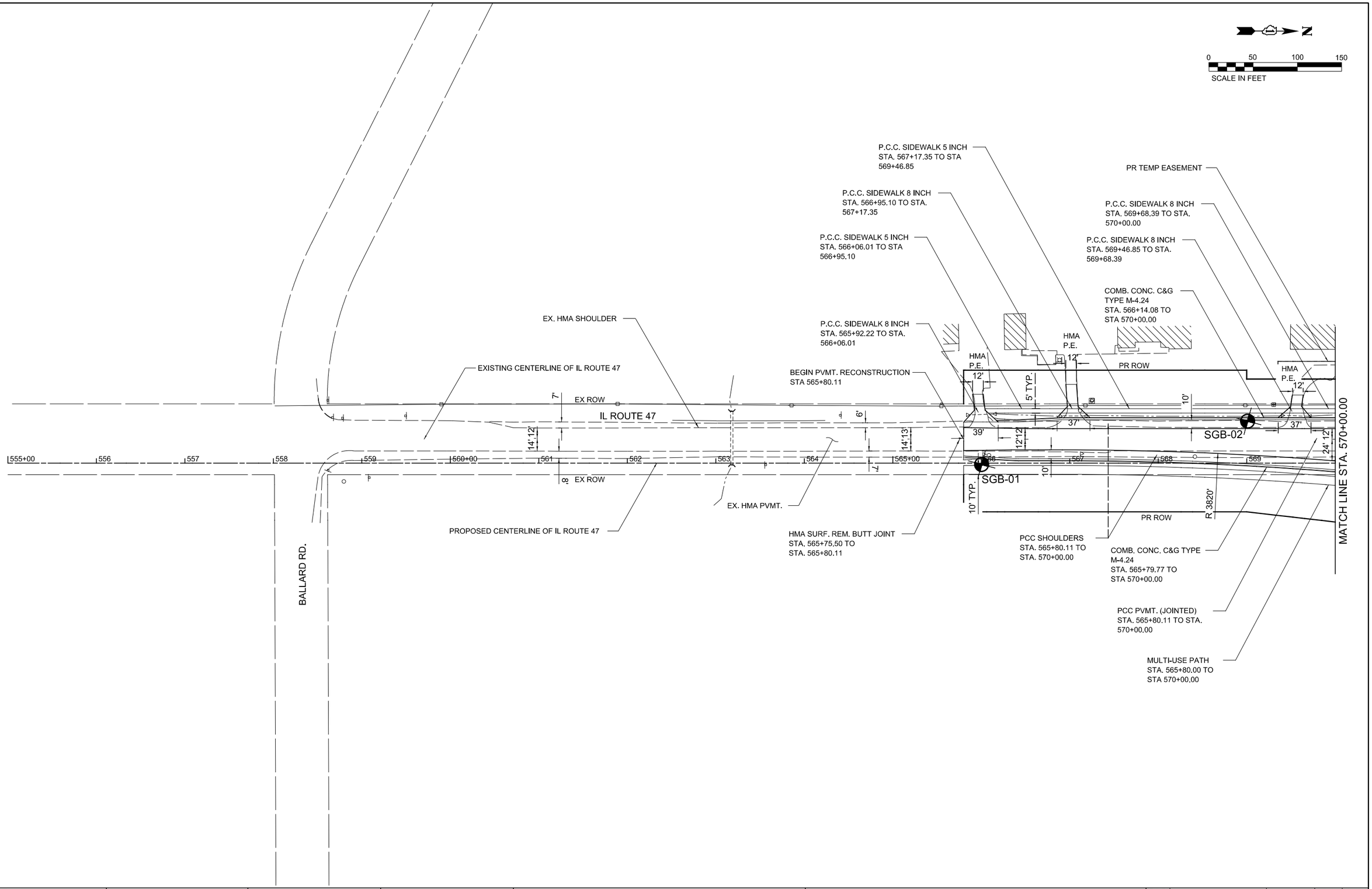
## LEGEND:

Soil Boring




Lithology Graphics

- Pavement
- Coarse sand
- Crushed stone
- Topsoil
- IDH Clay Loam
- IDH Clay
- IDH Silty Clay, Silty Clay Loam
- IDH Silt, Silty Loam
- IDH Loam
- IDH Sand, Sandy Loam
- Gravelly Sand, Sandy Gravel
- USCS High Plasticity Organic Silt or Clay
- USCS Peat




MODEL: $MODELNAME$
FILE NAME: $FILE$

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| | | | |
|---|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - | |
| | DRAWN - DJW | REVISED - | |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 47**
**ROADWAY PLAN**

SCALE: 1" = 50' | SHEET 1 OF 8 SHEETS | STA. 555+00.00 | TO STA. 570+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 1 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |

PROPOSED STATION OFFSETS

(1) STA 570+19.13, 24.47' LT.

(2) STA. 575+98.35, 15.00' RT.

0 50 100 150

SCALE IN FEET

P.C.C. SIDEWALK 5 INCH
STA. 570+00.00 TO
STA. 570+29.08

P.C.C. SIDEWALK 8 INCH
STA. 570+29.08 TO
STA. 570+54.91

P.C.C. SIDEWALK 5 INCH
STA. 570+54.91 TO
STA. 571+75.33

PR TEMP EASEMENT

P.C.C. SIDEWALK 8 INCH
STA. 571+75.33 TO
STA. 572+01.16

PCC PVMT. (JOINTED)
STA. 570+00.00 TO
STA. 583+00.00

P.C.C. SIDEWALK 5 INCH
STA. 572+01.16 TO
STA. 575+41.85

COMB. CONC. C&G TYPE M-4.24
STA. 570+00.00 TO
STA 583+00.00

P.C.C. SIDEWALK 8 INCH
STA. 575+01.16 TO
STA. 576+11.34

P.C.C. SIDEWALK 5 INCH
STA. 576+11.34 TO
STA. 583+00.00

PCC SHOULDERS
STA. 570+00.00 TO
STA. 583+00.00

PCC SHOULDERS
STA. 570+00.00 TO
STA. 583+00.00

EXISTING CENTERLINE OF IL ROUTE 47

PR ROW

EX ROW

HMA P.E. 16'

HMA C.E. 34'

SGB-03

SGB-04

SGB-05

SGB-06

IL ROUTE 47

MATCH LINE STA. 570+00.00

MATCH LINE STA. 583+00.00

R 3820'

R 3796'

10' TYP.

5' TYP.

6' TYP.

9' TYP.

24' HMA P.E.

MULTI-USE PATH
STA. 570+00.00 TO
STA. 575+17.95

COMB. CONC. C&G TYPE M-4.24
STA. 570+00.00 TO
STA. 583+00.00

PCC PVMT. (JOINTED)
STA. 570+00.00 TO
STA. 583+00.00

PR ROW

PR ROW

EX ROW

PROPOSED CENTERLINE OF IL ROUTE 47

MULTI-USE PATH
STA. 575+46.70 TO
STA. 581+49.73

MULTI-USE PATH
STA. 582+00.69 TO
STA. 583+00.00

HEATHER LN.

MODEL: $MODELNAME$
FILE NAME: $FILEL$

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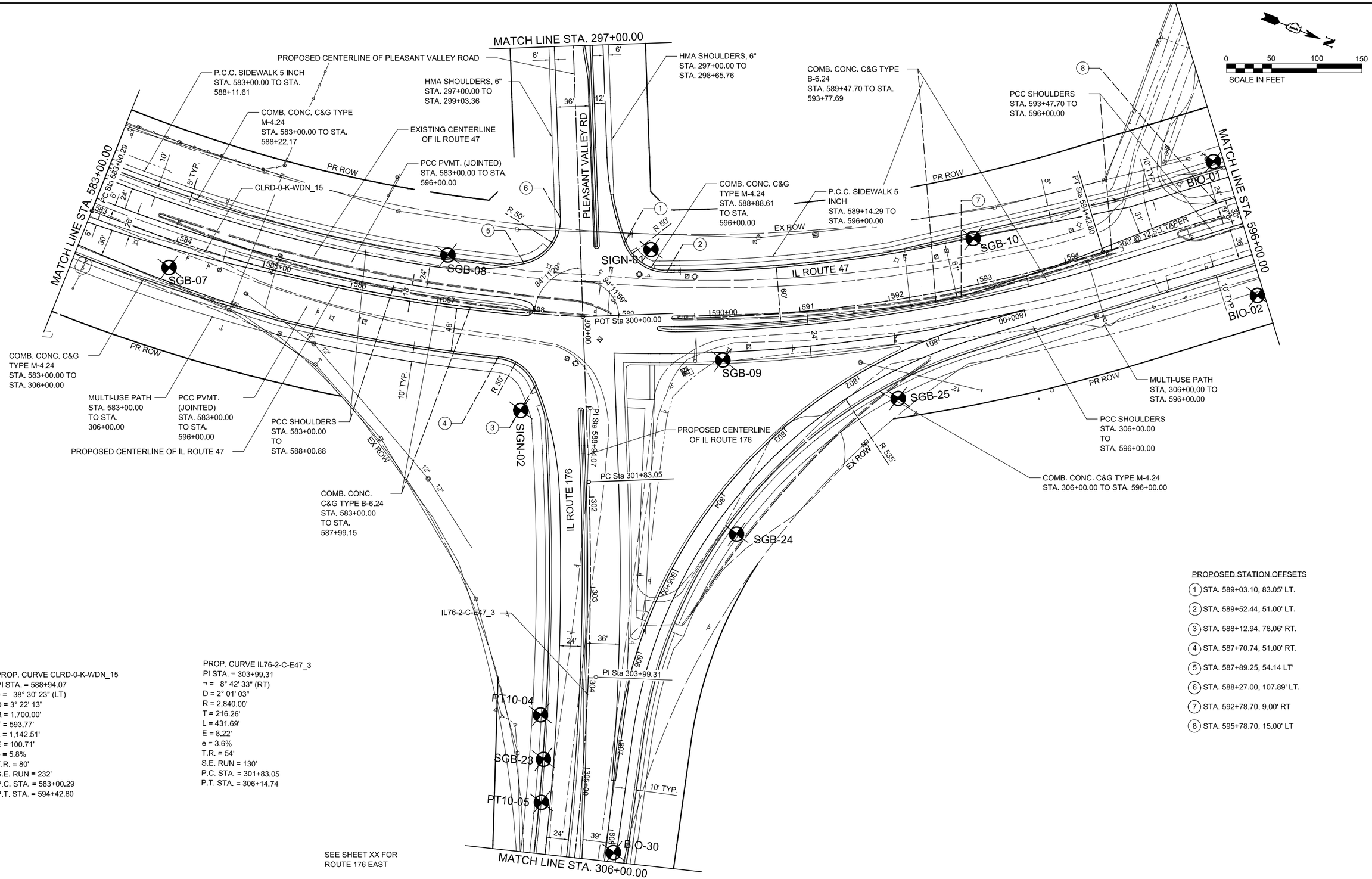
| | | | |
|---|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - | |
| | DRAWN - DJW | REVISED - | |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 47**
**ROADWAY PLAN**

SCALE: 1" = 50' | SHEET 2 OF 8 SHEETS | STA. 570+00.00 | TO STA. 583+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 2 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |




PROP. CURVE CLRD-0-K-WDN_15
PI STA. = 588+94.07
¬ = 38° 30' 23" (LT)
D = 3° 22' 13"
R = 1,700.00'
T = 593.77'
L = 1,142.51'
E = 100.71'
e = 5.8%
T.R. = 80'
S.E. RUN = 232'
P.C. STA. = 583+00.29
P.T. STA. = 594+42.80

PROP. CURVE IL76-2-C-E47_3
PI STA. = 303+99.31
¬ = 8° 42' 33" (RT)
D = 2° 01' 03"
R = 2,840.00'
T = 216.26'
L = 431.69'
E = 8.22'
e = 3.6%
T.R. = 54'
S.E. RUN = 130'
P.C. STA. = 301+83.05
P.T. STA. = 306+14.74

PROPOSED STATION OFFSETS

1. STA. 589+03.10, 83.05' LT.
2. STA. 589+52.44, 51.00' LT.
3. STA. 588+12.94, 78.06' RT.
4. STA. 587+70.74, 51.00' RT.
5. STA. 587+89.25, 54.14 LT'
6. STA. 588+27.00, 107.89' LT.
7. STA. 592+78.70, 9.00' RT
8. STA. 595+78.70, 15.00' LT

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MODEL: $MODELNAME$
FILE NAME: $FILES

| | | | |
|---|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - | |
| | DRAWN - DJW | REVISED - | |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 47**
**ROADWAY PLAN**

SCALE: 1" = 50' | SHEET 3 OF 8 SHEETS | STA. 583+00.00 | TO STA. 596+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 3 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS FED. AID PROJECT | | | |

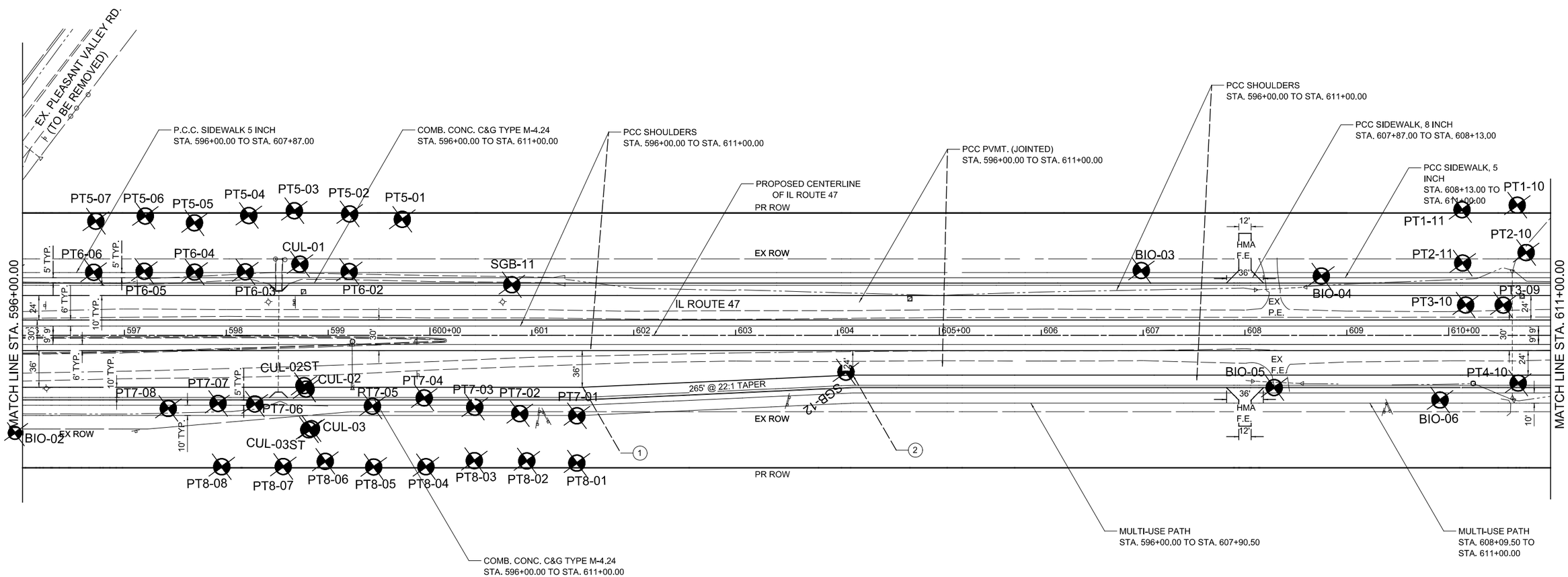
PROPOSED STATION OFFSETS

(1) STA. 601+50.00, 51.00' RT.

(2) STA. 604+15.00, 39.00' RT.

0 50 100 150

SCALE IN FEET




MODEL: $MODELNAME$
FILE NAME: $FILE$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| | | | |
|---|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - | |
| | DRAWN - DJW | REVISED - | |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 47**
**ROADWAY PLAN**

SCALE: 1" = 50' | SHEET 4 OF 8 SHEETS | STA. 596+00.00 TO STA. 611+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 4 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |

PROPOSED STATION OFFSETS

(1) STA. 618+90.82, 39.00' LT

(2) STA. 621+55.82, 51.00' LT

0 50 100 150

SCALE IN FEET

PCC SIDEWALK 5 INCH
STA. 611+00.00 TO STA. 618+37.00

COMB. CONC. C&G TYPE M-4.24
STA. 611+00.00 TO STA. 626+00.00

PCC SHOULDERS
STA. 611+00.00 TO STA. 626+00.00

PCC SIDEWALK 8 INCH
STA. 618+37.00 TO STA 618+63.00

PCC PVMT (JOINTED)
STA. 611+00.00 TO
STA. 626+00.00

PCC SIDEWALK 5 INCH
STA. 618+63.00 TO STA 626+00.00

PCC SHOULDERS
STA. 611+00.00 TO
STA. 626+00.00

PT1-09 PT1-08 PT1-07 PT1-06 PT1-05 PT1-04 PT1-03 PT1-02 PT1-01

PT2-09 PT2-08 PT2-07 PT2-06 PT2-05ST PT2-05 PT2-04 PT2-04ST PT2-03 PT2-02 PT2-01

PT3-08 PT3-07 PT3-06 PT3-05 SGB-13 PT3-04 PT3-03 PT3-02 PT3-01

PT4-09 PT4-08 PT4-07 PT4-06 PT4-05 PT4-04 PT4-03 PT4-02 PT4-01

BIO-07 BIO-08 BIO-09 BIO-10 BIO-11 BIO-12ST BIO-12 BIO-13 BIO-14

SGB-14

DPB-01 DPB-02 DPB-03

PR ROW

EX ROW

EX P.E.

EX F.E.

HMA F.E.

12'

36'

24'

265' @ 22:1 TAPER

IL ROUTE 47

MATCH LINE STA. 611+00.00

MATCH LINE STA. 626+00.00

611 612 613 614 615+00 616 617 618 619 620+00 621 622 623 624 625+00

9' 9' 30' 24' 6' TYP. 10' TYP. 5' 10' TYP. 10' TYP. 10'

PROPOSED CENTERLINE OF IL ROUTE 47

COMB. CONC. C&G TYPE M-4.24
STA. 611+00.00 TO STA. 626+00.00

MULTI-USE PATH
STA. 611+00.00 TO STA. 626+00.00

MODEL: $MODELNAME$
FILE NAME: $FILE$

STRAND ASSOCIATES®
1170 SOUTH HOUBOLT ROAD
JOLIET, ILLINOIS 60431
(815) 744-4200

| | | | |
|---|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - | |
| | DRAWN - DJW | REVISED - | |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 47**
**ROADWAY PLAN**

SCALE: 1" = 50' | SHEET 5 OF 8 SHEETS | STA. 611+00.00 | TO STA. 626+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 5 |
| | | CONTRACT NO. 62B43 | | |
| | | ILLINOIS | FED. AID PROJECT | |

NOTE

1. * INDICATES SIDE STREET STATION AND OFFSET.

0 50 100 150

SCALE IN FEET

MATCH LINE STA. 424+00.00

P.C.C. SIDEWALK 5 INCH
STA. 424+00.00 TO STA.
425+91.66

IL ROUTE 176

SGB-27

MULTI-USE PATH
STA. 424+00.00 TO STA. 427+75.72

PROPOSED CENTERLINE OF
IL ROUTE 176

PROPOSED STATION OFFSETS

1. STA. 627+74.41, 15.00' RT.
2. STA. 630+74.41, 7.00' LT.
3. STA. 427+13.25, 39.00' LT.
4. STA. 635+62.41, 51.00' LT.
5. STA. 637+56.08, 51.00' LT.
6. STA. 640+15.57 , 39.00' LT.

SWANSON RD

SGB-33

SGB-26

SGB-34

PROPOSED CENTERLINE OF
SWANSON ROAD

COMB. CONC. C&G TYPE M-4.24
STA. 626+00.00 TO STA. 633+86.22

PCC PVMT. (JOINTED)
STA. 626+00.00 TO
STA. 641+00.00

P.C.C. SIDEWALK 5 INCH
STA. 626+00.00 TO STA.
633+96.78

PCC SHOULDERS
STA. 626+00.00 TO
STA. 628+64.83

MULTI-USE PATH
STA. 428+05.21 TO STA.
428+64.29

P.C.C. SIDEWALK 5 INCH
STA. 635+04.95 TO STA. 641+00.00

COMB. CONC. C&G TYPE M-4.24
STA. 633+87.66 TO STA. 641+00.00

PCC SHOULDERS
STA. 638+67.45
TO STA.
641+00.00

BIO-16

BIO-17

BIO-18

CUL-04

BIO-15

SGB-15

BIO-19

BIO-20

BIO-21

BIO-22

BIO-23

CUL-05ST

CUL-05

CUL-06

IL ROUTE 47

PROPOSED CENTERLINE OF IL ROUTE 47

MATCH LINE STA. 626+00.00

MATCH LINE STA. 641+00.00

COMB. CONC. C&G
TYPE B-6.24
STA. 626+54.46 TO
STA. 633+40.40

MULTI-USE PATH
STA. 626+00.00 TO STA. 641+00.00

PCC SHOULDERS
STA. 634+64.85 TO
STA. 641+00.00

PCC SHOULDERS
STA. 626+00.00 TO
STA. 641+00.00

COMB. CONC. C&G
TYPE M-4.24
STA. 626+00.00 TO
STA. 641+00.00

PCC
SHOULDERS
STA. 626+00.00
TO STA.
627+74.41

PROP. CURVE CLRD-0-K-WDN_18
PI STA. = 634+16.47
¬ = 38° 34' 58" (RT)
D = 3° 37' 59"
R = 1,577.12'
T = 552.03'
L = 1,062.03'
E = 93.82'
e = 6.0%
T.R. = 80'
S.E. RUN = 240'
P.C. STA. = 628+64.43
P.T. STA. = 639+26.46

MODEL: $MODELNAME$
FILE NAME: $FILE$

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(815) 744-4200

| | | | |
|---|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - | |
| | DRAWN - DJW | REVISED - | |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 47**
**ROADWAY PLAN**

SCALE: 1" = 50' | SHEET 6 OF 8 SHEETS | STA. 626+00.00 | TO STA. 641+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 6 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS FED. AID PROJECT | | | |

PROPOSED STATION OFFSETS

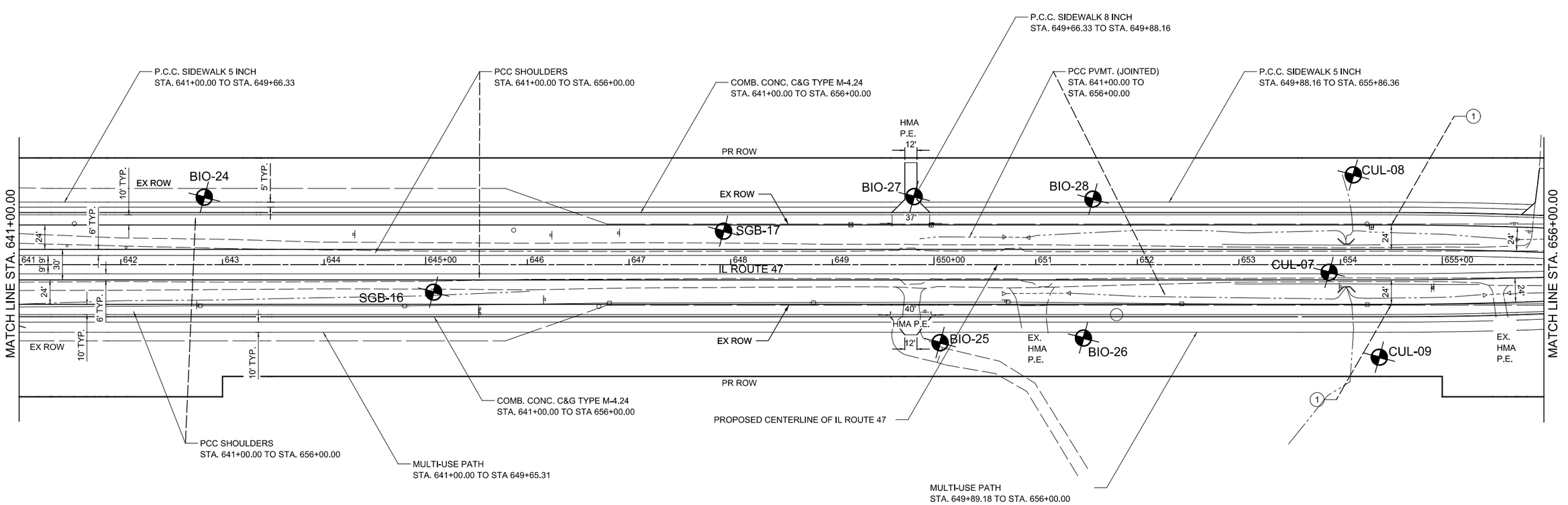
(1) STA. 654+50.00, 39.00' RT

(2) STA. 654+50.00, 39.00' LT

N

0 50 100 150

SCALE IN FEET




MODEL: $MODELNAME$
FILE NAME: $FILE$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JOLIET, ILLINOIS 60431
(815) 744-4200

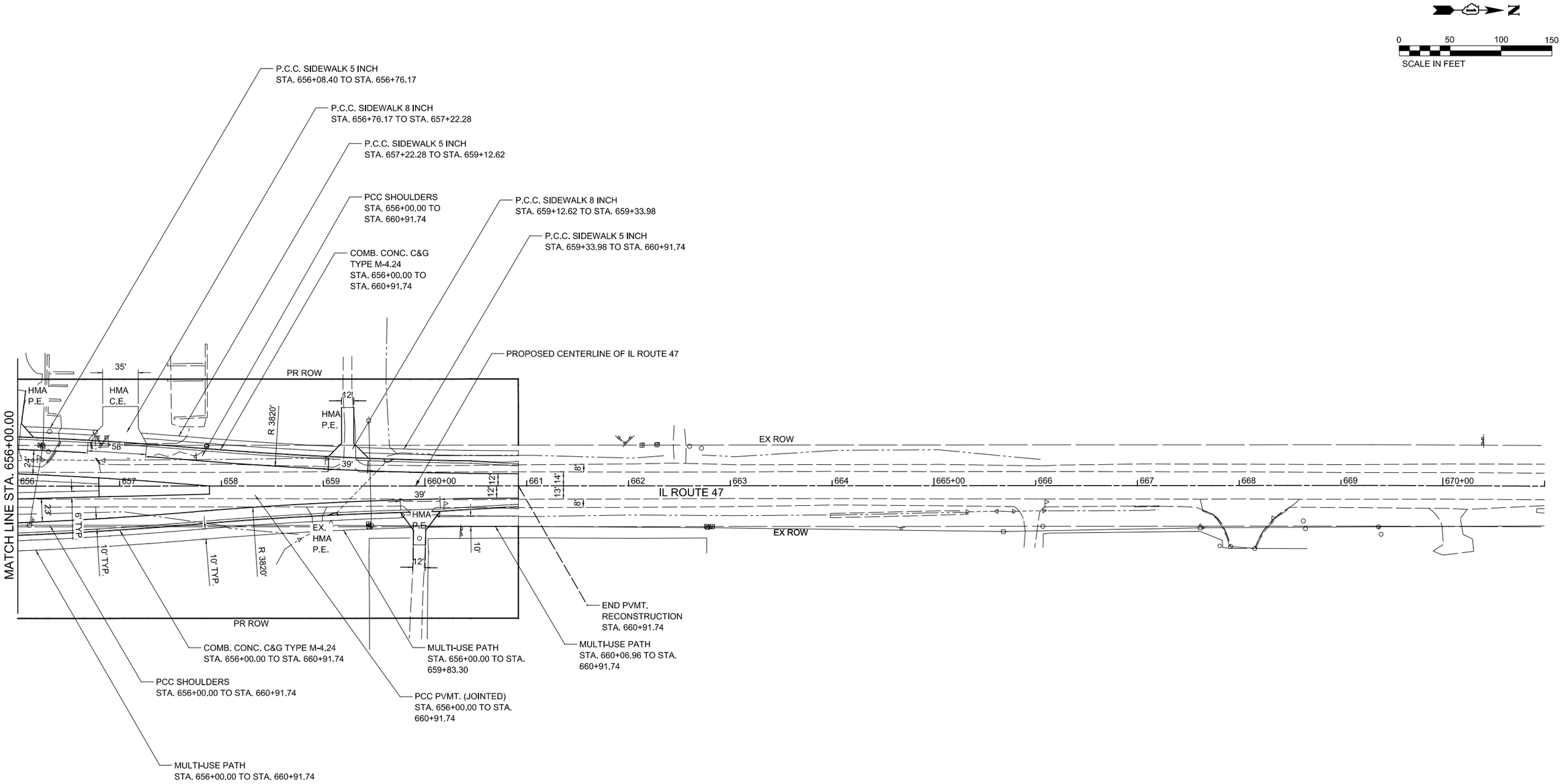

| | | | |
|---|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - | |
| | DRAWN - DJW | REVISED - | |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 47**
**ROADWAY PLAN**

SCALE: 1" = 50' | SHEET 7 OF 8 SHEETS | STA. 641+00.00 TO STA. 656+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 7 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |




MODEL: $MODELNAME$
FILE NAME: $FILEL$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(815) 744-4200


| | | |
|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - |
| | DRAWN - DJW | REVISED - |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 47**
**ROADWAY PLAN**

SCALE: 1" = 50' | SHEET 8 OF 8 SHEETS | STA. 656+00.00 | TO STA. 671+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 8 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |

PROPOSED STATION OFFSETS

(1) STA. 310+64.74, 0.00' RT.

N

0 50 100 150

SCALE IN FEET

SEE SHEET XX
MATCH LINE STA. 306+00.00

P.C.C. SIDEWALK 5 INCH
STA. 306+00.00 TO STA. 312+28.02

PR TEMP EASEMENT

PR TEMP EASEMENT

COMB. CONC. C&G TYPE M-4.24
STA. 306+00.00 TO STA. 316+64.74

PCC SHOULDER
STA. 306+00.00 TO STA. 316+64.74

P.C.C. SIDEWALK 5 INCH
STA. 312+52.09 TO STA. 316+64.74

EX HMA SHOULDER

BEGIN PVMT. RECONSTRUCTION
STA. 316+64.74

PR ROW

PR ROW

EX ROW

HMA
P.E.

PT9-03
PT9-04
PT9-05
PT9-06
PT9-07
PT9-08

BIO-29
SGB-21ST
SGB-21
SGB-19
SGB-20
SGB-22
SGB-18

IL ROUTE 176

306 307 308 309 310+00 311 312 313 314 315+00 316 317 318 319 320+00

809 811

HMA
P.E.

EX ROW

HMA
P.E.

PR ROW

PR ROW

PCC PVMT JOINTED
STA. 306+00.00 TO
STA. 316+64.74

MULTI-USE PATH
STA. 306+00.00 TO
STA. 312+60.78

COMB. CONC. C&G TYPE M-4.24
STA. 306+00.00 TO STA. 316+64.74

MULTI-USE PATH
STA. 312+82.05 TO STA. 316+64.74

EX HMA PAVT.

PROPOSED CENTERLINE OF IL ROUTE 176

HMA SURF. REM. BUTT JOINT
STA. 316+64.74 TO
STA. 316+69.24

PCC SHOULDER
STA. 306+00.00 TO STA. 316+64.74

PCC PVMT JOINTED
STA. 306+00.00 TO STA. 316+64.74

MODEL: $MODELNAME$
FILE NAME: $FILE$

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(815) 744-4200

| | | | |
|---|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - | |
| | DRAWN - DJW | REVISED - | |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 176 (EAST)**
**ROADWAY PLAN**

SCALE: 1" = 50' | SHEET 1 OF 1 SHEETS | STA. 306+00.00 | TO STA. 321+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 9 |
| | | CONTRACT NO. 62B43 | | |
| | | ILLINOIS | FED. AID PROJECT | |

N

0 50 100 150
SCALE IN FEET

PROP. CURVE RTBP-2-E-000_3
PI STA. = 804+40.14
¬ = 68° 13' 05" (LT)
D = 10° 23' 55"
R = 551.00'
T = 373.18'
L = 656.04'
E = 114.48'
e = _____
T.R. = _____
S.E. RUN = _____
P.C. STA. = 800+66.96
P.T. STA. = 807+23.00

PCC SHOULDER
STA. 800+00.00 TO
STA. 306+00.00

PCC PVMT JOINTED
STA. 800+00.00 TO
STA. 306+00.00

P.C.C. SIDEWALK 5 INCH
STA. 303+50.19 TO STA 306+00.00

COMB. CONC. C&G TYPE M-4.24
STA. 306+00.00 TO STA. 596+00.00

P.C.C. SIDEWALK 5 INCH
STA. 300+56.23 TO STA 300+94.76

RTBP-2-E-000_3

MATCH LINE STA. 596+00.00

MATCH LINE STA. 306+00.00

BIO-01
BIO-02
BIO-30
SGB-08
SGB-09
SGB-10
SGB-23
SGB-24
SGB-25
PT10-04
PT10-05
SIGN-01
SIGN-02

SEE SHEET XX FOR
ROUTE 176 EAST

MODEL: $MODELNAME$
FILE NAME: $FILEL$


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JOLIET, ILLINOIS 60431
(815) 744-4200

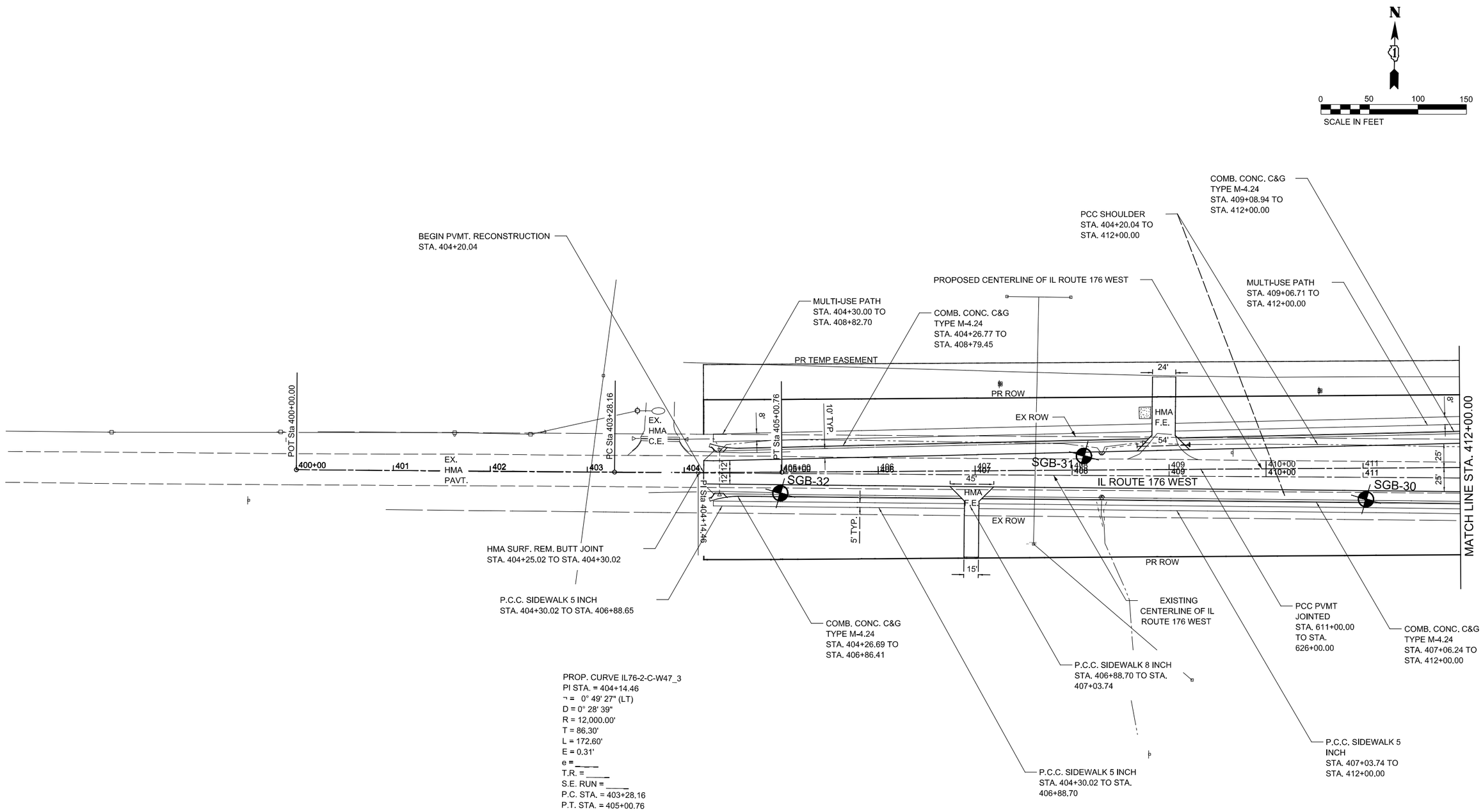

| | | | |
|---|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - | |
| | DRAWN - DJW | REVISED - | |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 176 (EAST) RIGHT TURN BYPASS**
**ROADWAY PLAN**

SCALE: 1" = 50' | SHEET 3 OF 8 SHEETS | STA. 583+00.00 | TO STA. 596+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 10 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |




MODEL: $MODELNAME$
FILE NAME: $FILE$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JOLIET, ILLINOIS 60431
(815) 744-4200


| | | | |
|---|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - | |
| | DRAWN - DJW | REVISED - | |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 176 (WEST)**
**ROADWAY PLAN**

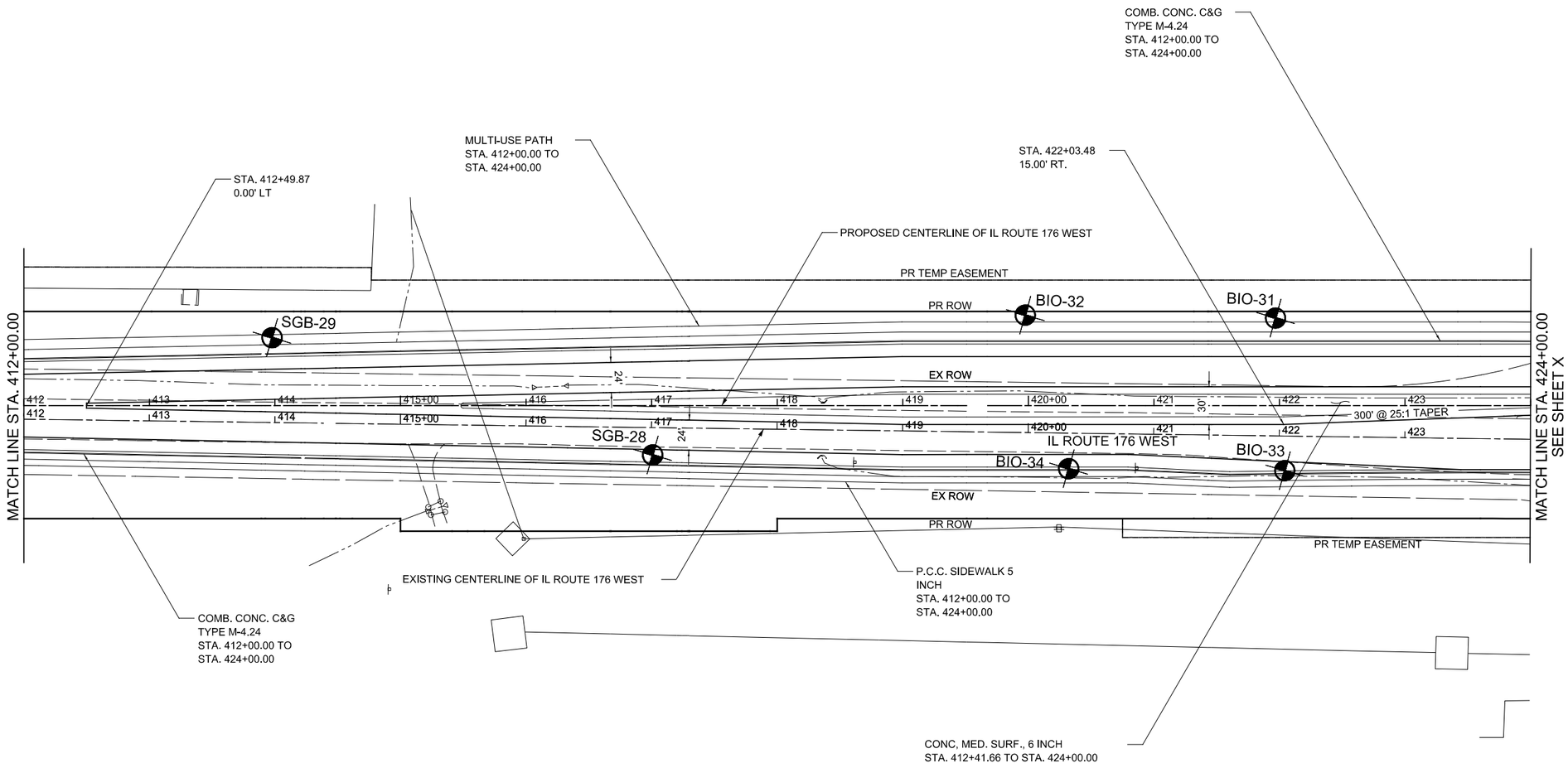
SCALE: 1" = 50' | SHEET 1 OF 2 SHEETS | STA. 400+00.00 TO STA. 412+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 11 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |

N

0 50 100 150

SCALE IN FEET




MODEL: $MODELNAME$
FILE NAME: $FILE$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1170 SOUTH HOUBOLT ROAD
JOLIET, ILLINOIS 60431
(815) 744-4200

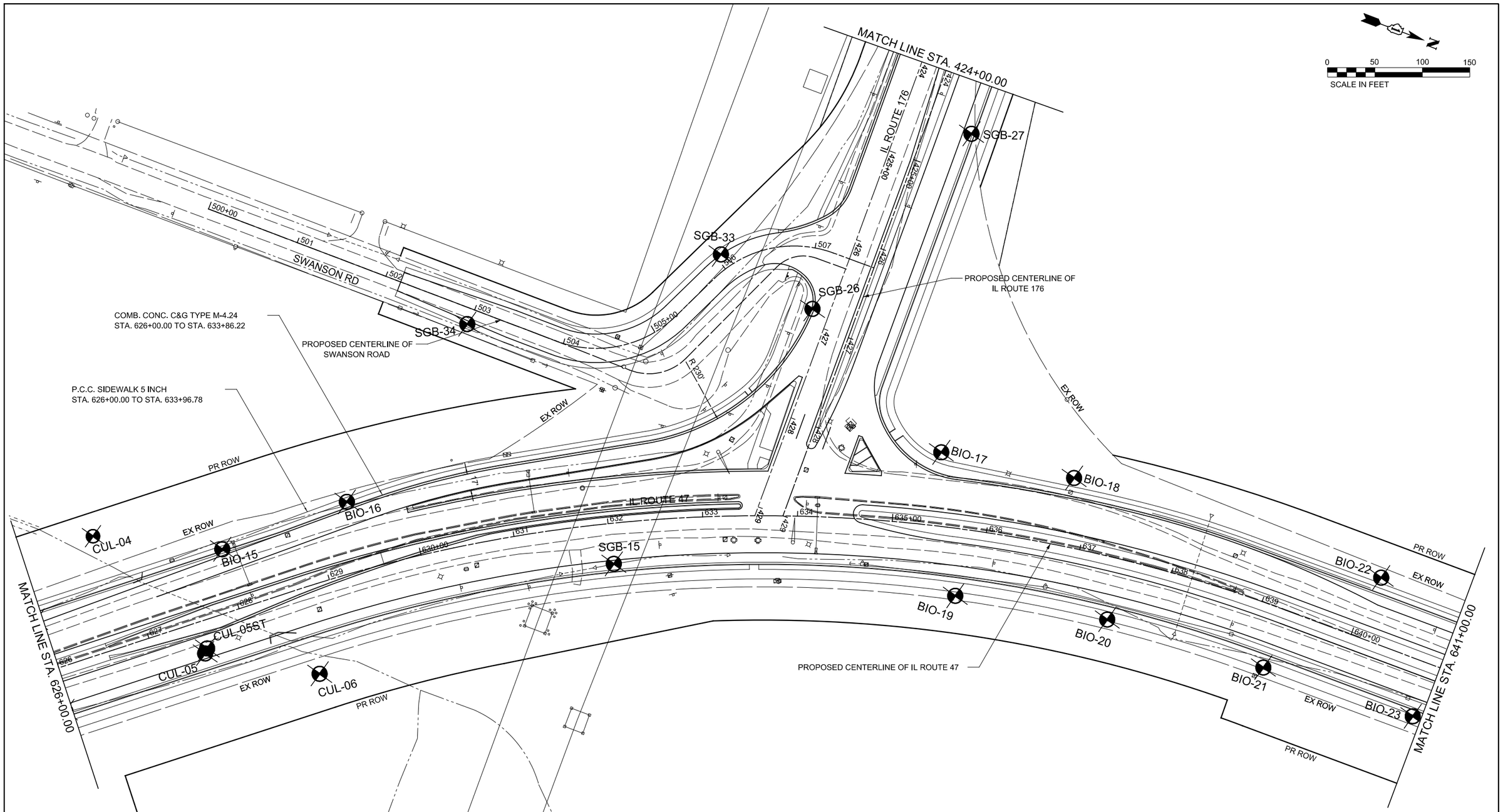

| | | | |
|---|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - | |
| | DRAWN - DJW | REVISED - | |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 176 (WEST)**
**ROADWAY PLAN**

SCALE: 1" = 50' | SHEET 2 OF 2 SHEETS | STA. 412+00.00 | TO STA. 424+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 12 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |




MODEL: $MODELNAME$
FILE NAME: $FILEL$

| | | | | | |
|---|---|---|---|---|---|
| STRAND ASSOCIATES® 1170 SOUTH HOUBOLT ROAD JOLIET, ILLINOIS 60431 (815) 744-4200 | USER NAME = $USER$ | DESIGNED - MAG | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | IL ROUTE 176 (WEST) RIGHT TURN BYPASS ROADWAY PLAN |
| | | DRAWN - DJW | REVISED - | | |
| | PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | | |
| | PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | | SCALE: 1" = 50' SHEET 6 OF 8 SHEETS STA. 626+00.00 TO STA. 641+00.00 |

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 13 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |

PROPOSED STATION OFFSETS

1. STA. 273+28.41, 12.00' LT.
2. STA. 273+28.41, 12.00' RT.
3. STA. 273+38.41, 18.00' LT
4. STA. 273+28.41, 18.00' RT.
5. STA. 278+84.79, 12.00' LT.
6. STA. 278+98.69, 18.00' LT.
7. STA. 280+00.94, 18.00' LT.
8. STA 280+14.84, 12.00' LT.
9. STA. 400+68.48, 12.00' LT.
10. STA. 400+68.45, 12.00' RT
11. 

N

0 50 100 150
SCALE IN FEET

PROP. CURVE PVRD-2-C-000_6
PI STA. = 277+87.14
¬ = 45° 20' 50" (RT)
D = 8° 40' 52"
R = 660.00'
T = 275.73'
L = 522.36'
E = 55.28'
e = 6.0%
T.R. = 59'
S.E. RUN = 227'
P.C. STA. = 275+11.41
P.T. STA. = 280+33.78

EX. ROADWAY TO BE REMOVED AND ABANDONDED

HMA SHOULDERS, 6"
STA. 273+28.41 TO
STA. 401+00.00

HMA P.E.

SEE SHEET X
MATCH LINE STA. 401+00.00

PI Sta 277+87.14

PROPOSED CENTERLINE OF PLEASANT VALLEY ROAD

PROPOSED CENTERLINE OF CONNECTOR ROAD

EX. PLEASANT VALLEY ROAD

PC Sta 275+11.41

PR ROW

92°39'37"

CONNECTOR RD. 1

92°18'55"

R 60'

400+00

BIO-38

SGB-41

SGB-42

SGB-40

HMA SHOULDERS, 6"
STA. 401+00.00 TO STA.
282+00.00

BEGIN PVMT. RECONSTRUCTION
STA. 273+28.41

PVRD-2-C-000_6

R 648'

PT Sta 273+28.41

PLEASANT VALLEY ROAD

DPB-04

PT Sta 280+33.78

DPB-05

SWANSON ROAD

PC Sta 268+79.61

EX. HMA P.E.

EX. HMA PVMT.

EX. HMA P.E.

PR ROW

HMA SHOULDERS, 6"
STA. 273+28.41 TO STA. 282+00.00

PVRD-2-C-000_3

PI Sta 271+13.68

MATCH LINE STA. 282+00.00

HMA SURF. REMOVAL
BUTT JOINT
STA. 273+23.91 TO STA.
273+28.41

PROP. CURVE PVRD-2-C-000_3
PI STA. = 271+13.68
¬ = 40° 10' 45" (LT)
D = 8° 57' 09"
R = 640.00'
T = 234.08'
L = 448.81'
E = 41.46'
e = 8.0%
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 268+79.61
P.T. STA. = 273+28.41

MODEL: $MODELNAME$
FILE NAME: $FILE$

STRAND ASSOCIATES®
1170 SOUTH HOUBOLT ROAD
JOLIET, ILLINOIS 60431
(815) 744-4200

| | | | |
|---|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - | |
| | DRAWN - DJW | REVISED - | |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**PLEASANT VALLEY ROAD**
**ROADWAY PLAN**

SCALE: 1" = 50' | SHEET 1 OF 2 SHEETS | STA. 267+00.00 TO STA. 282+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 14 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |

N

0 50 100 150

SCALE IN FEET

PROP. CURVE PVRD-2-C-000_9
PI STA. = 289+01.27
¬ = 66° 16' 29" (LT)
D = 5° 24' 19"
R = 1,060.00'
T = 691.99'
L = 1,226.11'
E = 205.88'
e = 5.5%
T.R. = 33'
S.E. RUN = 122'
P.C. STA. = 282+09.28
P.T. STA. = 294+35.39

MATCH LINE STA. 282+00.00

PC STA. 282+09.28

BIO-37

PR ROW

HMA SHOULDERS, 6"
STA. 282+00.00 TO STA. 297+00.00

R 1042'

R 1048'

R 1078'

PR ROW

SGB-39

SGB-38

DPB-06

DPB-07

PVRD-2-C-000_9

PLEASANT VALLEY ROAD

SGB-37

PR ROW

PROPOSED CENTERLINE OF PLEASANT VALLEY ROAD

PROPOSED CENTERLINE OF PLEASANT VALLEY ROAD

HMA SHOULDERS, 6"
STA. 282+00.00 TO STA. 297+00.00

COMB. CONC. C&G, TYPE B-6.12
STA. 292+50.35 TO STA. 297+00.00

CONC. MED., TYPE SB-6.24
STA. 292+48.33 TO STA. 292+56.97

PR ROW

R 1640'

R 710'

R 698'

R 1646'

PT Sta 294+35.39

SGB-36

BIO-36

SGB-35

BIO-35

200' @ 8.4:1 TAPER

SEE SHEET X
MATCH LINE STA. 297+00.00

COMB. CONC. C&G, TYPE B-6.12
STA. 292+50.35 TO STA. 297+00.00

CONC. MED. SURF., 5 INCH
STA. 292+56.97 TO STA. 292+83.90

PROPOSED STATION OFFSETS

1. STA. 290+66.33, 12.00' LT.
2. STA. 292+48.33, 3.82' LT.
3. STA. 292+56.92, 8.41' LT.
4. STA. 292+57.03, 0.02' RT.
5. STA. 292+46.49, 18.00' RT.
6. STA. 293+14.10, 14.16' LT.
7. STA. 295+36.12, 21.00' RT.
8. STA. 295+36.12, 9.00' RT.

MODEL: $MODELNAME$
FILE NAME: $FILE$

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1170 SOUTH HOUBOLT ROAD
JOLIET, ILLINOIS 60431
(815) 744-4200

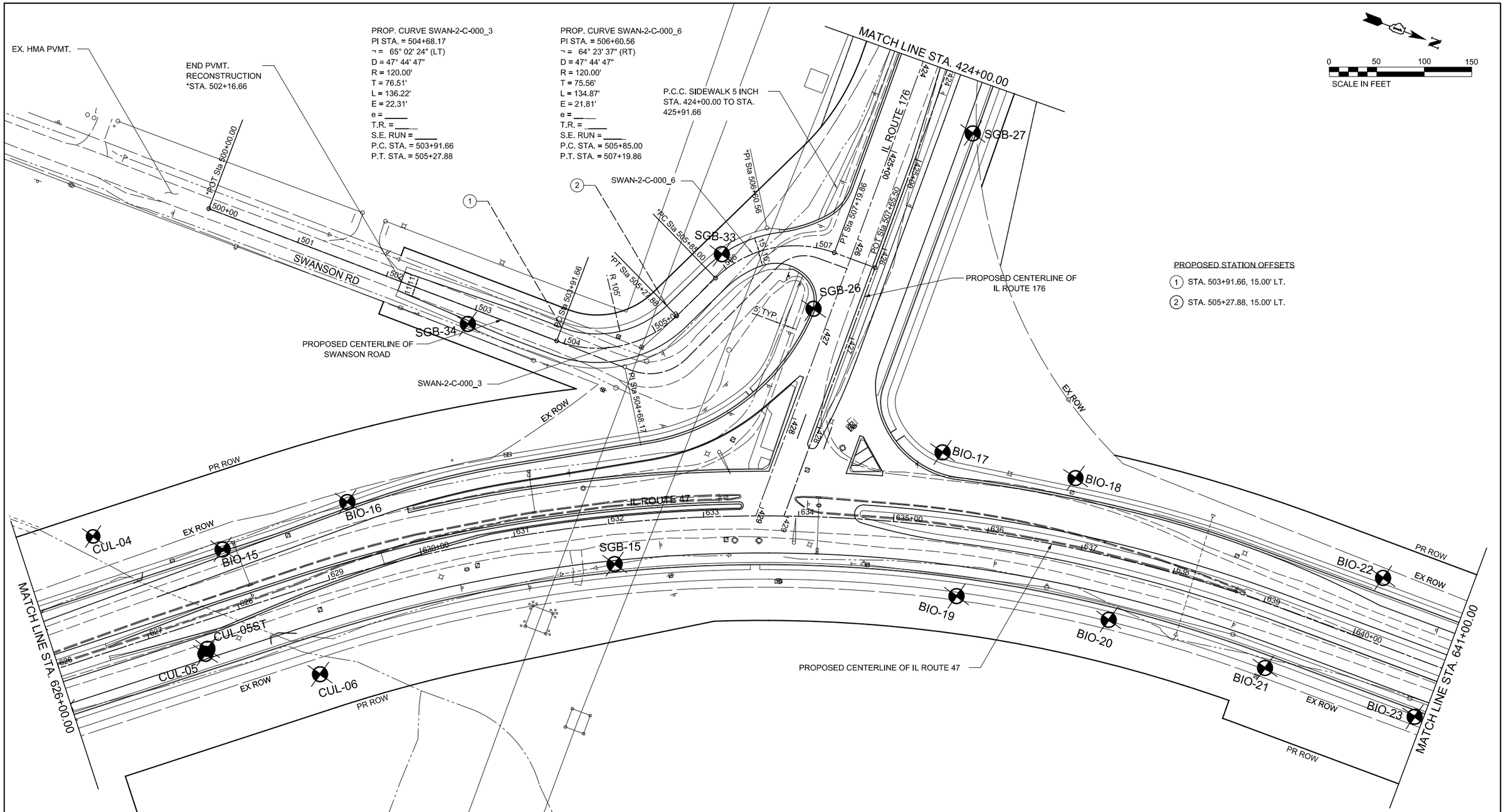
| | | | |
|---|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - | |
| | DRAWN - DJW | REVISED - | |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**PLEASANT VALLEY ROAD**
**ROADWAY PLAN**

SCALE: 1" = 50' | SHEET 2 OF 2 SHEETS | STA. 282+00.00 | TO STA. 297+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 15 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS FED. AID PROJECT | | | |

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(815) 744-4200

MODEL: $MODELNAME$
FILE NAME: $FILE1$

| | | |
|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - |
| | DRAWN - DJW | REVISED - |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**SWANSON ROAD**
**ROADWAY PLAN**

SCALE: 1" = 50' | SHEET 6 OF 8 SHEETS | STA. 626+00.00 TO STA. 641+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 16 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |

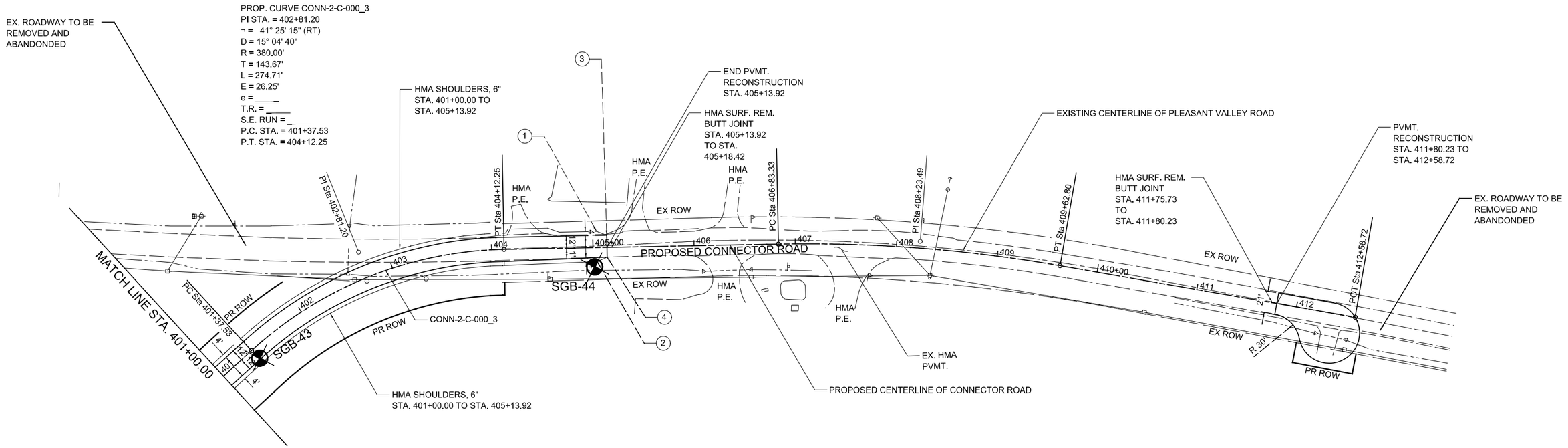
PROPOSED STATION OFFSETS

1. STA. 405+03.92, 16.00' LT.
2. STA. 405+04.01, 13.87' RT.
3. STA. 405+13.92, 12.00' LT.
4. STA. 405+13.92, 9.64' RT.

N

0 50 100 150

SCALE IN FEET




MODEL: $MODELNAME$
FILE NAME: $FILE$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| | | | |
|---|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - | |
| | DRAWN - DJW | REVISED - | |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**CONNECTOR ROAD**
**ROADWAY PLAN**

SCALE: 1" = 50' | SHEET 1 OF 1 SHEETS | STA. 401+00.00 TO STA. 413+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 17 |
| | | CONTRACT NO. 62B43 | | |
| | | ILLINOIS | FED. AID PROJECT | |

PLAN

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ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME

NOTE BOOK
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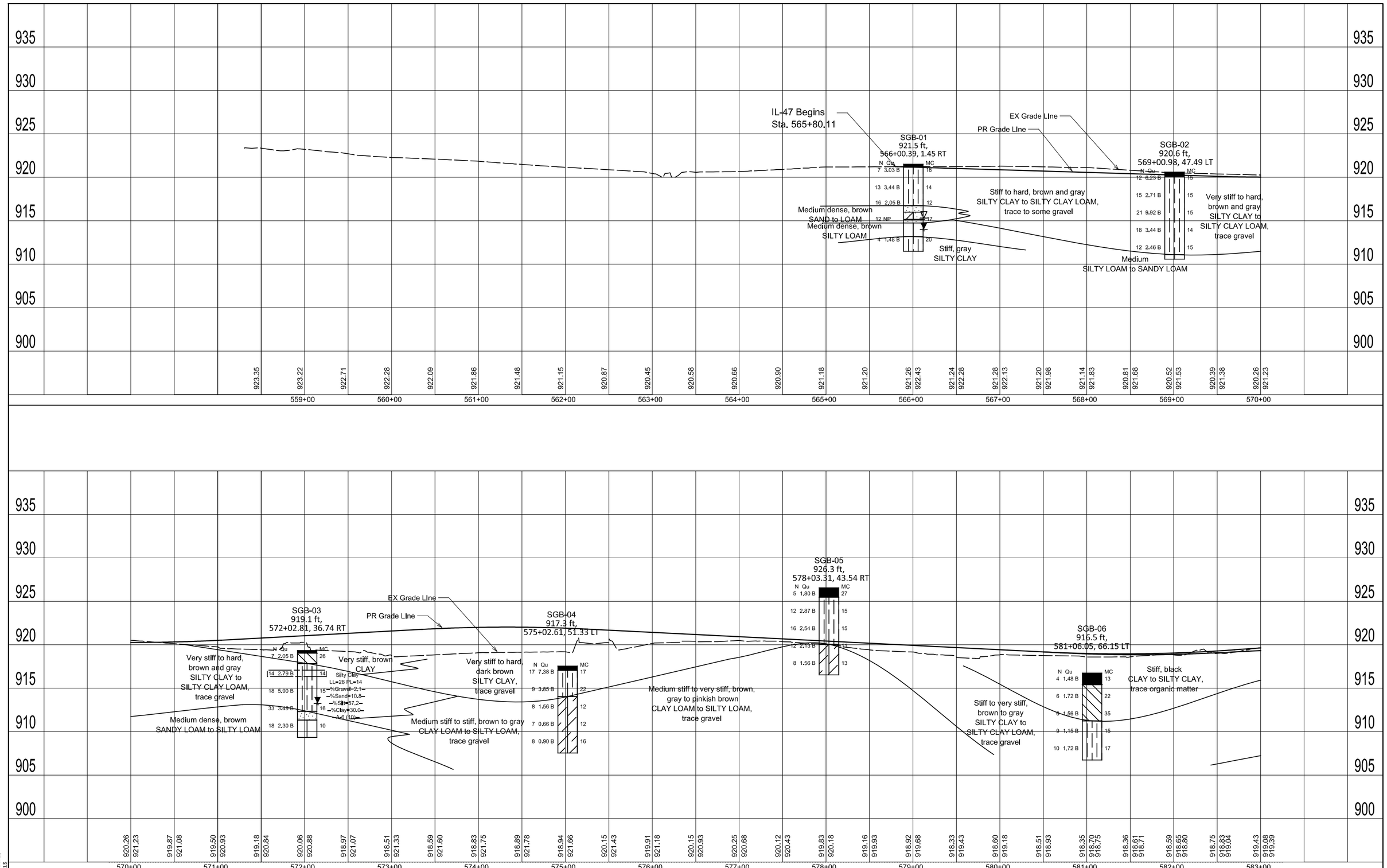
BY
DATE

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DESIGNED - CHECKED
E.M. NOTED
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NOTE BOOK
NO.

BY
DATE

MODEL: $MODELNAME$
FILE NAME: $FILE$


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| | | |
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| USER NAME = $USER$ | DESIGNED - MAG | REVISED - |
| | DRAWN - DJW | REVISED - |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

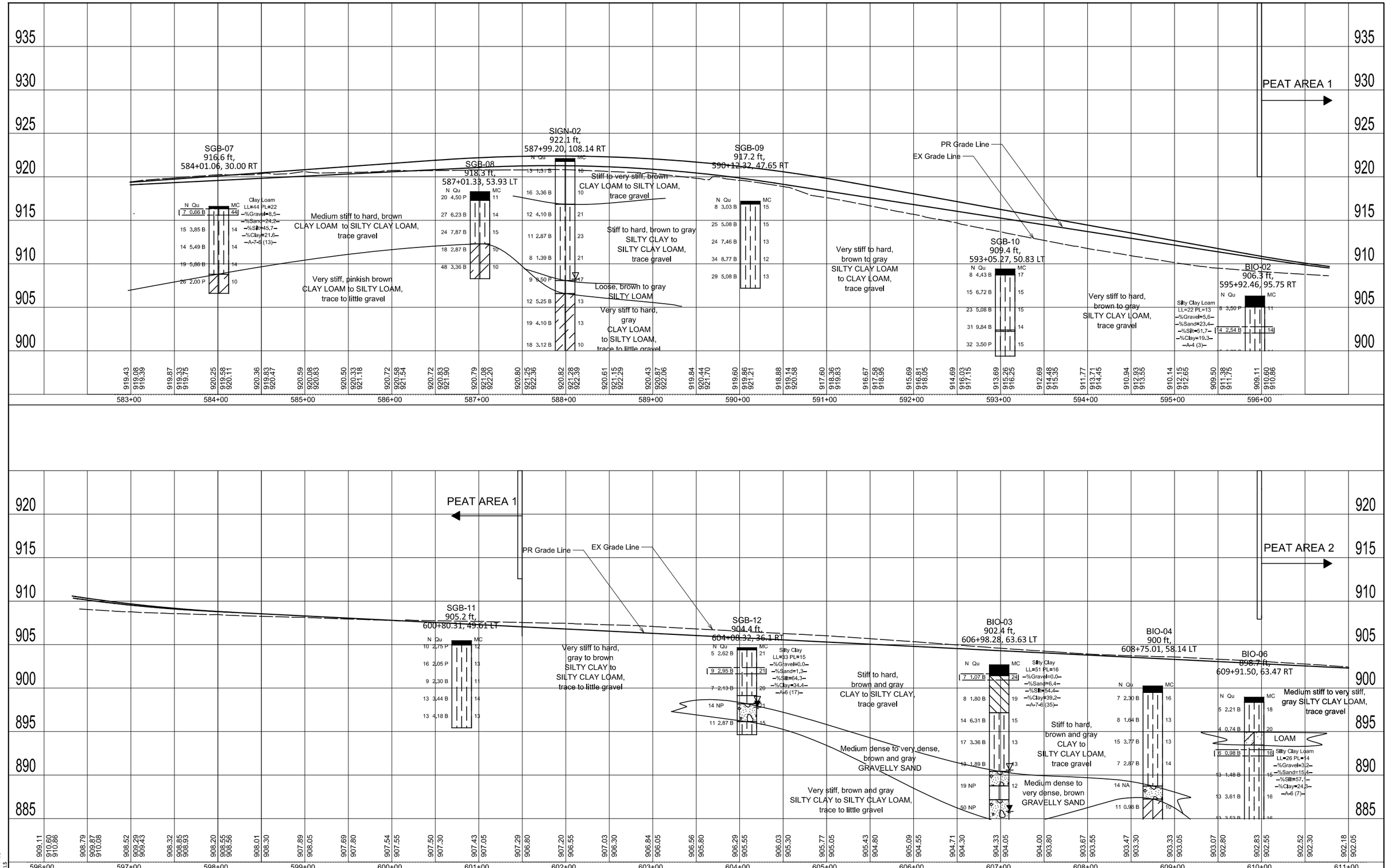
**IL ROUTE 47**
**ROADWAY PROFILE**

SCALE: 50-H 5-V | SHEET 1 OF 4 SHEETS | STA. 558+30.64 | TO STA. 583+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 18 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |

PLAN

| DATE | BY | |
|---|---|---|
| | | SURVEYED |
| | | PLOTTED |
| | | DRAWN CHECKED |
| | | ALIGNMENT CHECKED |
| | | RT. OF WAY CHECKED |
| | | CADD FILE NAME |
| | | NOTE BOOK |
| | | NO. |







PROFILE

| DATE | BY | |
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| | | DRAWN CHECKED |
| | | ALIGNMENT NOTED |
| | | R.O.W. NOTED |
| | | STRUCTURE NO. |
| | | TNS CHKD |
| | | NOTE BOOK |
| | | NO. |

MODEL: $MODELNAME$
FILE NAME: $FILEL$


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JOLIET, ILLINOIS 60431
(815) 744-4200


| | | |
|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - |
| | DRAWN - DJW | REVISED - |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 47**
**ROADWAY PROFILE**

SCALE: 50-H 5-V | SHEET 2 OF 4 SHEETS | STA. 583+00.00 | TO STA. 611+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 19 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |

PLAN

| | DATE |
|---|---|
| SURVEYED | |
| PLOTTED | |
| DESIGNED | |
| ALIGNMENT CHECKED | |
| RT. OF WAY CHECKED | |
| CADD FILE NAME | |
| NOTE BOOK | |
| NO. | |
| BY | |

PEAT AREA 2

PR Grade Line

EX Grade Line

SGB-13
897.6 ft,
613+03.41, 43.35 LT

Very stiff, dark brown SILTY CLAY LOAM, trace gravel --FILL--

Medium stiff to stiff, black ORGANIC SILTY LOAM

Medium stiff to very stiff, gray SILTY CLAY LOAM to CLAY LOAM,

Silty Loam
LL=74 PL=30
%Gravel=0.1
%Sand=3.9
%Silt=78.2
%Clay=17.7
A-7-5 (50)

Stiff to very stiff, black, brown and gray SILTY CLAY LOAM to CLAY LOAM, trace gravel

BIO-09
898.2 ft,
614+57.56, 84.81 RT

Silty Clay Loam
LL=18 PL=14
%Gravel=4.1
%Sand=14.8
%Silt=60.0
%Clay=21.0
A-4 (0)

Stiff to hard, black, brown and gray SILTY CLAY LOAM to CLAY LOAM, trace gravel

BIO-10
900.7 ft,
616+02.63, 88.75 RT

Stiff to hard, brown to gray SILTY CLAY LOAM, trace gravel

BIO-08
900 ft,
618+04.70, 65.49 LT

Stiff to very stiff, brown CLAY LOAM to CLAY, trace gravel --FILL--

Very stiff to hard, brown and gray SILTY CLAY LOAM, trace gravel

SGB-14
899.8 ft,
621+04.06, 40.63 RT

Medium stiff to very stiff, dark brown CLAY to SILTY CLAY, trace gravel

Very stiff to hard, brown and gray SILTY CLAY LOAM, trace gravel

BIO-11
899.8 ft,
624+09.48, 53.09 LT

Silty Clay Loam
LL=24 PL=12
%Gravel=1.4
%Sand=13.8
%Silt=60.2
%Clay=24.6
A-6 (7)

Medium stiff to very stiff, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel

BIO-14
897.5 ft,
625+92.36, 45.81 RT

Silty Clay Loam
LL=45 PL=15
%Gravel=0.1
%Sand=7.9
%Silt=53.5
%Clay=28.5
A-7-6 (28)

SANDY GRAVEL

920 915 910 905 900 895 890 885

902.18 902.05 | 901.88 901.80 | 901.60 901.55 | 901.40 901.30 | 901.22 901.05 | 901.22 900.84 | 901.25 900.77 | 901.29 900.84 | 901.35 901.05 | 901.31 901.30 | 901.28 901.55 | 901.33 901.80 | 901.37 902.05 | 901.41 902.30 | 901.47 902.55 | 901.57 902.80 | 901.70 903.05 | 901.68 903.30 | 901.70 903.57 | 901.76 903.96 | 901.87 904.38 | 901.90 904.79 | 902.00 905.21 | 901.98 905.62 | 902.06 906.03 | 902.03 906.45 | 902.17 906.86 | 902.22 907.27 | 902.37 907.69 | 902.51 908.10 | 902.68 908.41 | 908.40

611+00 612+00 613+00 614+00 615+00 616+00 617+00 618+00 619+00 620+00 621+00 622+00 623+00 624+00 625+00 626+00

PROFILE

| | DATE |
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| SURVEYED | |
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| E&M, NOTES | |
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| NOTE BOOK | |
| NO. | |
| BY | |

PR Grade Line

EX Grade Line

CUL-05
900.4 ft,
627+55.04, 29.23 RT

Hard, gray SILTY CLAY LOAM, little gravel --FILL--

Very soft, gray SILTY CLAY LOAM, little organic matter

Silty Clay Loam
LL=28 PL=13
%Gravel=4.9
%Sand=13.6
%Silt=55.4
%Clay=25.0
A-6 (10)

BIO-16
902.5 ft,
629+39.52, 73.76 LT

Stiff to hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel

SGB-15
900.2 ft,
632+01.74, 42.71 RT

Medium stiff to hard, brown to gray SILTY CLAY to SILTY CLAY LOAM, trace to little gravel

BIO-17
907.3 ft,
635+43.09, 77.64 LT

Medium stiff to hard, brown to gray CLAY LOAM to SILTY CLAY LOAM, trace to little gravel

BIO-20
903.8 ft,
637+45.83, 65.08 RT

Clay Loam
LL=31 PL=11
%Gravel=9.6
%Sand=29.7
%Silt=42.1
%Clay=18.6
A-6 (9)

Medium stiff to hard, brown and gray SILTY CLAY LOAM to CLAY LOAM, trace gravel

Loam
LL=20 PL=10
%Gravel=6.5
%Sand=34.1
%Silt=44.4
%Clay=15.4
A-4 (3)

Medium stiff to very stiff, pinkish gray LOAM to CLAY LOAM, trace to little gravel

BIO-21
905.3 ft,
639+25.5, 64.85 RT

Silty Clay Loam
LL=35 PL=15
%Gravel=2.1
%Sand=16.4
%Silt=55.6
%Clay=25.9
A-6 (15)

Very stiff to hard, brown and gray SILTY CLAY LOAM to CLAY LOAM, trace to little gravel

920 915 910 905 900 895 890 885

902.68 908.41 908.40 | 902.86 908.54 | 903.07 908.57 908.51 | 903.31 908.43 908.32 | 903.58 908.18 908.02 | 903.83 907.93 907.71 | 904.06 907.68 907.41 | 904.23 907.43 907.11 | 904.49 907.18 906.80 | 904.59 906.93 906.50 | 904.80 906.68 906.20 | 904.91 906.43 905.89 | 905.17 906.18 905.60 | 905.49 906.03 905.43 | 905.73 906.04 905.45 | 906.11 906.21 905.63 | 906.35 906.55 906.00 | 906.75 906.98 906.49 | 907.02 907.42 907.00 | 907.22 907.85 907.50 | 907.53 908.29 908.01 | 907.70 908.72 908.51 | 907.98 909.16 909.02 | 908.21 909.59 909.52 | 908.50 910.03 910.00 | 908.89 910.46 | 909.31 910.90 | 909.58 911.33 | 909.93 911.76 | 910.16 912.20 | 910.59 912.63

626+00 627+00 628+00 629+00 630+00 631+00 632+00 633+00 634+00 635+00 636+00 637+00 638+00 639+00 640+00 641+00

MODEL: SMODELNAME$
FILE NAME: $FILE$


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| | | |
|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - |
| | DRAWN - DJW | REVISED - |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 47**
**ROADWAY PROFILE**

SCALE: 50-H 5-V | SHEET 3 OF 4 SHEETS | STA. 611+00.00 TO STA. 641+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 20 |
| | | CONTRACT NO. 62B43 | | |
| | | ILLINOIS | FED. AID PROJECT | |

PLAN
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NOTE BOOK
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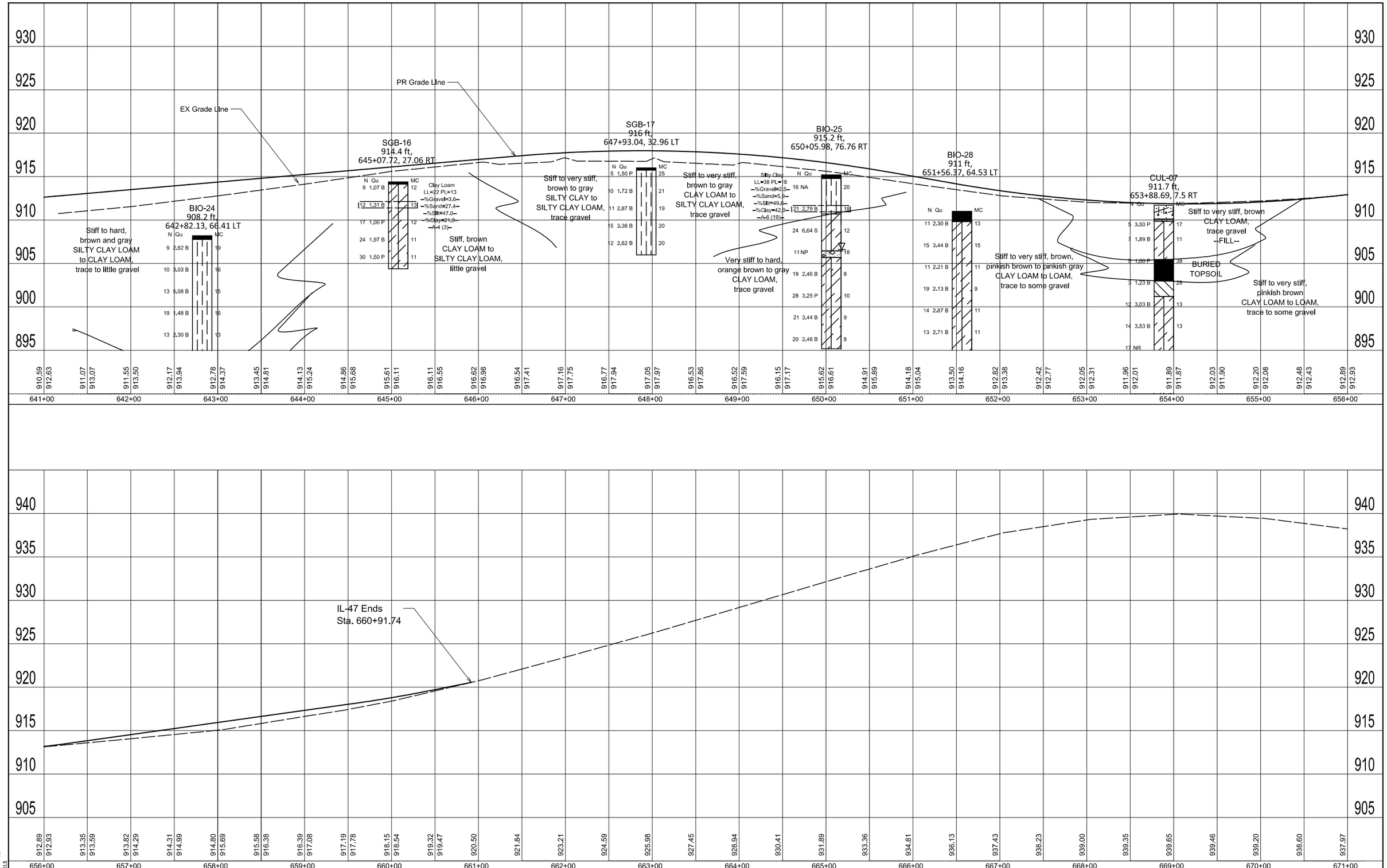





MODEL: $MODELNAME$
FILE NAME: $FILE$

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JOLIET, ILLINOIS 60431
(815) 744-4200

| | | |
|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - |
| | DRAWN - DJW | REVISED - |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 47**
**ROADWAY PROFILE**

SCALE: 50-H 5-V | SHEET 4 OF 4 SHEETS | STA. 641+00.00 | TO STA. 671+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 21 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |

PLAN

| DATE | BY | SURVEYED | PLOTTED | DESIGNED - CHECKED | DRAWN - CHECKED | ALIGNMENT CHECKED | RT. OF WAY CHECKED | CADD FILE NAME |
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NOTE BOOK
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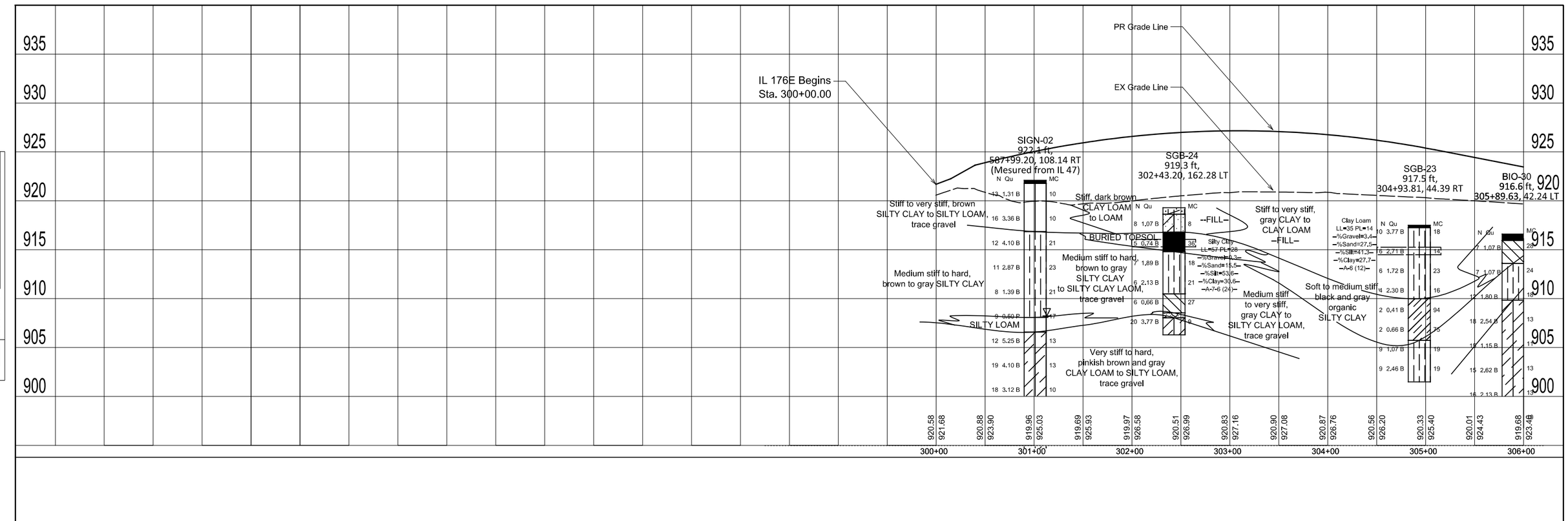


PROFILE

| DATE | BY | SURVEYED | PLOTTED | DESIGNED - CHECKED | DRAWN - CHECKED | ALIGNMENT NOTED | R.O.W. NOTED | STRUCTURE NOTATNS CHKD |
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NOTE BOOK
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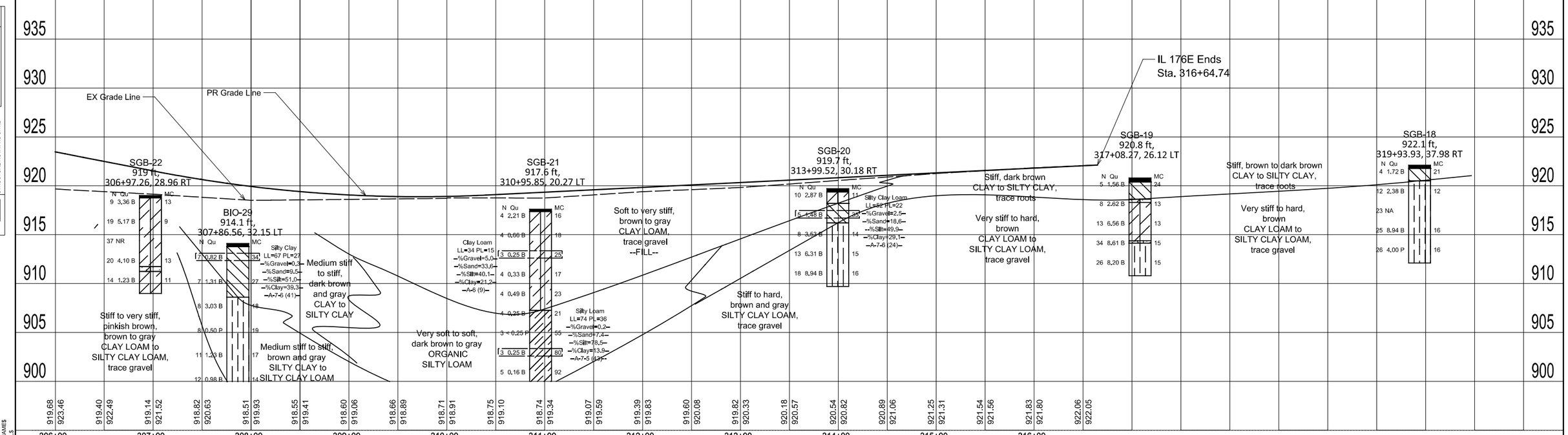


MODEL: $MODELNAME$
FILE NAME: $FILE$


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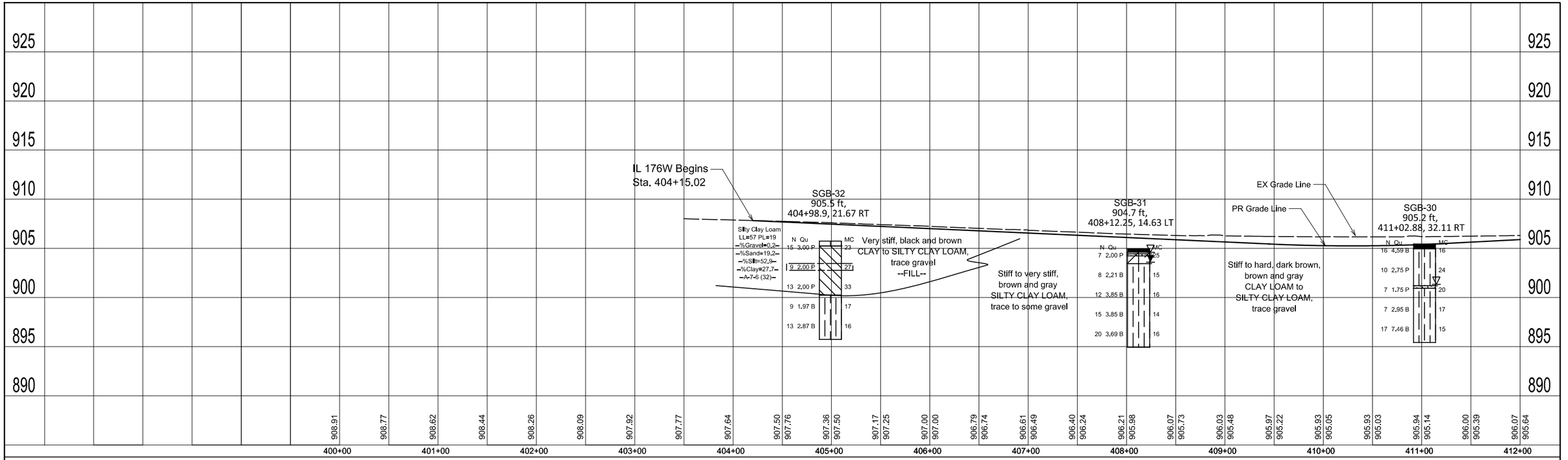
|---|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - | |
| | DRAWN - DJW | REVISED - | |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | |

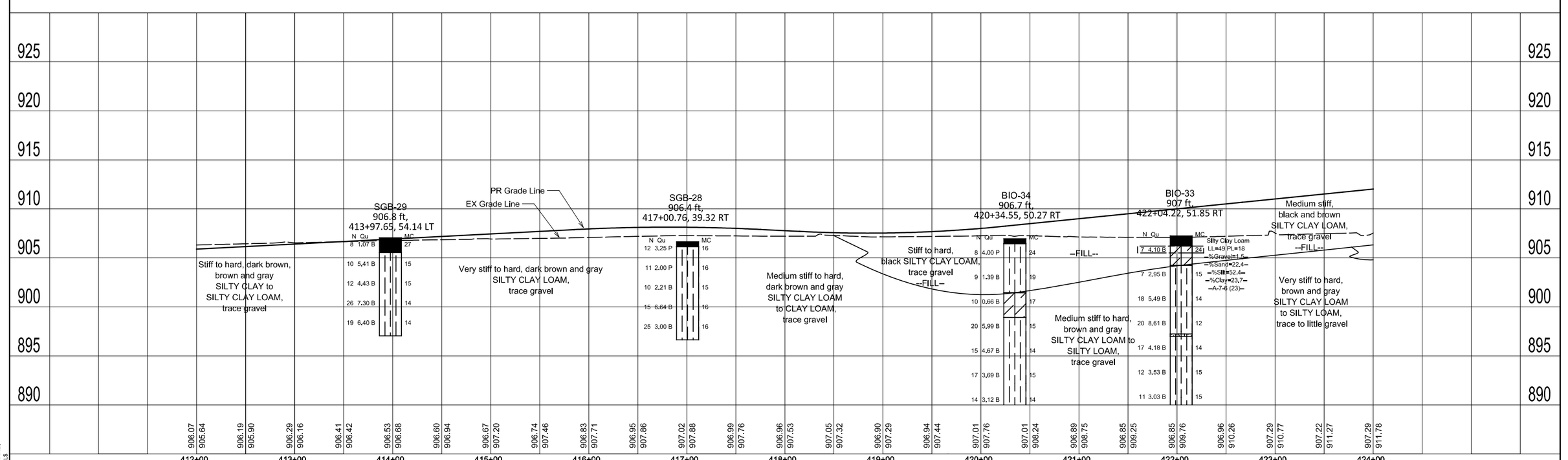
**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 176 (EAST)**
**ROADWAY PROFILE**

SCALE: 50-H 5-V | SHEET 1 OF 1 SHEETS | STA. 400+00.00 | TO STA. 424+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 22 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |

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NOTE BOOK
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NOTE BOOK
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MODEL: $MODELNAME$
FILE NAME: $FILE$

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JOLIET, ILLINOIS 60431
(815) 744-4200

| | | | | | |
|---|---|---|---|---|---|
| USER NAME = $USER$ | | DESIGNED - MAG | | REVISED - | |
| | | DRAWN - DJW | | REVISED - | |
| PLOT SCALE = $SCALE$ | | CHECKED - DWG | | REVISED - | |
| PLOT DATE = $DATE$ | | DATE - $PLANDATE$ | | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 176 (WEST)**
**ROADWAY PROFILE**

SCALE: 50-H 5-V | SHEET 1 OF 2 SHEETS | STA. 400+00.00 | TO STA. 424+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 23 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |

PLAN

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CADD FILE NAME

NOTE BOOK
NO.

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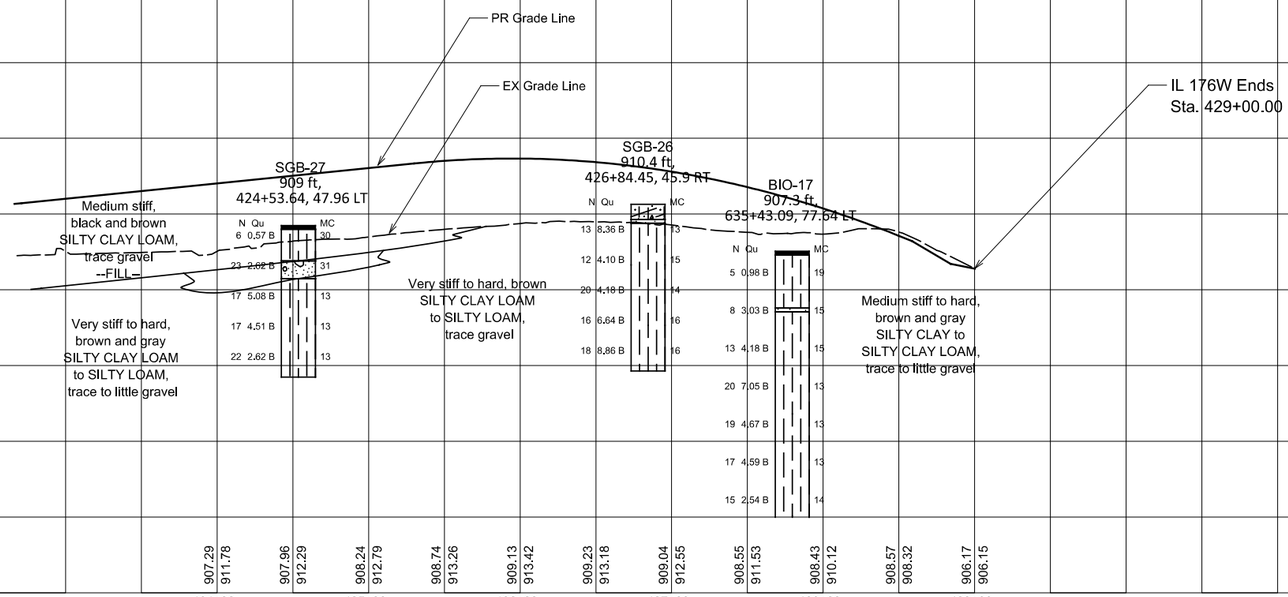


PROFILE

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NOTE BOOK
NO.

DATE
BY

MODEL: $MODELNAME$
FILE NAME: $FILE1$


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JOLIET, ILLINOIS 60431
(815) 744-4200


| | | |
|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - |
| | DRAWN - DJW | REVISED - |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 176 (WEST)**
**ROADWAY PROFILE**

SCALE: 50-H 5-V | SHEET 2 OF 2 SHEETS | STA. 424+00.00 | TO STA. 429+00.05

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 24 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
DATE
BY

PVRD Begins
Sta. 273.28.41

EX Grade Line

PR Grade Line

SGB-42
907.4 ft,
274+29.45, 29.03 LT

N Qu
6 1.07 B MC 35
6 1.07 B 27
5 1.50 P 17
15 5.82 S 14

Stiff to very stiff, brown to gray
SILTY CLAY, trace gravel

Brown coarse SAND
and Gravel

Stiff to hard, brown and gray
SITLY CLAY LOAM, trace gravel

SGB-41
915.6 ft,
278+04.09, 11.68 RT

N Qu
5 2.13 B MC 22
11 3.03 B 19
10 3.42 B 21
11 3.28 B 20
13 3.03 B 14
17 1.07 B 15
16 3.12 B 15
17 2.54 B 13

Stiff to hard, brown and gray
CLAY to SITLY CLAY, trace gravel

Medium dense, brown,
medium to coarse
SAND to SANDY GRAVEL

Stiff to very stiff, gray
SILTY CLAY LOAM
to CLAY LOAM,
trace gravel

BIO-38
918.1 ft,
280+16.60, 29.84 LT

N Qu
10 1.80 B MC 29
16 5.74 B 19
15 4.33 S 18
12 3.50 P 14
24 NP 23
17 1.97 B 13
23 3.61 B 13

SGB-40
918.5 ft,
281+04.76, 12.42 LT

N Qu
7 2.21 B MC 14
14 3.85 B 14
21 6.89 B 13
22 6.81 B 15
23 4.51 B 10
29 5.74 B 9
17 2.79 B 11
19 1.80 S 11

Silty Clay Loam
LL=29 PL=15
–%Gravel=2.3–
–%Sand=10.2–
–%Silt=59.1–
–%Clay=28.4–
–A-6 (11)–

Stiff to hard
SILTY CLAY LOAM
to CLAY LOAM

935
930
925
920
915
910
905
900

904.30 904.27 904.54 905.72 907.81 910.82 913.69 914.91 914.22 912.94 911.44 911.50 909.59 910.24 908.58 909.29 907.65 908.66 905.90 908.34 906.99 908.34 908.49 908.65 910.09 909.27 912.44 910.21 915.13 911.46 916.97 913.02 917.76 914.86 916.98 916.55 916.71 917.87 917.00 918.84 917.39 919.45 915.56 919.70 914.11 919.60

269+00 270+00 271+00 272+00 273+00 274+00 275+00 276+00 277+00 278+00 279+00 280+00 281+00 282+00

PROFILE
SURVEYED
PLOTTED
DESIGNED - CHECKED
E.M. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
DATE
BY

PR Grade Line

EX Grade Line

SGB-39
913.8 ft,
284+00.27, 22.9 RT

N Qu
5 1.56 B MC 24
7 0.90 B 14
9 3.53 B 12
11 2.05 B 11
9 1.89 B 12
17 2.71 B 14
9 1.15 B 11

Silty Clay Loam
LL=27 PL=15
–%Gravel=3.7–
–%Sand=24.0–
–%Silt=51.5–
–%Clay=20.7–
–A-6 (6)–

Medium stiff to hard, brown and gray
SILTY CLAY LOAM, trace gravel

Stiff to hard,
brown and gray
SILTY CLAY LOAM
to CLAY LOAM,
trace gravel

Medium stiff to stiff,
dark brown and gray
SILTY CLAY LOAM, trace gravel

Stiff to hard, brown and gray
SILTY CLAY LOAM
to CLAY LOAM,
trace gravel

SGB-38
914.8 ft,
287+04.56, 17.16 LT

N Qu
5 1.48 B MC 33
5 NP 12
7 NP 14
24 NP 16
9 1.23 B 10
28 2.13 B 17
15 2.87 B 9
11 2.87 B 13

Loose to medium dense, brown
GRAVELLY LOAM
to medium SAND

Stiff to very stiff,
dark brown to brown
CLAY to SILTY CLAY LOAM,
trace gravel

SGB-37
919.7 ft,
289+95.02, 31.75 RT

N Qu
5 2.25 P MC 21
7 1.39 B 21
14 2.21 B 10
26 1.00 P 14
19 3.03 B 10
30 4.26 B 9
22 4.02 B 10
26 4.18 B 9

Stiff to hard, gray
SILTY CLAY LOAM
to CLAY LOAM,
trace gravel

Stiff to hard,
pinkish brown and gray
SILTY CLAY LOAM
to CLAY LOAM,
trace to little gravel

BIO-36
909.3 ft,
291+96.71, 43.5 RT

N Qu
5 1.07 B MC 12
12 3.69 B 14
19 2.38 B 12
16 2.95 B 10

SGB-36
908.5 ft,
292+99.10, 24.48 LT

N Qu
6 1.25 P MC 32
4 1.80 B 23
4 1.31 B 18
14 3.77 B 14
10 2.87 B 15

Silty Clay
LL=43 PL=17
–%Gravel=0.0–
–%Sand=8.1–
–%Silt=55.0–
–%Clay=36.9–
–A-7-6 (25)–

Stiff to very stiff black, brown and gray
CLAY to SILTY CLAY, trace gravel

Stiff to hard, brown and gray
CLAY to SILTY CLAY LOAM,
trace to little gravel

SGB-35
912.4 ft,
296+00.60, 14.16 RT

N Qu
4 2.00 P MC 26
10 1.00 P 14
17 4.76 B 15
11 2.46 B 15
9 1.89 B 15
22 3.12 B 12
15 1.21 B 14

Stiff to hard,
CLAY LOAM to
SILTY CLAY LOAM,

935
930
925
920
915
910
905
900

914.11 919.60 913.53 919.31 913.51 919.03 913.72 918.74 914.21 918.46 915.11 918.17 916.21 917.89 915.75 917.60 914.69 917.32 913.66 917.03 914.87 916.75 916.33 916.46 917.95 916.18 919.22 915.89 919.06 915.61 918.79 915.32 917.34 915.04 915.55 914.75 913.66 914.47 911.67 914.18 911.02 913.90 910.04 913.61 908.82 913.34 908.93 913.24 909.79 913.33 910.90 913.59 911.07 913.89 911.02 914.18 911.07 914.48 911.08 914.77 912.13 915.07

282+00 283+00 284+00 285+00 286+00 287+00 288+00 289+00 290+00 291+00 292+00 293+00 294+00 295+00 296+00 297+00

MODEL: $MODELNAME$
FILE NAME: $FILE$

STRAND ASSOCIATES®
1170 SOUTH HOUBOLT ROAD
JOLIET, ILLINOIS 60431
(815) 744-4200

| | | | |
|---|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - | |
| | DRAWN - DJW | REVISED - | |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**PLEASANT VALLEY ROAD**
**ROADWAY PROFILE**

SCALE: 50-H 5-V | SHEET 1 OF 2 SHEETS | STA. 273+28.41 | TO STA. 297+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 25 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |

PLAN

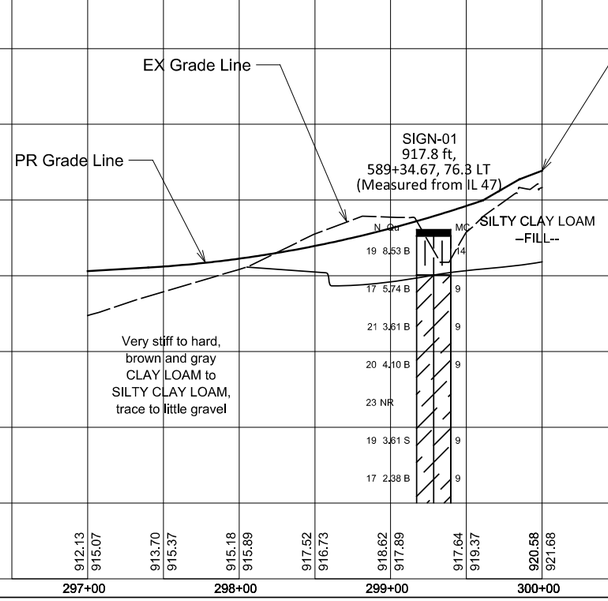
| | |
|---|---|
| SURVEYED | |
| PLOTTED | |
| ALIGNMENT CHECKED | |
| RT. OF WAY CHECKED | |
| CADD FILE NAME | |
| NOTE BOOK | |
| NO. | |

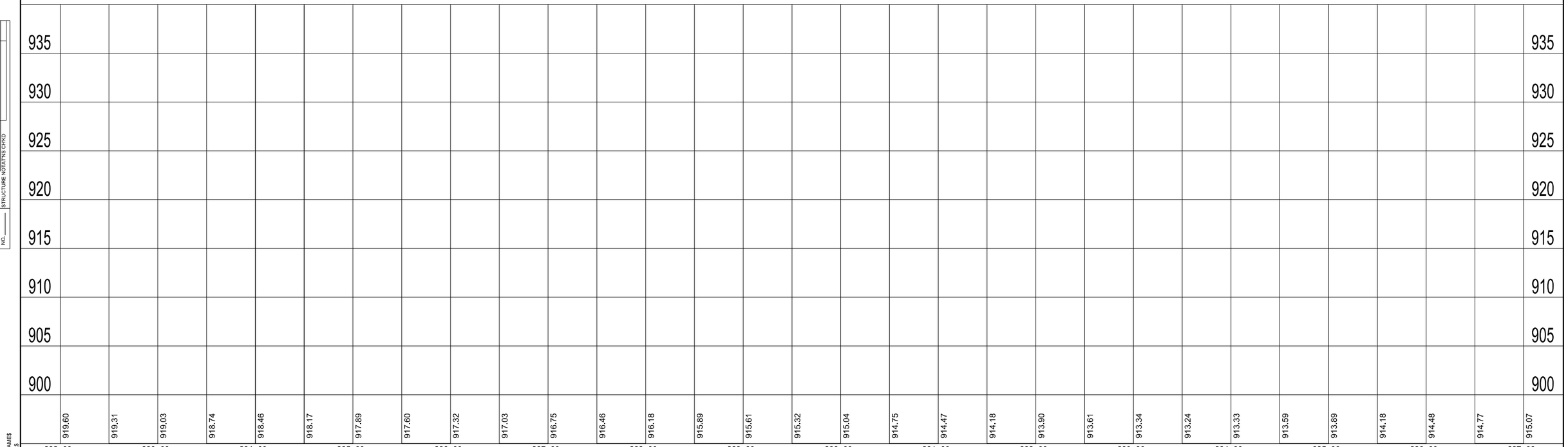
| BY | DATE |
|---|---|
| | |

PROFILE

| | |
|---|---|
| SURVEYED | |
| PLOTTED | |
| GRADES CHECKED | |
| NOTE BOOK | |
| R.M. NOTED | |
| NO. | |
| STRUCTURE NOTATNS CHKD | |

| BY | DATE |
|---|---|
| | |




MODEL: $MODELNAME$
FILE NAME: $FILE$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1170 SOUTH HOUBOLT ROAD
JOLIET, ILLINOIS 60431
(815) 744-4200

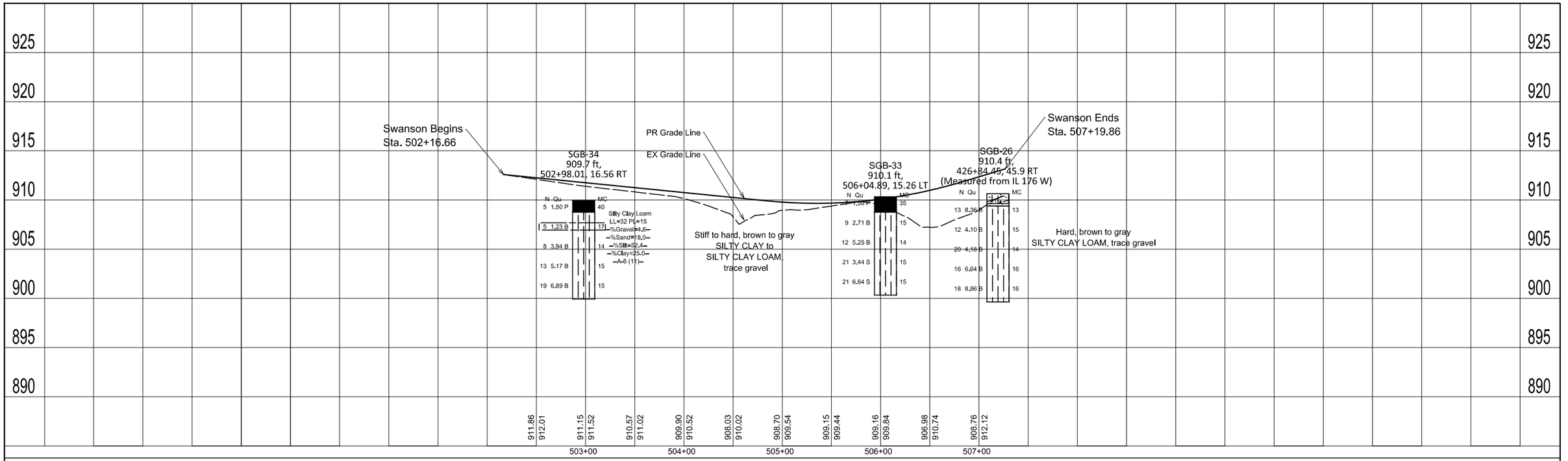

| | | |
|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - |
| | DRAWN - DJW | REVISED - |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**PLEASANT VALLEY ROAD**
**ROADWAY PROFILE**

SCALE: 50-H 5-V | SHEET 2 OF 2 SHEETS | STA. 297+00.00 TO STA. 300+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 26 |
| | | CONTRACT NO. 62B43 | | |
| | 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
NOTE BOOK
ELM. NOTED
STRUCTURE NOTATNS CHKD
NO.
BY
DATE

MODEL: $MODELNAME$
FILE NAME: $FILE1$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(815) 744-4200

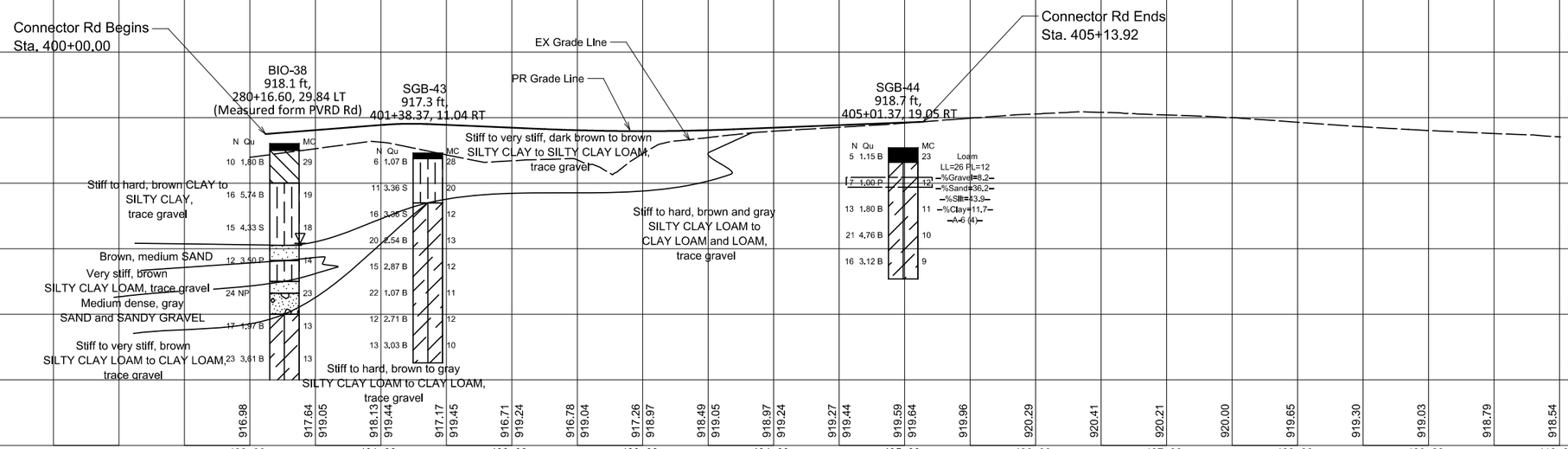

| | | |
|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - |
| | DRAWN - DJW | REVISED - |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**SWANSON ROAD**
**ROADWAY PROFILE**

SCALE: 50-H 5-V | SHEET 1 OF 1 SHEETS | STA. 502+16.66 | TO STA. 507+26.50

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 27 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |




PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
DESIGN CHECKED
NOTE BOOK
B.M. NOTED
NO.
STRUCTURE NOTATNS CHKD
BY
DATE

MODEL: $MODELNAME$
FILE NAME: $FILE1$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(815) 744-4200


| | | |
|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - |
| | DRAWN - DJW | REVISED - |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**CONNECTOR ROAD**
**ROADWAY PROFILE**

SCALE: 50-H 5-V | SHEET 1 OF 1 SHEETS | STA. 400+00.00 | TO STA. 412+58.72

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 28 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |

# APPENDIX G

IL47-2-C-000
596+50.00 / 1

PR ROW

EX ROW

904.96

1:3

PT5-07
902.60 ft,
596+71.96, 111.97 LT

| | | | |
|---|---|---|---|
| N | Qu | | MC |
| 5 | 0.98 | B | 31 |
| 4 | 1.31 | B | 28 |
| 7 | 0.98 | B | 19 |
| 7 | 0.74 | B | 12 |
| 7 | 1.15 | B | 11 |

PT6-06
904.3 ft,
596+69.87,61.87 LT

| | | | |
|---|---|---|---|
| N | Qu | | MC |
| 7 | 2.30 | B | 28 |
| 14 | 2.30 | B | 19 |
| 9 | 2.13 | B | 14 |
| 10 | 0.57 | B | 11 |
| 11 | 0.98 | B | 10 |
| 11 | 1.48 | B | 10 |

909.29 909.41 909.51 909.39 909.79 910.03 909.88 909.64 909.60 909.80 909.84 910.08 910.32 910.16 909.86 909.46 909.58 909.38 909.34

-4.00% -2.00% 1.31% 4.00% 4.00% 2.00% -1.31% -2.50% -4.00%

1:4 1:4

1:3

EX ROW

PR ROW

915 910 905 900 895 890

EL 885

N 2032542.6710
E 959491.4590

N 2032636.3974
E 959608.5716

596+50.00 R1

N 2032730.1238
E 959725.6842

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

IL47-2-C-000
597+00.00 / 1

PR ROW

EX ROW

903.62

1:3

PT6-05
903.6 ft,
597+19.53,62.89 LT

| N | Qu | | MC |
|---|---|---|---|
| 6 | 0,50 | P | 20 |
| 7 | 0,74 | B | 19 |
| 5 | 0,90 | B | 14 |
| 14 | 1,39 | B | 12 |

PT6-06
902.2 ft,
597+20.57,117.11 LT

| N | Qu | | MC |
|---|---|---|---|
| 2 | 0,50 | P | 47 |
| 2 | 0,57 | B | 32 |
| 3 | 0,57 | B | 35 |
| 4 | 0,33 | B | 13 |
| 8 | 0,57 | B | 11 |
| 10 | 0,98 | B | 12 |
| 10 | 1,07 | B | 9 |

908.78
908.90
909.00
908.89
909.29
909.53
909.29
909.05
909.01
909.15
909.19
909.43
909.67
909.43
909.13
908.73
908.85
908.65
908.61

-4.00%
-2.00%
2.00%
4.00%
4.00%
2.00%
-2.00%
-2.50%
-4.00%

1:4
1:4

PT7-08
904 ft,
597+43.12,71.76 RT

| N | Qu | | MC |
|---|---|---|---|
| 7 | 0,82 | B | 21 |
| 5 | 1,48 | B | 30 |
| 5 | 0,66 | B | 27 |
| 10 | 1,00 | P | 17 |
| 11 | 2,62 | B | 15 |
| 12 | 1,23 | B | 15 |
| 18 | 2,79 | B | 14 |

1:3

903.72

PR ROW

915
910
905
900
895
890

EL 885

N 2032581.7085
E 959460.2168

N 2032675.4349
E 959577.3294

N 2032769.1613
E 959694.4420

**597+00.00 R1**

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

IL47-2-C-000
597+50.00 / 1

PR ROW
EX ROW
903.65
1:3
908.34
908.46
908.56
908.45
908.85
909.09
908.85
908.61
908.57
908.65
908.69
908.93
909.17
908.93
908.63
908.23
908.34
908.14
908.10
902.76
PR ROW
EX ROW
1:3
-4.00%
-2.00%
2.00%
4.00%
-0.00%
4.00%
2.00%
-2.00%
-2.50%
-4.00%

PT5-05
902.1 ft,
597+68.8,110.41 LT
N Qu MC
2 0.74 B 41
2 0.25 P 38
2 0.25 P 41
7 1.07 B 17
12 0.74 B 11
11 1.48 B 11

PT6-04
902.9 ft,
597+68.95,62.05 LT
N Qu MC
5 2.00 P 21
8 2.71 B 16
5 1.31 B 21
8 1.07 B 14
8 1.23 B 13

PT7-07
903.5 ft,
597+91.99,66.83 RT
N Qu MC
6 0.66 B 34
8 1.89 B 18
10 2.71 B 12
12 2.79 B 11
14 4.18 B 11

PT8-08
902.9 ft,
597+95.55,128.97 RT
N Qu MC
5 0.86 B 30
4 0.82 B 16
8 1.97 B 21
9 1.56 B 16

915
910
905
900
895
890

EL 885

N 2032620.7460
E 959428.9747

N 2032714.4724
E 959546.0873

N 2032808.1988
E 959663.1999

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

**597+50.00 R1**

IL47-2-C-000
598+50.00 / 1

915
910
905
900
895
890

PR ROW
EX ROW
EX ROW
PR ROW

902.93
907.79
907.91
908.01
907.90
908.30
908.54
908.30
908.06
908.02
908.52
908.52
908.02
908.06
908.30
908.54
908.30
908.00
907.60
907.71
907.51
907.47
901.22

-4.00%
-2.00%
2.00%
4.00%
4.00%
2.00%
-2.00%
-2.50%
-4.00%
1:3
1:4
1:4
1:3

PT5-04
903.4 ft,
598+22.13,117.55 LT
N Qu MC
4 0.75 P 41
5 0.50 P 31
3 0.82 B 29
9 1.97 B 16

PT6-03
902.4 ft,
598+18.68,62.3 LT
N Qu MC
7 0.98 B 19
5 1.00 P 57
2 0.49 B 30
2 NP 19
5 0.75 P 16
7 1.23 B 17

PT7-06
902.9 ft,
598+28.00,67.39 RT
N Qu MC
5 1.23 B 18
7 2.62 B 25
6 1.48 B 16
13 1.89 B 10

PT8-07
901.8 ft,
598+55.93,128.77 RT
N Qu MC
5 1.75 P 14
9 1.07 B 19
5 0.75 P 35
4 0.49 B 43
3 0.66 B 35
10 0.74 B 11
16 2.87 B 11
20 3.20 B 10

EL 885

N 2032698.8211
E 959356.4904

N 2032792.5475
E 959483.6030

N 2032886.2739
E 959600.7156

598+50.00 R1

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

IL 47-2-C-000
599+00.00 / 1

PR ROW
EX ROW
PR ROW
EX ROW

PT5-03
904.5 ft,
598+66.84,122.26 LT
N Qu MC
4 1.75 P 28
6 0.75 P 24
8 3.60 B 15

CUL-01
903.4 ft,
598+72.30,69.86 LT
N Qu MC
12 4.59 B 16
11 2.05 B 12
21 2.00 P 13
14 3.20 B 10
15 1.64 B 9
9 2.54 B 11
7 0.98 B 13
16 2.95 B 13
10 1.72 B 12
8 1.23 B 15

CUL-02
905.1 ft,
598+78.32,52.77 RT
N Qu MC
7 1.50 P 16
6 0.90 B 18
7 1.50 P 23
2 0.41 B 53
3 0.41 B 28 Silty Clay A-6 (19)
LL=38 PL=19
8 0.50 P 17
11 1.56 B 10
14 1.64 B 10
19 1.50 P 11
20 3.20 B 9

CUL-03
900.3 ft,
598+83.67,91.63 RT
N Qu MC
3 0.68 B 50
3 0.80 B 17
7 0.82 B 21 A-6 (8)
LL=26 PL=13 Silty Clay Loam
9 1.31 B 17
13 1.48 B 10
11 1.80 B 10
19 2.30 B 10
15 1.89 B 10
19 3.28 B 9

PT8-06
900.2 ft,
598+97.19,123.67 RT
N Qu MC
3 1.00 P 44
5 0.57 B 37
6 1.48 B 18
16 1.00 P 20
19 1.31 B 9
10 1.48 B 13

599+00.00 R1

907.54 907.66 907.76 907.65 908.05 908.29 908.05 907.81 907.77 907.77 907.81 908.05 908.29 908.05 907.75 907.35 907.46 907.26 907.22

905.31 904.54 904.54 900.50

-4.00% -2.00% 2.00% 4.00% 4.00% 2.00% -2.00% -2.50% -4.00%

1:4 1:4 1:3 1:3

915 910 905 900 895 890

EL 88 01

N 2032737.8586 E 959385.2483
N 2032831.5950 E 959452.3609
N 2032925.3314 E 959519.4735

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

IL47-2-C-000
599+50.00 / 1

PR ROW
PT5-02
906.6 ft,
599+21.16,119.11 LT
N Qu MC
5 2.05 B 21
9 0.98 B 11
15 2.05 B 11

904.98
904.29 EX ROW
904.29
907.29
907.41
907.51
907.40
907.80
908.04
907.80
907.56
907.52
907.52
907.56
907.80
908.04
907.80
907.50
907.10
907.21
907.01
906.97
PT6-02
904.1 ft,
599+20.69,62.59 LT
N Qu MC
11 1.50 P 10
13 2.21 B 11
11 2.46 B 11

-4.00%
-2.00%
2.00%
4.00%
4.00%
2.00%
-2.00%
-2.50%
-4.00%
1:3
1:4
1:4
1:3
899.67

EX ROW
PT7-05
901.6 ft,
599+43.52,69.55 RT
N Qu MC
4 1.31 B 21
4 0.41 B 24
5 1.23 B 69
3 0.41 B 18
5 0.74 B 54
5 0.49 B 20
7 0.98 B 11
9 1.23 B 11
14 0.82 B 13
7 NP 11
11 3.77 B 10

PR ROW
PT8-05
899.5 ft,
599+44.75,129.19 RT
N Qu MC
3 0.50 P 49
3 0.49 B 29
6 0.90 B 16
10 0.75 P 20
11 1.31 B 11
10 1.23 B 11
16 2.46 B 10

599+50.00 R1

N 2032776.8961
E 959304.0061
N 2032870.6225
E 959421.1187
N 2032964.3490
E 959538.2313

910
905
900
895
890
885
EL 880

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

IL 47-2-C-000
600+00.00 / 1

915
910
905
900
895
890

PR ROW
EX ROW
EX ROW
PR ROW

PT5-01
906.9 ft,
599+72.79,113.86 LT

PT7-04
900.7 ft,
599+94.30,61.45 RT

PT8-04
899 ft,
599+95.98,128.96 RT

906.11
904.04
904.04
907.04
907.16
907.26
907.15
907.55
907.79
907.55
907.31
907.27
907.27
907.31
907.55
907.79
907.55
907.25
906.85
906.96
906.76
906.72
900.56

-4.00%
-2.00%
2.00%
4.00%
4.00%
2.00%
-2.00%
-2.50%
-4.00%

1:3
1:3
1:4
1:4
1:3

Very soft to very stiff, brown and gray
SILTY CLAY to SILTY CLAY LOAM, trace gravel

Soft, gray CLAY to SILTY CLAY

Medium stiff, black and gray
SILTY CLAY, trace gravel
--FILL--

Very soft to stiff, black and gray
SILTY CLAY to ORGANIC SILTY CLAY,
trace gravel, little plant matter

Soft to medium stiff, gray CLAY to SILTY CLAY

Medium stiff to very stiff, brown to gray
CLAY LOAM, trace gravel

600+00.00 R1

EL 885.0

N 2032815.9337
E 959272.7640

N 2032909.6601
E 959389.8766

N 2033003.3865
E 959506.9892

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

IL47-2-C-000
600+50.00 / 1

PR ROW
EX ROW
906.48
903.79
903.79
906.79
906.91
907.01
906.90
907.30
907.54
907.30
907.06
907.02
905.52
905.52
907.02
907.06
907.30
907.54
907.30
907.00
906.60
906.71
EX ROW
906.51
906.47
PR ROW
900.03
-4.00%
-2.00%
2.00%
4.00%
4.00%
2.00%
-2.00%
-2.50%
-4.00%
1:3
1:3
1:4
1:4
1:3

PT7-03
901 ft,
600+43.97,70.55 RT
N Qu
4 0.98 B
6 0.66 B
5 1.64 B
20 2.46 B
MC
50
18
16
10

PT8-03
898.6 ft,
600+43.48,123.02 RT
N Qu MC
2 0.50 P 68
2 1.00 P 71
2 0.41 B 74
3 0.16 B 23
6 1.48 B 17
3 0.66 B
9 0.98 B 10
11 1.97 B 10
21 1.48 B 8

600+50.00 R1

915
910
905
900
895
890

EL 885

N 2032854.9712
E 959241.5219
N 2032948.6976
E 959358.6345
N 2033042.4240
E 959475.7470

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

IL47-2-C-000
601+00100 / 1

PR ROW
EX ROW
EX ROW
PR ROW

906.68
903.54
903.54
906.54
906.66
906.76
906.65
907.05
907.29
907.05
906.81
906.77
905.27
905.27
906.77
906.81
907.05
907.29
907.05
906.75
906.35
906.46
906.26
906.22
900.41

1:3
1:4
1:4
1:3

4.00%
-2.00%
2.00%
4.00%
4.00%
2.00%
-2.00%
-2.50%
-4.00%

SG-01-11
905.2 ft,
600+80.31,49.61 LT
N Qu MC
10 2.75 P 12
16 2.05 P 13
9 2.30 B 11
13 3.44 B 14
13 4.18 B 13

PT7-02
901.3 ft,
600+88.10,76.85 RT
N Qu MC
6 0.75 P 61
5 0.41 B 26
5 1.23 B 12
11 1.97 B 16
10 2.13 B 15
9 1.89 B 16

PT8-02
899 ft,
600+95.01,123.26 RT
N Qu MC
2 1.00 P 57
2 0.57 B 77
4 0.66 B 28
7 NA
8 0.90 B 16
12 0.90 B
11 2.13 B 14
13 2.30 B 10

601+00.00 R1

915
910
905
900
895
890

EL 885

N 2032894.0087
E 959210.2797
N 2032987.7351
E 959327.3923
N 2033081.4616
E 959444.5049

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

IL 47-2-C-000
601+50.00 R1

PR ROW
EX ROW
EX ROW
PR ROW

908.63
906.29
906.41
906.51
906.40
906.80
907.04
906.80
906.56
906.52
906.52
906.56
906.80
907.04
906.80
906.50
906.10
906.21
906.01
905.97
903.14

903.29
903.29

-4.00%
-2.00%
2.00%
4.00%
4.00%
2.00%
-2.00%
-2.50%
-4.00%

1:3
1:3
1:4
1:4
1:3
1:3

PT7-01
903.8 ft,
601+44.17,78.95 RT

PT8-01
900.6 ft,
601+44.17,125.38 RT

| | | |
|---|---|---|
| 7 | NA | MC 34 |
| 7 | 0.57 B | 14 |
| 6 | 0.57 B | 11 |
| 19 | NA | |
| 17 | 2.95 B | 9 |
| 15 | 5.00 B | 9 |

| | | |
|---|---|---|
| 4 | 0.50 P | MC 41 |
| 5 | 0.98 B | 29 |
| 4 | 1.48 B | 17 |
| 16 | 5.66 B | 17 |
| 13 | 4.84 S | 16 |
| 11 | 3.68 B | 15 |

915
910
905
900
895
890

EL 885

N 2032933.0462
E 959178.9376

N 2033026.7727
E 959296.1502

N 2033120.4991
E 959413.2629

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

IL 47-2-C-000
610+00.00 R1

PR ROW
EX ROW
EX ROW
PR ROW

902.04 902.16 902.26 902.15 902.55 902.79 902.55 902.31 902.27 902.77 902.77 902.27 902.31 902.55 902.79 902.55 902.15 902.26 902.06 902.02 898.23

-4.00% -2.00% 2.00% 4.00% 4.00% 2.00% -2.00% -4.00%

1:4 1:4 1:3

PT1-11
897.5 ft,
610+13.08,123.27 LT
N Qu MC
7 1.84 B 32
5 1.31 B 22
7 1.50 P 14
8 1.39 B 15

PT2-11
897.8 ft,
610+13.74,70.97 LT
N Qu MC
5 1.00 P 53
4 1.07 B 26
6 0.82 B 17
12 1.23 B 16

B13-10
900.8 ft,
610+16.70,29.71 LT
N Qu MC
8 3.00 P 15
7 0.90 B 22
6 0.74 B 38
4 0.41 B 21
9 NP 27 15
5 NP 17
20 1.23 B 15
11 0.74 B 13
17 2.13 B 16

BIO-06
898.7 ft,
609+91.50,63.47 RT
N Qu MC
5 2.21 B 18
4 0.74 B 20
6 0.98 B
16 Silty Clay Loam A-6 (7)
LL=26 PL=14
13 1.48 B 15
13 3.61 B 16
13 3.53 B 16
10 2.38 B 16
10 0.66 B 18
17 0.57 B 27 17

N 2033596.6842
E 958647.9212

N 2033690.4107
E 958765.0338

N 2033784.1371
E 958882.1464

910
905
900
895
890
885

EL 880

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

IL 47-2-C-000
610+50.00 R1

PR.ROW

EX.ROW

PT1-10
896.8 ft,
610+67.33,127.72 LT
N Qu
6 1,50 P MC 45
4 0,66 B 27
9 2,54 B 16

PT2-10
895.7 ft,
610+76.07,81.22 LT
N Qu
1 0,74 B MC 42
2 0,41 B 32
5 1,64 B 15

PT3-09
900.2 ft,
610+53.59,29.61 LT
N Qu
11 > 4,58 P MC 14
13 1,64 B 22
7 1,75 B 43
14 NP 17
7 3,28 B 16

PT4-10
898.7 ft,
610+68.24,46.87 RT
N Qu
6 1,97 B MC 31
6 0,98 B 27
2 0,41 B 31
13 NP 12
6 1,48 B 13
12 NR
6 1,54 B 48

-4.00% -2.00% 2.00% 4.00% 4.00% 2.00% -2.00% -4.00%

1:3 1:4 1:4 1:3

901.79 901.91 902.01 901.90 902.30 902.54 902.30 902.06 902.02 902.02 902.06 902.30 902.54 902.30 901.90 902.01 901.81 901.77 897.05

N 2033635.7218
E 958816.6791

N 2033729.4482
E 958733.7917

N 2033823.1746
E 958850.9042

EL 880

910
905
900
895
890
885

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

IL47-2-C-000
611+00.00 R1

PT1-09
896.4 ft,
611+25.71,132.43 LT
N Qu MC
3 NA 65
3 NA
3 0.08 B 22
5 NP 36
8 < 0.25 P 19
7 1.48 B 15
21 1.48 B 16

PT2-09
896 ft,
611+14.29,77.33 LT
N Qu MC
4 0.75 P 76
3 0.08 B 40
4 0.25 B 29
7 1.31 B 17
8 2.71 B 18

PT3-08
900 ft,
611+15.91,30.23 LT
N Qu MC
12 > 4.50 P 15
8 NP 25
7 1.25 P 17
3 NA
4 0.25 B 49
3 NP 33
14 2.38 B 16

PT4-09
898.2 ft,
611+14.0,45.54 RT
N Qu MC
4 1.48 B 32
7 1.89 B 39
2 0.25 B 48
16 NP 18
8 1.07 B 17
7 2.62 B 16

EX.ROW
PR.ROW
EX.ROW
PR.ROW

895.32
896.98

901.54 901.66 901.76 901.65 902.05 902.29 902.05 901.81 901.77 901.77 901.81 902.05 902.29 902.05 901.65 901.76 901.56 901.52

-4.00% -2.00% 2.00% 4.00% 1:4 1:4 4.00% 2.00% -2.00% -4.00%

1:3 1:3

N 2033674.7593
E 958535.4369

N 2033768.4857
E 958702.5495

N 2033862.2121
E 958819.6621

611+00.00 R1

EL 875

905 900 895 890 885 880

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

IL47-2-C-000
611+50.00 / 1

PR ROW
EX ROW
EX ROW
PR ROW

901.29 901.41 901.51 901.40 901.80 902.04 901.80 901.56 901.52 901.52 901.56 901.80 902.04 901.80 901.40 901.51 901.31 901.27

-4.00% -2.00% 2.00% 4.00% 4.00% 2.00% -2.00% -4.00%

1:4 1:4 1:3 1:3

896.28 896.95

PT1-08
895.7 ft,
611+63.70,128.34 LT
N Cu MC
3 NA 58
2 < 0,25 P 72
0 NP 37
12 NP 17
11 1,89 B 15

PT2-08
896.1 ft,
611+59.69,76.01 LT
N Cu MC
2 0,75 P 80
2 NA
9 NP 35
8 NP 15
6 1,31 B 16
6 2,54 B 16

899.5 ft,
611+65.76,32.35 LT
N Cu MC
11 > 4,50 P 20
5 2,13 B 20
3 0,41 B 22
10 0,25 P 24
8 0,82 B 13
7 0,98 B 16
10 2,62 B 15

PT4-08
897.5 ft,
611+67.98,47.97 RT
N Cu MC
5 0,66 B 33
4 1,00 P 69
2 0,08 B 33
7 0,90 B 17
11 1,80 B 15
9 1,80 B 16

N 2033713.7968
E 958554.1948

N 2033907.5233
E 958671.3074

N 2033901.2497
E 958788.4200

**611+50.00 R1**

EL 880

910
905
900
895
890
885

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

IL47-2-C-000
612+00.00 R1

PR ROW

EX ROW

PT1-07
895.3 ft,
612+17.52,129.86 LT
N Qu MC
2 0,25 P 122
0 NA
0 0,16 B 82
3 NP 41
0 NP 20
6 1,23 B 17

PT2-07
895.5 ft,
612+14.55,74.4 LT
N Qu MC
2 0,25 P 84
2 NA
2 0,25 P 28
5 1,48 B 18
5 2,13 B 17

PT3-07
899.2 ft,
612+14.02,33.29 LT
N Qu MC
12 > 4,58 P 19
7 2,24 B 28
5 < 0,25 P 108
2 NP 40
3 NP 39
2 0,98 B 17
9 3,28 B 15

PT4-07
897 ft,
612+12.47,50.61 RT
N Qu MC
6 1,15 B 26
5 1,00 P 58
3 0,16 B 34
6 1,23 B 18
9 1,89 B 16

901.04 901.16 901.26 901.15 901.55 901.79 901.55 901.31 901.27 899.77 899.77 901.27 901.31 901.55 901.79 901.55 901.15 901.26 901.06 901.02

-4.00% 2.00% 4.00% 4.00% 2.00% -2.00% -4.00%

1:4 1:4 1:3

895.32 897.02

N 2033752.8344 E 958522.9527
N 2033846.5608 E 958640.0652
N 2033940.2872 E 958757.1778

612+00.00 R1

910 905 900 895 890 885 880 EL

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

IL47-2-C-000
612+00.00 R1

PR ROW

EX ROW

PT1-07
895.3 ft,
612+17.52,129.86 LT
N Qu MC
2 0,25 P 122
0 NA
0 0,16 B 82
3 NP 41
0 NP 20
6 1,23 B 17

PT2-07
895.5 ft,
612+14.55,74.4 LT
N Qu MC
2 0,25 P 84
2 NA
2 0,25 P 28
5 1,48 B 18
5 2,13 B 17

PT3-07
899.2 ft,
612+14.02,33.29 LT
N Qu MC
12 > 4,58 P 19
7 2,24 B 28
5 < 0,25 P 108
2 NP 40
3 NP 39
2 0,98 B 17
9 3,28 B 15

PT4-07
897 ft,
612+12.47,50.61 RT
N Qu MC
6 1,15 B 26
5 1,00 P 58
3 0,16 B 34
6 1,23 B 18
9 1,89 B 16

901.04 901.16 901.26 901.15 901.55 901.79 901.55 901.31 901.27 899.77 899.77 901.27 901.31 901.55 901.79 901.55 901.15 901.26 901.06 901.02

-4.00% 2.00% 4.00% 4.00% 2.00% -2.00% -4.00%

1:4 1:4 1:3

895.32 897.02

N 2033752.8344 E 958522.9527
N 2033846.5608 E 958640.0652
N 2033940.2872 E 958757.1778

612+00.00 R1

910 905 900 895 890 885 880 EL

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

IL47-2-C-000
613+00.00 / 1

PR ROW
EX ROW
EX ROW
PR ROW

PT1-05
895.2 ft,
613+15.35,122.42 LT

| N | Qu | | MC |
|---|---|---|---|
| 9 | 1.00 P | | 108 |
| 1 | < 0.25 P | | 50 |
| 0 | NA | | |
| 0 | < 0.25 P | | 109 |
| 0 | NP | | 70 |
| 1 | NP | | 13 |
| 12 | NP | | 14 |

PT2-05
895.1 ft,
613+13.99,73.57 LT

| N | Qu | | MC |
|---|---|---|---|
| 3 | NA | | 162 |
| 2 | < 0.25 P | | 109 |
| 2 | 0.16 B | | 127 |
| 0 | NP | | 61 |
| 3 | NP | | 50 |
| 5 | 0.98 B | | 18 |
| 7 | 0.49 B | | 17 |
| 13 | 1.15 B | | 19 |
| 14 | 3.20 B | | 18 |

SGB-13
897.6 ft,
613+03.41,43.35 LT

| N | Qu | | MC |
|---|---|---|---|
| 9 | 2.54 B | | 18 |
| 5 | 2.85 B | | 20 |
| 5 | 0.66 B | 88 | Silty Loam A-7-5 (50) LL=74 PL=30 |
| 0 | 0.75 P | | 60 |
| S | 1.00 P | | |
| 4 | 1.07 B | | 15 |
| 13 | 1.31 B | | 15 |

PT4-05
897.1 ft
,613+17.23,44.91 RT

| N | Qu | | MC |
|---|---|---|---|
| 5 | 0.74 B | | 15 |
| 8 | 0.82 B | | 12 |
| 12 | 0.82 B | | 13 |
| 12 | 1.89 B | | 14 |
| 8 | 2.62 B | | 13 |

900.54 900.66 900.76 900.65 901.05 901.29 901.05 900.81 900.77 899.27 899.27 900.77 900.81 901.05 901.29 901.05 900.65 900.76 900.56 900.52

-4.00% -2.00% 2.00% 4.00% 4.00% 2.00% -2.00% -4.00%

1:4 1:4 1:3

894.91 897.15

905 900 895 890 885 880

EL 875

N 20338309094
E 958460.4684

N 20339246358
E 958577.5810

N 20340183623
E 958694.6935

613+00.00 R1

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

IL47-2-C-000
613+50.00 R1

PT1-04
894.8 ft,
613+68.99,129.45 LT

| N | Qu | | MC |
|---|---|---|---|
| 0 | 0.50 | P | 149 |
| 0 | 0.25 | B | 96 |
| 0 | 0.16 | B | 98 |
| 6 | 0.66 | B | 18 |
| 5 | 1.31 | B | 16 |

PT2-04
895.4 ft,
613+65.39,75.75 LT

| N | Qu | | MC |
|---|---|---|---|
| 2 | NA | | 108 |
| 1 | 0.25 | B | 85 |
| 6 | NP | | 54 |
| 6 | 0.74 | B | 20 |
| 7 | 0.82 | B | 18 |
| 9 | 0.49 | B | 17 |
| 10 | 1.89 | B | 15 |
| 12 | 2.54 | B | 17 |

PT3-04
899.3 ft,
613+68.24,33.31 LT

| N | Qu | | MC |
|---|---|---|---|
| 17 | < 4.50 | P | 28 |
| 8 | 2.95 | B | 23 |
| 5 | 0.75 | P | 82 |
| 2 | < 0.25 | P | 43 |
| 13 | NP | | 59 |
| 2 | 0.66 | B | 19 |
| 6 | 0.90 | B | 18 |
| 11 | 1.48 | B | 15 |

PT4-04
897.5 ft,
613+67.94,41.74 RT

| N | Qu | | MC |
|---|---|---|---|
| 6 | 1.00 | P | 27 |
| 7 | 0.98 | B | 15 |
| 6 | NP | | 12 |
| 7 | 1.89 | B | 15 |
| 6 | 1.89 | B | 15 |

PR ROW
EX ROW
PR ROW

900.34 900.46 900.56 900.45 900.85 901.09 900.85 900.61 900.57 900.57 900.61 900.85 901.09 900.85 900.45 900.56 900.36 900.32 897.32

-4.00% 2.00% 4.00% 4.00% 2.00% -2.00% -4.00% -6.90%

1:4 1:4 1:3 1:3

N 2033869.9470
E 958429.2262

N 2033963.6734
E 958546.3388

N 2034057.3998
E 958663.4514

EL 875

905 900 895 890 885 880

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

IL 47-2-C-000
614+00.00 R1

PT1-03
895.4 ft,
614+13.16,130.69 LT
N Qu MC
1 0.50 P 91
1 0.41 B 89
1 0.16 B 71
6 0.66 B 16
9 1.48 B 17

PT2-03
895.3 ft,
614+13.97,75.75 LT
N Qu MC
3 NA 76
4 0.16 B 32
14 NP 12
5 0.57 B 13
12 3.20 B 16
7 2.71 B 17

PT3-03
614+19.96,30.96 LT
N Qu MC
16 4.76 B 17
6 1.07 B 15
6 0.38 B 29
8 0.75 P 13
13 0.25 B 12
8 2.13 B 15

PT4-03
897.9 ft,
614+08.69,42.75 RT
N Qu MC
5 3.00 P 14
9 0.98 B 39
8 0.90 B 30
8 2.13 B 16
7 1.48 B 15

PR ROW
EX ROW
PR ROW
EX ROW

900.27 900.39 900.49 900.38 900.78 901.02 900.78 900.54 900.50 900.50 900.54 900.78 901.02 900.78 900.38 900.49 900.29 900.25

897.25 897.70

-4.00% -2.00% 2.00% 4.00% 4.00% 2.00% -2.00% -4.00% -6.90%

1:3 1:4 1:4 1:3

N 2033908.9845
E 958397.9841

N 2034002.7109
E 958515.0967

N 2034096.4373
E 958632.2093

614+00.00 R1

EL 875

905
900
895
890
885
880

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

IL 47-2-C-000
614+50.00 / 1

PT1-02
895.4 ft,
614+65.05,128.96 LT
N Qu MC
2 0.50 P 95
1 NR
1 0.16 B 67
5 0.25 B 14
7 1.48 B 16

PT2-02
896.1 ft,
614+66.67,75.99 LT
N Qu MC
2 1.00 P 78
2 0.66 B 60
5 0.33 B 33
8 1.23 B 16
8 1.58 B 17

PT3-02
895.4 ft,
614+70.89,31.87 LT
N Qu MC
12 2.50 P 14
10 2.00 P 20
4 0.98 B 35
8 NA
7 0.57 B 16
7 0.57 B 16
10 2.54 B 15

PT4-02
896.8 ft,
614+61.26,47.97 RT
N Qu MC
4 1.07 B 28
8 3.53 B 15
8 2.79 B 15

PR ROW
EX ROW
PR ROW
EX ROW

900.34 900.46 900.56 900.45 900.85 901.09 900.85 900.61 900.57 900.57 900.61 900.85 901.09 900.85 900.45 900.56 900.36 900.32

-4.00% -2.00% 2.00% 4.00% 4.00% 2.00% -2.00% -4.00% -6.90%

1:3 1:4 1:4 1:3 1:3

897.32 898.11

N 2033948.0220
E 958356.7420

N 2034041.7484
E 958483.8545

N 2034135.4749
E 958609.9671

614+50.00 R1

EL 880

910
905
900
895
890
885

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

IL 47-2-C-000
615+00.00 / 1

PT1-01
896 ft,
615+19.46,131.48 LT
N Qu MC
3 <0.25 P 72
3 0.57 B 41
2 0.57 B 51
5 1.23 B 18

PT2-01
896.1 ft,
615+24.68,79.27 LT
N Qu MC
3 1.50 P 62
3 0.25 B 34
5 1.23 B 18
7 1.23 B 16

PT3-01
899.3 ft,
615+19.40,33.88 LT
N Qu MC
11 3.00 P 16
13 3.12 B 15
5 0.90 B 33
15 NP 10
5 2.13 B 15
6 1.89 B 16

PT4-01
897.3 ft,
615+10.88,51.86 RT
N Qu MC
6 3.05 B 15
6 3.28 B 16
8 3.85 S 14

PR ROW
EX ROW
EX ROW
PR ROW

900.54 900.66 900.76 900.65 901.05 901.29 901.05 900.81 900.77 900.77 900.81 901.05 901.29 901.05 900.65 900.76 900.56 900.52
897.52 897.52 898.68

-4.00% 2.00% 2.00% 4.00% 4.00% 2.00% -2.00% -4.00% -6.00%

1:3 1:4 1:4 1:3 1:3

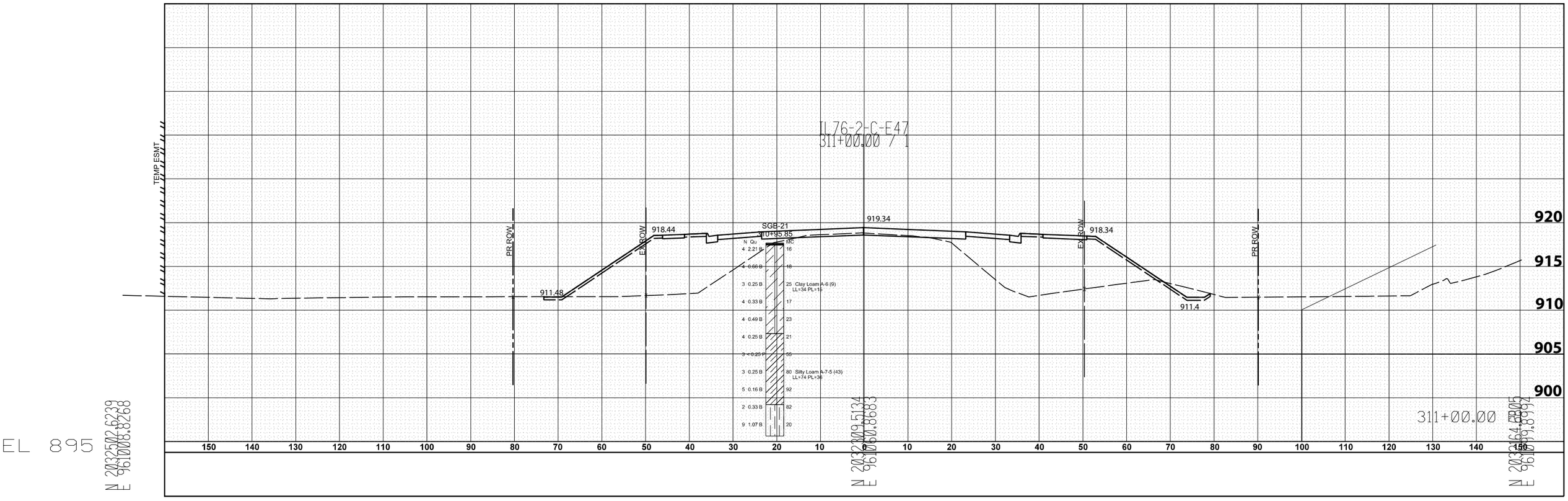
910
905
900
895
890
885
EL 880

N 2033987.4695
E 958335.4998

N 2034080.7660
E 958432.6124

615+00.00 R1
N 2034174.5124
E 958529.7254

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150


TEMP ESMT
PR ROW
EX ROW
EX ROW
PR ROW
911.48
918.44
919.34
918.34
911.4
SGB-21
310+95.85
N Qu MC
4 2.21 B 16
4 0.66 B 18
3 0.25 B 25 Clay Loam A-6 (9) LL=34 PL=15
4 0.33 B 17
4 0.49 B 23
4 0.25 B 21
3 <0.25 P 55
3 0.25 B 80 Silty Loam A-7-5 (43) LL=74 PL=36
5 0.16 B 92
2 0.33 B 82
9 1.07 B 20
IL76-2-C-E47
311+00.00 7 1
311+00.00
920
915
910
905
900
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
EL 895
N 2032502.6239
E 961008.8268
N 2032309.5134
E 961060.8683
N 2032164.7805
E 961119.8882

# APPENDIX H

# Undercut Option

**IL Route 47 at IL Route 176 and PVRD, 62B43**
DATE: 9/28/2020
**OPINION OF PROBABLE CONSTRUCTION COST**

| AREA 1 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **STATION LIMIT** | **OFFSET** | **PAY ITEM #** | **PAY ITEM** | **UNIT** | **QUANTITY** | **UNIT COST** | **COST** |
| 597+00 TO 598+75 | LT | 20201200 | REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL | CU YD | 1,782 | $25.00 | $44,550.00 |
| | | 21001000 | GEOTECHNICAL FABRIC FOR GROUND STABILIZATION | SQ YD | 972 | $2.00 | $1,944.00 |
| | | 30300001 | AGGREGATE SUBGRADE IMPROVEMENT | CU YD | 1,782 | $37.00 | $65,934.00 |
| | | 52200020 | TEMPORARY SOIL RETENTION SYSTEM | SQ FT | 963 | $30.00 | $28,890.00 |
| | | | | | | **SUBTOTAL** | **$141,318.00** |
| | | | | | | 10 % Contingency | $14,131.80 |
| | | | | | | **TOTAL** | **$155,449.80** |

| AREA 2 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **STATION LIMIT** | **OFFSET** | **PAY ITEM #** | **PAY ITEM** | **UNIT** | **QUANTITY** | **UNIT COST** | **COST** |
| 599+00 TO 600+00 | RT | 20201200 | REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL | CU YD | 1,000 | $25.00 | $25,000.00 |
| | | 21001000 | GEOTECHNICAL FABRIC FOR GROUND STABILIZATION | SQ YD | 500 | $2.00 | $1,000.00 |
| | | 30300001 | AGGREGATE SUBGRADE IMPROVEMENT | CU YD | 1,000 | $37.00 | $37,000.00 |
| | | 52200020 | TEMPORARY SOIL RETENTION SYSTEM | SQ FT | 600 | $30.00 | $18,000.00 |
| | | | | | | **SUBTOTAL** | **$81,000.00** |
| | | | | | | 10 % Contingency | $8,100.00 |
| | | | | | | **TOTAL** | **$89,100.00** |

| AREA 3 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **STATION LIMIT** | **OFFSET** | **PAY ITEM #** | **PAY ITEM** | **UNIT** | **QUANTITY** | **UNIT COST** | **COST** |
| 600+00 TO 601+50 | RT | 20201200 | REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL | CU YD | 1,167 | $25.00 | $29,175.00 |
| | | 21001000 | GEOTECHNICAL FABRIC FOR GROUND STABILIZATION | SQ YD | 583 | $2.00 | $1,166.00 |
| | | 30300001 | AGGREGATE SUBGRADE IMPROVEMENT | CU YD | 1,167 | $37.00 | $43,179.00 |
| | | 52200020 | TEMPORARY SOIL RETENTION SYSTEM | SQ FT | 900 | $30.00 | $27,000.00 |
| | | | | | | **SUBTOTAL** | **$100,520.00** |
| | | | | | | 10 % Contingency | $10,052.00 |
| | | | | | | **TOTAL** | **$110,572.00** |

| AREA 4 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **STATION LIMIT** | **OFFSET** | **PAY ITEM #** | **PAY ITEM** | **UNIT** | **QUANTITY** | **UNIT COST** | **COST** |
| 610+00 TO 615+25 | LT | 20201200 | REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL | CU YD | 7,778 | $25.00 | $194,450.00 |
| | | 21001000 | GEOTECHNICAL FABRIC FOR GROUND STABILIZATION | SQ YD | 2,917 | $2.00 | $5,834.00 |
| | | 30300001 | AGGREGATE SUBGRADE IMPROVEMENT | CU YD | 7,778 | $37.00 | $287,786.00 |
| | | 52200020 | TEMPORARY SOIL RETENTION SYSTEM | SQ FT | 4,200 | $30.00 | $126,000.00 |
| | | | | | | **SUBTOTAL** | **$614,070.00** |
| | | | | | | 10 % Contingency | $61,407.00 |
| | | | | | | **TOTAL** | **$675,477.00** |

| AREA 5 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **STATION LIMIT** | **OFFSET** | **PAY ITEM #** | **PAY ITEM** | **UNIT** | **QUANTITY** | **UNIT COST** | **COST** |
| 610+00 TO 613+50 | RT | 20201200 | REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL | CU YD | 3,241 | $25.00 | $81,025.00 |
| | | 21001000 | GEOTECHNICAL FABRIC FOR GROUND STABILIZATION | SQ YD | 1,944 | $2.00 | $3,888.00 |
| | | 30300001 | AGGREGATE SUBGRADE IMPROVEMENT | CU YD | 3,241 | $37.00 | $119,917.00 |
| | | 52200020 | TEMPORARY SOIL RETENTION SYSTEM | SQ FT | 1,750 | $30.00 | $52,500.00 |
| | | | | | | **SUBTOTAL** | **$257,330.00** |
| | | | | | | 10 % Contingency | $25,733.00 |
| | | | | | | **TOTAL** | **$283,063.00** |

| AREA 6 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **STATION LIMIT** | **OFFSET** | **PAY ITEM #** | **PAY ITEM** | **UNIT** | **QUANTITY** | **UNIT COST** | **COST** |
| 310+50 TO 312+50 | LT | 20201200 | REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL | CU YD | 3,556 | $25.00 | $88,900.00 |
| | | 21001000 | GEOTECHNICAL FABRIC FOR GROUND STABILIZATION | SQ YD | 889 | $2.00 | $1,778.00 |
| | | 30300001 | AGGREGATE SUBGRADE IMPROVEMENT | CU YD | 3,556 | $37.00 | $131,572.00 |
| | | 52200020 | TEMPORARY SOIL RETENTION SYSTEM | SQ FT | 2,400 | $30.00 | $72,000.00 |
| | | | | | | **SUBTOTAL** | **$294,250.00** |
| | | | | | | 10 % Contingency | $29,425.00 |
| | | | | | | **TOTAL** | **$323,675.00** |

**IL Route 47 at IL Route 176 and PVRD, 62B43**
DATE: 9/28/2020
**OPINION OF PROBABLE CONSTRUCTION COST**

| AREA 7 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **STATION LIMIT** | **OFFSET** | **PAY ITEM #** | **PAY ITEM** | **UNIT** | **QUANTITY** | **UNIT COST** | **COST** |
| 310+50 TO 311+25 | RT | 20201200 | REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL | CU YD | 1,500 | $25.00 | $37,500.00 |
| | | 21001000 | GEOTECHNICAL FABRIC FOR GROUND STABILIZATION | SQ YD | 375 | $2.00 | $750.00 |
| | | 30300001 | AGGREGATE SUBGRADE IMPROVEMENT | CU YD | 1,500 | $37.00 | $55,500.00 |
| | | 52200020 | TEMPORARY SOIL RETENTION SYSTEM | SQ FT | 900 | $30.00 | $27,000.00 |
| | | | | | | **SUBTOTAL** | **$120,750.00** |
| | | | | | | 10 % Contingency | $12,075.00 |
| | | | | | | **TOTAL** | **$132,825.00** |

# PVD Option

| | | | |
|---|---|---|---|
| IL 47 - IDOT CONTRACT 62B43 | | | 62B43 |
| PROJECT DESCRIPTION | | | JOB/FILE NO. |
| Quantity Book Calculation | | | 1 of 1 |
| SUBJECT | | | PAGE TOTAL |
| AAK | 9/14/2020 | | |
| CALC'D BY | CALC DATE | CHECKED | CHECKED DATE |

PAY ITEM: X0325833
PAY ITEM NAME: Wick Drains
UNIT: FOOT
ABBREV: Wick Drains
NOTES: NA

| Alignment | FROM STA. | TO STA. | Left Offset | Right Offset | area ($ft^2$) | Wick Drain depth (ft) | Number of drains | QUANT (FOOT) | Cost |
|---|---|---|---|---|---|---|---|---|---|
| IL 47 | 597+00 | 598+75 | 25' LT | 75' LT | 8,750 | 5.5 | 630 | 3,465 | $ 5,198 |
| IL 47 | 599+00 | 600+00 | 55' RT | 100' RT | 4,500 | 10 | 320 | 3,200 | $ 4,800 |
| IL 47 | 600+00 | 601+50 | 55' RT | 90' RT | 5,250 | 6 | 380 | 2,280 | $ 3,420 |
| IL 47 | 610+00 | 615+25 | 30' LT | 80' LT | 26,250 | 8 | 1890 | 15,120 | $ 22,680 |
| IL 47 | 610+00 | 613+50 | 30' RT | 80' RT | 17,500 | 5 | 1260 | 6,300 | $ 9,450 |
| IL 176 E | 310+50 | 312+50 | 30' LT | 70' LT | 8,000 | 12 | 580 | 6,960 | $ 10,440 |
| IL 176 E | 310+50 | 311+25 | 20' RT | 65' RT | 3,375 | 8.5 | 240 | 2,040 | $ 3,060 |
| | | | | | | | SUBTOTAL | 39,365 | $ 59,048 |
| | | | | | | | 10% Contingency | 3,937 | $ 5,905 |
| | | | | | | | **TOTAL** | **43,302** | **$ 64,952** |

| | | |
|---|---|---|
| PVD Assumptions | | |
| Drainage Spacing | 4 | ft |
| Spacing Pattern | Δ | triangular |
| Unit Cost | $1.50 | per ft. |

# Aggregate Column Option

| | | | | |
|---|---|---|---|---|
| Wang Engineering | IL 47 - IDOT CONTRACT 62B43 | | | 62B43 |
| | PROJECT DESCRIPTION | | | JOB/FILE NO. |
| | Quantity Book Calculation | | | 1 of 1 |
| | SUBJECT | | | PAGE TOTAL |
| | AAK | 9/15/2020 | | |
| | CALC'D BY | CALC DATE | CHECKED | CHECKED DATE |

PAY ITEM:
PAY ITEM NAME: Aggregate Column
UNIT: FOOT
ABBREV:
NOTES: NA

| Alignment | FROM STA. | TO STA. | Left Offset | Right Offset | area ($ft^2$) | Column Depth (ft) | Number of column | QUANT (FOOT) | Cost |
|---|---|---|---|---|---|---|---|---|---|
| IL 47 | 597+00 | 598+75 | 25' LT | 75' LT | 8,750 | 7.5 | 160 | 1,200 | $ 30,000 |
| IL 47 | 599+00 | 600+00 | 55' RT | 100' RT | 4,500 | 12 | 80 | 960 | $ 24,000 |
| IL 47 | 600+00 | 601+50 | 55' RT | 90' RT | 5,250 | 8 | 90 | 720 | $ 18,000 |
| IL 47 | 610+00 | 615+25 | 30' LT | 80' LT | 26,250 | 10 | 470 | 4,700 | $ 117,500 |
| IL 47 | 610+00 | 613+50 | 30' RT | 80' RT | 17,500 | 7 | 320 | 2,240 | $ 56,000 |
| IL 176 E | 310+50 | 312+50 | 30' LT | 70' LT | 8,000 | 14 | 140 | 1,960 | $ 49,000 |
| IL 176 E | 310+50 | 311+25 | 20' RT | 65' RT | 3,375 | 10.5 | 60 | 630 | $ 15,750 |
| | | | | | | | SUBTOTAL | 12,410 | $ 310,250 |
| | | | | | | | 10% Contingency | 1,241 | $ 31,025 |
| | | | | | | | **TOTAL** | **13,651** | **$ 341,275** |

| Aggregate Column Assumptions | | |
|---|---|---|
| Column Spacing | 8 | ft |
| Spacing Pattern | Δ | triangular |
| Unit Cost | $25 | per ft. |

# Pile Supported Embankment Option

| | | |
|---|---|---|
| Wang Engineering | IL 47 - IDOT CONTRACT 62B43 (PROJECT DESCRIPTION) | 62B43 (JOB/FILE NO.) |
| | Quantity Book Calculation (SUBJECT) | 1 of 1 (PAGE TOTAL) |
| | AAK (CALC'D BY) / 9/15/2020 (CALC DATE) / (CHECKED) / (CHECKED DATE) | |

PAY ITEM:
PAY ITEM NAME: Pile Supported Embankment
UNIT: SQUARE FOOT
ABBREV:
NOTES: NA

| Alignment | FROM STA. | TO STA. | Left Offset | Right Offset | area ($ft^2$) | Cost |
|---|---|---|---|---|---|---|
| IL 47 | 597+00 | 598+75 | 25' LT | 75' LT | 8,750 | $105,000 |
| IL 47 | 599+00 | 600+00 | 55' RT | 100' RT | 4,500 | $ 54,000 |
| IL 47 | 600+00 | 601+50 | 55' RT | 90' RT | 5,250 | $ 63,000 |
| IL 47 | 610+00 | 615+25 | 30' LT | 80' LT | 26,250 | $315,000 |
| IL 47 | 610+00 | 613+50 | 30' RT | 80' RT | 17,500 | $210,000 |
| IL 176 E | 310+50 | 312+50 | 30' LT | 70' LT | 8,000 | $ 96,000 |
| IL 176 E | 310+50 | 311+25 | 20' RT | 65' RT | 3,375 | $ 40,500 |
| | | | | SUBTOTAL | 73,625 | $ 883,500 |
| | | | | 10% Contingency | 7,363 | $ 88,350 |
| | | | | **TOTAL** | **80,988** | **$ 971,850** |

| | | | |
|---|---|---|---|
| Pile Assumptions | | | |
| Unit Cost | $12 | per square ft. | |

# APPENDIX I

| Area | Station Limits | offsets |
|---|---|---|
| 1 | 597+00 to 598+75 | 25' LT to 75' LT |
| 2 | 599+00 to 600+00 | 55' RT to 100' RT |
| 3 | 600+00 to 601+50 | 55' RT to 90' RT |
| 4 | 610+00 to 615+25 | 30' LT to 80' LT |
| 5 | 610+00 to 613+50 | 30' RT to 80' RT |

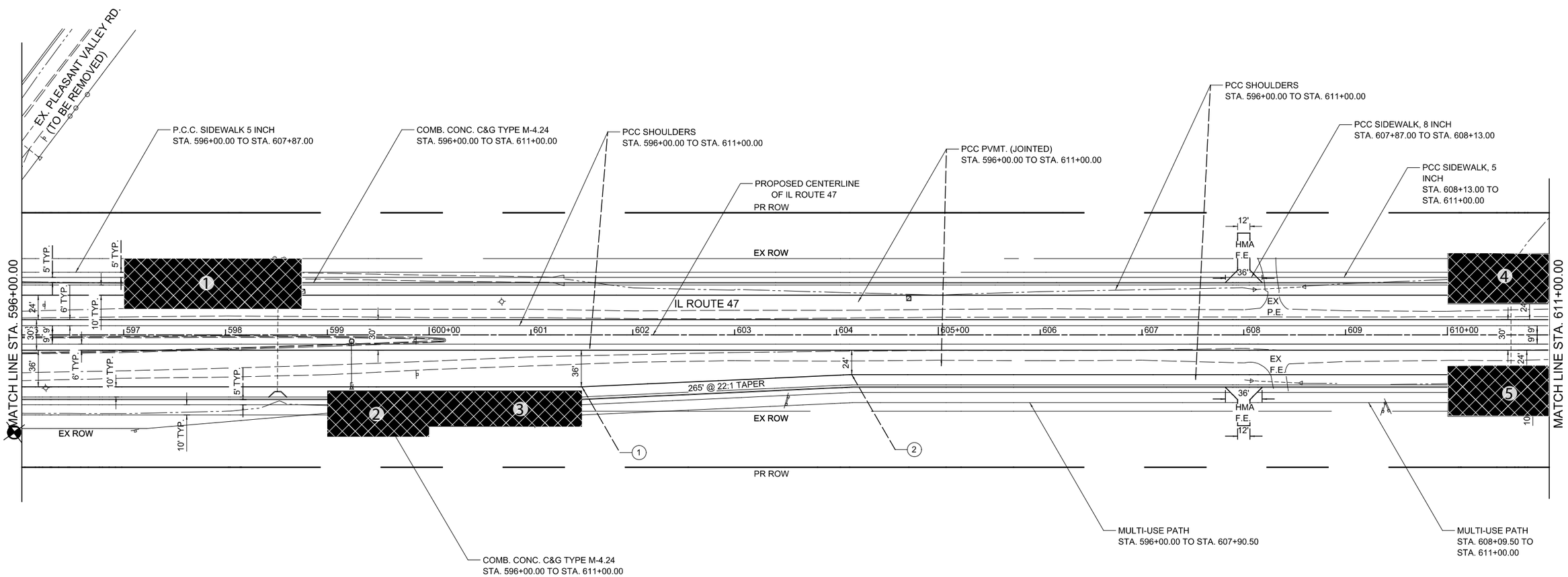
PROPOSED STATION OFFSETS

(1) STA. 601+50.00, 51.00' RT.

(2) STA. 604+15.00, 39.00' RT.

0 50 100 150

SCALE IN FEET




MODEL: $MODELNAME$
FILE NAME: $FILE$


STRAND ASSOCIATES®
1170 SOUTH HOUBOLT ROAD
JOLIET, ILLINOIS 60431
(815) 744-4200


| | | | |
|---|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - | |
| | DRAWN - DJW | REVISED - | |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 47**
**ROADWAY PLAN**

SCALE: 1" = 50' | SHEET 4 OF 8 SHEETS | STA. 596+00.00 TO STA. 611+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 4 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |

| Area | Station Limits | offsets |
|---|---|---|
| 4 | 610+00 to 615+25 | 30' LT to 80' LT |
| 5 | 610+00 to 613+50 | 30' RT to 80' RT |

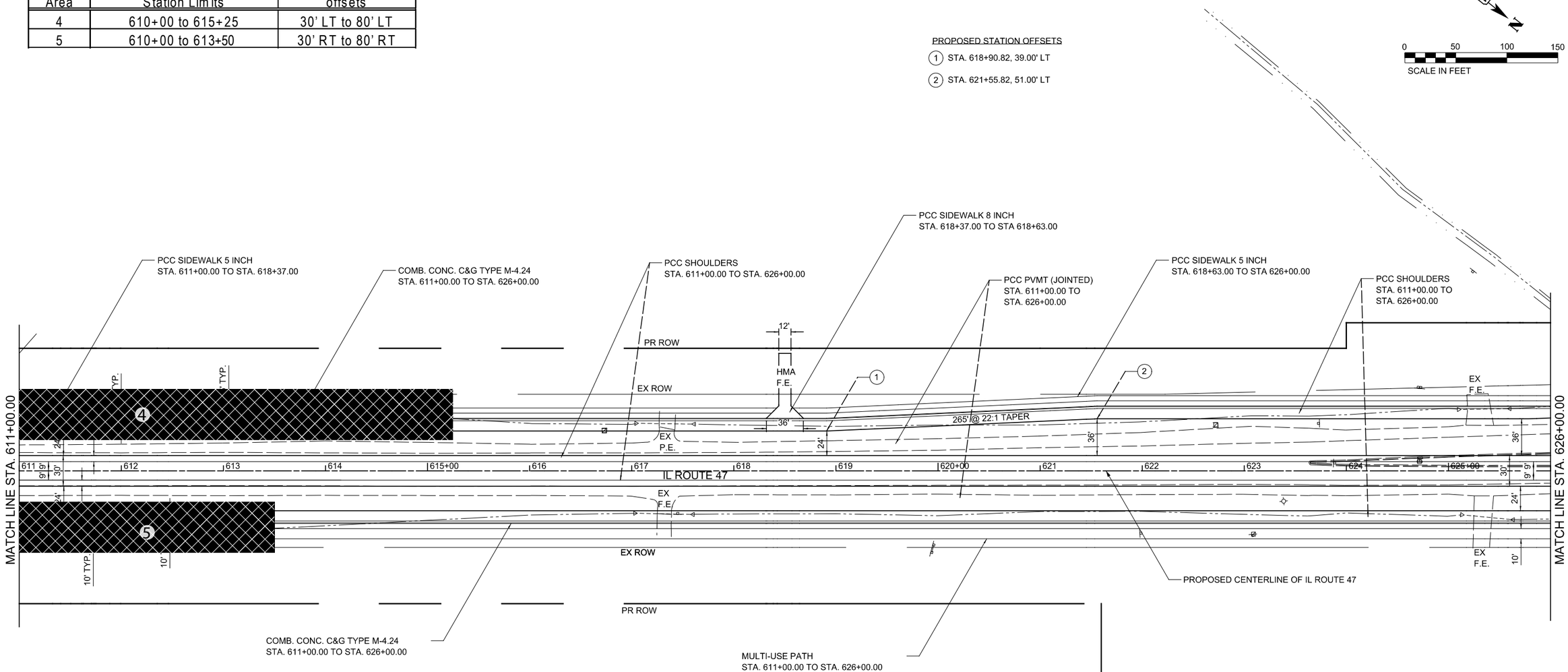
PROPOSED STATION OFFSETS

(1) STA. 618+90.82, 39.00' LT

(2) STA. 621+55.82, 51.00' LT

0 50 100 150

SCALE IN FEET




MODEL: $MODELNAME$
FILE NAME: $FILE$


STRAND ASSOCIATES®
1170 SOUTH HOUBOLT ROAD
JOLIET, ILLINOIS 60431
(815) 744-4200


| | | | |
|---|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - | |
| | DRAWN - DJW | REVISED - | |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 47**
**ROADWAY PLAN**

SCALE: 1" = 50' | SHEET 5 OF 8 SHEETS | STA. 611+00.00 TO STA. 626+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 5 |
| | | CONTRACT NO. 62B43 | | |
| | | ILLINOIS | FED. AID PROJECT | |

| Area | Station Limits | offsets |
|---|---|---|
| 6 | 310+50 to 312+50 | 30' LT to 70' LT |
| 7 | 310+50 to 311+25 | 20' RT to 65' RT |

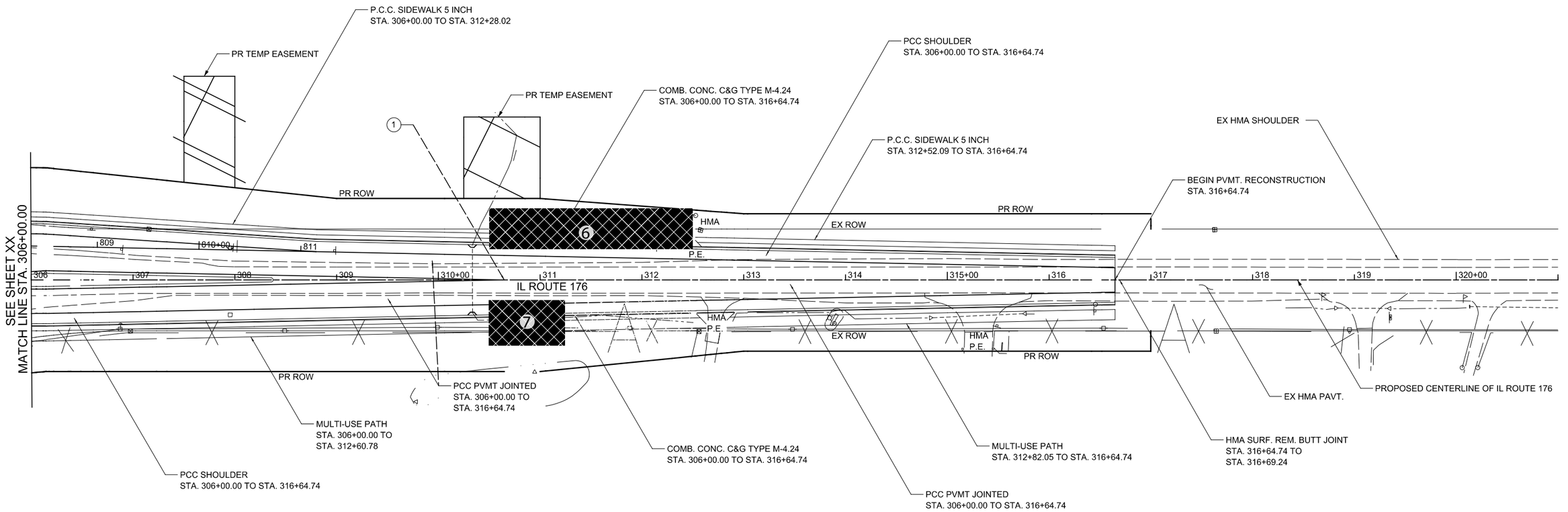
PROPOSED STATION OFFSETS

(1) STA. 310+64.74, 0.00' RT.

N

0 50 100 150

SCALE IN FEET




MODEL: $MODELNAME$
FILE NAME: $FILEL$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JOLIET, ILLINOIS 60431
(815) 744-4200


| | | | |
|---|---|---|---|
| USER NAME = $USER$ | DESIGNED - MAG | REVISED - | |
| | DRAWN - DJW | REVISED - | |
| PLOT SCALE = $SCALE$ | CHECKED - DWG | REVISED - | |
| PLOT DATE = $DATE$ | DATE - $PLANDATE$ | REVISED - | |

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**

**IL ROUTE 176 (EAST)**
**ROADWAY PLAN**

SCALE: 1" = 50' | SHEET 1 OF 1 SHEETS | STA. 306+00.00 | TO STA. 321+00.00

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---|---|---|---|---|
| 326 | 105-N-2(15) | MCHENRY | 28 | 9 |
| | | CONTRACT NO. 62B43 | | |
| | ILLINOIS | FED. AID PROJECT | | |