



REPORT TRANSMITTAL

September 24, 2021

To: Steve Ferguson
Illinois Department of Transportation
Region 2 District 3
700 East Norris Drive
Ottawa, Illinois 60135-1628

Re: **Structure Geotechnical Report**
IL 64 Retaining Wall SN 019-8800
0.4 miles West of Five Points Road
DeKalb County, Illinois

Rubino Report No. G20.184_REV1

Via email: Steven.Ferguson@illinois.gov

Dear Mr. Ferguson,

Rubino Engineering, Inc. (Rubino) is pleased to submit our Structure Geotechnical Report for the proposed IL 64 Retaining Wall in DeKalb County, Illinois.

Report Description

Enclosed is the Structure Geotechnical Report including results of field and laboratory testing, as well as recommendations for retaining wall design and general site development.

Authorization and Correspondence History

- PTB 197/022, P-93-030-20, Work Order #1 approved by Dave Broviak and Masood Ahmad of Illinois Department of Transportation Region 2

Closing

Rubino appreciates the opportunity to provide geotechnical services for this project and we look forward to continued participation during the design and in future construction phases of this project.

If you have questions pertaining to this report, or if Rubino may be of further service, please contact our office at (847) 931-1555.

Respectfully submitted,
RUBINO ENGINEERING, INC.

Michelle A. Lipinski, PE
President

michelle.lipinski@rubinoeng.com

MAL/file/ Enclosures

IL 64 RETAINING WALL SN 019-8800

**ILLINOIS ROUTE 64
F.A.P RTE 0 17
SECTION (125) SLP, J
STA. 893+54 TO STA. 902+10**

DEKALB COUNTY, ILLINOIS

**IDOT CONTRACT NUMBER 66L14
RUBINO PROJECT NO.
G20.184_REV1**

***Structure
Geotechnical
Report
(SGR)***

*Drilling
Laboratory Testing
Geotechnical Analysis*

**PREPARED BY:
SABINA SCHMID
JONATHAN IGNARSKI**

rubino
ENGINEERING INC.

**Michelle A. Lipinski, PE
President, Rubino Engineering, Inc.
IL No. 062-061241, Exp. 11/30/21**

**Reviewed by:
Jeffrey Rothamer, PE
Riyad Wahab, PE
Chicago Testing Laboratory**

PREPARED FOR:

IDOT REGION 2 DISTRICT 3

700 EAST NORRIS DRIVE

OTTAWA, ILLINOIS 61350-1628

SEPTEMBER 24, 2021

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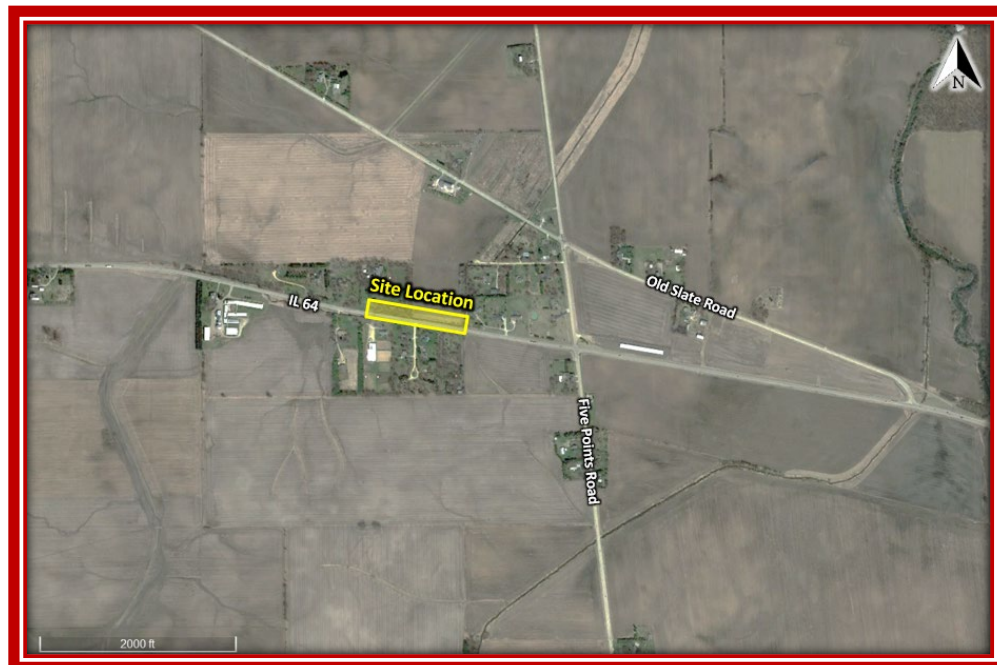
PROJECT DESCRIPTION AND SCOPE

Rubino Engineering, Inc. (Rubino) understands that IDOT is planning to construct a retaining wall along the north side of IL 64 from station 893+54 to station 902+10 to prevent further erosion of the slope face. Rubino's discussion of the soils at this site are based off of the boring logs performed by IDOT on July 1, 2020 and February 25, 2021.

Project Information: provided by IDOT

- "DRAFT - IL 64 Slope Repair Feasibility Study (2020-11-06)" prepared by Chamlin and Associates dated November 2020
- "IL 64 original plans 1936 D129-reduced" prepared by Chamlin and Associates
- "P&P sheets from DRAFT - IL 64 Slope Repair Feasibility Study (2020-11-06)" prepared by Chamlin and Associates
- "Borings - slope failure on IL 64, 0.4 miles West of Five Points Road, Contract 66L14" prepared by IDOT
- "IL 64 plan and profile sheets from Phase 1 report 2005-with markups 8-25-20" prepared by IDOT dated March 2004
- "019-8800 SOIL 2021" – Additional Boring Logs – prepared by IDOT
- "019-8800 SOIL 2020" – Updated Boring Logs – prepared by IDOT

The project site is located on the north side of IL-64 approximately 0.25 miles west of Five Points Road in Dekalb County, Illinois with an approximate latitude and longitude of 42.000268° N and 88.746029° W, respectively. The site is bounded by two box culverts (SN 019-2020 and SN 019-2524). Between the two structures, on the north side of the road, is a deep ditch that runs parallel with the IL-64. This ditch serves as an intermittent stream and unnamed tributary to the South Branch of Kishwaukee River. The slope in this area is heavily eroded and is a constant maintenance issue for IDOT. During heaving rain events the force of flowing water is washing out the front of the slope in spots.



The geotechnical recommendations presented in this report are based on the available project information and the subsurface materials described in this report. If any of the information on which this report is based is incorrect, please inform Rubino in writing so that we may amend the recommendations presented in this report (if appropriate, and if desired by the client). Rubino will not be responsible for the implementation of our recommendations if we are not notified of changes in the project.

This report briefly outlines the following:

- *Summary of client-provided project information and report basis*
- *Overview of encountered subsurface conditions*
 - *IDOT Format Boring Logs, Boring Location Plan, Site Vicinity Map*
- *Overview of field and laboratory tests performed, including results, performed by Chamlin & Associates*
- *Geotechnical recommendations pertaining to:*
 - *Retaining Wall Design*
 - *Slope Stability Analysis*
- *Construction considerations, including temporary excavation and construction control of water*

An electronic copy of the report will be provided. The report will be addressed to IDOT.

FIELD EXPLORATION

Subsurface Exploration and Testing

The borings were performed by IDOT drillers and logged by IDOT Personnel on July 1, 2020 and February 25, 2021. The borings were advanced by IDOT using a CME drill rig with 3 ¼ inch inside-diameter hollow stem augers and automatic hammer. Soil samples were obtained during the drilling process. Rubino is preparing this SGR based on the following borings performed by IDOT:

Table 1: Drilling Scope

| BORING NO. | STATION | OFFSET | ELEVATION (FEET) | DEPTH (FEET BEG*) |
|------------|---------|-------------|------------------|-------------------|
| B-01 | 896+29 | 16.8 ft Lt. | 838.99 | 21 ½ |
| B-02 | 895+56 | 14.8 ft Lt. | 839.23 | 21 ½ |
| B-03 | 894+66 | 14.9 ft Lt. | 839.46 | 21 ½ |
| B-1 | 901+63 | 16.4 ft Lt. | 838.72 | 31 ½ |
| B-2 | 900+75 | 16.1 ft Lt. | 838.60 | 31 ½ |
| B-3 | 900+08 | 16.0 ft Lt. | 838.74 | 31 ½ |
| B-4 | 898+98 | 16.2 ft Lt. | 838.62 | 31 ½ |
| B-5 | 897+80 | 15.1 ft Lt. | 838.77 | 31 ½ |
| B-6 | 897+08 | 16.7 ft Lt. | 838.86 | 31 ½ |
| B-7 | 893+98 | 14.6 ft Lt. | 839.56 | 31 ½ |

*BEG = Below existing grade



The boring logs showed data from the following test procedures:

- *Field Penetration Tests and Split-Barrel Sampling of Soils*
- *Field Water Level Measurements*
- *Laboratory Determination of Water (Moisture) Content of Soil by Mass*

The results of these tests are to be found on the accompanying boring logs located in the Appendix.

Subsurface Conditions

The geotechnical-related recommendations in this report are presented based on the subsurface conditions encountered and Rubino's understanding of the project. Should changes in the project criteria occur, a review must be made by Rubino to determine if modifications to our recommendations will be necessary.

Soils generally consisted of the following:

- Augured shoulder and gravel fill to approximately 2 ½ feet below existing grade
- Silty Clay Fill materials from approximately 2 ½ to 7 feet below existing grade
- Soft to medium stiff Silty Clay or Silty Loam Loess with silt pockets from approximately 5 to 12 ½ feet below existing grade
 - Silt layers and pockets were saturated and led to very low blow counts, including some weight of hammer readings
- Medium stiff Silty Clay from approximately 8 to 21 ½ feet below existing grade
- Loose to medium dense fine Sand to coarse Gravel from approximately 12 ½ to 17 feet below existing grade
- Stiff to very stiff Silty Clay Loam Till from approximately 12 to 31 ½ feet below existing grade

Groundwater Conditions

Groundwater was encountered in the borings during drilling operations. The following table summarizes groundwater observations from the field:

Table 2: Groundwater Observation Summary

| BORING NUMBER | GROUNDWATER ELEVATION DURING DRILLING (FEET) | GROUNDWATER ELEVATION UPON AUGER REMOVAL (FEET) |
|----------------------|---|--|
| B-01 | 826.4 | 830.9 |
| B-02 | 829.1 | 831.1 |
| B-03 | 829.3 | 830.3 |
| B-1 | Dry | Dry |



| | | |
|-----|-------|-------|
| B-2 | Dry | Dry |
| B-3 | 826.7 | 824.7 |
| B-4 | 827.6 | 827.6 |
| B-5 | 827.8 | 827.8 |
| B-6 | 823.9 | 824.9 |
| B-7 | 827.6 | 828.6 |

It should be noted that fluctuations in the groundwater level should be anticipated throughout the year depending on variations in climatological conditions and other factors not apparent at the time the borings were performed. The possibility of groundwater level fluctuation should be considered when developing the design and construction plans for the project. When bidding this project, the contractor should anticipate that groundwater will be present.

Undocumented Fill Discussion

Undocumented fill materials were reported in the borings at depths ranging from approximately 0 to 7 feet below existing grade. Undocumented fill was likely placed during original site development.

Deleterious materials were not reported within the undocumented fill materials. Deleterious materials can impede excavation and sheet pile driving if encountered during construction. Although deleterious materials were not encountered in all the undocumented fill materials, this does not eliminate the possibility that deleterious materials could be present within the undocumented fill materials at other locations along the project. The presence of deleterious materials could impact installation of the foundations during construction.

Undocumented fill is defined as fill that has been placed without being documented as to its placed density and moisture content.

Deleterious materials could include, but are not limited to, bricks, asphalt, concrete, metal, wood, or other building debris.

GEOTECHNICAL EVALUATIONS AND RECOMMENDATIONS

Retaining Wall Type – Sheet Pile

Based on the report from Chamlin and Associates, a sheet pile retaining wall was selected to remediate the slope failure along Illinois 64.

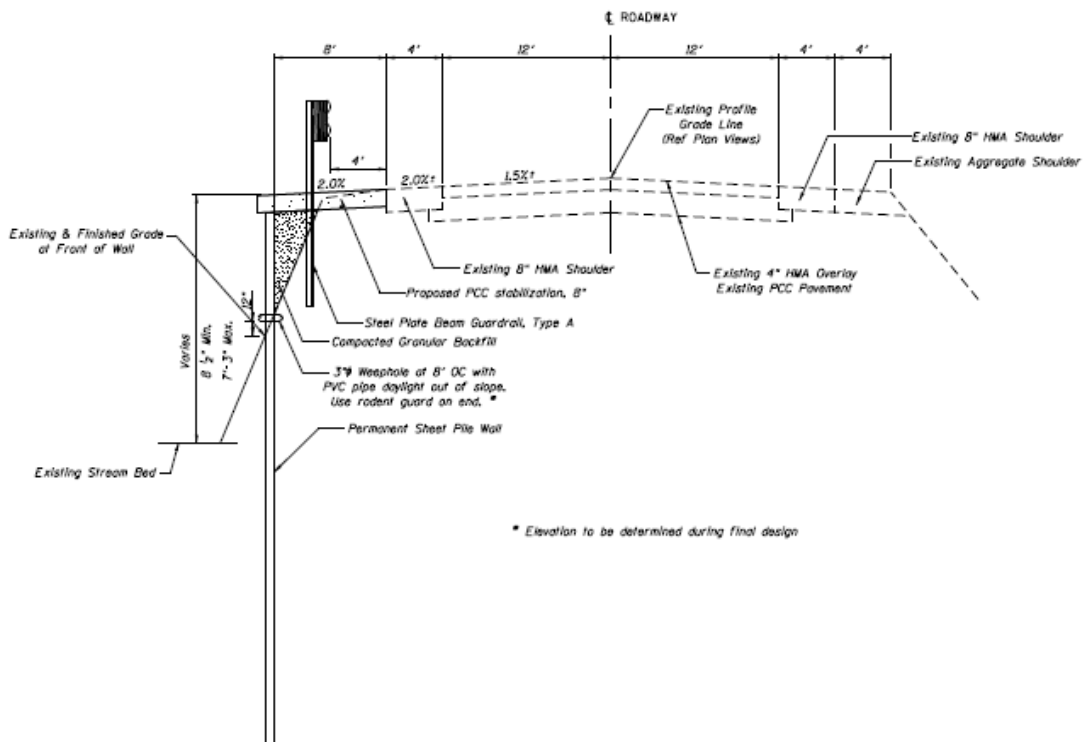
General Info from TSL

- 852 feet of Cantilevered Sheet Pile Wall
- Finished grade at front face of wall ranges from 834.90 feet to 830.70 feet

The table below presents a brief overview of considerations as well as general recommendations for the proposed wall type:



| Description/Considerations |
|---|
| <ul style="list-style-type: none"> • Design components include sheet piles driven into soils depths required to achieve moment equilibrium. • Anticipated “cut” conditions • Quick construction times • Generally, not as stiff as other retaining wall systems |
| General Recommendations |
| <ul style="list-style-type: none"> • The <u>permanent</u> sheet piling design should be performed using effective stress soil parameters and <u>should not</u> be designed based on the IDOT’s published <u>temporary</u> sheet pile spreadsheet. • The proposed permanent sheet pile wall should be designed to be as stiff as possible with enough embedment to resist lateral loads and hydrostatic loads long-term. • An anchoring system should be considered to restrain the long-term movement at the top of the sheet piles and ensure that any such future lateral movements would not create a condition of additional hydrostatic pressures that could cause future failures. |
| Additional Data Collection Recommendations |
| <ul style="list-style-type: none"> • The current topographic profile cross section of the failure area, compared to the not failed profile, should be provided to better establish the failure surface so that a realistic soil retention system could be recommended for the given slope failure condition. |



SECTION A-A
 TYPICAL SECTION THRU CANTILEVERED SHEET PILE



Global Stability Analysis

Rubino has performed a global stability analysis using the profile and soil properties in the Chamlin report and boring logs provided by IDOT. This analysis is only applicable to the profile presented and the soil conditions from borings. Once the permanent sheet pile has been designed, Rubino should perform a final global stability analysis using a current scaled cross-section.

The computer program, Stedwin Version 2.88, was used to calculate the factor of safety (FOS) against a global stability failure using the Bishop’s method of slices. Circular shear surfaces were evaluated. A search routine was employed to evaluate several circular shear surfaces to identify the most critical shear surfaces within constraints defined by the program user.

Drained shear strength parameters used in the analysis include friction angle and cohesion. The shear strength properties as well as the unit weights for each soil type used in the stability model were estimated based on the properties obtained from the field and laboratory testing provided by IDOT and are consistent with the soil properties used by Chamlin and Associates in the initial stability analyses.

Table 3: Summary of Material Properties Used for Stability

| Soil Desc. | Soil Type No. | Total Unit Wt. (pcf) | Saturated Unit Wt. (pcf) | Cohesion Intercept (psf) | Friction Angle (deg) | Piez. Surface No. |
|------------|---------------|----------------------|--------------------------|--------------------------|----------------------|-------------------|
| Stone | 1 | 125.0 | 125.0 | 0.0 | 28.0 | 0 |
| Asphalt | 2 | 120.0 | 120.0 | 0.0 | 28.0 | 0 |
| Sheet PL | 3 | 145.0 | 145.0 | 10000.0 | 0.0 | 0 |
| S/M Silt | 4 | 115.0 | 115.0 | 0.0 | 25.0 | 0 |
| St/M CL | 5 | 115.0 | 115.0 | 0.0 | 26.0 | 0 |
| L/M Grav | 6 | 118.0 | 118.0 | 0.0 | 28.0 | 0 |
| St/ CL L | 7 | 120.0 | 120.0 | 0.0 | 28.0 | 0 |

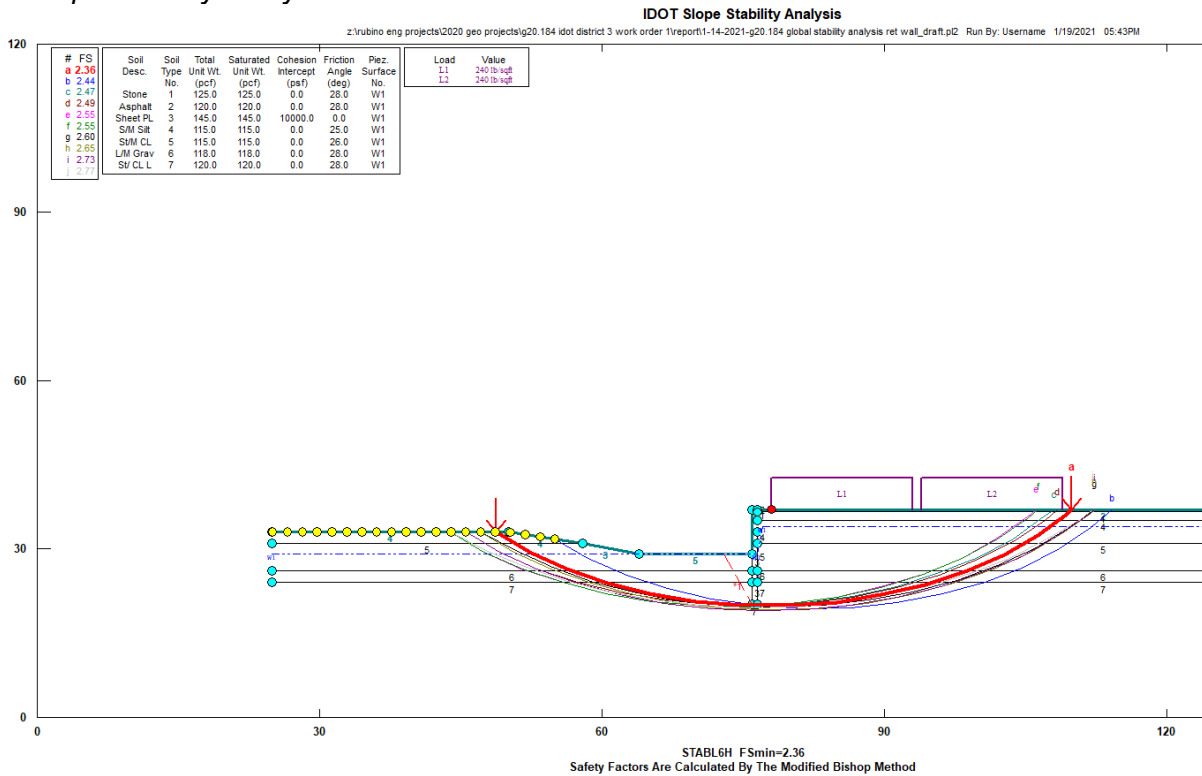
The results of the global stability analysis indicate calculated factors of safety meet or exceed the recommended minimums for each loading case. Below is a summary of the results of the global wall stability analysis.

Table 4: Summary of Slope Stability Analysis Results

| LOADING CASE | RECOMMENDED MINIMUM FOS | CALCULATED FOS |
|---------------------|-------------------------|---|
| End of Construction | 1.7 | 2.16 – Chamlin 2.36 – Rubino (see below) |



Slope Stability Analysis: FOS of 2.36



Lateral Earth Pressures

Lateral earth pressures will be influenced by the conditions of wall or support restraint, methods of construction, and/or compaction and the strength of the materials being restrained.

The lateral earth pressures are determined by multiplying the vertical applied pressure using the unit weight and corresponding height of the wall by the appropriate lateral earth pressure coefficient K.

The following table provides the recommended lateral earth pressure coefficients for the soils encountered. It is Rubino’s recommendation that the contribution of the foreslope in front of the sheet pile wall be ignored when considering passive lateral earth pressure due to the steep slope of the foreslope, which does not provide a rational value for K_p according the *AASHTO LRFD Bridge Manual*.



Table 5: “K”- Factor Lateral Earth Pressures

| ELEVATION RANGE (FEET) | SOIL DESCRIPTION | ESTIMATED TOTAL UNIT WEIGHT (LB/FT ³) | INTERNAL FRICTION ANGLE, Φ | K _A | K _P |
|------------------------|---|---|----------------------------|----------------|----------------|
| 838.3 – 831.6 | FILL: Silty CLAY to SILTY CLAY LOAM to SILTY CLAY LOAM Till | 120 | 26° | 0.40 | 2.64 |
| 838.6 – 833.2 | PROPOSED: Compacted Granular Backfill | 125 | 30° | 0.31 | 4.08 |
| 834.3 – 831.9 | Soft to medium SILT to SILTY CLAY with silt pockets | 115 | 25° | 0.41 | 2.44 |
| 834.4 – 817.4 | Medium stiff to stiff SILTY CLAY with silt pockets | 120 | 28° | 0.37 | 2.52 |
| 826.4 – 821.8 | SAND and GRAVEL | 118 | 28° | 0.34 | 3.39 |
| 831.2 – 807.1 | Stiff to very stiff SILTY CLAY LOAM TILL or SILTY LOAM or SILTY LOAM TILL | 125 | 28° | 0.37 | 2.52 |

The following equations were used to calculate the earth pressure coefficients “k”. See *AASHTO LRFD Bridge Design Specification, 9th Edition* for more information.

| | | |
|----------|--|---|
| Active: | $k_a = \frac{\sin^2(\theta + \phi)}{\Gamma[\sin^2 \theta \sin(\theta - \delta)]}$ $\Gamma = \left[1 + \sqrt{\frac{\sin(\phi + \delta) \sin(\phi - \beta)}{\sin(\theta - \delta) \sin(\theta + \beta)}} \right]^2$ | Walls that are permitted to rotate and deflect at the top See <i>AASHTO LRFD Bridge Design Specification, 9th Edition, Section 3.11.5.3</i> |
| Passive: | See <i>AASHTO LRFD Bridge Design Specifications, 9th Edition, Figure 3.11.5.4-1</i> | |

Conditions applicable to the above coefficients include:

- For active earth pressure, wall must rotate about base, with top lateral movements 0.002Z to 0.004Z, for loose to medium dense sand, where Z is the wall height
- For passive earth pressure, wall must move horizontally to mobilize resistance
 - Information used in *Figure 3.11.5.4-1*: Theta, θ = 90°, delta, δ = 0° for cohesive soils and delta, δ = 0.33 x Φ = 9.24° – 9.9° for granular soils
- If groundwater drainage will be provided as noted on the Approved TS&L, Section A-A, design for hydrostatic pressure will not be necessary. If drains will not be provided as shown, hydrostatic pressure should be designed to elevations consistent with the groundwater elevation of 3 feet from the roadway surface
- A resistance factor of 0.75 can be used for strength limits states checks in the passive case
- Contribution of foreslope in passive pressure calculation should be ignored due to steep slope of foreslope.



CONSTRUCTION CONSIDERATIONS

Site Preparation

Rubino recommends that unsuitable soils or fill be removed from the site, as applicable. Unsuitable soils or fills include but are not limited to the following: organic soil, topsoil, vegetation, frozen soil, existing pavement sections, existing foundations, building debris, and existing curbs.

Operations should be monitored and documented by a representative of the geotechnical engineer at the time of construction. Construction should be performed in accordance with the “Standard Specifications for Road and Bridge Construction,” adopted by the Illinois Department of Transportation.

CLOSING

The recommendations submitted are based on the available subsurface information obtained by Rubino Engineering, Inc. and design details furnished by IDOT Region 2 District 3 for the proposed project. If there are any revisions to the plans for this project or if deviations from the subsurface conditions noted in this report are encountered during construction, Rubino should be notified immediately to determine if changes in the recommendations are required. If Rubino is not retained to perform these functions, we will not be responsible for the impact of those conditions on the project.

The scope of services did not include an environmental assessment to determine the presence or absence of wetlands, or hazardous or toxic materials in the soil, bedrock, surface water, groundwater or air on, below, or around this site. Any statements in this report and/or on the boring logs regarding odors, colors, and/or unusual or suspicious items or conditions are strictly for informational purposes.

After the plans and specifications are more complete, the geotechnical engineer should be retained and provided the opportunity to review the final design plans and specifications to check that our engineering recommendations have been properly incorporated into the design documents. At this time, it may be necessary to submit supplementary recommendations. This report has been prepared for the exclusive use of IDOT Region 2 District 3 and their consultants for the specific application to the proposed IL 64 Retaining Wall in Dekalb, Illinois.



Appendix A - Drilling, Field, and Laboratory Test Procedures

AASHTO T 206 Penetration Tests and Split-Barrel Sampling of Soils

During the sampling procedure, Standard Penetration Tests (SPT's) were performed by IDOT at regular intervals to obtain the standard penetration (N-value) of the soil. The results of the standard penetration test can be used to estimate the relative strength and compressibility of the soil profile components through empirical correlations to the soils' relative density and consistency. The split-barrel sampler obtains a soil sample for classification purposes and laboratory testing, as appropriate for the type of soil obtained.

Water Level Measurements

The depths of observed water levels in the boreholes are noted on the boring logs presented in the appendix of this report. Seasonal variations, temperature and recent rainfall conditions may influence the levels of the groundwater table and volumes of water will depend on the permeability of the soils.

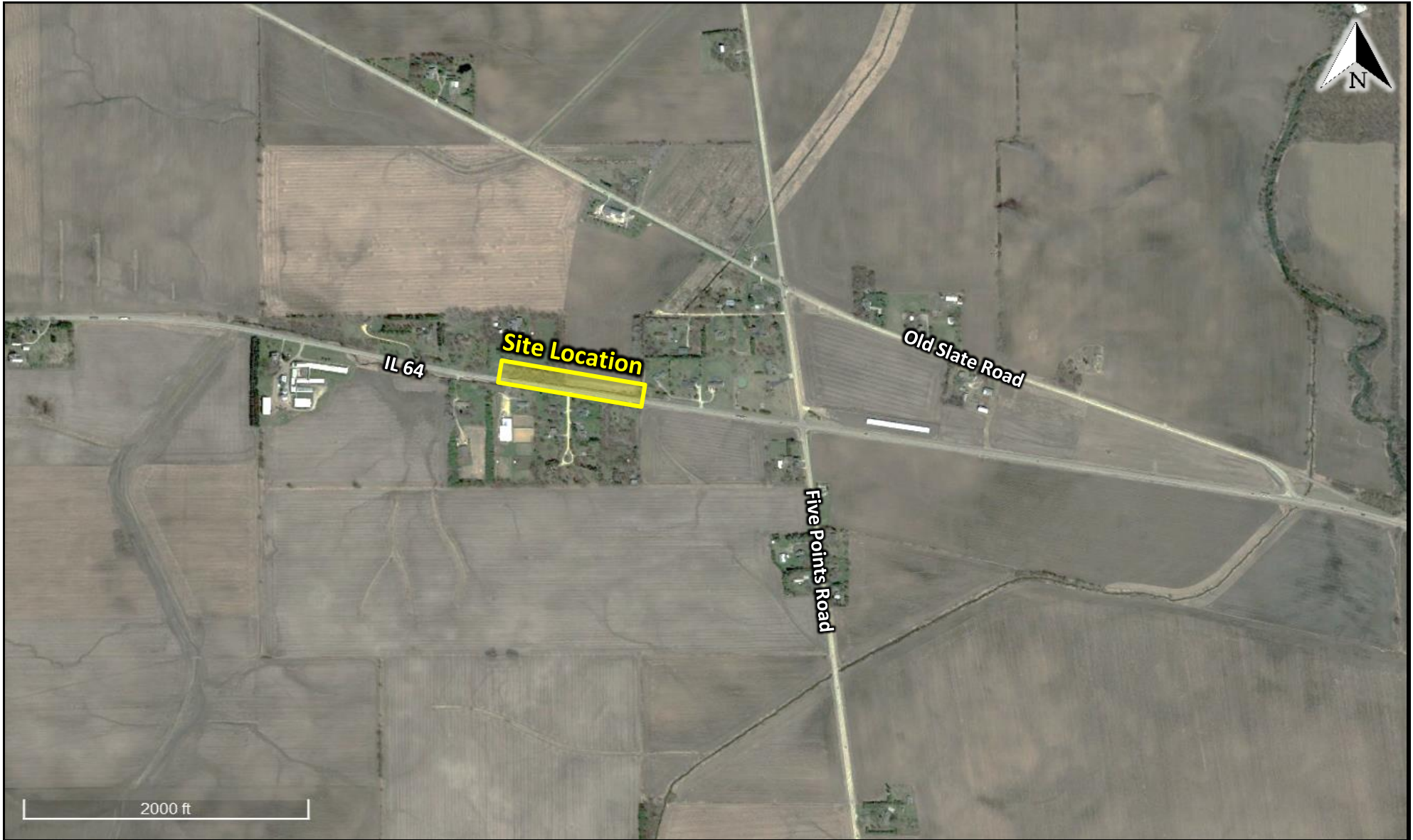
Ground Surface Elevations

Elevations of the soil borings were provided by Chamlin and Associates and IDOT. The depths indicated on the attached boring logs are relative to the existing ground surface for each individual boring at the time of the exploration. Copies of the boring logs are located in the Appendix of this report.

AASHTO T 265-15 Water (Moisture) Content of Soil by Mass (Laboratory)

The water content is an important index property used in expressing the phase relationship of solids, water, and air in a given volume of material and can be used to correlate soil behavior with its index properties. In fine grained cohesive soils, the behavior of a given soil type often depends on its natural water content. The water content of a cohesive soil along with its liquid and plastic limits as determined by Atterberg Limit testing are used to express the soil's relative consistency or liquidity index.

Appendix B – Site Vicinity Map & Boring Location Plan



rubino
ENGINEERING INC.

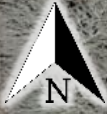
425 Shepard Drive
Elgin, Illinois 60123

Project Name:
Project Location:

Client:
Rubino Project # :

IL 64 Retaining Wall SGR
IL 64 0.4 miles west of Five Points Road
DeKalb County, Illinois
Illinois Department of Transportation
G20.184 REV1

**Site
Vicinity
Map**



200 ft

rubino
ENGINEERING INC.

425 Shepard Drive
Elgin, Illinois 60123

| | |
|---------------------------|---|
| Project Name: | IL 64 Retaining Wall SGR |
| Project Location: | IL 64 0.4 miles west of Five Points Road Dekalb County, Illinois |
| Client: | Illinois Department of Transportation |
| Rubino Project # : | G20.184 REV1 |

**Boring
Location
Plan**

Appendix C –TS&L printed May 27, 2021

Bench Marks:
 501 - Recovered brass on headwall west end, south side of IL Route 64
 Elev.=837.53 (stamped 838.54)
 502 - Railroad spike in power pole at southeast corner of IL Route 64 and Shannon Lane
 Elev.=836.78

Existing Structure: None

Proposed Structure: Permanent Sheet Pile wall

Roadway shall remain open to traffic

APPROVED

MAY 27, 2021

AS A BASIS FOR PREPARATION OF DETAILED PLANS

HIGHWAY CLASSIFICATION

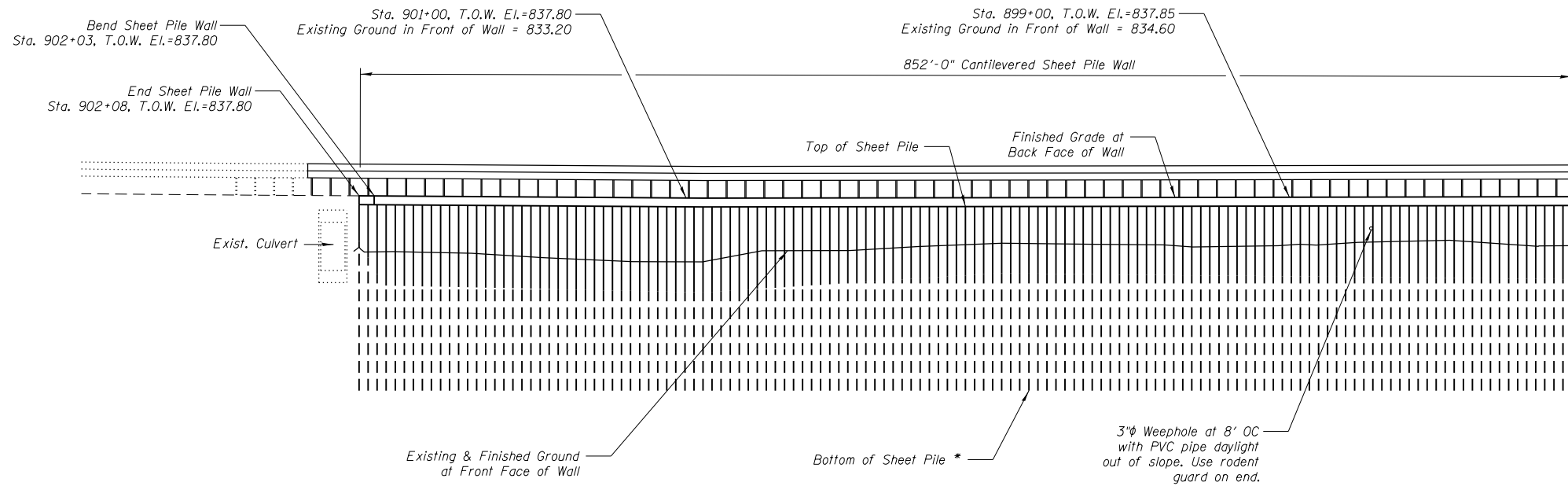
F.A.P. Rte. 17 - IL Route 64
 Functional Class: Minor Arterial
 ADT: 5408 (2021); 6983 (2041)
 ADTT: 617 (2021); 796 (2041)
 DHV: 698 (2041)
 Design Speed: 55 m.p.h.
 Posted Speed: 55 m.p.h.
 2 Way Traffic
 Directional Distribution: 50:50

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design
 Specification 9th Edition

DESIGN STRESSES

Field Units
 $f'c = 4,000$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 50,000$ psi (ASTM A572, Grade 50 Sheet Pile)

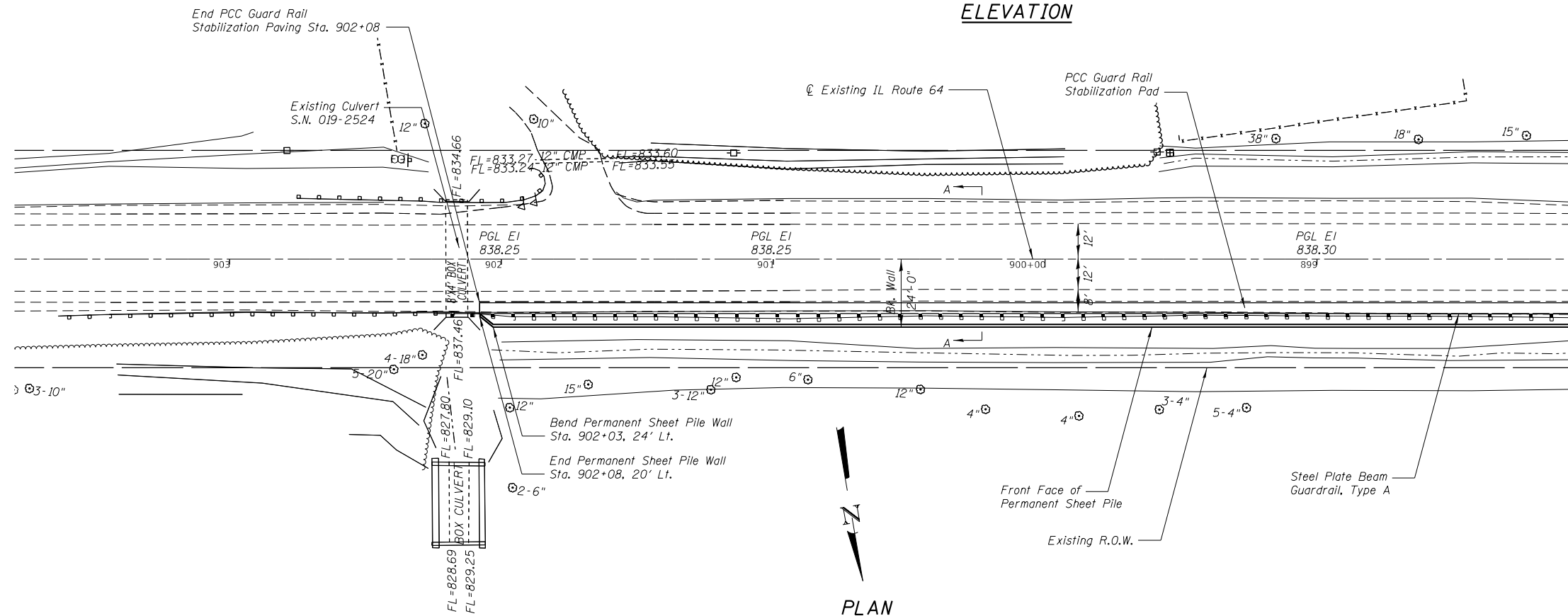


Match Line Sta. 898+00

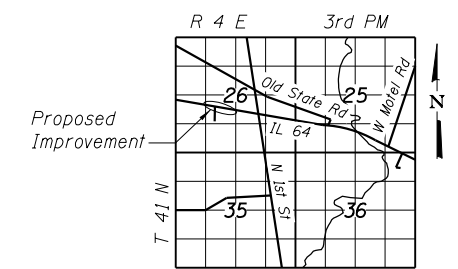
Match Line Sta. 898+00

* To be defined during final design

ELEVATION



PLAN



LOCATION SKETCH

GENERAL PLAN & ELEVATION

ILLINOIS ROUTE 64

F.A.P. RTE 17

SEC. (125)SLP,J

DEKALB COUNTY

STA. 893+56 TO STA. 902+08

STRUCTURE NO. 019-8800

MODEL: Default
 FILE NAME: G:\Users\111111335-07-IDOT-IL 64 Retaining Wall TS&L\CAD\14-GPE.dgn
 5/27/2021 2:25:27 PM



| | | |
|---------------|----------------|-----------|
| USER NAME = | DESIGNED - JKC | REVISED - |
| CHECKED - AJO | CHECKED - JKC | REVISED - |
| PLOT SCALE = | DRAWN - LAG | REVISED - |
| PLOT DATE = | CHECKED - JKC | REVISED - |

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
 STRUCTURE NO. 019-8800

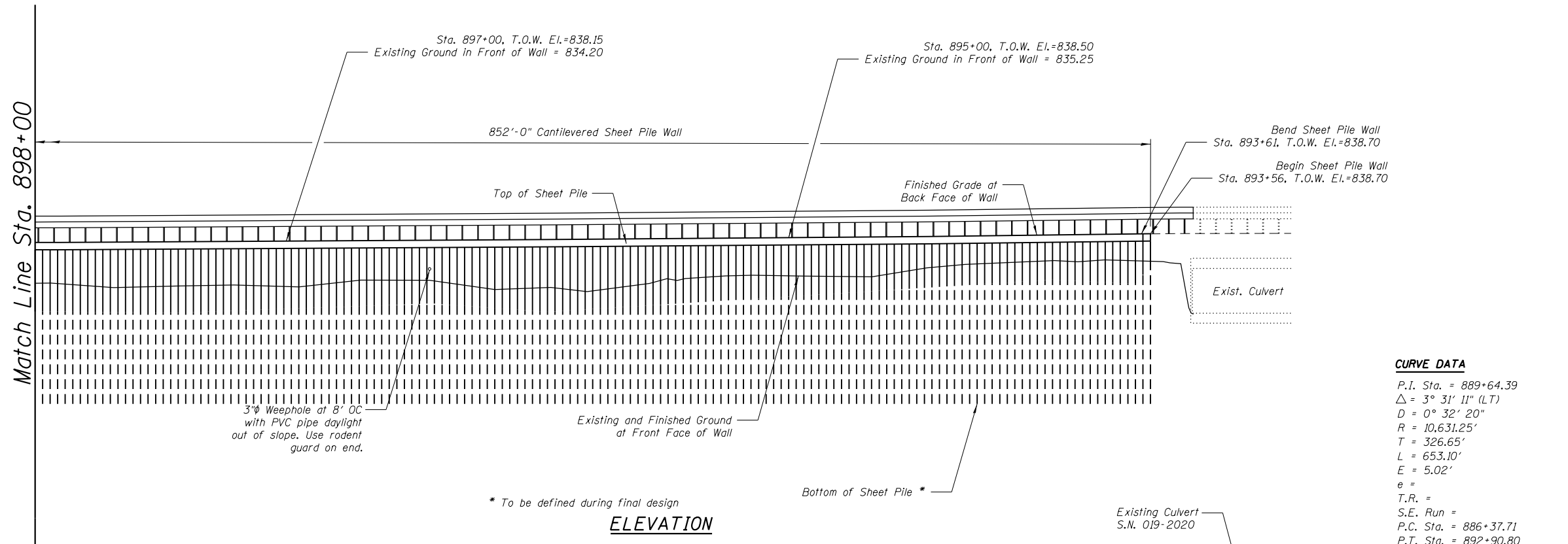
SHEET 1 OF 3 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|------------|--------|--------------|-----------|
| 17 | (125)SLP,J | DEKALB | | |
| CONTRACT NO. 66997 | | | | |
| ILLINOIS FED. AID PROJECT | | | | |

APPROVED

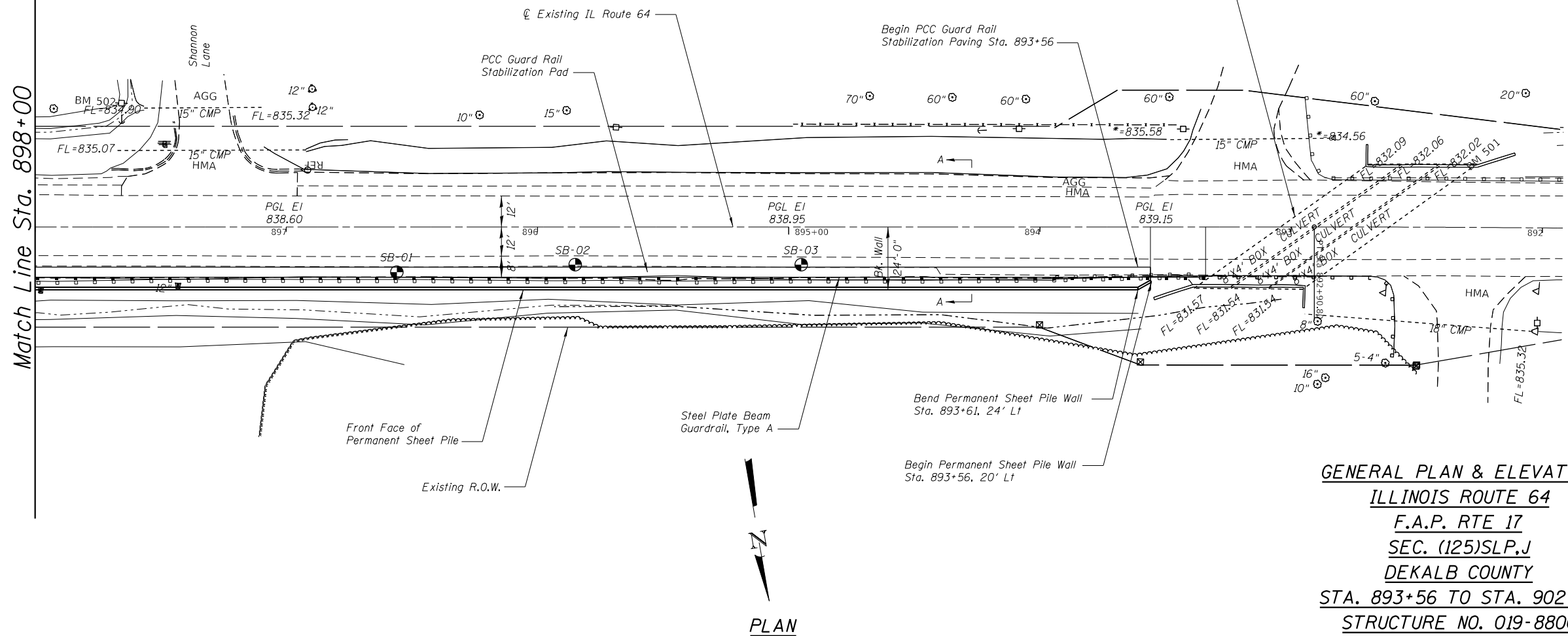
MAY 27, 2021

AS A BASIS FOR
PREPARATION OF DETAILED PLANS



CURVE DATA

| | |
|-------------|-----------------|
| P.I. Sta. = | 889+64.39 |
| Δ = | 3° 31' 11" (LT) |
| D = | 0° 32' 20" |
| R = | 10,631.25' |
| T = | 326.65' |
| L = | 653.10' |
| E = | 5.02' |
| e = | |
| T.R. = | |
| S.E. Run = | |
| P.C. Sta. = | 886+37.71 |
| P.T. Sta. = | 892+90.80 |



GENERAL PLAN & ELEVATION
ILLINOIS ROUTE 64
F.A.P. RTE 17
SEC. (125)SLP,J
DEKALB COUNTY
STA. 893+56 TO STA. 902+08
STRUCTURE NO. 019-8800

MODEL: Default
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 5/27/2021 2:40:43 PM



| | | |
|--------------|----------------|-----------|
| USER NAME = | DESIGNED - JKC | REVISED - |
| | CHECKED - AJO | REVISED - |
| PLOT SCALE = | DRAWN - LAG | REVISED - |
| PLOT DATE = | CHECKED - JKC | REVISED - |

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
 STRUCTURE NO. 019-8800

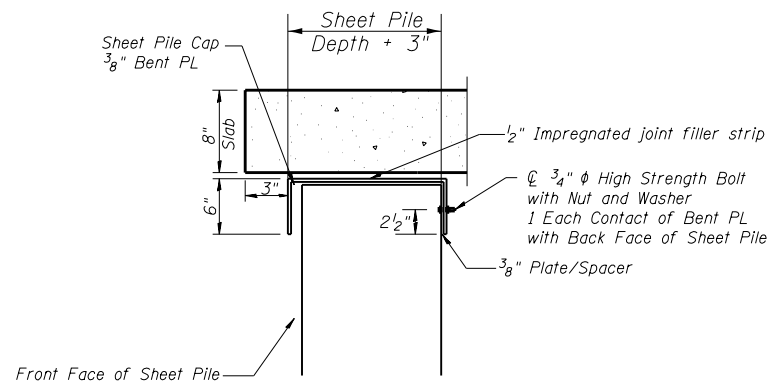
SHEET 2 OF 3 SHEETS

| | | | | |
|---------------------------|------------|--------|--------------|-----------|
| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
| 17 | (125)SLP,J | DEKALB | | |
| CONTRACT NO. 66997 | | | | |
| ILLINOIS FED. AID PROJECT | | | | |

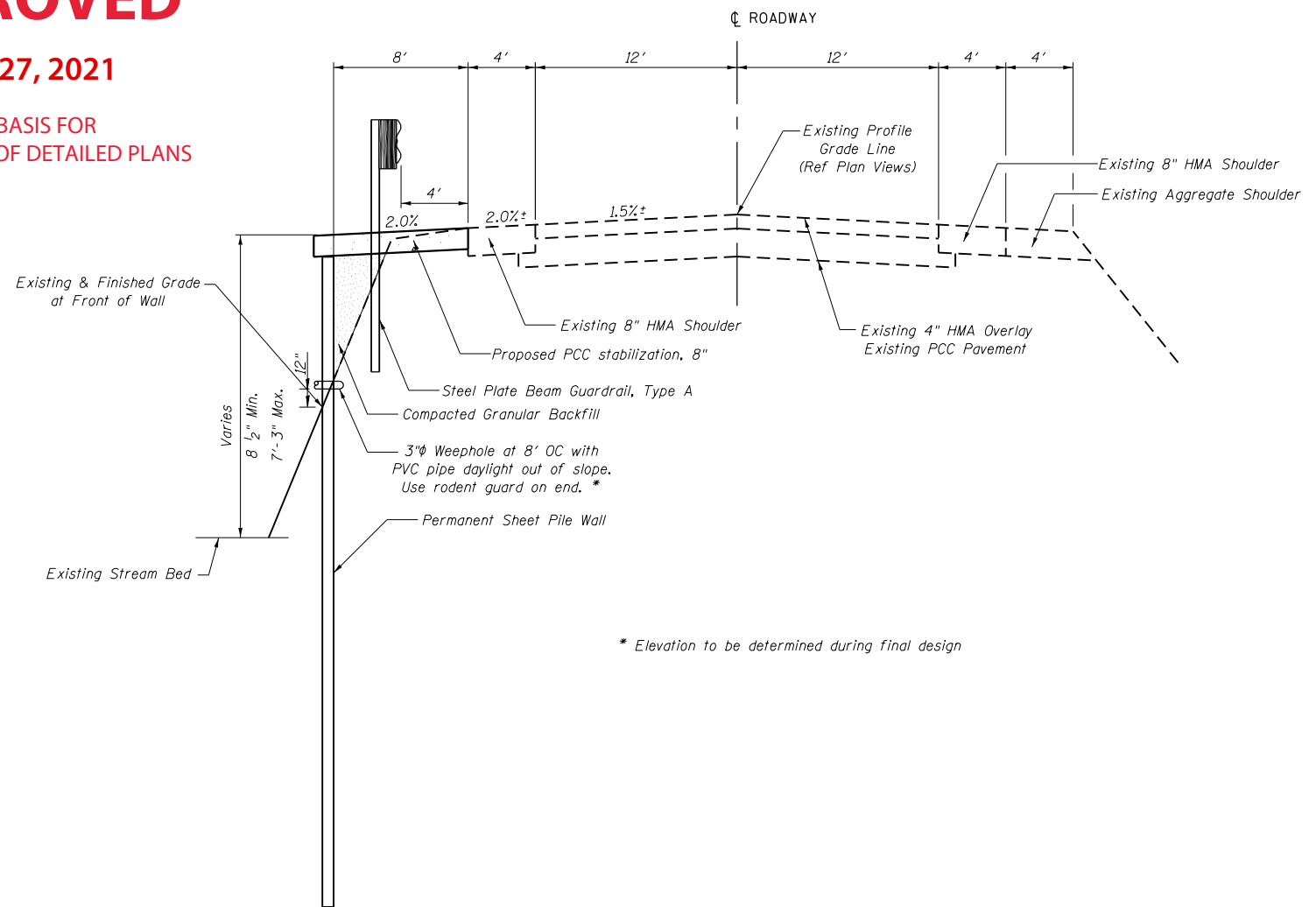
APPROVED

MAY 27, 2021

AS A BASIS FOR
PREPARATION OF DETAILED PLANS



SHEET PILE CAP DETAIL



* Elevation to be determined during final design

SECTION A-A
TYPICAL SECTION THRU CANTILEVERED SHEET PILE

DETAILS
ILLINOIS ROUTE 64
F.A.P. RTE 17
SEC. (125)SLP,J
DEKALB COUNTY
STA. 893+56 TO STA. 902+08
STRUCTURE NO. 019-8800

MODEL: Default
FILE NAME: G:\Users\111111335-07-IDOT-IL 64 Retaining Wall TS&LCAD\0366L14-typical.dgn
5/27/2021 3:03:17 PM



| | | |
|--------------|----------------|-----------|
| USER NAME = | DESIGNED - JKC | REVISED - |
| | CHECKED - AJO | REVISED - |
| PLOT SCALE = | DRAWN - LAG | REVISED - |
| PLOT DATE = | CHECKED - JKC | REVISED - |

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAILS
STRUCTURE NO. 019-8800

SHEET 3 OF 3 SHEETS

| F.A.P. RTE. | SECTION | COUNTY | TOTAL SHEETS | SHEET NO. |
|---------------------------|------------|--------|--------------|-----------|
| 17 | (125)SLP,J | DEKALB | | |
| CONTRACT NO. 66997 | | | | |
| ILLINOIS FED. AID PROJECT | | | | |

Appendix D – IDOT Boring Logs



Illinois Department of Transportation

Division of Highways
Illinois Department of Transportation

SOIL BORING LOG

Date 7/1/20

ROUTE FAP 17 (IL 64) DESCRIPTION Slope Failure on IL 64, 0.4 miles West of Five Points Road, Contract 66L14 LOGGED BY Larry Myers

SECTION (125)SLP,J LOCATION SW 1/4, SEC. 26, TWP. 41N, RNG. 4E, 3rd PM, Latitude 42.0003, Longitude -88.74653

COUNTY DeKalb DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 019-8800
Station 893+54 to 902+10

BORING NO. 02
Station 895+56
Offset 14.8 ft Lt.
Ground Surface Elev. 839.23 ft

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

Surface Water Elev. ft
Stream Bed Elev. ft
Groundwater Elev.:
First Encounter 829.2 ft
Upon Completion 831.2 ft
After Hrs. ft

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

| | | | | | | | | | |
|--|--------|----|-----|----|--|--------|-----|-----|----|
| Augered Bituminous Shoulder, Gravel Fill, Brown & Black Silty Clay Loam Fill | | | | | Stiff Purplish Gray Silty Clay Loam Till (continued) | | | | |
| | | | | | | 817.73 | 1 | | |
| | | | | | | | 2 | 1.4 | 15 |
| | 836.73 | | | | | | 3 | B | |
| Stiff Black & Brown Silty Clay Loam / Silty Clay Fill | | 2 | | | | | | | |
| | | 3 | 1.5 | 27 | | | | | |
| | | 4 | P | | | | | | |
| | 834.23 | -5 | | | | | -25 | | |
| Stiff Brown Silty Clay with Silt Pockets | | WH | | | | | | | |
| | | 1 | 1.0 | 28 | | | | | |
| WH = Weight of Hammer | | 2 | P | | | | | | |
| | 832.23 | | | | | | | | |
| Stiff Gray & Brown Silty Clay with Silt Pockets | | 1 | | | | | | | |
| | | 1 | 1.0 | 30 | | | | | |
| | | 2 | P | | | | | | |
| | | | | | | | | | |
| WH = Weight of Hammer | | WH | | | | | -30 | | |
| | | 1 | 1.0 | 24 | | | | | |
| | | 2 | P | | | | | | |
| | 826.73 | | | | | | | | |
| Stiff Purplish Gray Silty Clay Loam Till | | 1 | | | | | | | |
| | | 2 | 1.2 | 15 | | | | | |
| | | 3 | B | | | | | | |
| | | | | | | | | | |
| | -15 | | | | | | -35 | | |
| | | 1 | | | | | | | |
| | | 3 | 1.6 | 15 | | | | | |
| | | 4 | B | | | | | | |
| | | | | | | | | | |
| | | 2 | | | | | | | |
| | | 2 | 1.4 | 15 | | | | | |
| | | 2 | B | | | | | | |
| | | | | | | | | | |
| | -20 | | | | | | -40 | | |

SOIL BORING 019-8800.GPJ IL_DOT.GDT 3/9/21

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



SOIL BORING LOG

Slope Failure on IL 64, 0.4 miles West of Five Points Road, Contract 66L14

ROUTE FAP 17 (IL 64) DESCRIPTION

LOGGED BY Larry Myers

SECTION (125)SLP,J LOCATION SW 1/4, SEC. 26, TWP. 41N, RNG. 4E, 3rd PM,
Latitude 42.00034, Longitude -88.74685

COUNTY DeKalb DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 019-8800
 Station 893+54 to 902+10

BORING NO. 03
 Station 894+66
 Offset 14.9 ft Lt.
 Ground Surface Elev. 839.46 ft

| D E P T H H | B L O W S | U C S Qu | M O I S T | Surface Water Elev. _____ ft | D E P T H | B L O W S | U C S Qu | M O I S T |
|--------------------------------|-----------------------|-----------------------|-----------------------|------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| (ft) | (/6") | (tsf) | (%) | Stream Bed Elev. _____ ft | (ft) | (/6") | (tsf) | (%) |

Augered Bituminous Shoulder,
 Gravel Fill, Black & Brown Silty
 Clay Loam Fill

836.96

Stiff Brown & Black Silty Clay
 Loam Fill

834.46

Stiff Brown & Gray Silty Clay with
 Silt Pockets

832.46

Medium Gray & Brown Silty Clay
 with Silt Pockets

WH = Weight of Hammer

829.46

Stiff Purplish Gray Silty Clay Till

-10

-15

-20

Stiff Purplish Gray Silty Clay Till
(continued)

817.96

End of Boring

-25

SOIL BORING 019-8800.GPJ IL_DOT.GDT 3/9/21

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



Illinois Department of Transportation

Division of Highways
Illinois Department of Transportation

SOIL BORING LOG

Date 2/23/21

ROUTE FAP 17 (IL 64) DESCRIPTION Slope Failure on IL 64, 0.4 miles West of Five Points Road, Contract 66L14 LOGGED BY Larry Myers

SECTION (125)SLP,J LOCATION SW 1/4, SEC. 26, TWP. 41N, RNG. 4E, 3rd PM, Latitude 42.00003, Longitude -88.74432

COUNTY DeKalb DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

| STRUCT. NO. | Station | D E P T H H | B L O W S | U C S Qu | M O I S T T | Surface Water Elev. | Stream Bed Elev. | Groundwater Elev.: | First Encounter | Upon Completion | After | D E P T H H | B L O W S | U C S Qu | M O I S T T | |
|---|------------------------------------|--------------------------------|-----------------------|-----------------------|--------------------------------|---------------------|------------------|--------------------|-----------------|-----------------|-------|--------------------------------|-----------------------|-----------------------|--------------------------------|--|
| | | (ft) | (/6") | (tsf) | (%) | ft | ft | ft | ft | ft | Hrs. | (ft) | (/6") | (tsf) | (%) | |
| 019-8800 | 893+54 to 902+10 | | | | | | | | | | | | | | | |
| BORING NO. <u>1</u> | Station <u>901+63</u> | | | | | | | | | | | | | | | |
| | Offset <u>16.4 ft Lt.</u> | | | | | | | | | | | | | | | |
| | Ground Surface Elev. <u>838.72</u> | | | | | | | | | | | | | | | |
| Augered Shoulder Stone, CA 6, Black Silty Clay Loam Fill | | 836.22 | | | | | | | | | | | | | | |
| | | | 5 | | | | | | | | | | 2 | | | |
| | | | 4 | 3.0 | 19 | | | | | | | | 4 | 2.4 | 13 | |
| | | | 5 | P | | | | | | | | | 5 | B | | |
| Very Stiff Brown Silty Clay Loam Till Fill & Black Silty Clay Loam Fill | | 833.72 | | | | | | | | | | | | | | |
| | | | 3 | | | | | | | | | | 3 | | | |
| | | | 4 | 3.0 | 19 | | | | | | | | 5 | 2.9 | 11 | |
| | | | 5 | P | | | | | | | | | 6 | B | | |
| Stiff Black Silty Clay / Silty Loam | | 831.22 | | | | | | | | | | | | | | |
| | | | 3 | | | | | | | | | | 4 | | | |
| | | | 2 | 2.0 | 36 | | | | | | | | 5 | 3.4 | 11 | |
| | | | 3 | P | | | | | | | | | 8 | B | | |
| Stiff to Very Stiff Brown & Gray Silty Clay Loam Till | | | | | | | | | | | | | | | | |
| | | | 1 | | | | | | | | | | 4 | | | |
| | | | 3 | 2.0 | 17 | | | | | | | | 6 | 3.7 | 10 | |
| | | | 3 | P | | | | | | | | | 8 | B | | |
| | | | 3 | | | | | | | | | | | | | |
| | | | 4 | 2.5 | 15 | | | | | | | | 5 | | | |
| | | | 5 | P | | | | | | | | | 7 | 4.1 | 10 | |
| | | | 5 | P | | | | | | | | | 9 | B | | |
| Very Stiff Purplish Gray Silty Clay Loam Till | | 826.72 | | | | | | | | | | | | | | |
| | | | 2 | | | | | | | | | | | | | |
| | | | 4 | 2.0 | 13 | | | | | | | | | | | |
| | | | 4 | P | | | | | | | | | | | | |
| | | | 2 | | | | | | | | | | | | | |
| | | | 3 | 2.0 | 13 | | | | | | | | | | | |
| | | | 4 | B | | | | | | | | | | | | |
| | | | 2 | | | | | | | | | | | | | |
| | | | 3 | 2.4 | 13 | | | | | | | | | | | |
| | | | 5 | B | | | | | | | | | | | | |
| End of Boring | | 807.22 | | | | | | | | | | | | | | |

SOIL BORING 019-8800.GPJ IL_DOT_GDT 3/9/21

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



Illinois Department of Transportation

Division of Highways
Illinois Department of Transportation

SOIL BORING LOG

Date 2/23/21

ROUTE FAP 17 (IL 64) DESCRIPTION Slope Failure on IL 64, 0.4 miles West of Five Points Road, Contract 66L14 LOGGED BY Larry Myers

SECTION (125)SLP,J LOCATION SW 1/4, SEC. 26, TWP. 41N, RNG. 4E, 3rd PM,

Latitude 42.00007, Longitude -88.74464

COUNTY DeKalb DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 019-8800
Station 893+54 to 902+10

BORING NO. 2
Station 900+75
Offset 16.1 ft Lt.
Ground Surface Elev. 838.60 ft

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

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

Groundwater Elev.:
First Encounter _____ Dry ft
Upon Completion _____ Dry ft
After _____ Hrs. _____ ft

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

| | | | | | | | |
|---|-----|---|-----|--|---|-----|----|
| Augered Shoulder Stone, CA 6, Black Silty Clay Loam Fill | | | | Stiff to Very Stiff Purplish Gray Silty Clay Loam Till (<i>continued</i>) | 3 | | |
| | | | | | 4 | 2.4 | 13 |
| | | | | | 5 | B | |
| 836.10 | | | | | | | |
| Stiff Brown Silty Clay Loam Till Fill & Black Silty Clay Loam Fill | | 7 | | | 4 | | |
| | | 5 | 2.0 | 11 | 4 | 2.4 | 11 |
| | | 4 | P | | 5 | B | |
| | | | | | | | |
| | -5 | | | | | | |
| | | 3 | | | 4 | | |
| | | 2 | 1.5 | 20 | 4 | 3.1 | 13 |
| | | 4 | P | | 7 | B | |
| 831.60 | | | | | | | |
| Medium Brown & Gray Silty Clay / Silty Loam Loess | | 1 | | | 5 | | |
| | | 2 | 0.5 | 17 | 5 | 3.1 | 13 |
| | | 2 | P | | 7 | B | |
| 829.10 | | | | | | | |
| Very Stiff Brown Silty Clay Loam Till | | | | | | | |
| | | 3 | | | 6 | | |
| | | 4 | 3.5 | 14 | 6 | 3.4 | 12 |
| | | 7 | P | | 8 | B | |
| 826.60 | | | | End of Boring | | | |
| Stiff to Very Stiff Purplish Gray Silty Clay Loam Till | | 2 | | | | | |
| | | 3 | 2.0 | 14 | | | |
| | | 4 | P | | | | |
| | | | | | | | |
| | -15 | | | | | | |
| | | 2 | | | | | |
| | | 3 | 1.9 | 13 | | | |
| | | 4 | B | | | | |
| | | | | | | | |
| | | 3 | | | | | |
| | | 3 | 2.0 | 12 | | | |
| | | 5 | B | | | | |
| | | | | | | | |
| | -20 | | | | | | |

SOIL BORING 019-8800.GPJ IL_DOT.GDT 3/9/21

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



Illinois Department of Transportation

Division of Highways
Illinois Department of Transportation

SOIL BORING LOG

Date 2/23/21

ROUTE FAP 17 (IL 64) DESCRIPTION Slope Failure on IL 64, 0.4 miles West of Five Points Road, Contract 66L14 LOGGED BY Larry Myers

SECTION (125)SLP,J LOCATION SW 1/4, SEC. 26, TWP. 41N, RNG. 4E, 3rd PM,

Latitude 42.0001, Longitude -88.74488

COUNTY DeKalb DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 019-8800
Station 893+54 to 902+10

BORING NO. 3
Station 900+08
Offset 16.0 ft Lt.
Ground Surface Elev. 838.74 ft

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

Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft
Groundwater Elev.:
First Encounter 826.7 ft ▼
Upon Completion 824.7 ft ▼
After _____ Hrs. _____ ft

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

| | | | | | | | | |
|--|-----|-----|----|--|--|-----|-----|----|
| Augered Shoulder Stone, CA 6, Black Silty Clay Loam Fill | | | | Stiff to Very Stiff Purplish Gray Silty Clay Loam Till (continued) | | 1 | | |
| | | | | | | 3 | 2.2 | 14 |
| | | | | | | 4 | B | |
| 836.24 | | | | | | | | |
| Stiff Brown Silty Clay Loam Till Fill & Black Silty Clay Loam Fill | 7 | | | | | 2 | | |
| | 4 | 1.5 | 14 | | | 3 | 2.1 | 12 |
| | 3 | P | | | | 4 | B | |
| | | | | | | | | |
| | -5 | | | | | -25 | | |
| | 3 | | | | | 2 | | |
| | 4 | 1.5 | 35 | | | 4 | 2.4 | 12 |
| | 2 | P | | | | 5 | B | |
| 831.74 | | | | | | | | |
| Medium to Very Soft Brown & Gray Silty Clay / Silty Loam Loess | 1 | | | | | 2 | | |
| | 2 | 0.8 | 34 | | | 4 | 2.4 | 12 |
| | 2 | P | | | | 6 | B | |
| | | | | | | | | |
| | -10 | | | | | -30 | | |
| WH = Weight of Hammer | WH | | | | | 4 | | |
| | WH | | 32 | | | 4 | 3.0 | 11 |
| | 1 | | | | | 7 | B | |
| 826.24 | | | | 807.24 | | | | |
| Loose Brown Fine Sand to Coarse Gravel - Free Water | 1 | | | End of Boring | | | | |
| | 7 | | 14 | | | | | |
| | 8 | | | | | | | |
| 824.24 | | | | | | | | |
| Stiff to Very Stiff Purplish Gray Silty Clay Loam Till | 1 | | | | | -35 | | |
| | 4 | 1.8 | 14 | | | | | |
| | 4 | B | | | | | | |
| | | | | | | | | |
| | 1 | | | | | | | |
| | 4 | 2.1 | 13 | | | | | |
| | 5 | B | | | | | | |
| | | | | | | | | |
| | -20 | | | | | -40 | | |

SOIL BORING 019-8800.GPJ IL_DOT.GDT 3/9/21

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



SOIL BORING LOG

ROUTE FAP 17 (IL 64) DESCRIPTION Slope Failure on IL 64, 0.4 miles West of Five Points Road, Contract 66L14 LOGGED BY Larry Myers

SECTION (125)SLP,J LOCATION SW 1/4, SEC. 26, TWP. 41N, RNG. 4E, 3rd PM,
Latitude 42.00015, Longitude -88.74528

COUNTY DeKalb DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

| STRUCT. NO. | Station | | D E P T H | B L O W S | U C S | M O I S T | Surface Water Elev. | ft | D E P T H | B L O W S | U C S | M O I S T |
|---|-----------------------------|--|-----------------------|-----------------------|-------------|-----------------------|--|----|-----------------------|-----------------------|-------------|-----------------------|
| BORING NO. | Station | | (ft) | (/6") | (tsf) | (%) | Stream Bed Elev. | ft | (ft) | (/6") | (tsf) | (%) |
| 019-8800 | 893+54 to 902+10 | | | | | | | | | | | |
| 4 | 898+98 | | | | | | | | | | | |
| | Offset 16.2 ft Lt. | | | | | | | | | | | |
| | Ground Surface Elev. 838.62 | | | | | | | | | | | |
| Augered Shoulder Stone, CA 6, Black Silty Clay Loam Fill | | | | | | | Stiff to Very Stiff Purplish Gray Silty Clay Loam Till (continued) | | | 3 | | |
| | | | | | | | | | | 4 | 1.8 | 13 |
| | | | | | | | | | | 5 | S | |
| 836.12 | | | | | | | | | | | | |
| Very Stiff Brown Silty Clay Loam Till Fill & Black Silty Clay Loam Fill | | | | 5 | | | | | | 3 | | |
| | | | | 7 | 3.0 | 21 | | | | 4 | 2.1 | 13 |
| | | | | 9 | P | | | | | 6 | S | |
| | | | | | | | | | | | | |
| | | | -5 | | | | | | | -25 | | |
| | | | | 3 | | | | | | 1 | | |
| | | | | 3 | 2.0 | 26 | | | | 5 | 2.4 | 15 |
| | | | | 3 | P | | | | | 7 | S | |
| 832.12 | | | | | | | | | | | | |
| Stiff Brown & Gray Silty Clay / Silty Loam Loess | | | | | | | | | | | | |
| WH = Weight of Hammer | | | | WH | | | | | | 3 | | |
| | | | | 2 | 1.0 | 31 | | | | 5 | 2.6 | 14 |
| | | | | 2 | P | | | | | 7 | S | |
| | | | | | | | | | | | | |
| | | | -10 | | | | | | | -30 | | |
| | | | | WH | | | | | | 3 | | |
| | | | | 2 | 1.0 | 32 | | | | 5 | 2.6 | 13 |
| | | | | 2 | P | | | | | 8 | S | |
| 826.62 | | | | | | | 807.12 | | | | | |
| Stiff Brown Silty Loam Till | | | | | | | End of Boring | | | | | |
| | | | | 1 | | | | | | | | |
| | | | | 4 | 2.0 | 15 | | | | | | |
| | | | | 4 | P | | | | | | | |
| 824.12 | | | | | | | | | | | | |
| Stiff to Very Stiff Purplish Gray Silty Clay Loam Till | | | | | | | | | | | | |
| | | | -15 | | | | | | | -35 | | |
| | | | | 2 | | | | | | | | |
| | | | | 5 | 2.0 | 12 | | | | | | |
| | | | | 5 | P | | | | | | | |
| | | | | | | | | | | | | |
| | | | | 2 | | | | | | | | |
| | | | | 3 | 1.7 | 14 | | | | | | |
| | | | | 5 | S | | | | | | | |
| 820.12 | | | | | | | | | | | | |
| | | | -20 | | | | | | | -40 | | |

SOIL BORING 019-8800.GPJ IL_DOT_GDT 3/9/21

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



Illinois Department of Transportation

Division of Highways
Illinois Department of Transportation

SOIL BORING LOG

Date 2/24/21

ROUTE FAP 17 (IL 64) DESCRIPTION Slope Failure on IL 64, 0.4 miles West of Five Points Road, Contract 66L14 LOGGED BY Larry Myers

SECTION (125)SLP,J LOCATION SW 1/4, SEC. 26, TWP. 41N, RNG. 4E, 3rd PM,

Latitude 42.0002, Longitude -88.74569

COUNTY DeKalb DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 019-8800
Station 893+54 to 902+10

BORING NO. 5
Station 897+80
Offset 15.1 ft Lt.
Ground Surface Elev. 838.77 ft

| D E P T H H | B L O W S | U C S Qu | M O I S T T | Surface Water Elev. _____ ft | D E P T H H | B L O W S | U C S Qu | M O I S T T | Stream Bed Elev. _____ ft |
|--|-----------------------|-----------------------|--------------------------------|---|--------------------------------|-----------------------|-----------------------|--------------------------------|---------------------------|
| (ft) | (/6") | (tsf) | (%) | | (ft) | (/6") | (tsf) | (%) | |
| | | | | Groundwater Elev.: | | | | | |
| | | | | First Encounter <u>827.8</u> ft ▼ | | | | | |
| | | | | Upon Completion <u>827.8</u> ft ▼ | | | | | |
| | | | | After _____ Hrs. _____ ft | | | | | |
| Augered Shoulder Stone, CA 6, Black Silty Clay Loam Fill | | | | Stiff to Very Stiff Purplish Gray Silty Clay Loam Till (<i>continued</i>) | 2 | | | | |
| | | | | | 3 | 1.8 | 14 | | |
| | | | | | 6 | B | | | |
| 836.27 | | | | | | | | | |
| Very Stiff to Stiff Brown Silty Clay Loam Till Fill & Black Silty Clay Loam Fill | 4 | | | | 3 | | | | |
| | 4 | 2.5 | 29 | | 4 | 2.0 | 11 | | |
| | 5 | P | | | 5 | B | | | |
| | | | | | | | | | |
| -5 | | | | | | | | | |
| | 3 | | | | 3 | | | | |
| | 3 | 1.5 | 21 | | 5 | 2.0 | 15 | | |
| | 3 | P | | | 5 | B | | | |
| 832.27 | | | | | | | | | |
| Stiff to Very Soft Brown & Gray Silty Clay / Silty Loam Loess | 1 | | | | 3 | | | | |
| | 2 | 1.0 | 32 | | 6 | 2.7 | 14 | | |
| | 2 | P | | | 7 | B | | | |
| | | | | | | | | | |
| -10 | | | | | | | | | |
| WH = Weight of Hammer | WH | | | | 3 | | | | |
| | WH | | 35 | | 6 | 2.4 | 14 | | |
| | WH | | | | 8 | B | | | |
| 826.77 | | | | | | | | | |
| Stiff Brown & Gray Silty Loam | 2 | | | End of Boring | | | | | |
| | 3 | 1.5 | 22 | | | | | | |
| | 4 | P | | | | | | | |
| | | | | | | | | | |
| 823.77 -15 | | | | | | | | | |
| Medium Fine Sand to Coarse Gravel - Free Water | 3 | | | | | | | | |
| | 5 | | 14 | | | | | | |
| | 7 | | | | | | | | |
| 821.77 | | | | | | | | | |
| Stiff to Very Stiff Purplish Gray Silty Clay Loam Till | 2 | | | | | | | | |
| | 3 | 1.8 | 13 | | | | | | |
| | 5 | B | | | | | | | |
| | | | | | | | | | |
| -20 | | | | | | | | | |

SOIL BORING 019-8800.GPJ IL_DOT_GDT 3/9/21

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



Illinois Department of Transportation

Division of Highways
Illinois Department of Transportation

SOIL BORING LOG

Date 2/25/21

ROUTE FAP 17 (IL 64) DESCRIPTION Slope Failure on IL 64, 0.4 miles West of Five Points Road, Contract 66L14 LOGGED BY Larry Myers

SECTION (125)SLP,J LOCATION SW 1/4, SEC. 26, TWP. 41N, RNG. 4E, 3rd PM,
Latitude 42.00024, Longitude -88.74597

COUNTY DeKalb DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

| STRUCT. NO. | Station | BORING NO. | Station | Offset | Ground Surface Elev. | D E P T H (ft) | B L O W S (/6") | U C S (tsf) | M O I S T (%) | Surface Water Elev. | Stream Bed Elev. | Groundwater Elev.: | First Encounter | Upon Completion | After | Hrs. | D E P T H (ft) | B L O W S (/6") | U C S (tsf) | M O I S T (%) | | | | |
|---|------------------|------------|---------|-------------|----------------------|-----------------------------------|------------------------------------|--------------------------|----------------------------------|--|------------------|--------------------|-----------------|-----------------|-------|--------|-----------------------------------|------------------------------------|--------------------------|----------------------------------|--|--|--|--|
| 019-8800 | 893+54 to 902+10 | 6 | 897+08 | 16.7 ft Lt. | 838.86 | | | | | | | | | | | | | | | | | | | |
| Augered Shoulder Stone, CA 6, Black Silty Clay Loam Fill | | | | | | 836.36 | | | | Stiff to Very Stiff Purplish Gray Silty Clay Loam Till (continued) | | | | | | 2 | | | | | | | | |
| Very Stiff Brown Silty Clay Loam Till Fill & Black Silty Clay Loam Fill | | | | | | 833.86 | 4 | 3.0 | 25 | | | | | | | 3 | 1.8 | 14 | | | | | | |
| | | | | | | | 5 | P | | | | | | | | 4 | B | | | | | | | |
| Medium Brown & Gray Silty Clay / Silty Loam Loess | | | | | | | 1 | 0.5 | 25 | | | | | | | 2 | | | | | | | | |
| | | | | | | | 2 | P | | | | | | | | 4 | 2.1 | 14 | | | | | | |
| | | | | | | | 1 | | | | | | | | | 5 | B | | | | | | | |
| | | | | | | | 1 | 1.0 | 26 | | | | | | | 2 | | | | | | | | |
| | | | | | | | 3 | P | | | | | | | | 4 | 2.3 | 15 | | | | | | |
| WH = Weight of Hammer | | | | | | -10 | WH | | | | | | | | | 6 | B | | | | | | | |
| | | | | | | | 1 | 0.5 | 38 | | | | | | | 2 | | | | | | | | |
| | | | | | | | 2 | P | | | | | | | | 4 | 2.4 | 13 | | | | | | |
| Medium Gray & Brown Silty Loam with some Fine Sand Layers | | | | | | 826.86 | | | | End of Boring | | | | | | 807.36 | | | | | | | | |
| | | | | | | | 1 | 1.0 | 19 | | | | | | | | | | | | | | | |
| | | | | | | | 3 | P | | | | | | | | | | | | | | | | |
| Stiff to Very Stiff Purplish Gray Silty Clay Loam Till | | | | | | 823.86 | 2 | | | | | | | | | | | | | | | | | |
| | | | | | | | 3 | 1.7 | 14 | | | | | | | | | | | | | | | |
| | | | | | | | 4 | B | | | | | | | | | | | | | | | | |
| | | | | | | | 2 | | | | | | | | | | | | | | | | | |
| | | | | | | | 3 | 1.7 | 14 | | | | | | | | | | | | | | | |
| | | | | | | | 4 | B | | | | | | | | | | | | | | | | |
| | | | | | | -20 | | | | | | | | | | | | | | | | | | |

SOIL BORING 019-8800.GPJ IL_DOT_GDT 3/9/21

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



Illinois Department of Transportation

Division of Highways
Illinois Department of Transportation

SOIL BORING LOG

Date 2/25/21

ROUTE FAP 17 (IL 64) DESCRIPTION Slope Failure on IL 64, 0.4 miles West of Five Points Road, Contract 66L14 LOGGED BY Larry Myers

SECTION (125)SLP,J LOCATION SW 1/4, SEC. 26, TWP. 41N, RNG. 4E, 3rd PM,
Latitude 42.00037, Longitude -88.7471

COUNTY DeKalb DRILLING METHOD Hollow Stem Auger HAMMER TYPE CME Automatic

STRUCT. NO. 019-8800
Station 893+54 to 902+10

BORING NO. 7
Station 893+98
Offset 14.6 ft Lt.
Ground Surface Elev. 839.56 ft

| D E P T H H | B L O W S | U C S Qu | M O I S T | Surface Water Elev. _____ ft | D E P T H | B L O W S | U C S Qu | M O I S T |
|--------------------------------|-----------------------|-----------------------|-----------------------|------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| (ft) | (/6") | (tsf) | (%) | Stream Bed Elev. _____ ft | (ft) | (/6") | (tsf) | (%) |

| | | | | | | | | |
|---|----|------|----|---|--|-----|-----|----|
| Augered Bituminous Shoulder, CA 6, Concrete Rubble, more CA 6, Black Silty Clay Loam Fill | | | | Stiff to Very Stiff Purplish Gray Silty Clay Loam Till (<i>continued</i>) | | 3 | | |
| | | | | | | 3 | 2.1 | 15 |
| | | | | | | 6 | B | |
| | | | | | | 3 | | |
| | | | | | | 4 | 2.3 | 17 |
| | | | | | | 5 | B | |
| 834.56 -5 | | | | | | -25 | | |
| Stiff Black Silty Clay Loam Fill | 2 | | | | | 3 | | |
| | 4 | 1.0 | 26 | | | 5 | 2.6 | 14 |
| | 4 | P | | | | 7 | B | |
| 832.56 | | | | | | | | |
| Medium Brown & Gray Silty Clay / Silty Loam Loess | 2 | | | | | 3 | | |
| | 1 | 0.8 | 28 | | | 5 | 2.4 | 15 |
| | 3 | P | | | | 7 | B | |
| 830.06 | | | | | | | | |
| Stiff Gray Silty Loam | 2 | | | | | 3 | | |
| | 1 | 1.0 | 18 | | | 5 | 2.6 | 14 |
| | 4 | P | | | | 7 | B | |
| 827.56 | | | | 808.06 | | | | |
| Stiff to Very Stiff Purplish Gray Silty Clay Loam Till | 1 | | | End of Boring | | | | |
| | 3 | 1.7 | 13 | | | | | |
| | 5 | B | | | | | | |
| | | | | | | | | |
| -15 | | | | | | -35 | | |
| * Large Cobble at 15.0 Ft | 53 | | | | | | | |
| | 28 | 1.7* | 15 | | | | | |
| | 4 | B | | | | | | |
| | | | | | | | | |
| | 2 | | | | | | | |
| | 3 | 2.3 | 16 | | | | | |
| | 5 | B | | | | | | |
| | | | | | | | | |
| -20 | | | | | | -40 | | |

SOIL BORING 019-8800.GPJ IL_DOT.GDT 3/9/21

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