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Re: Letter Report
Geotechnical Recommendations for Temporary Soil Retention System (TSRS)
Interstate 80 Reconstruction East Mainline
PTB/ Item.:194/011
Contract No. 62R89
Will County, Illinois
Wang No. KE225089/ 7901-15-01

This letter report presents the results of our geotechnical subsurface investigation, laboratory testing, geotechnical engineering analyses, and recommendations for the design and construction of the proposed Temporary Soil Retention System (TSRS) along I-80 in Will County, Illinois.

Based on *Preliminary Drawings* (Appendix-D) provided by TranSystems Corporation (TranSystems), Wang Engineering, Inc., A Terracon Company (Wang) understands the TSRSs are proposed on both eastbound and westbound of I-80. The eastbound TSRSs are located 31.5' to 43.5' RT from I-80 centerline, between Stations 518+00 and 550+00. The westbound TSRSs are located 31.5' to 43.5' LT from centerline and between Stations 521+00 and 546+50. The main purpose of the TSRS is to allow for the maintenance of traffic while lowering the I-80 roadway profile up to 7 feet. The TSRSs are part of the proposed roadway widening and reconstruction of I-80 from Houbolt Road to west of Center Street and will be constructed as part of Contract 62R89. On the USGS Channahon *Quadrangle 7.5 Minute Series* map, the structures are located in the SE ¼ of Section 13 and NE ¼ of Section 24, Tier 35 N, Range 9 E of the Third Principal Meridian. A *Site Location Map* is presented as Exhibit 1.

The purpose of our investigation was to characterize the site soil and groundwater conditions for the design and construction of the TSRS. The TSRS details are summarized in Table 1

Table 1: Proposed TSRS Locations

TSRS Locations	Start Station[1]	End Station	Offset
I-80 Eastbound	518+00	529+50	43.5' RT
	529+50	534+72[1]	31.5' RT
	535+51[1]	540+70	31.5' RT
	540+70	550+00	43.5' RT
I-80 Westbound	521+00	530+00	43.5' LT
	530+00	534+93[1]	31.5' LT
	535+69[1]	540+40	31.5' LT
	540+40	546+50	43.5' LT

[1]Stations and offsets measured are approximate. Actual TSRS locations will be shown on final plans.

FIELD AND LABORATORY INVESTIGATIONS

The subsurface investigation consisted of a total of 25 structure borings performed by Wang Testing Services (WTS), Borings JJT-BSB-01 through JJT-BSB-05 were drilled in March 2021 and Borings TSRS-01 through TSRS-20 were drilled in May 2023. Borings TSRS-01 through TSRS-20 and JJT-01 through JJT-BSB-04 were drilled along I-80 roadway from elevations of 607.1 to 640.3 feet and were sampled to depths of 30 to 87 feet below ground surface (bgs). Boring JJT-BSB-05 was drilled along Joliet Junction trail from an elevation of 612.1 feet and to a depth of 45 feet bgs. The boring locations were surveyed by Wang with a mapping-grade GPS. Elevations, stations, and offsets were provided by TranSystems. The as-drilled boring locations are shown in the *Boring Logs* (Appendix A) and on the *Boring Location Plan* (Exhibit 2).

A combination of ATV- and truck-mounted drilling rigs, equipped with hollow stem augers, was used to advance and maintain open boreholes. Soil sampling was executed according to AASHTO T 206, "*Penetration Test and Split Barrel Sampling of Soils."* The soil was sampled at 2.5-foot intervals to 30.0 feet bgs and at 5.0-foot intervals thereafter to the boring's termination depths. Bedrock cores, 2 to 15.5-feet long, were taken from Borings JJT-BSB-01 through JJT-BSB-05 using a NWD4-sized core barrel. Soil samples collected from each sampling interval were placed in

sealed jars, and the rock cores were placed into marked core boxes and transported to the laboratory for further examination and testing.

Field boring logs prepared and maintained by a Wang field geologist included lithological descriptions, visual-manual soil classifications (IDH textural classification), results of pocket penetrometer or Rimac unconfined compressive strength testing on cohesive soils, and Standard Penetration Test (SPT) results recorded as blows per 6 inches of penetration.

Groundwater observations were made during and at completion drilling. It should be noted that groundwater levels might vary with seasonal rainfall patterns and long-term climate fluctuations or be influenced by local site conditions. The boreholes were grouted immediately upon completion and the surface was restored as close as possible to the original condition.

Soil samples were tested in our laboratory for moisture content (AASHTO T 265). Atterberg limits (AASHTO T89 and T90) and particle size analysis (AASHTO T88) tests were executed on selected samples. The laboratory test results are shown in the *Boring Logs* (Appendix A) and in the *Laboratory Test Results* (Appendix B).

SOIL AND GROUNDWATER CONDITIONS

Detailed descriptions of the soil conditions encountered during the subsurface investigation are presented in the attached *Boring Logs* (Appendix A) and in the *Soil Profiles* (Exhibits 3-1 to 3-3). 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.

Along I-80 surface, the borings encountered 11 to 19 inches of asphalt pavement over one to 27 inches of sandy gravel aggregate base. Borings TSRS-01 through TSRS-03, TSRS-05, TSRS-07, TSRS-10, and TSRS-11 were drilled along I-80 roadway shoulders and they revealed three inches of crushed stone. Boring JJT-BSB-05 encountered 2.5 inches of asphalt pavement over 5 inches of crushed stone aggregate base along Joliet Junction trail. In descending order, the general lithological succession encountered beneath the pavement structure or topsoil includes: 1) man-made ground (fill); 2) stiff to hard silty clay to silty clay loam; 3) medium dense to dense sand, gravelly sand to sandy gravel and silt to silty loam; 4) very stiff to hard silty clay loam and dense to very dense silty loam to gravelly silty loam; and 5) dolostone bedrock.

(1) Man-made ground (fill)

Beneath the pavement structure, the borings encountered 3.7 to 30.0 feet of cohesive and granular fill. The cohesive fill consists of medium stiff to hard, brown, gray, and black silty clay and silty clay loam with unconfined compressive strength (Q_u) values of 0.8 to 10.2 tsf and moisture content values of 11 to 28%. Laboratory index testing on a sample from this layer shows L_L and P_L values of 36 to 39% and 16 to 17%, respectively. The granular fill consists of loose to medium dense, damp to wet, brown, gray, and black sandy gravel with SPT N-values of 4 to 28 blows per foot.

Below the fill, at elevations of 600.1 and 608.9 feet (4.0 and 29.8 feet bgs), Borings TSRS-01 and TSRS-14 encountered hard, dark brown and black silty clay buried topsoil. The buried topsoil has a Q_u value of 4.0 tsf and a moisture content value of 26%.

(2) Stiff to hard silty clay to silty clay loam

Beneath the fill, at elevations of 599.1 to 619.7 feet (8.0 to 31.8 feet bgs), the borings revealed up to 29.2 feet of stiff to hard brown and gray silty clay to silty clay loam. This soil unit has Q_u values of 1.0 to 10.1 tsf and moisture content values of 12 to 30%.

From elevations of 590.5 to 600.0 feet (11.5 to 28.0 feet bgs), Borings TSRS-02, TSRS-03 and TSRS-06 encountered 0.8 to 3.0 feet of interbedded loose to medium dense, damp to moist sand and silt layers. The sand and silt layers have SPT N-values of 6 to 29 blows per foot.

(3) Medium dense to dense sand, gravelly sand to sandy gravel and silt to silty loam

At elevations of 583.3 to 597.4 feet (18.0 to 49.8 feet bgs), the borings encountered up to 15 feet of medium dense to dense, damp to saturated, brown and gray sand, gravelly sand to sandy gravel and silt to silty loam. This unit has SPT N-values of 13 to 44 blows per foot.

(4) Very stiff to hard silty clay loam and dense to very dense silty loam to gravelly silty loam

At elevations of 574.4 to 585.4 feet (27.4 to 56.8 feet bgs), the borings revealed up to 13.6 feet of very stiff to hard silty clay loam and dense to very dense, damp silty loam to gravelly silty loam. This unit has Q_u values of 2.5 to 5.4 tsf, SPT N-values of 35 blows per foot to greater than 54 blows for 6-inches, and moisture content values of 8 to 25%. Laboratory index testing on a silty loam sample from this layer shows L_L and P_L values of 17% and 12%, respectively.

(5) Dolostone bedrock

At elevations of 571.6 to 575.2 feet (37 to 68 feet bgs), Borings JJT-BSB-01 through JJT-BSB-05

encountered up to six feet of very dense, damp to saturated weathered dolostone bedrock.

At elevations of 567.2 to 572.1 feet (40.0 to 71.5 feet bgs), Borings JJT-BSB-01 through JJT-BSB-03, and JJT-BSB-05 cored through strong to very strong, very poor to fair quality dolostone bedrock. The bedrock has Rock Quality Designation (RQD) values of 10 to 66% and uniaxial compressive strengths of 6,408 to 7,495 psi.

Groundwater was observed while drilling at elevations of 582 and 609 feet (3.0 and 52.0 feet bgs) within the granular fill and the sand and silt (unit 3). Upon completion of drilling, groundwater was measured within the augers at elevations of 577 and 579 feet (25 to 30 feet bgs) in Borings TSRS-01 and TSRS-02. Borings TSRS-03 through TSRS-20 did not record any groundwater at the completion of drilling. Due to bedrock coring in Borings JJT-BSB-01 through JJT-BSB-05, proper groundwater measurements were not recorded. Borings JJT-BSB-01 and JJT-BSB-04 were flushed and left open for a 24-hour groundwater measurement. During the 24-hour water level measurement cave-in was observed at 12.0 and 62.0 feet bgs and groundwater was measured at 617 and 634 feet (6.0 and 22.0 feet bgs).

ANALYSES AND RECOMMENDATIONS

Based on the Preliminary Drawings, TSRS will be installed for widening and reconstruction of I-80. Borings TSRS-01 through TSRS-20, and bridge borings JJT-BSB-01 through JJT-BSB-05 show stiff to hard silty clay to silty clay loam fill followed by very stiff to hard silty clay to silty clay loam. Deeper soils reveal saturated medium dense to very dense silt to sand lying over bedrock at about 70 feet bgs (575 feet elevation). Borings designated as TSRS were drilled to 30 feet bgs and Borings designated as JJT-BSB were drilled to bedrock. *Bedrock Core Photographs* are shown in Appendix C and compressive strength on rocks samples in *Laboratory Test Result* (Appendix-B).

We understands that the *Temporary Soil Retention System* will be designed by the Contractor and reviewed by IDOT prior to construction. Actual type of TSRS will be designed by the contractor. We recommend including a pay item "*Temporary Soil Retention System*" in the project documents.

To establish a minimum TSRS embedment depth, we recommend performing a lateral load analysis via p-y curve (LPILE) method using the soil and rock parameters provided in Tables 2 through 24. Tables also include active, at rest, and passive earth pressure coefficients for horizontal backfill behind the TSRS designated as K_a, K_o, and K_p, respectively. Lateral load due to roadway traffic and

construction equipment should be considered. Lateral deflection of TSRS should be limited to keep retained roadway in a stable condition. Tables with TSRS borings as a reference have lateral soil parameters to 30 feet bgs. TSRS should be designed and constructed as per Article 522.07 of IDOT Standard Specifications for Road and Bridge Construction(2022). If additional information is required below this depth, we recommend drilling deeper borings.

Table 2: Recommended Soil Parameters for Lateral Load Analysis
from Station 518+00 to 518+80
Reference Boring: TSRS-01

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Undrained Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
V Stiff to Hard SI CL Loam Fill Surface to 600.1	125	5000	0	100	32
Hard SI Clay (Buried Topsoil) 600.1 to 598.6	125	4000	0	100	32
V Stiff to Hard SI Clay 598.6 to 586.1	125	4000	0	100	32
M Dense SI Loam to Sand 586.1 to 578.6 feet	53 (Submerged)	0	30	0	30
M Dense to Dense Sand 578.6 to 574.4	58 (Submerged)	0	32	0	32
V Stiff SI CL Loam 574.4 to 574.1	58 (Submerged)	2500	0	100	31

Table 3: Recommended Soil Parameters for Lateral Load Analysis
from Station 518+80 to 520+25
Reference Boring: TSRS-02

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, cu (psf)	Estimated Undrained Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
V Stiff to Hard SI CL Loam Fill Surface to 599.1	125	5000	0	100	32
V Stiff SI Clay 599.1 to 595.6	120	2900	0	100	31
Loose Silt 595.6 to 594.1	110	0	27	0	27
V Stiff SI CL Loam to SI Loam 594.1 to 590.5 feet	120	3000	0	100	31
Loose Silt 590.5 to 589.1	110	0	27	0	27
Stiff to Hard SI CL Loam 589.1 to 584.9	120	2600	0	100	31
Medium Sand 584.9 to 583.0	115	0	30	0	30
V Stiff SI Clay 583.0 to 581.6	120	3000	0	100	31
M Dense Sand 581.6 to 577.1	58 (Submerged)	0	31	0	31

Table 4: Recommended Soil Parameters for Lateral Load Analysis
from Station 520+25 to 521+70
Reference Boring: TSRS-03

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
Hard SI CL Fill Surface to 603.4	125	5000	0	100	32
V Stiff SI CL Fill 603.4 to 595.1	120	3300	0	100	31
M Dense Silt 595.1 to 594.3	115	0	30	0	30

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
V Stiff to Hard SI Clay 594.3 to 583.3	125	4300	0	100	32
Coarse Sand 583.3 to 582.5	115	0	31	0	31
V Stiff SI CL Loam 582.5 to 581.3	58(Submerged)	2500	0	100	31

Table 5: Recommended Soil Parameters for Lateral Load Analysis
from Station 521+70 to 523+25
Reference Boring: TSRS-04

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
Hard SI CL to SI CL Loam Fill Surface to 599.4	125	5000	0	100	32
Stiff to V Stiff SI Clay to Clay 599.4 to 591.9	120	1700	0	100	30
V Stiff to Hard SI Clay 591.9 to 584.9	125	3800	0	100	31

Table 6: Recommended Soil Parameters for Lateral Load Analysis
from Station 523+25 to 524+70
Reference Boring: TSRS-05

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
Hard SI Clay to SI CL Loam Fill Surface to 614.9	125	5000	0	100	32
V Stiff SI Clay to Si CL Loam Fill 614.9 to 612.4	120	3600	0	100	31
Hard SI Clay to SI CL Loam Fill 612.4 to 597.4	125	5000	0	100	32

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
V Stiff SI CL to SI CL Loam Fill 597.4 to 591.1	120	3400	0	100	31
V Stiff SI Clay 591.1 to 590.4	120	2500	0	100	31

Table 7: Recommended Soil Parameters for Lateral Load Analysis
from Station 524+70 to 525+90
Reference Boring: TSRS-06

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
V Stiff to Hard SI Clay to SI CL Loam Fill Surface to 600.0	125	5000	0	100	32
Loose to M Dense Sand 600 to 597.1	120	0	31	0	31
V Stiff SI Clay 597.1 to 595.8	120	3500	0	100	31
M Dense Sand 595.8 to 594.7	115	0	30	0	30
V Stiff SI Clay 594.7 to 593.8	120	3700	0	100	31

Table 8: Recommended Soil Parameters for Lateral Load Analysis
from Station 525+70 to 527+30
Reference Boring: TSRS-07

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
V Stiff SI Clay to SI CL Loam Fill Surface to 614.3	120	2800	0	100	31
V Stiff to Hard SI Clay to SI CL Loam Fill 614.3 to 597.3	125	5000	0	100	32

Table 9: Recommended Soil Parameters for Lateral Load Analysis
from Station 527+30 to 528+85
Reference Boring: TSRS-08

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
Hard SI CL Fill Surface to 614.9	125	5000	0	100	32
V Stiff to Hard SI Clay Fill 614.9 to 604.9	125	4500	0	100	32
V Stiff SI Clay 604.9 to 600.4	120	3100	0	100	31

Table 10: Recommended Soil Parameters for Lateral Load Analysis
from Station 528+85 to 530+27
Reference Boring: TSRS-09

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
V Stiff to Hard SI CL to SI CL Loam Fill Surface to 607.7	125	5000	0	100	32
Stiff to V Stiff SI Clay 607.7 to 604.0	120	1500	0	100	30

Table 11: Recommended Soil Parameters for Lateral Load Analysis
from Station 530+27 to 531+75
Reference Boring: TSRS-10

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
V Stiff to Hard SI Clay Fill Surface to 612.2	125	4500	0	100	32
Stiff to V Stiff SI Clay 612.2 to 607.2	120	2100	0	100	31
Hard SI Clay 607.2 to 605.2	125	5000	0	100	32

Table 12: Recommended Soil Parameters for Lateral Load Analysis
from Station 531+75 to 533+25
Reference Boring: TSRS-11

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
V Stiff to Hard SI CL to Si CL Loam Fill Surface to 627.8	120	3500	0	100	31
V Stiff to Hard SI CL to SI CL Loam Fill 627.8 to 614.0	125	5000	0	100	32
V Stiff SI CL to SI CL Loam 614.0 to 608.3	120	3100	0	100	31

Table 13: Recommended Soil Parameters for Lateral Load Analysis
from Station 533+25 to 534+93
Reference Borings: JJT-BSB-01 and JJT-BSB-02

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
M Stiff to Hard SI CL to SI CL Loam Fill Surface to 630.7	120	2700	0	100	31
Stiff to Hard SI CL to SI CL Loam Fill 630.7 to 606.9	120	3800	0	100	31
V Stiff to Hard SI CL to SI CL Loam 606.9 to 592.9	125	5000	0	100	32
M Dense to Dense SI Loam, Sand to GR Sand 592.9 to 585.4	58 (Submerged)	0	32	0	32
V Stiff to Hard SI CL Loam 585.4 to 577.9	63 (Submerged)	4000	0	100	32
V Dense SI Loam 577.9 to 571.6	63 (Submerged)	0	33	0	33

Table 14: Recommended Soil Parameters for Lateral Load Analysis
from Station 535+51 to 536+75
Reference Borings: JJT-BSB-03 and JJT-BSB-04

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
Stiff to V Stiff SI CL Fill Surface to 607.4	120	2300	0	100	31
Stiff to Hard SI Clay 607.4 to 590.5	120	4600	0	100	32
M Dense to V Dense SA to SI Loam 590.5 to 572.6	63 (Submerged)	0	33	0	33

Table 15: Recommended Soil Parameters for Lateral Load Analysis
from Station 536+75 to 538+25
Reference Boring: TSRS-12

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
Soft to Stiff SI Clay Fill Surface to 634.8	115	1000	0	100	30
V Stiff to Hard SI Clay Fill 634.8 to 614.8	120	3100	0	100	31
Hard SI Clay Fill 614.8 to 610.2	120	4700	0	100	32

Table 16: Recommended Soil Parameters for Lateral Load Analysis
from Station 538+25 to 539+75
Reference Boring: TSRS-13

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
Hard SI CL Fill Surface to 630.9	125	5000	0	100	32
V Stiff to Hard Fill 630.9 to 618.38	120	3500	0	100	31

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
Stiff to V Stiff SI Clay 618.4 to 608.9	120	2100	0	100	31

Table 17: Recommended Soil Parameters for Lateral Load Analysis
from Station 539+75 to 541+30
Reference Boring: TSRS-14

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
Stiff to V Stiff SI CL to SI CL Loam Fill Surface to 625.6	120	2200	0	100	31
V Stiff to Hard SI CL to SI CL Loam Fill 625.6 to 608.6	120	3400	0	100	31

Table 18: Recommended Soil Parameters for Lateral Load Analysis
from Station 541+30 to 542+80
Reference Boring: TSRS-15

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
V Stiff to Hard SI CL Fill Surface to 616.1	125	5000	0	100	32
V Stiff SI CL Fill 616.1 to 613.6	120	2700	0	100	31
V Stiff to Hard SI CL Fill 613.6 to 606.6	125	5000	0	100	32

Table 19: Recommended Soil Parameters for Lateral Load Analysis
from Station 542+80 to 544+30
Reference Boring: TSRS-16

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
V Stiff to Hard SI CL to SI CL Loam Fill Surface to 624.4	125	5000	0	100	32
V Stiff SI CL to SI CL Loam Fill 624.4 to 616.9	120	3200	0	100	31
Hard SI CL to SI CL Loam 616.9 to 611.9	125	5000	0	100	32
Stiff to V Stiff SI CL to SI CL Loam 611.9 to 604.9	120	2800	0	100	31

Table 20: Recommended Soil Parameters for Lateral Load Analysis
from Station 544+30 to 545+75
Reference Boring: TSRS-17

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
Hard SI CL to SI CL Loam Fill Surface to 621.1	125	5000	0	100	32
Stiff to V Stiff SI CL to SI CL Loam Fill 621.1 to 603.6	120	2300	0	100	31
V Stiff SI Clay 603.6 to 601.6	120	2500	0	100	31

Table 21: Recommended Soil Parameters for Lateral Load Analysis
from Station 545+75 to 547+25
Reference Boring: TSRS-18

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
V Stiff to Hard SI CL Fill Surface to 614.3	125	5000	0	100	32
V Stiff to Hard SI Clay 614.3 to 609.3	120	3500	0	100	31
Hard SI Clay 609.3 to 599.8	125	5000	0	100	32

Table 22: Recommended Soil Parameters for Lateral Load Analysis
from Station 547+25 to 548+80
Reference Boring: TSRS-19

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
V Stiff to Hard SI CL Fill Surface to 621.1	125	4500	0	100	32
V Stiff to Hard SI CL Fill 621.1 to 613.6	120	3500	0	100	31
V Stiff to Hard SI CL 613.6 to 603.6	120	5000	0	100	32
V Stiff SI Clay 603.6 to 597.3	120	3700	0	100	31
Dense Silt 597.3 to 596.6	120	0	32	0	32

Table 23: Recommended Soil Parameters for Lateral Load Analysis
from Station 548+80 to 550+00
Reference Boring: TSRS-20

Soil Type (Layer) Elevation (feet)	Unit Weight, γ (pcf)	Undrained Shear Strength, c_u (psf)	Estimated Friction Angle, Φ (°)	Estimated Drained Shear Strength, c'_u (psf)	Estimated Drained Friction Angle, Φ' (°)
Hard SI CL Loam Fill Surface to 614.2	125	5000	0	100	32
Hard SI Clay 614.2 to 609.2	125	5000	0	100	32
Stiff to V Stiff SI Clay 609.2 to 595.5	120	2200	0	100	31
Silt 595.5 to 594.7	53 (Submerged)	0	28	0	28

Table24: Bedrock Parameters for Lateral Load Analysis
Reference Borings: JJT-BSB-01to JJT-BSB-03 and JJT-BSB-05

Bedrock	Total Unit Weight, γ (pcf)	Modulus of Rock Mass (ksi)	Uniaxial Compressive Strength (psi)	RQD (%)	Strain Factor
Dolostone	140	400	6,000 (Estimated)	10	0.0005
Dolostone	140	700	6408	33	0.0005
Dolostone	140	780	7495	58	0.0005

CONSTRUCTION CONSIDERATIONS

Excavations should be performed in accordance with local, state, and federal regulations. The potential effect of ground movements upon nearby utilities should be considered during construction. Open excavations should not be sloped steeper than 1:1.5 (V:H) or as per latest Occupational Safety and Health Administration (OSHA) technical manual.

Groundwater was encountered during drillings at elevations of 582 to 609 feet. At the end of the drilling, groundwater was encountered at elevations of 577 and 579 feet. Groundwater elevations correlates directly to silt and sand layers (Layers 2 to 4). Groundwater elevations may change due to season variations. Excavation to the depths of granular layers may require dewatering. Groundwater that does enter the excavation could be removed by sump pump. The groundwater water will impact construction of the TSRS.

It has been a pleasure to assist TranSystems Corporation, and the Illinois Department of Transportation of in this project. If you have any questions, please do not hesitate to contact us.

Respectfully Submitted,

WANG ENGINEERING, INC.

Ramesh KC, P.E
Project Engineer

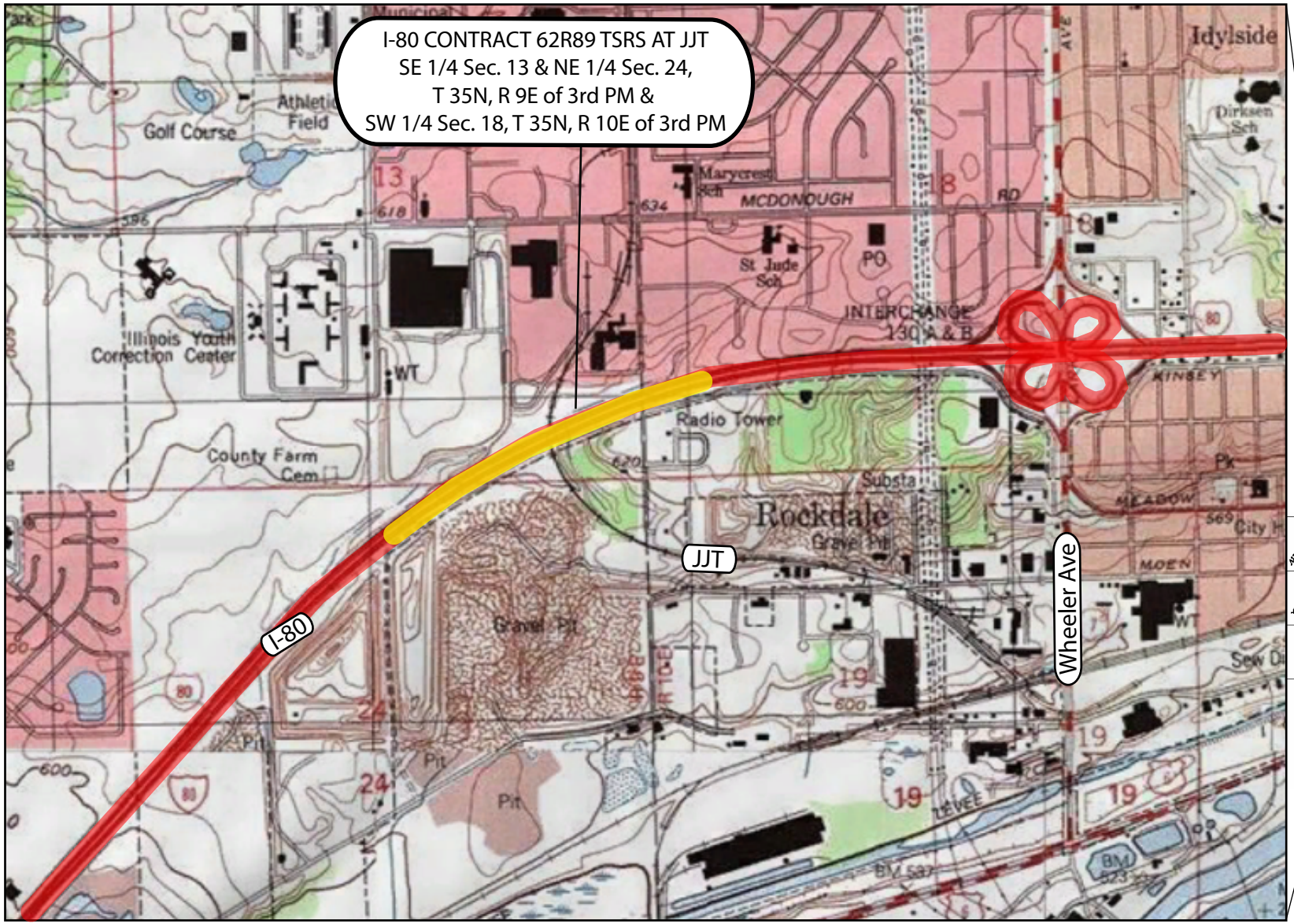
Andri Kurnia, P.E.
Senior Engineer

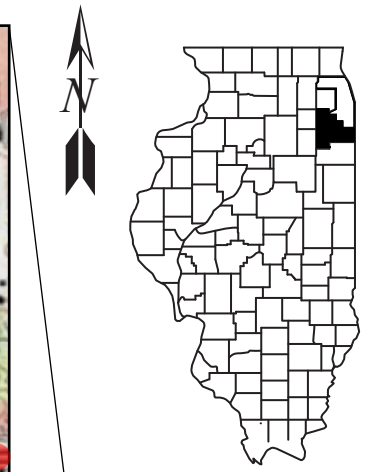
Jessica Bensen, P.G.
Project Geologist

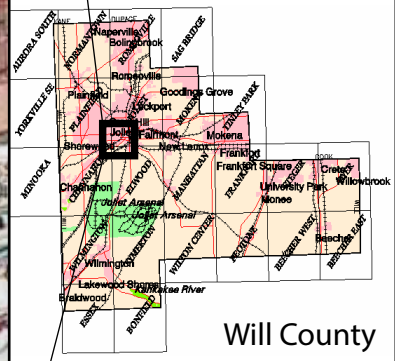
Mohammed (Mike) Kothawala, P.E., D. GE
QA/QC Reviewer

Attachments:
Exhibit 1: Site Location Map
Exhibit 2: Boring Location Plan
Exhibit 3: Soil Profile
Appendix A: Boring Logs
Appendix B: Laboratory Test Results
Appendix C: Bedrock Core Photographs
Appendix D: General Plan and Elevation Drawings

EXHIBITS







Will County

SITE LOCATION MAP: TEMPORARY SOIL RETENTION SYSTEM, I-80 CONTRACT 62R89; WILL COUNTY, ILLINOIS

SCALE: GRAPHICAL	EXHIBIT 1	DRAWN BY: J. Bensen CHECKED BY: A. Kurina

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FOR TRANSYSTEMS CORPORATION

KE225089
7901-15-01

Legend

- JJT Bridge Soil Boring
- TSRS Soil Boring

0 400 800 Feet

BORING LOCATION PLAN:TEMPORARY SOIL RETENTION SYSTEM, I-80 CONTRACT 62R89; WILL COUNTY, ILLINOIS

SCALE: GRAPHICAL	EXHIBIT 2	DRAWN BY: J. Bensen CHECKED BY: A. Kurina

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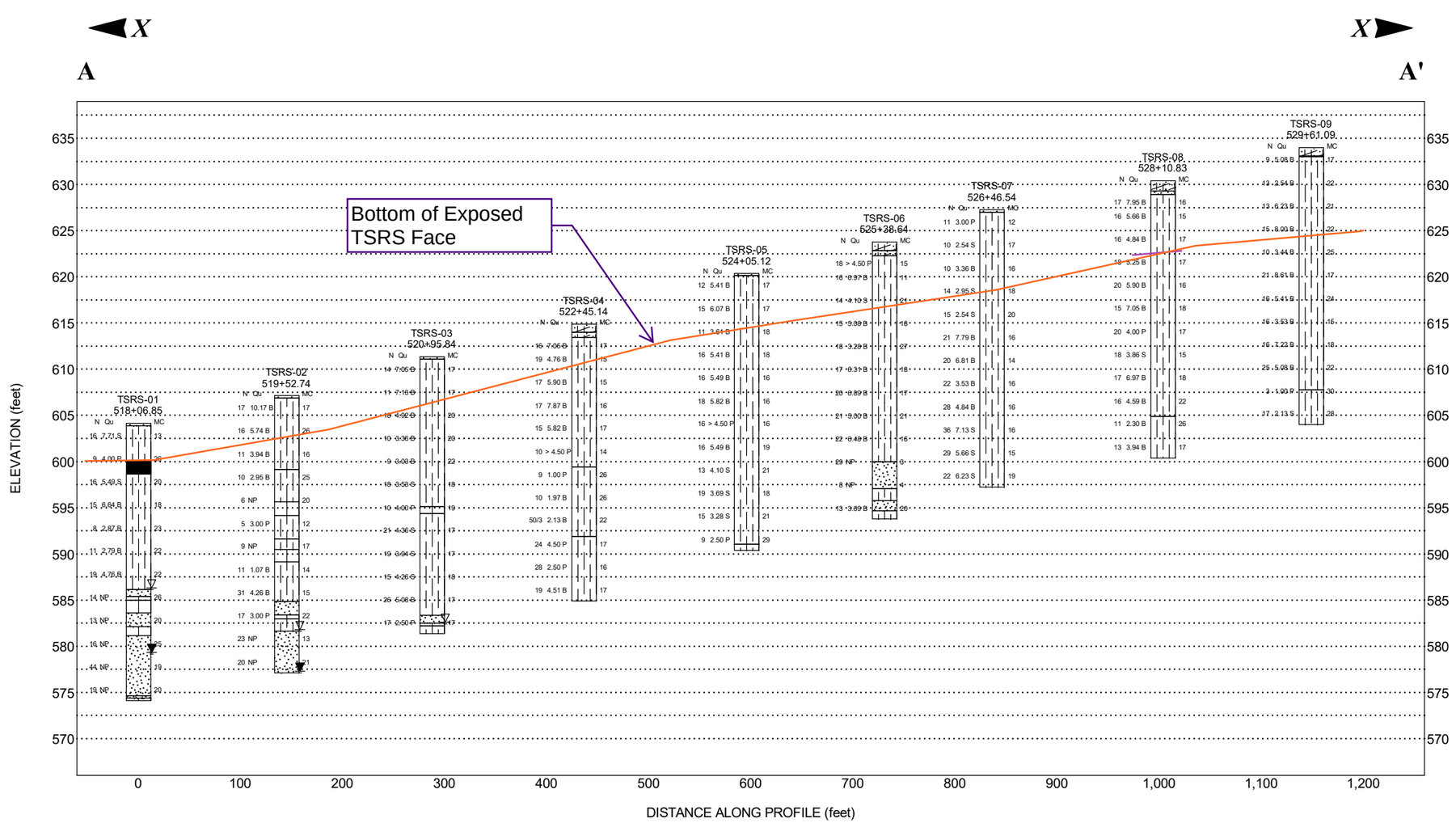
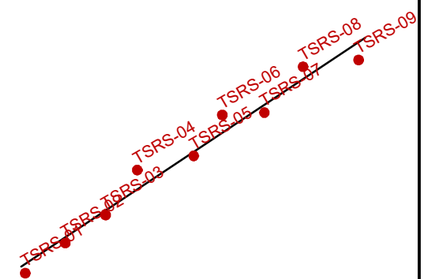
KE225089
7901-15-01



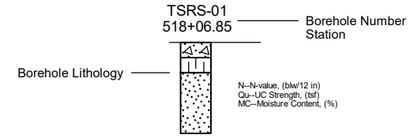
Lithology Graphics

- Crushed stone
- IDH Silty Clay, Silty Clay Loam
- Topsoil
- IDH Sand, Sandy Loam
- IDH Silt, Silty Loam
- Gravelly sand, sandy gravel
- Pavement



Site Map Scale 1 inch equals 440 feet

Explanation:



- Water Level Reading at time of drilling.
- Water Level Reading 24-hr after drilling or at end of drilling

0 120

Horizontal Scale (feet)

Vertical Exaggeration: 9x

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Subsurface Data Profile
TSRS along I-80

WEI SINCE 1982

I-80 Reconstruction (Houbolt Rd to Center St)
Will County, Illinois

JOB NUMBER	PLATE NUMBER
7901-15-01	EXHIBIT 3-1

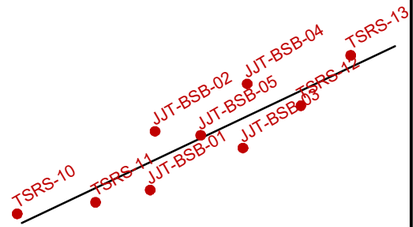
A

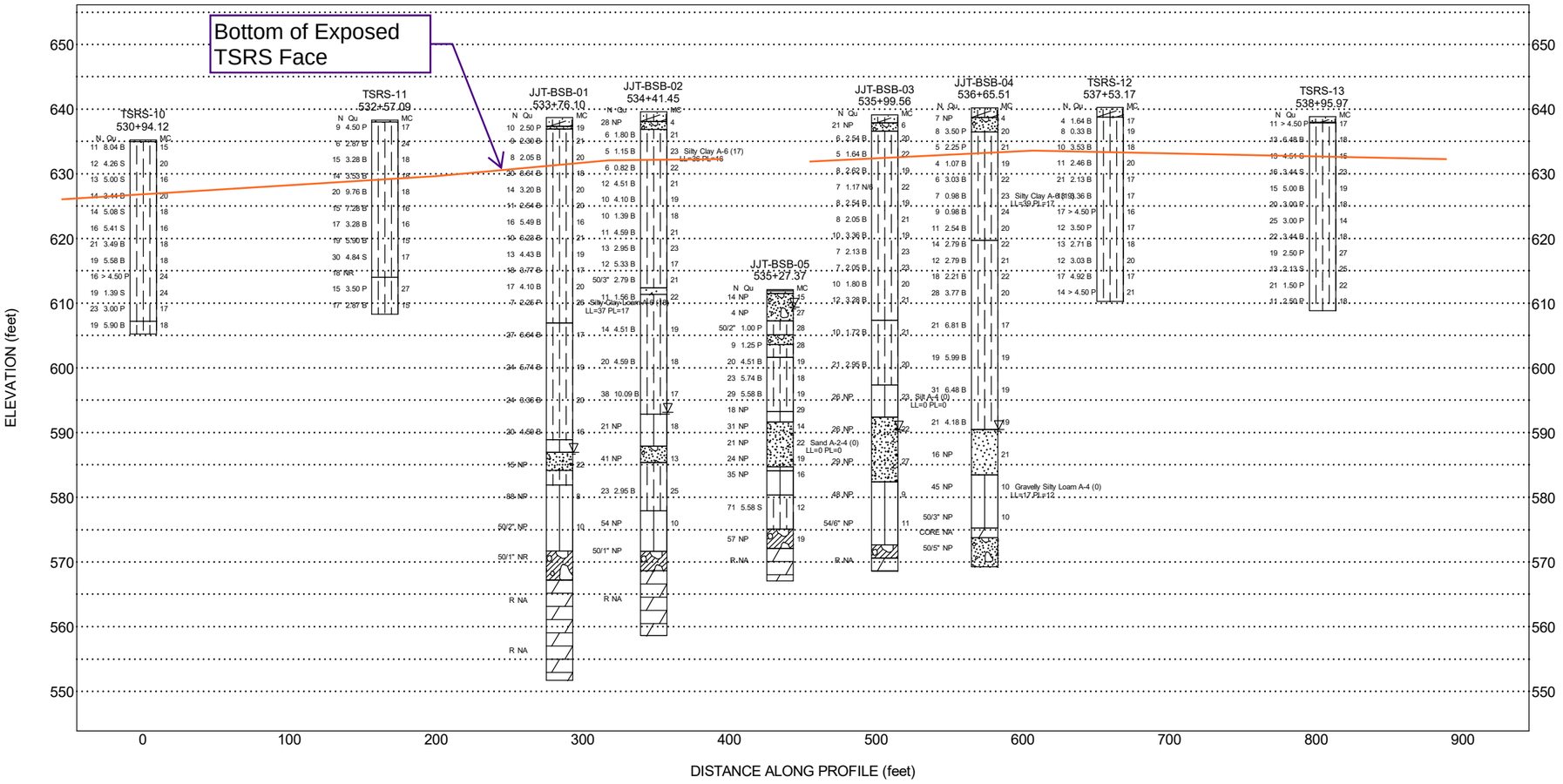
X

A'

X

N





Lithology Graphics

- Pavement
- Coarse sand
- IDH Sand, Sandy Loam
- Gravelly sand, sandy gravel
- Weathered bedrock
- Crushed stone
- IDH Silty Clay, Silty Clay Loam
- Dolomite or Dolomitic Limestone
- IDH Silt, Silty Loam
- Concrete

Site Map Scale 1 inch equals 330 feet

Explanation:

JJT-BSB-01
533+76.10 — Borehole Number / Station

Borehole Lithology

N--N-value, (blw/12 in)
Qu--UC Strength, (tsf)
MC--Moisture Content, (%)

Water Level Reading at time of drilling.

Water Level Reading 24-hr after drilling or at end of drilling

0 — 90

Horizontal Scale (feet)

Vertical Exaggeration: 4.5x

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Lombard, IL 60148

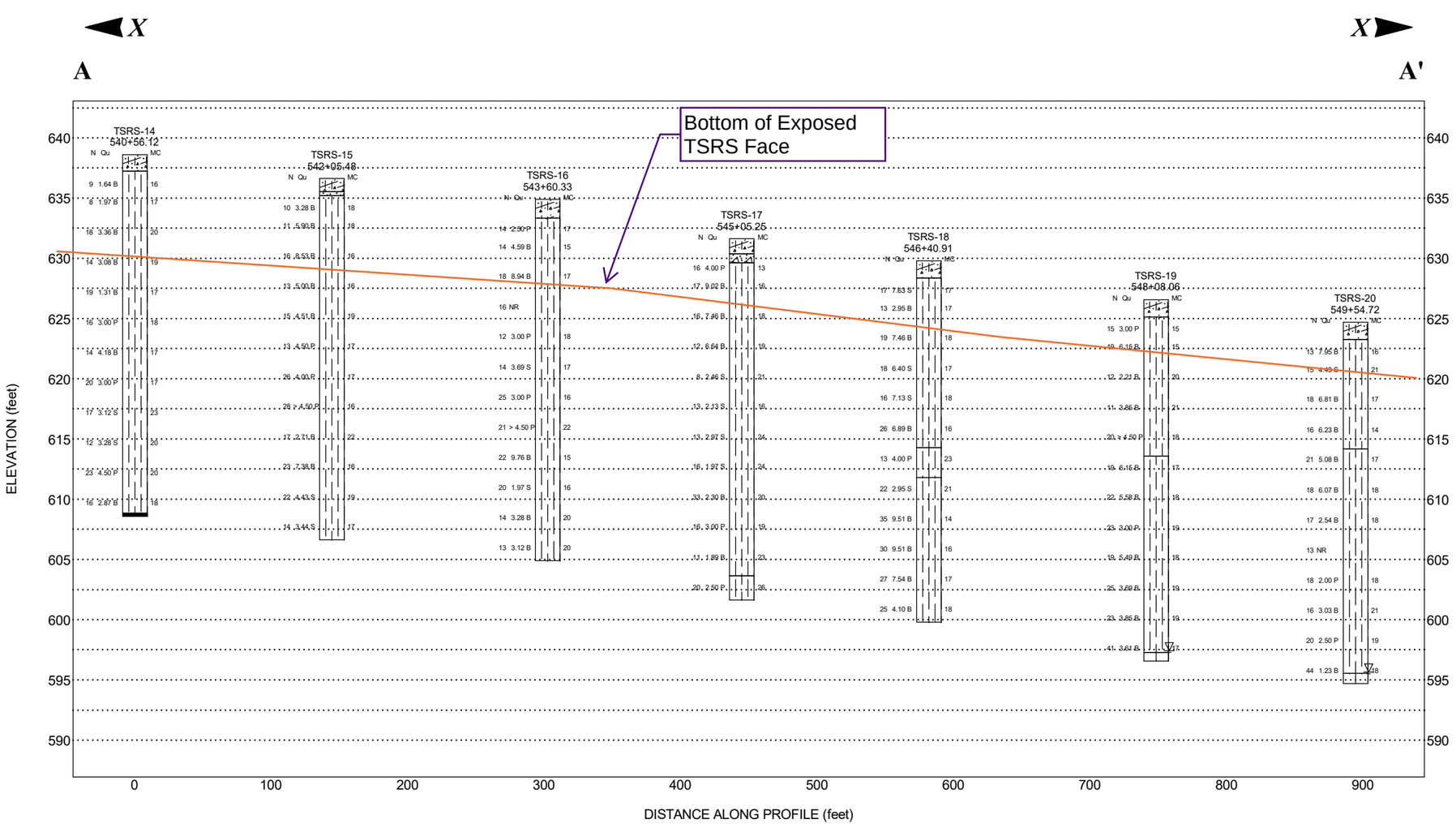
Subsurface Data Profile
TSRS along I-80

WEI SINCE 1982

I-80 Reconstruction (Houbolt Rd to Center St)
Will County, Illinois

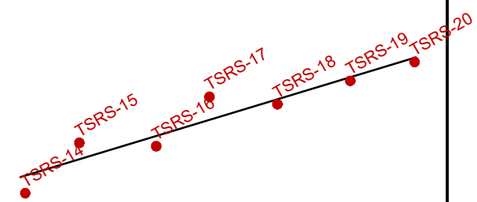
JOB NUMBER	PLATE NUMBER
7901-15-01	EXHIBIT 3-2

WEI 11X17 7901501.GPJ WANGENG.GDT 6/5/23



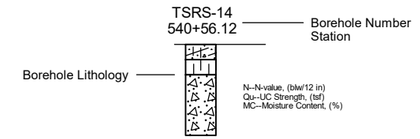
Lithology Graphics

- Pavement
- IDH Silty Clay, Silty Clay Loam
- Topsoil
- Crushed stone
- IDH Silt, Silty Loam



Site Map Scale 1 inch equals 330 feet

Explanation:



- Water Level Reading at time of drilling.
- Water Level Reading 24-hr after drilling or at end of drilling

0 — 90

Horizontal Scale (feet)

Vertical Exaggeration: 9x

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Subsurface Data Profile
TSRS along I-80

I-80 Reconstruction (Houbolt Rd to Center St)
Will County, Illinois

JOB NUMBER	PLATE NUMBER
7901-15-01	EXHIBIT 3-3

WEI 11X17 7901501.GPJ WANGENG.GDT 6/5/23

APPENDIX A

Wang Engineering

LEGEND FOR BORING LOG

Relative Density of Non-Cohesive Soils

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

Consistency of Cohesive Soils

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

Rock Quality Designation (RQD)

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

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

Proportional Terms

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

Gradation Terminology

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

Relative Moisture Conditions

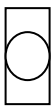
Term	Description
Dry	Dusty, No visible moisture
Damp	Cohesives hard to mold; Granulars do not flow easily
Moist	Cohesives can be molded; Granulars start to stick together
Wet	Cohesives can be very easily molded and sticky; Granulars stick together easily
Saturated	Only granular soils; Water drains freely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

Relative Drilling Resistance (RDR)

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

Sample Type Symbols


Split Spoon


No Recovery


Geoprobe


Rock Core


Shelby Tube


Auger Cuttings


In-situ Vane Shear Test

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

(Rev. 05/23/2018)

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BORING LOG JJT-BSB-01

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 638.68 ft
North: 1763574.41 ft
East: 1036121.43 ft
Station: 533+76.10
Offset: 60.29 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		16-inch thick ASPHALT --PAVEMENT--						
	637.4							
	636.9	5-inch thick, brown and gray SANDY GRAVEL; damp --AGGREGATE BASE--						
		Very stiff to hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--						
					1	3 4 6	2.50 P	19
			5		2	3 4 5	2.30 B	21
					3	3 4 4	2.05 B	20
			10		4	5 10 10	8.61 B	18
					5	4 7 7	3.20 B	20
			15		6	3 5 6	2.54 B	20
					7	8 6 10	5.49 B	16
			20		8	7 5 5	6.23 B	21
			25		9	4 5 8	4.43 B	19
					10	6 8 10	3.77 B	17
					11	5 7 10	4.10 B	20
		--trace organic matter-- --L_L(%)=37, P_L(%)=17-- --%Gravel=2.4-- --%Sand=5.3-- --%Silt=66.6-- --%Clay=25.7-- --A-6 (18)--	30		12	3 3 4	2.25 P	26
	606.9							
		Very stiff to hard, brown to gray SILTY CLAY LOAM to SILTY CLAY, trace gravel; damp --RDR 2--						
			35		13	7 12 15	6.64 B	17
			40		14	6 11 13	5.74 B	19

GENERAL NOTES

Begin Drilling: **03-14-2021** Complete Drilling: **03-14-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20D50T [80%]**
Driller: **J&M** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" IDA HSA to 10 ft; mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **52.00 ft**
At Completion of Drilling: **NA**
Time After Drilling: **24 hours**
Depth to Water: **22 (Cave in at 62 ft) ft**

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

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BORING LOG JJT-BSB-01

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 638.68 ft
North: 1763574.41 ft
East: 1036121.43 ft
Station: 533+76.10
Offset: 60.29 RT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
45				15	6 11 13	3.36 B	20
50	588.9	Gray SILTY LOAM; damp --RDR 2--		16	6 8 12	4.59 B	16
	586.9	Medium dense, gray and brown, coarse SAND; wet to saturated --RDR 2--					
55	584.2	Hard (4.00P), gray SILTY CLAY LOAM; damp --RDR 2--		17	9 8 7	NP	22
	581.9	Very dense, gray Gravelly SILTY LOAM; damp --RDR 2-3-- --hard drilling at 58 feet-- --possible cobbles--					
60				18	34 45 43	NP	8
65		--RDR 3-4--		19	38 50/2"	NP	10
	571.7	--slow hard drilling from 67 feet-- --possible cobbles-- WEATHERED BEDROCK --RDR 4--					
70				20	50/1"	NR	
	567.2	Very strong, light yellowish gray, fair quality DOLOSTONE; closely spaced, moderately weathered, horizontal and oblique joints, with <0.05 inch opening, slightly rough walls, and <0.2 inch thick sand infill, few chert nodules. --RUN 1: 71.5 to 79.0 feet-- --Recovery= 98%-- --RQD= 66%--	CORE				
75				21			
80		--RUN 2: 79.0 to 87.0 feet-- --Recovery=100%--	CO				

GENERAL NOTES

Begin Drilling: **03-14-2021** Complete Drilling: **03-14-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20D50T [80%]**
Driller: **J&M** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" IDA HSA to 10 ft; mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **52.00 ft**
At Completion of Drilling: **NA**
Time After Drilling: **24 hours**
Depth to Water: **22 (Cave in at 62 ft) ft**

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

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BORING LOG JJT-BSB-01

WEI Job No.: 7901-15-01

Client **TranSystems Corporation**
Project **I-80 Reconstruction (Houbolt Rd to Center St)**
Location **Will County, Illinois**

Datum: NAVD 88
Elevation: 638.68 ft
North: 1763574.41 ft
East: 1036121.43 ft
Station: 533+76.10
Offset: 60.29 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--RQD= 56%--				R E		
					22			
			85					
	551.7							
		Boring terminated at 87.00 ft						
			90					
			95					
			100					

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 **03-14-2021** Complete Drilling **03-14-2021**
Drilling Contractor **Wang Testing Services** Drill Rig **20D50T [80%]**
Driller **J&M** Logger **M. Sadowski** Checked by **C. Marin**
Drilling Method **2.25" IDA HSA to 10 ft; mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **52.00 ft**
At Completion of Drilling ▼ **NA**
Time After Drilling **24 hours**
Depth to Water **22 (Cave in at 62 ft) ft**

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

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BORING LOG JJT-BSB-02

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 639.61 ft
North: 1763702.19 ft
East: 1036132.01 ft
Station: 534+41.45
Offset: 50.05 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		18-inch thick ASPHALT --PAVEMENT--						
	638.1							
		Medium dense, brown and gray SANDY GRAVEL; damp			1	20 22 6	NP	4
	636.9	--AGGREGATE BASE--						
		Medium stiff to hard, brown and gray SILTY CLAY, trace gravel; damp						
		--FILL--			2	2 3 3	1.80 B	21
		--RDR 2--	5					
		--L_L(%)=36, P_L(%)=16--			3	2 3 2	1.15 B	23
		--%Gravel=2.0--						
		--%Sand=9.1--						
		--%Silt=54.2--						
		--%Clay=34.6--						
		--A-6 (17)--			4	2 3 3	0.82 B	22
			10					
					5	4 5 7	4.51 B	21
					6	4 5 5	4.10 B	19
			15					
					7	4 5 5	1.39 B	18
					8	3 4 7	4.59 B	21
			20					
					9	4 6 7	2.95 B	23
			25		10	6 6 6	5.33 B	17
					11	5 6 50/3"	2.79 B	21
	612.4							
		--very hard and slow drilling at 27 feet, concrete fragments--						
	611.4	--FILL--						
		--RDR 4-5--			12	5 5 6	1.56 B	22
		Hard, brown and gray SILTY CLAY; damp	30					
		--RDR 2--						
					13	4 7 7	4.51 B	19
			35					
					14	8 10 10	4.59 B	18
			40					

GENERAL NOTES

Begin Drilling: **03-11-2021** Complete Drilling: **03-11-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20D50T [80%]**
Driller: **NC&EG** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" IDA HSA to 10 ft; mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **46.75 ft**
At Completion of Drilling: **mud in borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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BORING LOG JJT-BSB-02

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 639.61 ft
North: 1763702.19 ft
East: 1036132.01 ft
Station: 534+41.45
Offset: 50.05 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			45		15	8 18 20	10.09 B	17
	592.9	Medium dense, gray SILT; wet --RDR 2--						
			50		16	8 9 12	NP	18
	587.9	Brown and gray Gravelly SAND; saturated --RDR 2-3--						
	585.4	Very stiff to hard (>4.5P), gray SILTY CLAY LOAM, trace gravel; damp --RDR 3-- --rig chatter and slow drilling at 55.5 feet, possible cobbles--	55		17	10 30 11	NP	13
		--silt seams--	60		18	10 11 12	2.95 B	25
	577.9	Very dense, gray Gravelly SILTY LOAM; damp --RDR 2-3--						
			65		19	18 27 27	NP	10
		--rig chatter at 65 feet; possible cobbles--						
	571.6	Very dense, gray GRAVEL; damp --WEATHERED BEDROCK-- --RDR 3-4-- --slow drilling, rock fragments--	70		20	50/1"	NP	
	568.6	Very strong, light yellowish gray, poor quality DOLOSTONE; closely spaced, moderately weathered, horizontal joints, with <0.05 inch opening, slightly rough walls, and <0.2 inch thick sand infill. --RUN 1: 71.0 to 81.0 feet-- --Recovery = 98%-- --RQD= 33%-- --Q_u= 6,408 psi--	75		21	CORE		
		--no water return from 78 to 79 feet--	80					

GENERAL NOTES

Begin Drilling: **03-11-2021** Complete Drilling: **03-11-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20D50T [80%]**
Driller: **NC&EG** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" IDA HSA to 10 ft; mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **46.75 ft**
At Completion of Drilling: **mud in borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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BORING LOG JJT-BSB-02

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 639.61 ft
North: 1763702.19 ft
East: 1036132.01 ft
Station: 534+41.45
Offset: 50.05 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	558.6	Boring terminated at 81.00 ft	85					
			90					
			95					
			100					

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: **03-11-2021** Complete Drilling: **03-11-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20D50T [80%]**
Driller: **NC&EG** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" IDA HSA to 10 ft; mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **46.75 ft**
At Completion of Drilling: **mud in borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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BORING LOG JJT-BSB-03

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 639.13 ft
North: 1763665.90 ft
East: 1036323.57 ft
Station: 535+99.56
Offset: 64.22 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 ASPHALT --PAVEMENT--						
	637.9							
		Medium dense, brown and gray SANDY GRAVEL; damp						
	636.6	--AGGREGATE BASE--			1	28 18 3	NP	6
		Stiff to very stiff, brown and gray SILTY CLAY, trace gravel; damp --FILL-- --RDR 2--			2	2 3 3	2.54 B	20
			5		3	2 2 3	1.64 B	22
					4	4 4 4	2.62 B	19
			10		5	3 3 4	1.17 N/6	22
					6	3 4 4	2.54 B	19
			15		7	3 3 5	2.05 B	21
					8	4 4 6	3.36 B	19
			20		9	3 3 4	2.13 B	23
					10	3 3 4	2.05 B	23
			25		11	4 4 6	1.80 B	20
					12	5 6 6	3.28 B	21
	607.4	Stiff to very stiff, brown and gray SILTY CLAY; damp --RDR 2--	30					
					13	4 5 5	1.72 B	21
			35					
					14	7 9 12	2.95 B	20
			40					

GENERAL NOTES

Begin Drilling: **03-15-2021** Complete Drilling: **03-15-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20D50T [80%]**
Driller: **J&M** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" IDA HSA to 10 ft; mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **49.00 ft**
At Completion of Drilling: **mud in borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG JJT-BSB-03

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 639.13 ft
North: 1763665.90 ft
East: 1036323.57 ft
Station: 535+99.56
Offset: 64.22 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	597.4	Medium dense, brown SILT; damp to moist --RDR 2-- --L_L(%)=NP, P_L(%)=NP-- --%Gravel=0.6-- --%Sand=3.1-- --%Silt=91.2-- --%Clay=5.0-- --A-4 (0)--	45		15	12 13 13	NP	23
	592.4	Medium dense, brown and gray, medium to coarse SAND; moist to saturated --RDR 2--	50	▽	16	12 14 12	NP	22
			55		17	8 12 17	NP	27
	582.4	Dense to very dense, gray SILTY LOAM, little to some gravel; damp --RDR 2-3--	60		18	27 27 21	NP	9

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--slow hard drilling and rig chatter at 61.5 feet-- --possible cobbles--	65		19	54/6"	NP	11
	572.6	--hard drilling from 66.5 feet-- --WEATHERED BEDROCK--						
	570.6	Very strong, light brownish gray, fair quality, DOLOSTONE; closely spaced, moderately weathered, horizontal joints, with	70		20	C O R E		
	568.6	0.05 - 0.2 inch opening, slightly rough walls, and <0.2 inch thick sand infill. --RUN 1: 68.5 to 70.5 feet-- --Recovery = 96%-- --RQD= 58%-- --Q_u= 7,495 psi-- --no water return at 69.5 feet-- Boring terminated at 70.50 ft	75					
			80					

GENERAL NOTES

Begin Drilling: **03-15-2021** Complete Drilling: **03-15-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20D50T [80%]**
Driller: **J&M** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" IDA HSA to 10 ft; mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **49.00 ft**
At Completion of Drilling ▼ **mud in borehole**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG JJT-BSB-04

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 640.22 ft
North: 1763805.61 ft
East: 1036332.58 ft
Station: 536+65.51
Offset: 59.29 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		18-inch thick ASPHALT --PAVEMENT--						
	638.7							
		Loose, brown and gray SANDY GRAVEL; damp --AGGREGATE BASE--			1	8 4 3	NP	4
	636.5							
		Medium stiff to very stiff, brown and gray SILTY CLAY, trace to little gravel; damp --FILL-- --RDR 2--	5		2	9 5 3	3.50 P	20
					3	2 2 3	2.25 P	21
			10		4	2 2 2	1.07 B	19
					5	2 3 3	3.03 B	22
		--L_L(%)=39, P_L(%)=17-- --%Gravel=0.5-- --%Sand=11.3-- --%Silt=54.7-- --%Clay=33.5-- --A-6 (19)--	15		6	3 3 4	0.98 B	23
					7	3 4 5	0.98 B	24
			20		8	5 5 6	2.54 B	20
	619.7							
		Very stiff to hard, brown and gray SILTY CLAY, trace gravel; damp --RDR 2-3--	25		9	3 6 8	2.79 B	22
					10	6 6 6	2.79 B	21
			30		11	5 7 11	2.21 B	22
					12	5 7 21	3.77 B	20
			35		13	3 9 12	6.81 B	17
			40		14	8 8 11	5.99 B	19

GENERAL NOTES

Begin Drilling: **03-10-2021** Complete Drilling: **03-10-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20D50T [80%]**
Driller: **NC&EG** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" IDA HSA to 10 ft; mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **50.00 ft**
At Completion of Drilling: **NA**
Time After Drilling: **24 hours**
Depth to Water: **6 (cave in at 12 ft) ft**

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BORING LOG JJT-BSB-04

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 640.22 ft
North: 1763805.61 ft
East: 1036332.58 ft
Station: 536+65.51
Offset: 59.29 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--slow drilling at 47.0 feet--						
		--possible cobbles--						
	590.5	Medium dense, brown and gray, medium to coarse SAND; wet	50		16	7 8 13	4.18 B	19
		--RDR 2 to 3--						
	583.5	Dense to very dense, gray Gravelly SILTY LOAM; damp	55		17	8 8 8	NP	21
		--RDR 2-3--						
		--L_L(%)=17, P_L(%)=12--						
		--%Gravel=17.6--						
		--%Sand=29.7--						
		--%Silt=44.6--	60		18	19 21 24	NP	10
		--%Clay=8.1--						
		--A-4 (0)--						
		--rig chatter--						
		--possible cobbles--						
		--very hard drilling at 65 feet; possible boulder--	65		19	31 50/3"	NP	10
	575.2	--RDR 4--						
		Very strong, light grayish gray, highly weathered DOLOSTONE			20	CORE		
	573.7	BOULDER,						
		--RUN 1: 66.0 to 66.5 feet--						
		--Recovery = 67%--						
		--RQD= 0%--						
		--loss of drilling mud--						
		Very dense, gray, fine to coarse GRAVEL; saturated			21	50/5"	NP	
		--RDR 4--						
		--gravel cave-in at 70 feet--	70					
	569.2	Boring terminated at 71.00 ft	75					
			80					

GENERAL NOTES

Begin Drilling: **03-10-2021** Complete Drilling: **03-10-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20D50T [80%]**
Driller: **NC&EG** Logger: **M. Sadowski** Checked by: **C. Marin**
Drilling Method: **2.25" IDA HSA to 10 ft; mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **50.00 ft**
At Completion of Drilling: **NA**
Time After Drilling: **24 hours**
Depth to Water: **6 (cave in at 12 ft) ft**

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BORING LOG JJT-BSB-05

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 612.10 ft
North: 1763693.55 ft
East: 1036231.49 ft
Station: 535+27.37
Offset: 0.41 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	611.9	2.5-inch thick ASPHALT						
	611.5	--PAVEMENT--						
		5-inch thick, gray CRUSHED STONE						
		--AGGREGATE BASE--						
		Loose to medium dense, dark brown and black SANDY GRAVEL; damp to wet			1	7 4 10	NP	15
		--FILL--						
		--RDR 2--			2	2 2 2	NP	27
	607.3		5					
		Stiff, black and brown SILTY CLAY						
		--FILL--						
		--RDR 2--			3	2 4 50/2"	1.00 P	28
	605.1							
		--hard drilling; possible cobbles--						
		--RDR 4--						
		--auger refusal at 8.5 feet--						
	603.6	--offset boring 10 feet north--						
		Stiff, brown SILTY CLAY LOAM, trace gravel; damp			4	2 3 6	1.25 P	28
		--FILL--	10					
	601.6							
		Hard, brown to gray SILTY CLAY, trace gravel; damp						
		--RDR 2--			5	5 8 12	4.51 B	19
					6	8 8 15	5.74 B	18
			15					
					7	8 12 17	5.58 B	19
	593.3							
		Medium dense, gray SILT; saturated			8	5 8 10	NP	29
			20					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--RDR 2--						
	591.6							
		Medium dense to dense, brown, medium to coarse SAND; saturated						
		--RDR 2--			9	13 15 16	NP	14
		--L_L(%)=NP, P_L(%)=NP--						
		--%Gravel=1.1--						
		--%Sand=84.5--						
		--%Silt=12.9--						
		--%Clay=1.4--	25					
		--A-2-4 (0)--			10	7 8 13	NP	22
					11	8 11 13	NP	19
	584.7							
		Hard (>4.50P), gray SILTY CLAY LOAM; damp						
	584.1							
		Dense, gray SILTY LOAM, few silt seams; damp						
		--RDR 2--			12	13 19 16	NP	16
			30					
		--hard drilling and rig chatter at 31.5; possible cobbles--						
		--RDR 3 to 4--						
	580.4							
		Hard, gray SILTY CLAY LOAM, trace gravel; damp						
		--RDR 4--			13	24 33 38	5.58 S	12
			35					
		--hard drilling, 37.0 to 38.5 feet--						
		--possible cobbles--						
	575.1							
		Very dense, gray weathered DOLOSTONE fragments; wet						
		--WEATHERED BEDROCK--						
		--RDR 4--			14	12 26 31	NP	19
	572.1		40					

GENERAL NOTES

Begin Drilling: **03-22-2021** Complete Drilling: **03-24-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20D25A [83%]**
Driller: **J&M** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25" IDA HSA to 10 ft; mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **3.00 ft**
At Completion of Drilling: **mud in borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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BORING LOG JJT-BSB-05

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 612.10 ft
North: 1763693.55 ft
East: 1036231.49 ft
Station: 535+27.37
Offset: 0.41 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Strong, light brownish brown, very poor quality, DOLOSTONE; Closely spaced, highly weathered, horizontal, oblique, and vertical joints, with 0.05 - > 0.2 inch opening, slightly rough to rough walls, and no infill. --RUN 1: 40.0 to 45.0 feet-- --Recovery = 100%-- --RQD= 10%--			15	CORE		
	567.1		45					
		Boring terminated at 45.00 ft						
			50					
			55					
			60					

GENERAL NOTES

Begin Drilling: **03-22-2021** Complete Drilling: **03-24-2021**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20D25A [83%]**
Driller: **J&M** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25" IDA HSA to 10 ft; mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **3.00 ft**
At Completion of Drilling: **mud in borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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BORING LOG TSRS-01

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 604.13 ft
North: 1762787.77 ft
East: 1034775.55 ft
Station: 518+06.85
Offset: 32.048 RT

Elevation (ft)	Depth (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
603.9		Brown CRUSHED STONE --SHOULDER--					
		Very stiff to hard, brown SILTY CLAY LOAM, trace gravel; damp --FILL--		1	3 7 9	7.71 S	13
		--Qu: 3.50P--		2	4 4 5	4.00 P	26
600.1	5	Hard, dark brown and black SILTY CLAY, trace gravel; damp --Buried TOPSOIL--					
598.6		Very stiff to hard, brown SILTY CLAY, trace gravel; damp --RDR 2--		3	3 6 10	5.49 S	20
	10			4	3 7 8	6.64 B	18
				5	2 3 5	2.87 B	23
	15			6	3 5 6	2.79 B	22
				7	6 8 11	4.76 B	22
586.1		Brown, fine SAND; wet					
585.4							
585.0		Stiff (1.5p), brown SILTY CLAY					
		Medium dense, brown SILT; wet		8	10 7 7	NP	26
	20						
583.6		Medium dense, brown, medium SAND, trace gravel; wet --few silty clay lenses--		9	4 4 9	NP	20
582.1		Brown SILTY LOAM; wet					
581.1		Medium dense to dense, brown and gray, fine to coarse SAND; saturated --RDR 2--		10	6 8 8	NP	25
	25						
				11	13 22 22	NP	19
				12	5 12 7	NP	20
574.6							
574.4		Gray SANDY GRAVEL; wet					
574.1	30	Very stiff (2.5p), gray SILTY CLAY LOAM, trace gravel; damp					
		Boring terminated at 30.00 ft					
	35						
	40						

GENERAL NOTES

Begin Drilling: **05-14-2023** Complete Drilling: **05-14-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20CME55T [81%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **18.00 ft**
At Completion of Drilling: **25.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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BORING LOG TSRS-02

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 607.13 ft
North: 1762875.16 ft
East: 1034891.73 ft
Station: 519+52.74
Offset: 29..849 RT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
0	606.9	Brown CRUSHED STONE --SHOULDER--					
		Hard, brown SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--		1	3 6 11	10.17 B	17
5				2	4 7 9	5.74 B	26
				3	3 5 6	3.94 B	16
	599.1	Very stiff, brown SILTY CLAY, trace gravel; damp --RDR 2--		4	2 5 5	2.95 B	25
10				5	2 3 3	NP	20
	595.6	Loose, brown SILT, trace clay seams; damp					
	594.1	Very stiff, brown SILTY CLAY LOAM to SILTY LOAM, trace gravel; damp		6	3 2 3	3.00 P	12
15				7	3 4 5	NP	17
	591.6	Very stiff (3.0P), brown SILTY CLAY, trace gravel; damp					
	590.5	--RDR 2--					
		Loose, brown SILT, trace clay seams; moist					
	589.1	Stiff to hard, brown and gray SILTY CLAY LOAM, trace gravel; damp --RDR 2--		8	4 4 7	1.07 B	14
20							
	584.9	Brown, medium SAND; damp to moist --RDR 2--		9	6 13 18	4.26 B	15
	583.4						
	583.0	Brown SILT; moist to wet					
		Very stiff, brown SILTY CLAY, trace gravel; damp		10	6 5 12	3.00 P	22
25	581.6	--RDR 2--					
		Medium dense, brown, coarse SAND, trace gravel; saturated --RDR 2--		11	11 11 12	NP	13
				12	2 9 11	NP	21
30	577.1	Boring terminated at 30.00 ft					
35							
40							

GENERAL NOTES

Begin Drilling: **05-14-2023** Complete Drilling: **05-14-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20CME55T [81%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **25.50 ft**
At Completion of Drilling: **30.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG TSRS-03

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 611.35 ft
North: 1762956.49 ft
East: 1035008.87 ft
Station: 520+95.84
Offset: 30.702 RT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	611.1	Brown CRUSHED STONE --SHOULDER--					
		Very stiff to hard, brown and gray SILTY CLAY, trace gravel; damp --RDR 2-- --FILL--					
				1	3 6 8	7.05 B	17
				2	2 3 8	7.13 B	17
5							
				3	5 8 10	4.92 B	20
				4	3 3 7	3.36 B	20
10							
				5	2 4 5	3.03 B	22
				6	3 7 11	3.53 S	18
15							
	595.1	Medium dense, brown SILT;					
	594.3	damp		7	3 4 6	4.00 P	19
		Very stiff to hard, brown to gray SILTY CLAY, trace gravel; damp --RDR 2--					
				8	6 9 12	4.36 S	17
20							
25				9	4 8 11	3.94 S	17
				10	3 7 8	4.26 S	18
				11	5 10 16	5.08 B	17
	583.3	Brown, coarse SAND; moist					
	582.5						
	582.2	Brown SILT; wet		12	6 7 10	2.50 P	17
		Very stiff, brown SILTY CLAY					
30	581.3	LOAM, trace gravel; damp					
		Boring terminated at 30.00 ft					
35							
40							

GENERAL NOTES

Begin Drilling: **05-14-2023** Complete Drilling: **05-14-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20CME55T [81%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **28.90 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG TSRS-04

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 614.90 ft
North: 1763087.08 ft
East: 1035100.64 ft
Station: 522+45.14
Offset: 25.871 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
614.0	11-inch thick ASPHALT --PAVEMENT--						
613.4	7-inch thick CRUSHED STONE --BASE COURSE--						
	Hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--		1	1	4 7 9	7.05 B	17
			2	2	6 9 10	4.76 B	15
		5	3	3	5 7 10	5.90 B	15
			4	4	4 8 9	7.87 B	16
		10	5	5	4 6 9	5.82 B	17
			6	6	4 5 5	> 4.50 P	14
599.4		15					
	Stiff to very stiff, brown, dark gray and greenish gray SILTY CLAY to CLAY, trace gravel; damp --RDR 2-4--		7	7	3 4 5	1.00 P	26
		20	8	8	3 4 6	1.97 B	26
591.9	Very stiff to hard, brown to gray SILTY CLAY, trace gravel; damp --RDR 2--		9	9	4 44 50/3	2.13 B	22
		25	10	10	12 12 12	4.50 P	17
			11	11	9 13 15	2.50 P	16
584.9		30	12	12	5 9 10	4.51 B	17
	Boring terminated at 30.00 ft						
		35					
		40					

GENERAL NOTES

Begin Drilling: **05-21-2023** Complete Drilling: **05-21-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20D50T [80%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; 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 TSRS-05

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 620.39 ft
North: 1763128.34 ft
East: 1035264.69 ft
Station: 524+05.12
Offset: 29.193 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	620.1	Brown CRUSHED STONE --SHOULDER--						
		Very stiff to hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--			1	3 6 6	5.41 B	17
			5		2	3 7 8	6.07 B	17
					3	3 6 5	3.61 B	18
			10		4	4 6 10	5.41 B	18
					5	3 7 9	5.49 B	16
			15		6	5 8 10	5.82 B	16
					7	7 7 9	> 4.50 P	16
			20		8	6 9 7	5.49 B	19
			25		9	4 5 8	4.10 S	21
					10	5 9 10	3.69 S	18
					11	11 6 9	3.28 S	21
	591.1				12	3 4 5	2.50 P	29
	590.4	Very stiff, brown SILTY CLAY, trace gravel; damp	30					
		Boring terminated at 30.00 ft	35					
			40					

GENERAL NOTES

Begin Drilling: **05-14-2023** Complete Drilling: **05-14-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20CME55T [81%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; 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 TSRS-06

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 623.77 ft
North: 1763247.00 ft
East: 1035347.81 ft
Station: 525+38.64
Offset: 27.076 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	622.9	11-inch thick ASPHALT --PAVEMENT--						
	622.3	7-inch thick CRUSHED STONE --BASE COURSE--						
		Very stiff to hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--						
					1	10 9 9	> 4.50 P	15
			5		2	5 8 8	6.97 B	11
					3	5 6 8	4.10 S	21
			10		4	5 7 8	5.08 B	18
					5	5 8 10	3.28 B	27
			15		6	5 6 11	6.31 B	18
					7	6 8 12	6.89 B	17
			20		8	4 10 11	5.00 B	21
	600.0	Loose to medium dense, brown, medium SAND, trace gravel; damp --RDR 2--	25		10	14 15 14	NP	3
	597.1	Very stiff (3.50P), brown SILTY CLAY, trace gravel; damp --RDR 2--			11	13 4 4	NP	4
	595.8	Medium dense, brown SAND, trace gravel; damp --RDR 2--						
	594.7	Very stiff, brown SILTY CLAY, trace gravel; damp --RDR 2--	30		12	11 5 8	3.69 B	20
	593.8	Boring terminated at 30.00 ft						
			35		9	6 9 13	6.48 B	16
			40					

GENERAL NOTES

Begin Drilling: **05-21-2023** Complete Drilling: **05-21-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20D50T [80%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; 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 TSRS-07

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 627.26 ft
North: 1763254.04 ft
East: 1035469.82 ft
Station: 526+46.54
Offset: 30.358 RT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
0	627.0	Brown CRUSHED STONE --SHOULDER--					
		Very stiff to hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--		1	4 4 7	3.00 P	12
5				2	5 4 6	2.54 S	17
				3	4 3 7	3.36 B	16
10				4	6 6 8	2.95 S	18
				5	4 6 9	2.54 S	20
15				6	5 10 11	7.79 B	16
				7	9 9 11	6.81 B	14
20				8	5 8 14	3.53 B	16
25				9	6 10 18	4.84 B	16
				10	9 16 20	7.13 S	16
				11	9 12 17	5.66 S	15
30	597.3			12	6 8 14	6.23 S	19
		Boring terminated at 30.00 ft					
35							
40							

GENERAL NOTES

Begin Drilling: **05-16-2023** Complete Drilling: **05-16-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20CME55T [81%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; 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 TSRS-08

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 630.39 ft
North: 1763387.13 ft
East: 1035582.15 ft
Station: 528+10.83
Offset: 27.530 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	629.3	13-inch thick ASPHALT --PAVEMENT--						
	628.9	5-inch thick CRUSHED STONE --BASE COURSE--						
		Very stiff to hard, brown and gray SILTY CLAY, trace gravel; damp --FILL-- --RDR 2--						
					1	4 8 9	7.95 B	16
			5		2	5 7 9	5.66 B	15
					3	6 6 10	4.84 B	17
			10		4	4 8 10	5.25 B	17
					5	4 8 12	5.90 B	16
			15		6	4 8 7	7.05 B	18
					7	6 9 11	4.00 P	17
			20		8	4 8 10	3.86 S	15
			25		9	5 9 8	6.97 B	18
					10	3 6 10	4.59 B	22
	604.9	Very stiff, brown and gray SILTY CLAY, trace gravel; damp --RDR 2--						
					11	3 5 6	2.30 B	26
	600.4		30		12	3 5 8	3.94 B	17
		Boring terminated at 30.00 ft						
			35					
			40					

GENERAL NOTES

Begin Drilling: **05-21-2023** Complete Drilling: **05-21-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20D50T [80%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; 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 TSRS-09

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 633.99 ft
North: 1763406.80 ft
East: 1035743.44 ft
Station: 529+61.09
Offset: 34.460 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	633.1	11-inch thick ASPHALT --PAVEMENT--						
	633.0	1-inch thick CRUSHED STONE --BASE COURSE--						
		Very stiff to hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--			1	3 4 5	5.08 B	17
			5		2	3 5 8	2.54 B	22
					3	3 5 8	6.23 B	21
			10		4	4 6 9	8.00 B	22
					5	2 3 7	3.44 B	25
			15		6	4 10 11	8.61 B	17
					7	5 6 10	5.41 B	24
			20		8	5 7 9	3.53 B	15
					9	7 6 10	7.22 B	18
			25		10	6 12 13	5.08 B	22
	607.7	Stiff to very stiff, brown SILTY CLAY, trace gravel; damp --RDR 2--			11	1 1 2	1.00 P	30
	604.0	Boring terminated at 30.00 ft	30		12	5 6 11	2.13 S	28
			35					
			40					

GENERAL NOTES

Begin Drilling: **05-14-2023** Complete Drilling: **05-14-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20CME55T [81%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; 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 TSRS-10

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 635.22 ft
North: 1763522.70 ft
East: 1035831.88 ft
Station: 530+94.12
Offset: 25.350 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	635.0	Brown CRUSHED STONE --SHOULDER--						
		Stiff to hard, brown and gray SILTY CLAY, trace gravel; damp --FILL-- --RDR 2--			1	4 5 6	8.04 B	15
			5		2	5 5 7	4.26 S	20
					3	3 6 7	5.00 S	16
			10		4	4 6 8	3.44 B	20
					5	4 7 7	5.08 S	18
			15		6	4 7 9	5.41 S	16
					7	5 9 12	3.49 B	18
			20		8	5 8 11	5.58 B	18
			25		9	3 6 10	> 4.50 P	24
					10	5 9 10	1.39 S	24
					11	12 12 11	3.00 P	17
	607.2	Hard, brown and gray SILTY CLAY, trace gravel; damp --RDR 2--			12	5 8 11	5.90 B	18
	605.2	Boring terminated at 30.00 ft	30					
			35					
			40					

GENERAL NOTES

Begin Drilling: **05-17-2023** Complete Drilling: **05-17-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20CME55T [81%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; 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 TSRS-11

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 638.30 ft
North: 1763547.64 ft
East: 1036002.51 ft
Station: 532+57.09
Offset: 31.163 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	638.0	Brown CRUSHED STONE --SHOULDER--						
		Very stiff to hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--			1	2 4 5	4.50 P	17
			5		2	4 3 3	2.87 B	24
					3	2 6 9	3.28 B	18
			10		4	4 5 9	3.53 B	18
					5	4 10 10	9.76 B	18
			15		6	3 7 8	7.28 B	16
					7	5 7 10	3.28 B	16
			20		8	6 9 10	5.90 B	15
	614.0	Very stiff, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --RDR 2--	25		10	9 11 7	NR	
					11	3 6 9	3.50 P	27
	608.3	Boring terminated at 30.00 ft	30		12	5 7 10	2.87 B	15
			35					
			40					

GENERAL NOTES

Begin Drilling: **05-16-2023** Complete Drilling: **05-16-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20CME55T [81%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; 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 TSRS-12

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 640.25 ft
North: 1763757.93 ft
East: 1036449.73 ft
Station: 537+53.17
Offset: 31.747 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 ASPHALT --PAVEMENT--						
	638.7							
		Stiff to hard, brown and gray SILTY CLAY, trace gravel; damp --FILL-- --RDR 2--						
					1	4 2 2	1.64 B	17
			5		2	3 4 4	0.33 B	19
					3	3 5 5	3.53 B	18
			10		4	2 3 8	2.46 B	20
					5	5 13 8	2.13 B	17
			15		6	4 5 8	3.36 B	17
					7	7 7 10	> 4.50 P	16
			20		8	9 6 6	3.50 P	17
			25		9	4 5 8	2.71 B	18
					10	3 5 7	3.03 B	20
					11	6 7 10	4.92 B	17
	610.2		30		12	6 7 7	> 4.50 P	21
		Boring terminated at 30.00 ft						
			35					
			40					

GENERAL NOTES

Begin Drilling: **05-15-2023** Complete Drilling: **05-15-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20CME55T [81%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; 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 TSRS-13

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 638.88 ft
North: 1763867.47 ft
East: 1036558.18 ft
Station: 538+95.97
Offset: 26.401 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	638.0	11-inch thick ASPHALT --PAVEMENT--						
	637.9	1-inch thick CRUSHED STONE --BASE COURSE--						
		Stiff to hard, brown and gray SILTY CLAY, trace gravel; damp --FILL-- --RDR 2--						
					1	4 4 7	> 4.50 P	17
			5		2	4 4 9	6.48 B	18
					3	5 5 8	4.51 S	15
			10		4	7 7 9	3.44 S	23
					5	5 7 8	5.00 B	19
			15		6	21 10 10	3.00 P	18
					7	10 12 13	3.00 P	14
			20		8	8 10 12	3.44 B	18
			25		9	7 9 10	2.50 P	27
					10	2 5 8	2.13 S	25
					11	8 10 11	1.50 P	22
	608.9		30		12	4 4 7	2.50 P	18
		Boring terminated at 30.00 ft						
			35					
			40					

GENERAL NOTES

Begin Drilling: **05-17-2023** Complete Drilling: **05-17-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20CME55T [81%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; boring backfilled upon completion**

WATER LEVEL DATA

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

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

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BORING LOG TSRS-14

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 638.61 ft
North: 1763872.91 ft
East: 1036728.76 ft
Station: 540+56.12
Offset: 32.778 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	637.2	16.5-inch thick ASPHALT --PAVEMENT--						
		Stiff to hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--			1	3 4 5	1.64 B	16
			5		2	2 3 5	1.97 B	17
					3	3 8 10	3.36 B	20
			10		4	7 7 7	3.08 B	19
					5	5 9 10	1.31 B	17
			15		6	6 8 8	3.00 P	18
					7	4 4 10	4.18 B	17
			20		8	8 10 10	3.00 P	17
			25		9	4 7 10	3.12 S	23
					10	4 6 6	3.28 S	20
					11	6 10 13	4.50 P	20
	608.9				12	4 5 11	2.87 B	18
	608.6	Black SILTY CLAY --Buried TOPSOIL--	30					
		Boring terminated at 30.00 ft	35					
			40					

GENERAL NOTES

Begin Drilling: **05-15-2023** Complete Drilling: **05-15-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20CME55T [81%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; 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 TSRS-15

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 636.62 ft
North: 1763982.56 ft
East: 1036846.51 ft
Station: 542+05.48
Offset: 27.180 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	635.5	13-inch thick ASPHALT --PAVEMENT--						
	635.2	4-inch thick CRUSHED STONE --BASE COURSE--						
		Very stiff to hard, brown and gray SILTY CLAY, trace gravel; damp --FILL-- --RDR 2--						
					1	7 4 6	3.28 B	18
			5		2	4 4 7	5.90 B	18
					3	3 8 8	8.53 B	16
			10		4	3 5 8	5.00 B	16
					5	4 6 9	4.51 B	19
			15		6	4 6 7	4.50 P	17
					7	8 13 13	4.00 P	17
			20		8	16 13 15	> 4.50 P	16
					9	4 7 10	2.71 B	22
			25		10	5 10 13	7.38 B	16
					11	4 11 11	4.43 S	19
	606.6	Boring terminated at 30.00 ft	30		12	4 5 9	3.44 S	17
			35					
			40					

GENERAL NOTES

Begin Drilling: **05-17-2023** Complete Drilling: **05-17-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20CME55T [81%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; 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 TSRS-16

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 634.91 ft
North: 1763975.27 ft
East: 1037013.94 ft
Station: 543+60.33
Offset: 37.131 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		19-inch thick ASPHALT --PAVEMENT--						
	633.3							
		Stiff to hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--			1	5 6 8	2.50 P	17
			5		2	3 5 9	4.59 B	15
					3	7 7 11	8.94 B	17
			10		4	7 8 8	NR	
					5	4 4 8	3.00 P	18
			15		6	4 6 8	3.69 S	17
					7	6 10 15	3.00 P	16
			20		8	7 11 10	> 4.50 P	22
			25		9	5 9 13	9.76 B	15
					10	4 7 13	1.97 S	16
					11	3 6 8	3.28 B	20
	604.9		30		12	4 5 8	3.12 B	20
		Boring terminated at 30.00 ft						
			35					
			40					

GENERAL NOTES

Begin Drilling: **05-15-2023** Complete Drilling: **05-15-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20CME55T [81%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; 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 TSRS-17

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 631.62 ft
North: 1764082.91 ft
East: 1037129.97 ft
Station: 545+05.25
Offset: 26.693 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	630.4	15-inch thick ASPHALT --PAVEMENT--						
	629.6	9-inch thick CRUSHED STONE --BASE COURSE--						
		Stiff to hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--			1	7 7 9	4.00 P	13
			5		2	5 8 9	9.02 B	16
					3	5 7 9	7.46 B	18
			10		4	5 6 6	6.64 B	19
					5	6 4 4	2.46 S	21
			15		6	6 8 5	2.13 S	16
					7	7 6 7	2.97 S	24
			20		8	5 7 9	1.97 S	24
			25		9	4 12 21	2.30 B	20
					10	8 7 9	3.00 P	19
					11	4 5 6	1.89 B	23
	603.6	Very stiff, gray SILTY CLAY, trace gravel and wood fragments; moist --RDR 2--			12	3 9 11	2.50 P	26
	601.6	Boring terminated at 30.00 ft	30					
			35					
			40					

GENERAL NOTES

Begin Drilling: **05-17-2023** Complete Drilling: **05-17-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20CME55T [81%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; 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 TSRS-18

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 629.80 ft
North: 1764066.80 ft
East: 1037277.93 ft
Station: 546+40.91
Offset: 34.684 RT

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 ASPHALT --PAVEMENT--						
	628.4							
		Very stiff to hard, brown, gray and greenish gray SILTY CLAY, trace gravel; damp --FILL-- --RDR 2--			1	4 7 10	7.63 S	17
					2	5 5 8	2.95 B	17
			5					
					3	8 8 11	7.46 B	18
					4	5 7 11	6.40 S	17
			10					
					5	5 7 9	7.13 S	18
					6	4 10 16	6.89 B	16
			15					
	614.3							
		Hard, gray SILTY CLAY, trace gravel and wood fragments; damp --RDR 2--			7	4 5 8	4.00 P	23
	611.8							
		Very stiff to hard, brown SILTY CLAY, trace gravel; damp --RDR 2--			8	5 8 14	2.95 S	21
			20					
					9	10 16 19	9.51 B	14
					10	8 11 19	9.51 B	16
			25					
					11	7 11 16	7.54 B	17
					12	9 9 16	4.10 B	18
	599.8		30					
		Boring terminated at 30.00 ft						
			35					
			40					

GENERAL NOTES

Begin Drilling: **05-15-2023** Complete Drilling: **05-15-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20CME55T [81%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; 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 TSRS-19

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 626.57 ft
North: 1764117.56 ft
East: 1037436.51 ft
Station: 548+08.06
Offset: 32.871 RT

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 ASPHALT --PAVEMENT--						
	625.2							
		Very stiff to hard, brown SILTY CLAY, trace gravel; damp --FILL-- --RDR 2--			1	7 7 8	3.00 P	15
			5		2	5 8 11	6.15 B	15
					3	4 5 7	2.21 B	20
			10		4	7 6 5	3.85 B	21
					5	6 9 11	> 4.50 P	18
	613.6							
		Very stiff to hard, brown to gray SILTY CLAY, trace gravel; damp --RDR 2--			6	4 7 12	6.15 B	17
			15		7	5 9 13	5.58 B	18
					8	7 11 12	3.00 P	19
			20					
					9	5 8 11	5.49 B	18
			25		10	9 12 13	3.69 B	19
					11	8 10 13	3.85 B	19
	597.3							
		Dense, gray SILT; wet			12	9 19 22	3.61 B	17
	596.6		30					
		Boring terminated at 30.00 ft						
			35					
			40					

GENERAL NOTES

Begin Drilling: **05-16-2023** Complete Drilling: **05-16-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20CME55T [81%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **29.30 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG TSRS-20

WEI Job No.: 7901-15-01

Client: **TranSystems Corporation**
Project: **I-80 Reconstruction (Houbolt Rd to Center St)**
Location: **Will County, Illinois**

Datum: NAVD 88
Elevation: 624.70 ft
North: 1764158.76 ft
East: 1037576.68 ft
Station: 549+54.72
Offset: 32.122 RT

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 ASPHALT --PAVEMENT--						
	623.3							
		Hard, brown and gray SILTY CLAY LOAM, trace gravel; damp --FILL-- --RDR 2--			1	4 6 7	7.95 B	16
			5		2	4 6 9	4.43 S	21
					3	4 8 10	6.81 B	17
			10		4	4 6 10	6.23 B	14
	614.2							
		Stiff to hard, brown to gray SILTY CLAY, trace gravel; damp --RDR 2--			5	4 9 12	5.08 B	17
			15		6	4 7 11	6.07 B	18
					7	6 7 10	2.54 B	18
			20		8	5 6 7	NR	
			25		9	6 7 11	2.00 P	18
					10	5 8 8	3.03 B	21
					11	7 8 12	2.50 P	19
	595.5	Gray SILT; wet			12	8 23 21	1.23 B	18
	594.7	Boring terminated at 30.00 ft	30					
			35					
			40					

GENERAL NOTES

Begin Drilling: **05-16-2023** Complete Drilling: **05-16-2023**
Drilling Contractor: **Wang Testing Services** Drill Rig: **20CME55T [81%]**
Driller: **AG&JD** Logger: **N. Karahalios** Checked by: **J. Bensen**
Drilling Method: **2.25" IDA HSA; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **29.20 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

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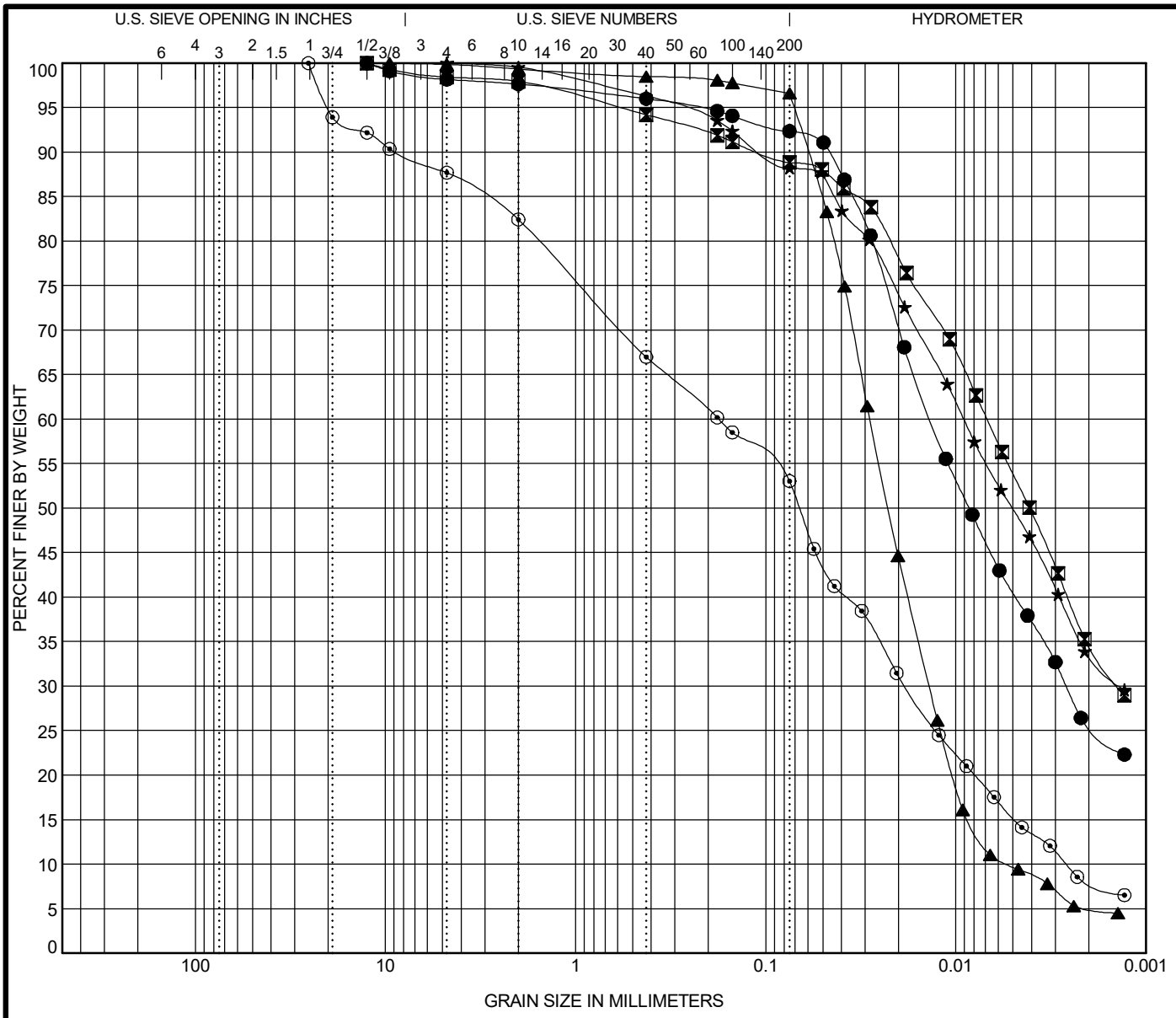
WANGENGINC 79011501.GPJ WANGENG.GDT 6/5/23

APPENDIX B



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
● JJT-BSB-01#12	28.5 ft	**Silty Clay Loam**	**37**	**17**	**20**		
⊠ JJT-BSB-02#3	6.0 ft	**Silty Clay**	**36**	**16**	**20**		
▲ JJT-BSB-03#15	43.5 ft	**Silt**	**NP**	**NP**	**NP**	**1.26**	**5.34**
★ JJT-BSB-04#6	13.5 ft	**Silty Clay**	**39**	**17**	**22**		
⊙ JJT-BSB-04#18	58.5 ft	**Gravelly Silty Loam**	**17**	**12**	**5**	**0.73**	**66.95**

Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● JJT-BSB-01#12	28.5 ft	**12.5**	**0.014**	**0.003**		**2.4**	**5.3**	**66.6**	**25.7**
⊠ JJT-BSB-02#3	6.0 ft	**12.5**	**0.007**	**0.001**		**2.0**	**9.1**	**54.2**	**34.6**
▲ JJT-BSB-03#15	43.5 ft	**9.5**	**0.028**	**0.014**	**0.005**	**0.6**	**2.7**	**91.2**	**5.0**
★ JJT-BSB-04#6	13.5 ft	**4.75**	**0.009**	**0.001**		**0.5**	**11.3**	**54.7**	**33.5**
⊙ JJT-BSB-04#18	58.5 ft	**25.4**	**0.176**	**0.018**	**0.003**	**17.6**	**29.4**	**44.6**	**8.1**

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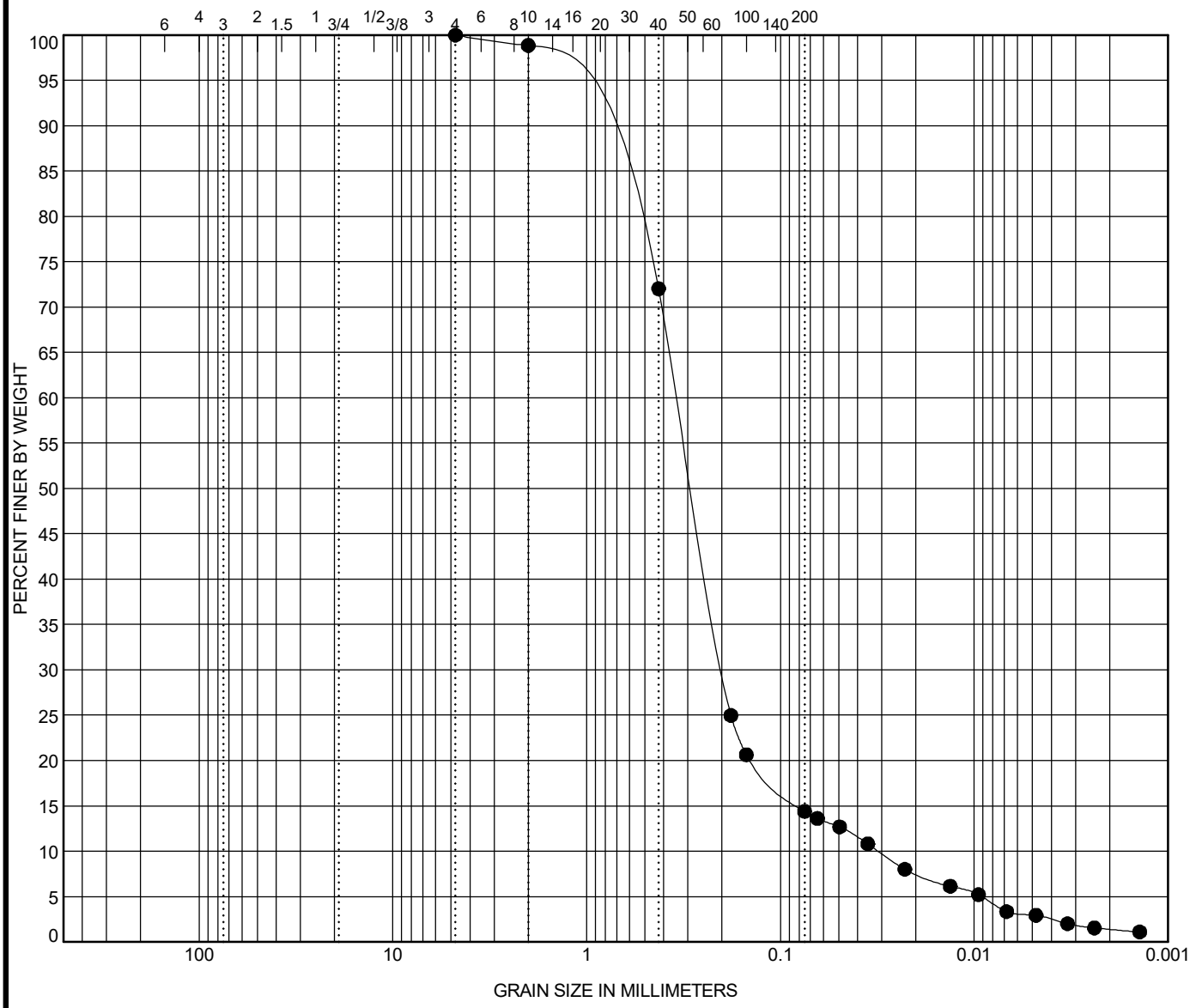
GRAIN SIZE DISTRIBUTION

Project: I-80 Reconstruction (Houbolt Rd to Center St)

Location: Will County, Illinois

Number: 7901-15-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification	IDH Classification	LL	PL	PI	Cc	Cu
● **JJT-BSB-05#10 23.5 ft**	**Sand**	**NP**	**NP**	**NP**	**3.66**	**10.94**

Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **JJT-BSB-05#10 23.5 ft**	**4.75**	**0.341**	**0.197**	**0.031**	**1.1**	**84.5**	**12.9**	**1.4**

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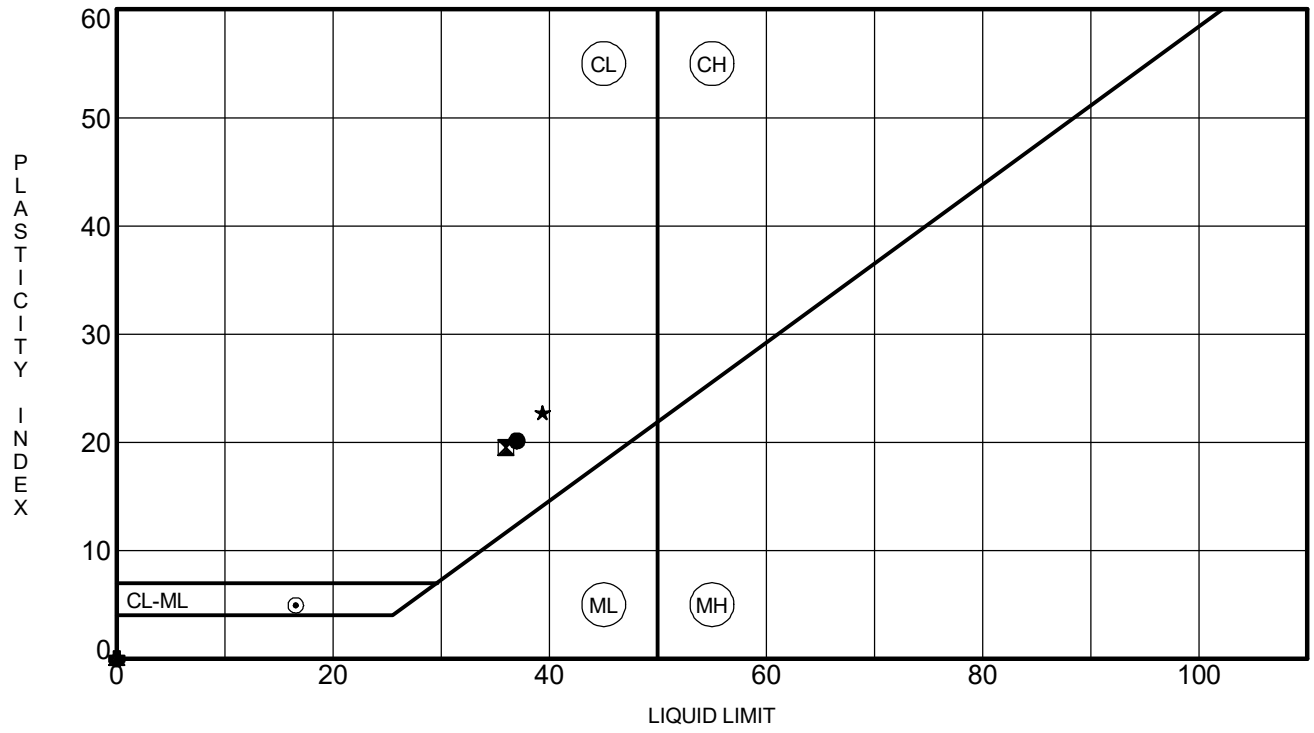
GRAIN SIZE DISTRIBUTION

Project: I-80 Reconstruction (Houbolt Rd to Center St)

Location: Will County, Illinois

Number: 7901-15-01



Specimen Identification			LL	PL	PI	Fines	IDH Classification
●	JJT-BSB-01#12	28.5 ft	37	17	20	92	Silty Clay Loam
⊠	JJT-BSB-02#3	6.0 ft	36	16	20	89	Silty Clay
▲	JJT-BSB-03#15	43.5 ft	NP	NP	NP	97	Silt
★	JJT-BSB-04#6	13.5 ft	39	17	22	88	Silty Clay
⊙	JJT-BSB-04#18	58.5 ft	17	12	5	53	Gravelly Silty Loam
✿	JJT-BSB-05#10	23.5 ft	NP	NP	NP	14	Sand

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ATTERBERG LIMITS' RESULTS

Project: I-80 Reconstruction (Houbolt Rd to Center St)

Location: Will County, Illinois

Number: 7901-15-01

Wang Engineering

Unconfined Compressive Strength of Intact Rock Core Specimens

Project: I-80 Reconstruction

Client: Transystems

WEI Job No.: 7901-15-01

Field Sample ID	Lab Specimen ID	Depth (ft)	Location	Sample Description	Length (in)		Diameter (in)	Total Load (lbs)	Total Pressure (psi)	Fracture Type*	Break Date	Tested By	Area (in^2)
					Before Capping	After Capping							
JJT-BSB-02 Run 1	1	71.5	West Abutment	Dolostone	4.20	NA	2.05	21110	6408.2	3	4/16/21	MAC	3.29
JJT-BSB-03 Run 1	2	68.5	East Abutment	Dolostone	4.23	NA	2.05	24690	7495	3	4/16/21	MAC	3.29

*** Fracture Types:**

Type 1 - Reasonably well-formed cones on both ends, less than 1 in. [25 mm] of cracking through caps;
Type 2 - Well-formed cone on one end, vertical cracks running through caps, no well defined cone on other end;
Type 3 - Columnar vertical cracking through both ends, no well-formed cones;
Type 4 - Diagonal fracture with no cracking through ends; tap with hammer to distinguish from Type 1;
Type 5 - Side fractures at top or bottom (occur commonly with unbonded caps);
Type 6 - Similar to Type 5 but end of cylinder is pointed.

Prepared by: _____ 6/13/2023

Checked by: RMC

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APPENDIX C

Run #1

Boring JJT-BSB-01:
Run #1, 71.5 to 79.0 feet, RECOVERY=88%, RQD=66%

BEDROCK CORE PHOTOGRAPH: TEMPORARY SOIL RETENTION SYSTEM, I-80 CONTRACT 62R89; WILL COUNTY, ILLINOIS		
SCALE: GRAPHICAL	APPENDIX C-1	DRAWN BY: J. Bensen CHECKED BY: A. Hamad
Wang Engineering		1145 N. Main Street Lombard, IL 60148 www.wangeng.com
FOR TRANSYSTEMS CORPORATION		7901-15-01

Run #2

0 6 inches

Boring JJT-BSB-01:
Run #2, 79.0 to 87.0 feet, RECOVERY=100%, RQD=56%

BEDROCK CORE PHOTOGRAPH: TEMPORARY SOIL RETENTION SYSTEM, I-80
CONTRACT 62R89; WILL COUNTY, ILLINOIS

SCALE: GRAPHICAL	APPENDIX C-2	DRAWN BY: J. Bensen CHECKED BY: A. Hamad

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FOR TRANSYSTEMS CORPORATION | 7901-15-01

Run #1

0 6 inches

Boring JJT-BSB-02:
Run #1, 71.0 to 81.0 feet, RECOVERY=98%, RQD=33%

BEDROCK CORE PHOTOGRAPH: TEMPORARY SOIL RETENTION SYSTEM, I-80 CONTRACT 62R89; WILL COUNTY, ILLINOIS		
SCALE: GRAPHICAL	APPENDIX C-3	DRAWN BY: J. Bensen CHECKED BY: A. Hamad
Wang Engineering		1145 N. Main Street Lombard, IL 60148 www.wangeng.com
FOR TRANSYSTEMS CORPORATION		7901-15-01

Run #1

Boring JJT-BSB-03:
Run #1, 68.5 to 70.5 feet, RECOVERY=96%, RQD=58%

BEDROCK CORE PHOTOGRAPH: TEMPORARY SOIL RETENTION SYSTEM, I-80 CONTRACT 62R89; WILL COUNTY, ILLINOIS		
SCALE: GRAPHICAL	APPENDIX C-4	DRAWN BY: J. Bensen CHECKED BY: A. Hamad
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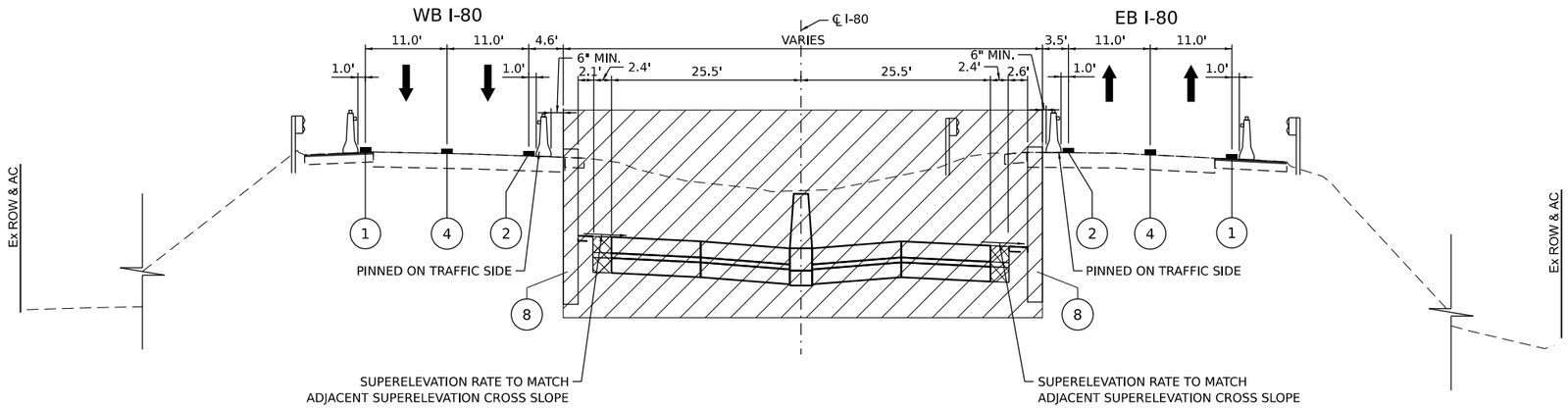
FOR TRANSYSTEMS CORPORATION		7901-15-01

Run #1

Boring JJT-BSB-05:
Run #1, 40.0 to 45.0 feet, RECOVERY=100%, RQD=10%

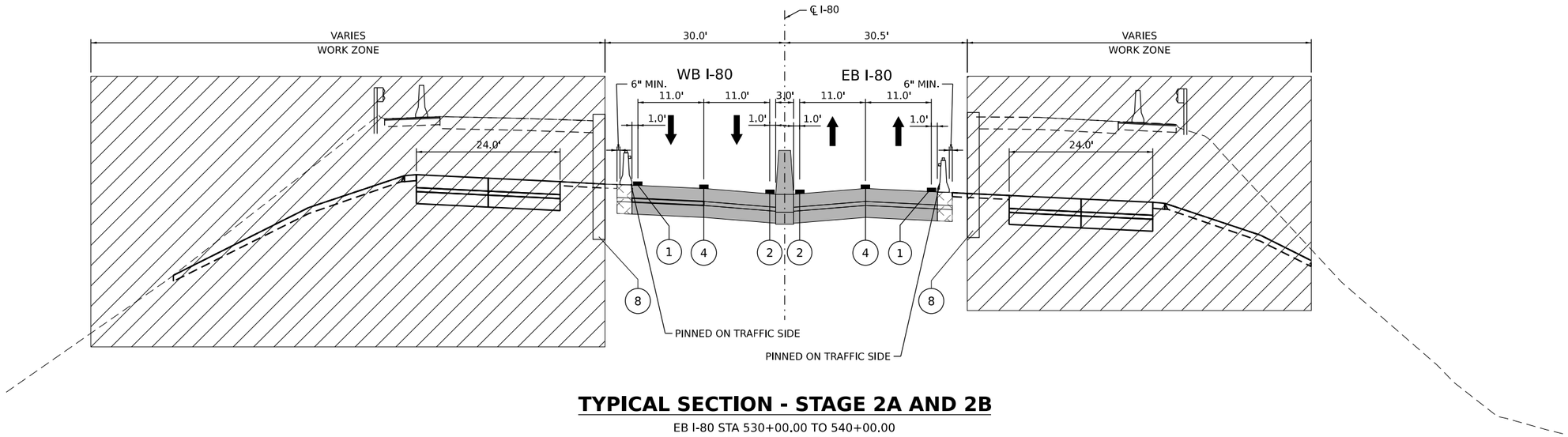
BEDROCK CORE: TEMPORARY SOIL RETENTION SYSTEM, I-80 CONTRACT 62R89; WILL COUNTY, ILLINOIS		
SCALE: GRAPHICAL	APPENDIX C-5	DRAWN BY: J. Bensen CHECKED BY: A. Hamad
Wang Engineering		1145 N. Main Street Lombard, IL 60148 www.wangeng.com
FOR TRANSYSTEMS CORPORATION		7901-15-01

APPENDIX D



TYPICAL SECTION - STAGE 1A, 1B, AND 1C

EB I-80 STA 533+09.65 TO 537+00.00
WB I-80 STA 533+08.49 TO 537+19.05



TYPICAL SECTION - STAGE 2A AND 2B

EB I-80 STA 530+00.00 TO 540+00.00
WB I-80 STA 530+45.04 TO 539+50.00

LEGEND

- WORK ZONE
- TEMPORARY PAVEMENT
- TEMPORARY PAVEMENT FROM PREVIOUS STAGE
- COMPLETED PERMANENT PAVEMENT
- TEMPORARY CONCRETE BARRIER WITH TYPE C REFLECTORS
- DIRECTION OF TRAVEL FLOW
- TYPE II BARRICADES OR DRUMS
- VERTICAL PANEL
- (1) TEMP PVT MK L4 EPOXY (SOLID WHITE)
- (2) TEMP PVT MK L4 EPOXY (SOLID YELLOW)
- (3) TEMP PVT MK L4 EPOXY (2' DASH 6' SKIP, WHITE)
- (4) TEMP PVT MK L5 EPOXY (10' DASH 30' SKIP, WHITE)
- (5) TEMP PVT MK L8 EPOXY (SOLID WHITE)
- (6) TEMP PVT MK L8 EPOXY (3' DASH 9' SKIP, WHITE)
- (7) EXISTING PAVEMENT MARKING
- (8) TEMP SOIL RETEN SYSTM
- * FROM PREVIOUS STAGE TO REMAIN

AECOM
303 EAST WACKER DRIVE, SUITE 1400
CHICAGO, IL 60601-5276
PHONE: (312) 373-7700 FAX: (312) 373-6800

USER NAME = amkluver	DESIGNED - NWM	REVISED -	
	DRAWN - PP	REVISED -	
PLOT SCALE = 20.000 ' / in.	CHECKED - SPF	REVISED -	
PLOT DATE = 6/7/2023	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUGGESTED STAGES OF CONSTRUCTION AND TRAFFIC CONTROL PLAN
TYPICAL SECTIONS

SCALE: | SHEET 3 OF 24 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-80	FAI 80 22 BR	WILL	1165	122
		CONTRACT NO. 62R89		
	ILLINOIS	FED. AID PROJECT		

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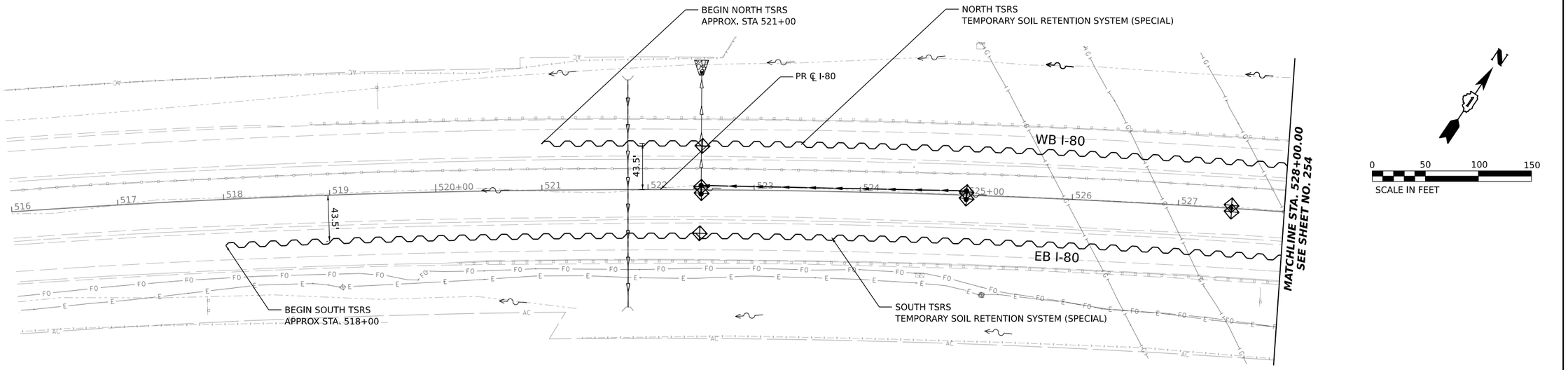
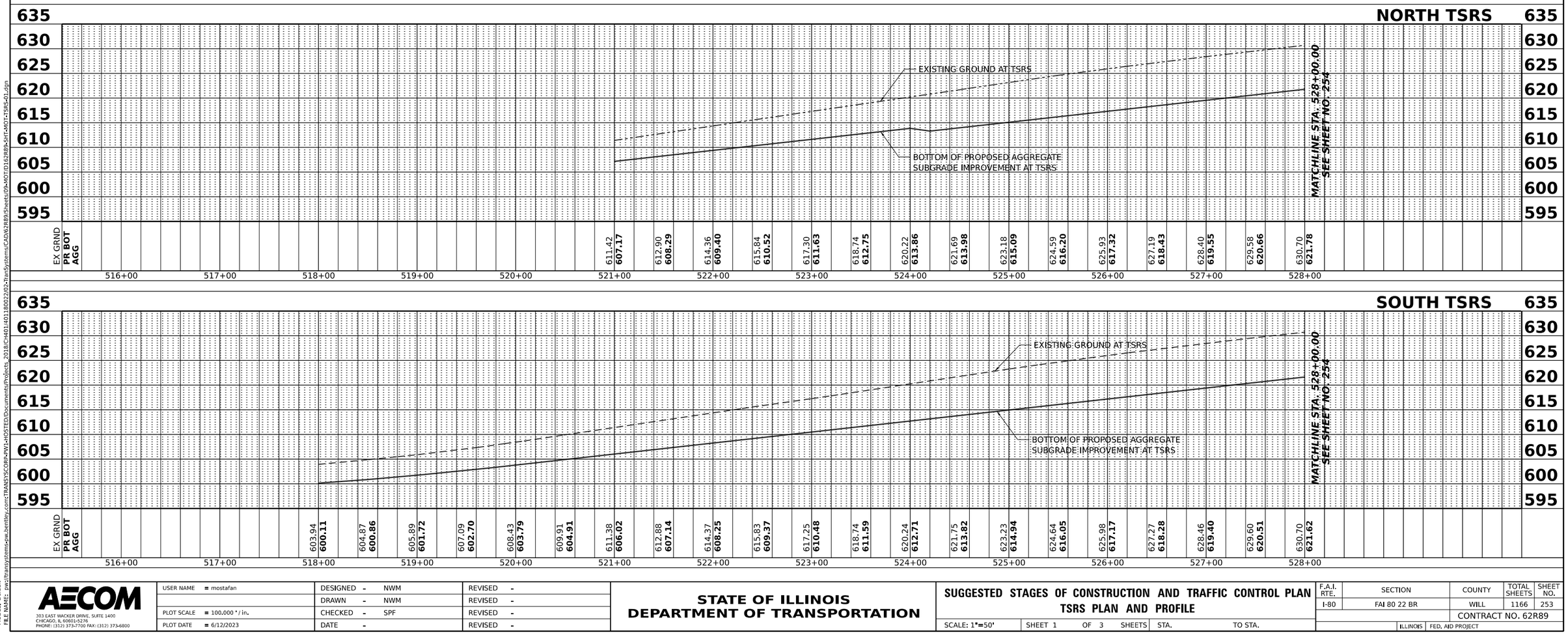
NOTES:

1. EXISTING AND PROPOSED UTILITY, DRAINAGE, AND EROSION CONTROL INFORMATION IS SHOWN FOR REFERENCE ONLY.
   SEE EXISTING AND PROPOSED DRAINAGE AND UTILITY PLANS AND EROSION CONTROL PLANS FOR ADDITIONAL INFORMATION.





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AECOM
303 EAST WACKER DRIVE, SUITE 1400
CHICAGO, IL 60601-5276
PHONE: (312) 373-7700 FAX: (312) 373-6800

USER NAME = mostafan	DESIGNED - NWM	REVISED -	
	DRAWN - NWM	REVISED -	
PLOT SCALE = 100.000 ' / in.	CHECKED - SPF	REVISED -	
PLOT DATE = 6/12/2023	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUGGESTED STAGES OF CONSTRUCTION AND TRAFFIC CONTROL PLAN
TSRS PLAN AND PROFILE

SCALE: 1"=50' | SHEET 1 OF 3 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-80	FAI 80 22 BR	WILL	1166	253
		CONTRACT NO. 62R89		
	ILLINOIS	FED. AID PROJECT		

NOTES:

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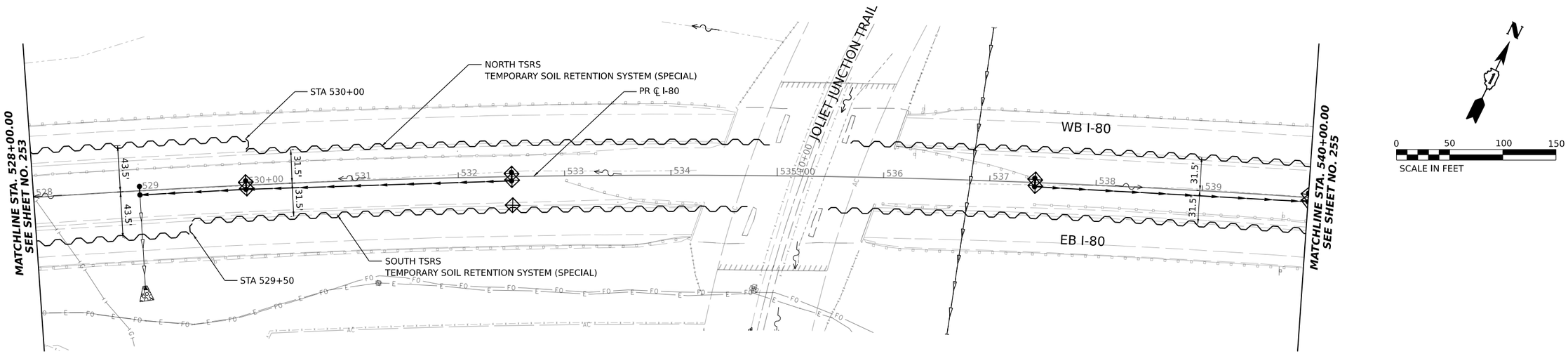

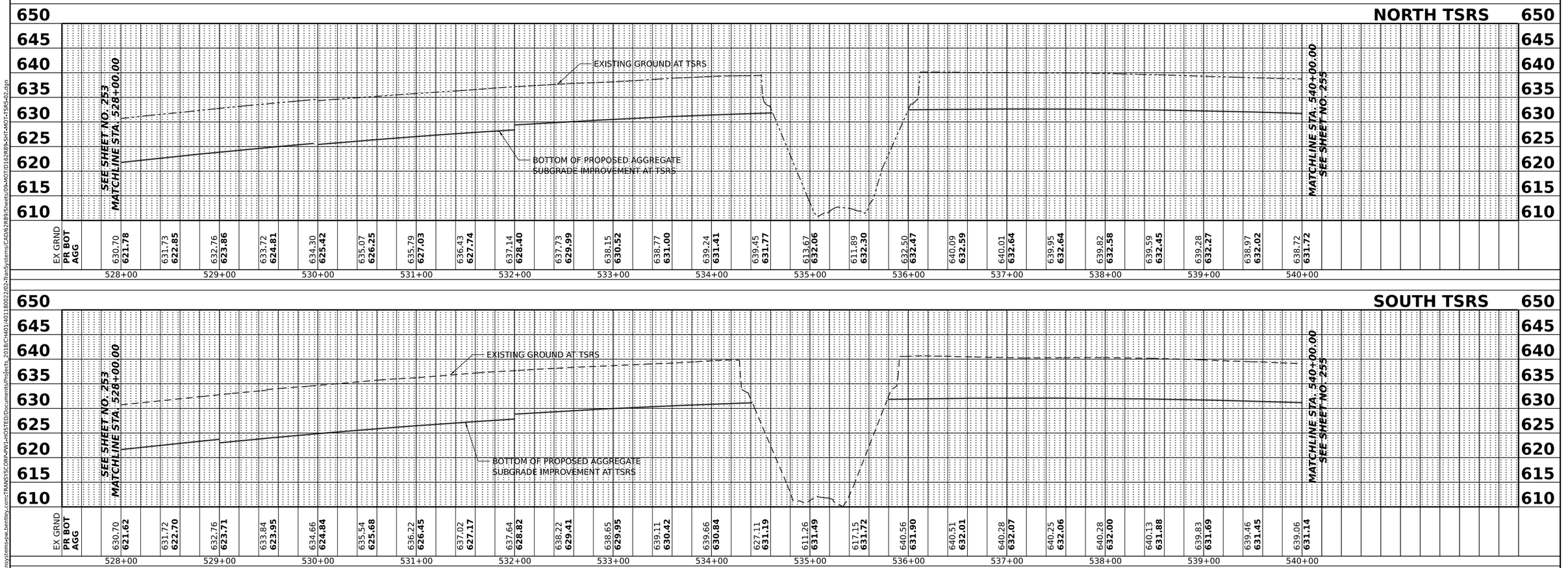

AECOM
303 EAST WACKER DRIVE, SUITE 1400
CHICAGO, IL 60601-5276
PHONE: (312) 373-7700 FAX: (312) 373-6800

USER NAME	= mostafan	DESIGNED	- NWM	REVISED	-
		DRAWN	- NWM	REVISED	-
PLOT SCALE	= 100.000 ' / in.	CHECKED	- SPF	REVISED	-
PLOT DATE	= 6/12/2023	DATE	-	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUGGESTED STAGES OF CONSTRUCTION AND TRAFFIC CONTROL PLAN
TSRS PLAN AND PROFILE

SCALE: 1"=50' | SHEET 2 OF 3 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-80	FAI 80 22 BR	WILL	1166	254
		CONTRACT NO. 62R89		
	ILLINOIS	FED. AID PROJECT		

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NOTES:

1. EXISTING AND PROPOSED UTILITY, DRAINAGE, AND EROSION CONTROL INFORMATION IS SHOWN FOR REFERENCE ONLY.
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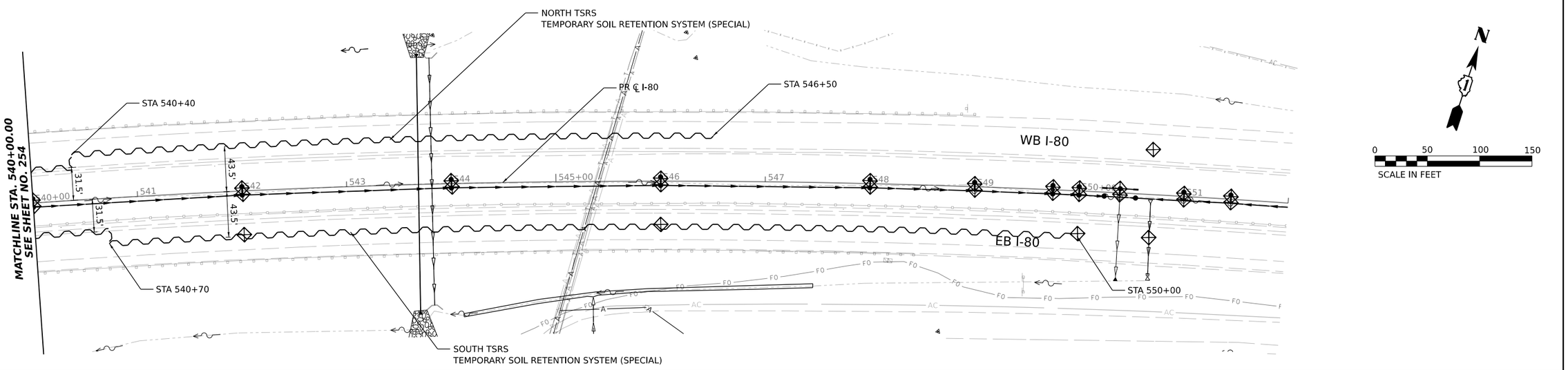

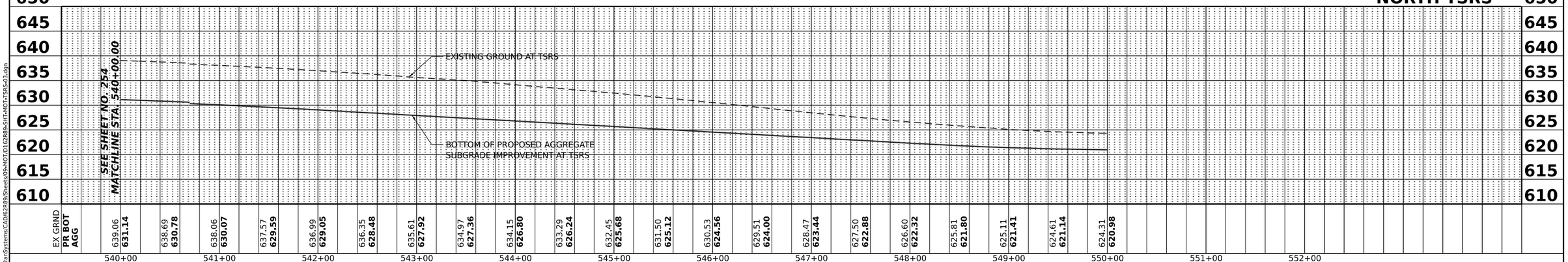

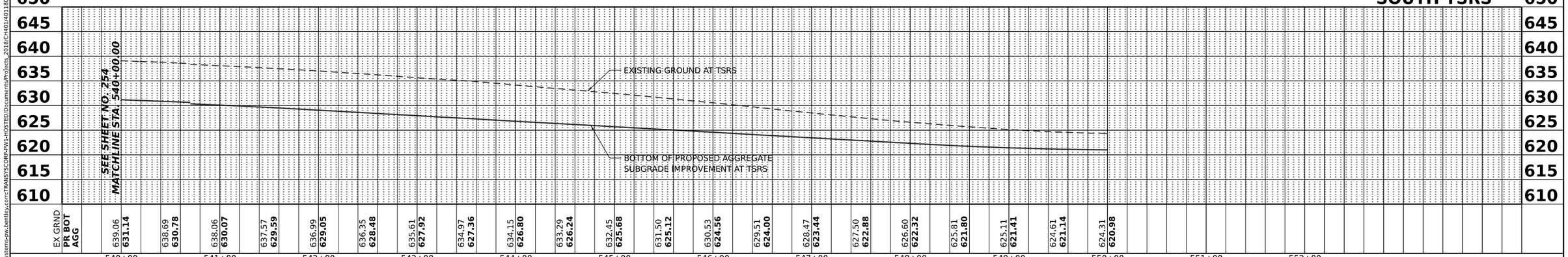

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USER NAME	= mostafan	DESIGNED	- NWM	REVISED	-
		DRAWN	- NWM	REVISED	-
PLOT SCALE	= 100.000 ' / in.	CHECKED	- SPF	REVISED	-
PLOT DATE	= 6/12/2023	DATE	-	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUGGESTED STAGES OF CONSTRUCTION AND TRAFFIC CONTROL PLAN
TSRS PLAN AND PROFILE

SCALE: 1"=50' | SHEET 3 OF 3 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-80	FAI 80 22 BR	WILL	1166	255
		CONTRACT NO. 62R89		
	ILLINOIS	FED. AID PROJECT		