ROADWAY GEOTECHNICAL REPORT
JANE BYRNE INTERCHANGE
RECONSTRUCTION
60X93 AND 60X79 RAMP COMPLETION
SECTION 2014-013R&B-R
COOK COUNTY, ILLINOIS

for

AECOM

303 East Wacker Drive

Chicago, IL 60601

(312) 938-0300

submitted by

Wang Engineering, Inc.

1145 North Main Street

Lombard, IL 60148

(630) 953-9928

Original: January 16, 2018
Revised : April 02, 2018

Technical Report Documentation Page

1. Title and Subtitle Roadway Geotechnical Report, Jane Byrne Interchange Reconstruction Contracts 60X93 and 60X79 Ramp Completion		**2. Report Date** April 02, 2018 **3. Report Type** ☐ SGR ☒ RGR ☒ Draft ☐ Final ☐ Revised
4. Route / Section / County FAP 90/94/290 /2014-013R&B-R/ Cook		**5. Project Numbers** IDOT No. D-91-277-13 Contracts No. 60X79 and 60X93
6. PTB / Item No. 163/001	**7. Existing Structure Number(s)** n.a.	**8. Proposed Structure Number(s)** n.a.
9. Prepared by Wang Engineering, Inc. 1145 N Main Street Lombard, IL 60148	**Contributor(s)** Author: Cornelia L Marin, PG QC/QA: Corina T Farez, PE, PG PIC: Corina T Farez, PE, PG	**Contact Phone Number** (630) 953-9928 x 1039 cmarin@wangeng.com
10. Prepared for AECOM 303 E Wacker Drive Chicago, IL 60601	**Design / Structural Engineer** Amish Bhatt, PE, SE	**Contact Phone Number** (312) 938-0300

11. Abstract

As part of the Jane Byrne Interchange project, this report addresses evaluations for the construction of Contract 60X93 roadway ramp completion from I-290/Congress Parkway westbound (WB) to I-90/94 northbound (NB) and southbound (SB) and Contract 60X79 roadway Ramp EN completion. The improvement limits addressed in this report are Ramp EN between Stations 1611+00 and 1620+28; Ramp SE between Stations 1400+00 and 1404+75; SB Taylor Bypass between Stations 6400+75 and 6407+50 and Between Stations 6417+10 and 6424+11; EB Taylor Exit between Stations 7319+90 and 7326+26; Ramp ES between Stations 1511+39 and 1526+49; Ramp WS between Stations 1229+50 and 1241+20; and Ramp WN between Stations 1105+26 and 1108+22. The new ramps will be constructed along the outside of southbound and northbound of Interstate 90/94 to create direct exit or access to and from it. The new roadways are about 20 to 46 feet wide. The ramps approach embankments are flanked by retaining walls 14 (SN 016-1803), 20 (SN 016-1811), 46 (SN 016-1833), 47 (SN 016-1834), and 48 (SN 016-1835). The roadway improvements will be cut into the existing slopes, existing roadways, or supported by new fill and retaining walls.

Based on our subsurface investigation results, the soils consists of up to 18.5 feet of fill, up to 10 feet medium stiff to very stiff clay crust, up to 40 feet of very soft to medium stiff silty clay. Water-bearing layers are present in the fill, within the silt seams, within the soft clay, and at deeper levels within the granular materials and weathered dolostone.

Since the soft clayey subgrade will not provide a stable working platform for placement and compaction of improved aggregate subgrade; we recommend 24 inches of additional undercut below the 12 inches of IDOT Aggregate Subgrade Improvement and placing geotextile fabric at the base of the excavation for separation. Alternatively, the undercut thickness could be reduced or eliminated by using a bi-axial or tri-axial geogrid designed for the average daily traffic, axel loading, and pavement design life. The pavement sections should be designed for an average SSR value of POOR or an IBR value of 2.

The recommendations pertaining to the proposed retaining walls required to accommodate the new embankment are provided in separate structure geotechnical reports.

12. Path to archived file

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1.0 INTRODUCTION

This report presents the results of our geotechnical subsurface investigation, laboratory testing, and engineering analysis and evaluations for the construction of Contract 60X93 roadway ramps completion from I-290/Congress Parkway westbound (WB) to I-90/94 northbound (NB) and southbound (SB) and Contract 60X79 roadway Ramp EN completion. A *Site Location Map* is presented as Exhibit 1.

Roadway design drawings provided to Wang Engineering, Inc. (Wang) by TranSystems Corporation (Transystems) indicate the improvements include

Contract 60X79

- Ramp EN between Station 1602+81.84 and Station 1620+27.93; and

Contract 60X93

- Ramp SE between Station 1400+00.00 and Station 1412+21.28;
- SB Taylor Street Exit/Bypass Ramp between Stations 6400+75.27 and 6424+10.70;
- EB Taylor Street Exit Ramp between Station 7306+37.89 and Station 7326+25.98;
- Ramp ES between 1507+75.00 and Station 1526+48.46;
- Ramp WS between Station 1210+33.12 and 1241+20.44; and
- Ramp WN between Station 1103+05.20 and Station 1108+21.88.

Some roadway sections and structures along the alignments were addressed in Wang's various roadway and structure geotechnical reports. Table 1 summarizes structures and the roadway sections already addressed in structure geotechnical reports (SGRs) and RGRs.

Table 1: Structures and Roadway Section Addressed in SGRs and RGRs

Alignment	Old RGRs*	Structure (SN)	This RGR
Ramp EN (1602+82 to 1620+00)	1602+82 to 1607+94 (RGR[1] dated Jul. 14, 2015)	016-1712, 016-1807, and 016-1811	1611+00 to 1620+28
Ramp SE (1400+00 to 1412+21)	-	016-1714 and 016-1835	1400+00 to 1404+75
SB Taylor Street Exit/Bypass Ramp (6400+75 to 6424+11)	-	016-1718, 016-1834, and 016-1803	6400+75 to 6407+50 and 6417+10 to 6424+11
EB Taylor Street Exit Ramp (7306+38 to 7326+26)	7306+38 to 7319+90 (RGR dated Jul. 14, 2015 and RGR[2] dated Jan. 27, 2017)	-	7319+90 to 7326+26
Ramp ES (1507+75 to 1526+49)	1507+75 to 1511+39 (RGR dated Jul. 14, 2015)	-	1511+39 to 1526+49
Ramp WS (1210+33 to 1241+20)	-	016-1715 and 016-1803	1229+50 to 1241+20
Ramp WN (1103+05 to 1108+22)	-	016-1706 and 016-1833	1105+26 to 1108+22

*Previously submitted RGRs: [1] I-290 from Loomis St to I-90/94, Contract 60X77; and
[2] EB Taylor Exit Ramp, Contract 62A74.

The proposed roadway pattern shows numerous new ramps, bridges, retaining walls, and roadway alignments. The roadway sections addressed in this report will have one to two lanes with shoulders on both sides and a total width of about 20 to 46 feet. The new roadway will be constructed on either the existing embankment cut back and supported by retaining walls, existing surface cut and supported by retaining walls, new embankment fill with slopes no steeper than 1:2 (V:H) or supported by retaining walls, or at existing grade elevation.

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

2.0 SITE AND REGIONAL GEOLOGY

The site is located within the City of Chicago at the I-90/94 and I-290 Circle Interchange. On the USGS Chicago Loop 7.5 Minute Series map, the ramps run through Sections 16 and 17 of Tier 39 N, Range 14 E of the Third Principal Meridian.

The following review of published geologic data, with emphasis on factors that might influence the design and construction of the proposed engineering works, is meant to place the project area within a geological framework and confirm the dependability and consistency of the present subsurface investigation results. For the study of the regional geologic framework, Wang considered northeastern Illinois in general and Cook County in particular. Exhibit 2 illustrates the *Site and Regional Geology*.

2.1 Physiography

The site is situated within the northern section of the Chicago/Calumet lacustrine plain (Chrzatowsky and Thompson 1992). The area's flat, lakeward-sloping surface is a wave-scoured groundmoraine covered by thin and discontinuous lacustrine offshore silt and clay (Willman 1971).

The roadway ramps get from above ground surface elevation of about 595 feet along Congress Parkway to about 577 feet along proposed I-90/94 (Dan Ryan expressway) constructed within a 20- to 25-foot deep cut.

2.2 Surficial Cover

Within the project area, 100-foot thick or more, Wisconsinan-age glacial drift covers the bedrock (Leetaru et al. 2004). The glacial cover is made up of discontinuous occurrences of clay and silt of the Equality Formation of the Mason Group and diamictons of the Wadsworth and Lemont Formations of the Wedron Group (Hansel and Johnson 1996). The Equality Formation is made up of bedded silt and clay, locally laminated, with lenses and/or thin beds of sand and gravel. The Wadsworth Formation consists of relatively homogenous, massive, gray till with clay to silty clay matrix, with dolostone and shale clasts and occasional lenses of sorted and stratified silt. The Wadsworth Formation is underlain by the pebbly silty clay loam to silty loam diamicton of the Yorkville Member of the Lemont Formation, known informally as the Chicago "hardpan."

From a geotechnical viewpoint, the Equality Formation is characterized by low strength, medium to high plasticity, and medium to high moisture content, whereas the Wadsworth Formation is

characterized by medium plasticity, medium to low moisture content, medium to very stiff consistency, poor permeability, and low compressibility (Bauer et al. 1991; Peck and Reed 1954).

2.3 Bedrock

In the project area, the glacigenic deposits unconformably rest over a 350-foot thick Silurian-age dolostone (Leetaru et al. 2004) at depths more than 100 feet below ground surface (bgs).

Our subsurface investigation results fit into the local geologic context. The borings drilled in the project area revealed the native sediments consist of clay to silty clay lacustrine deposits, silty clay diamictons, hardpan, and gravelly sands that overlie the bedrock.

2.4 Climate Data

The subsurface investigation was performed from February 2013 to December 2015. To assess the possible effects of temperature and precipitation on water table data and soil moisture, the climatic conditions for the investigation period and three months prior to the start of the investigation are summarized graphically in Figures 1 through 8. The precipitation and temperature data for the investigation period are compared against thirty-year monthly data (1981 to 2010) in box-and-whiskers format to show deviations from “normal” climate conditions during the current investigation. Local climate data were obtained from the O’Hare Station (NCDC 2015).

The deviations from the historical 30-year climate data show a relatively wet period with average temperatures for 2013 and a relatively wet with lower than average temperature for 2014. Record precipitation event of 8.68 inches was recorded in April 2013. In addition, colder than normal temperatures were recorded in November and December 2013 and January, February, March, July, and August 2014 during and/or before the investigation. Record high temperatures of 48.9F and 39F were observed in December 2012 and December 2015, respectively. These high temperatures were not doubled by precipitations. Observations of perched groundwater within the granular fill may have been influenced by these climate factors.

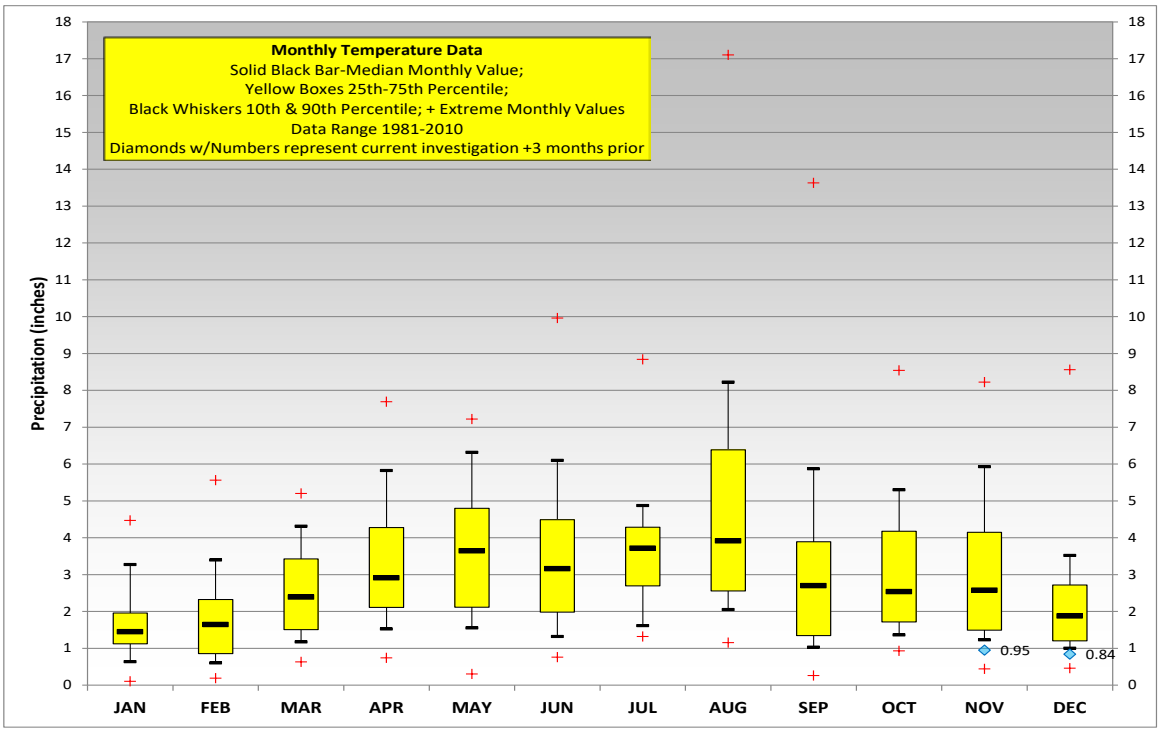

Figure 1: Monthly Precipitation Data for 2012

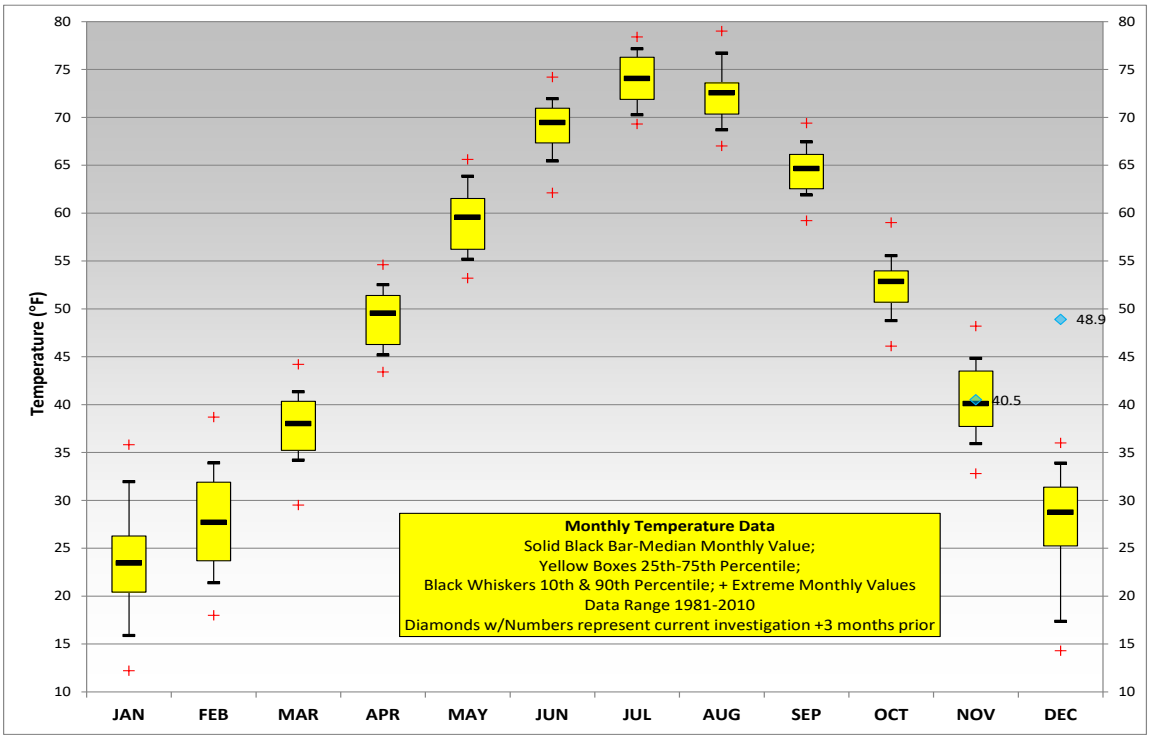

Figure 2: Monthly Temperature Data for 2012

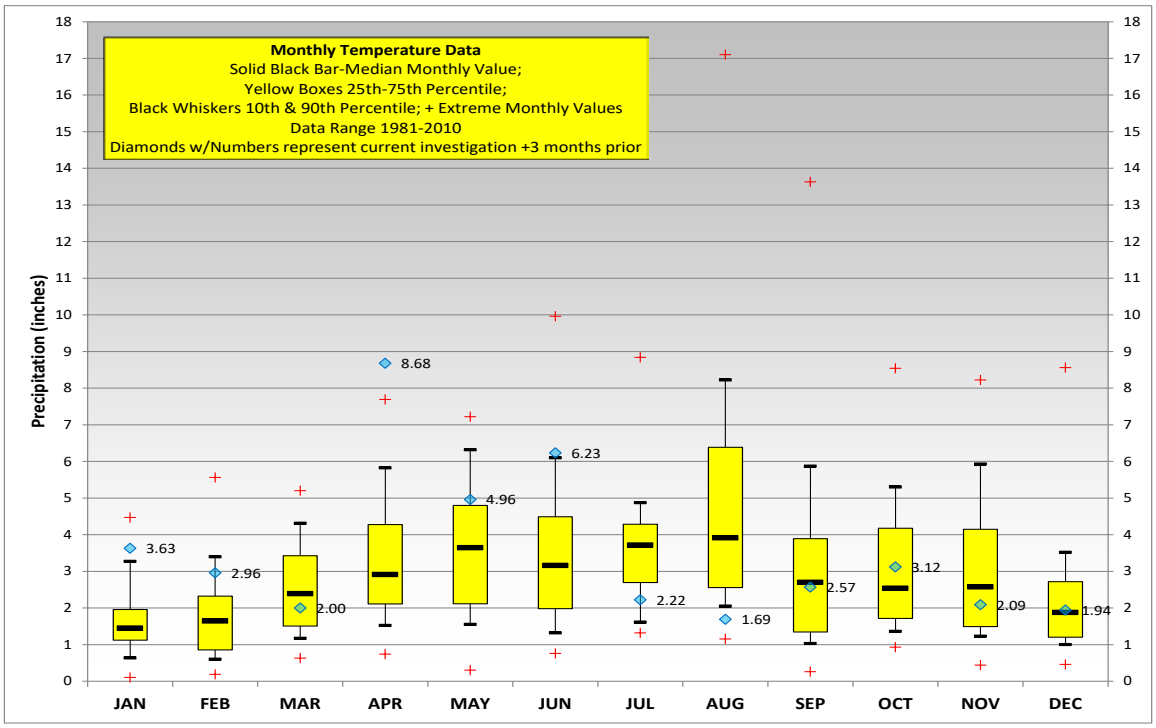

Figure 3: Monthly Precipitation Data for 2013

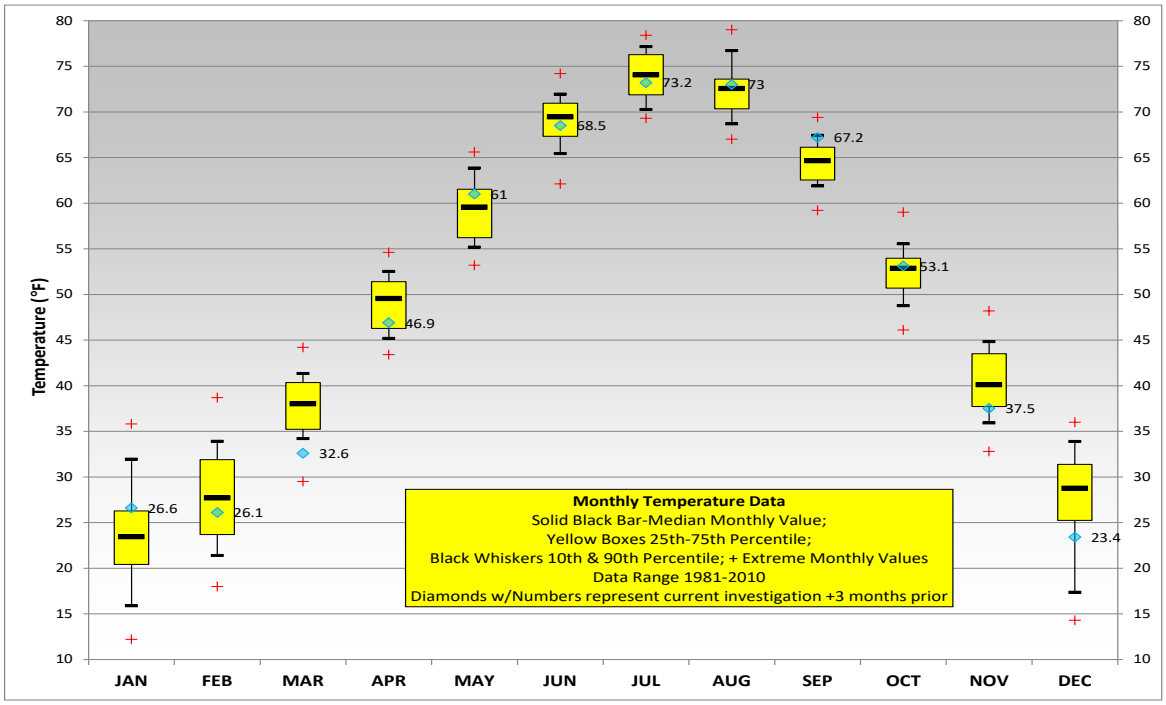

Figure 4: Monthly Temperature Data for 2013

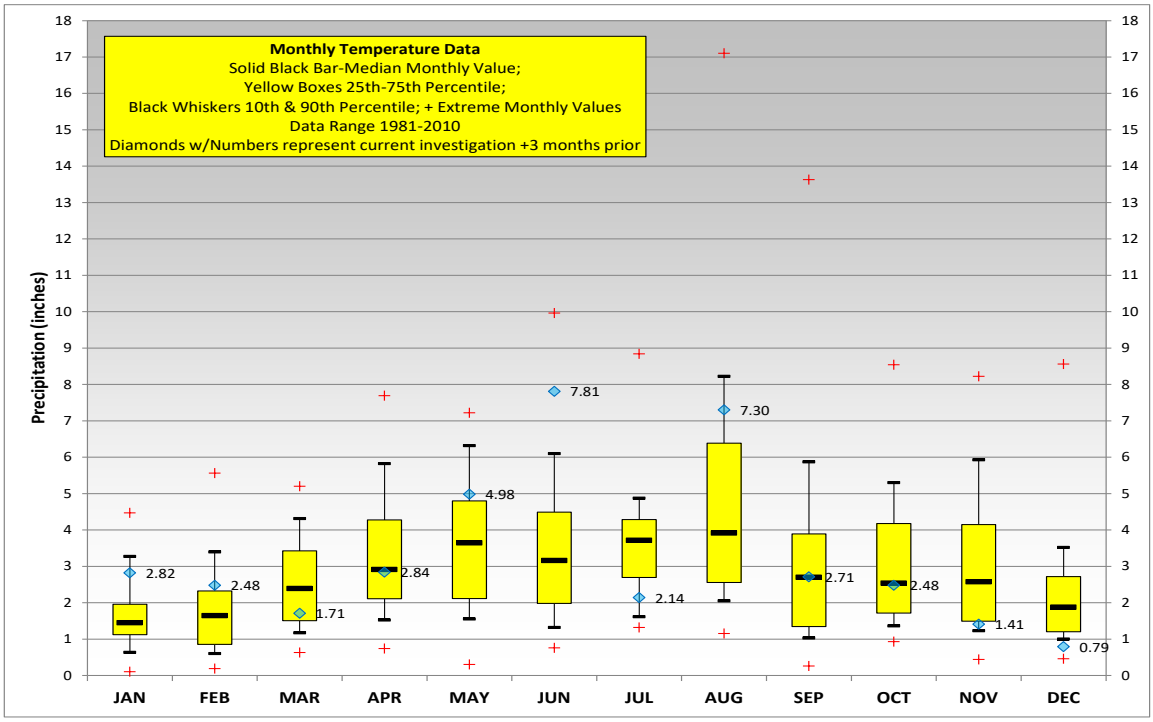

Figure 5: Monthly Precipitation Data for 2014

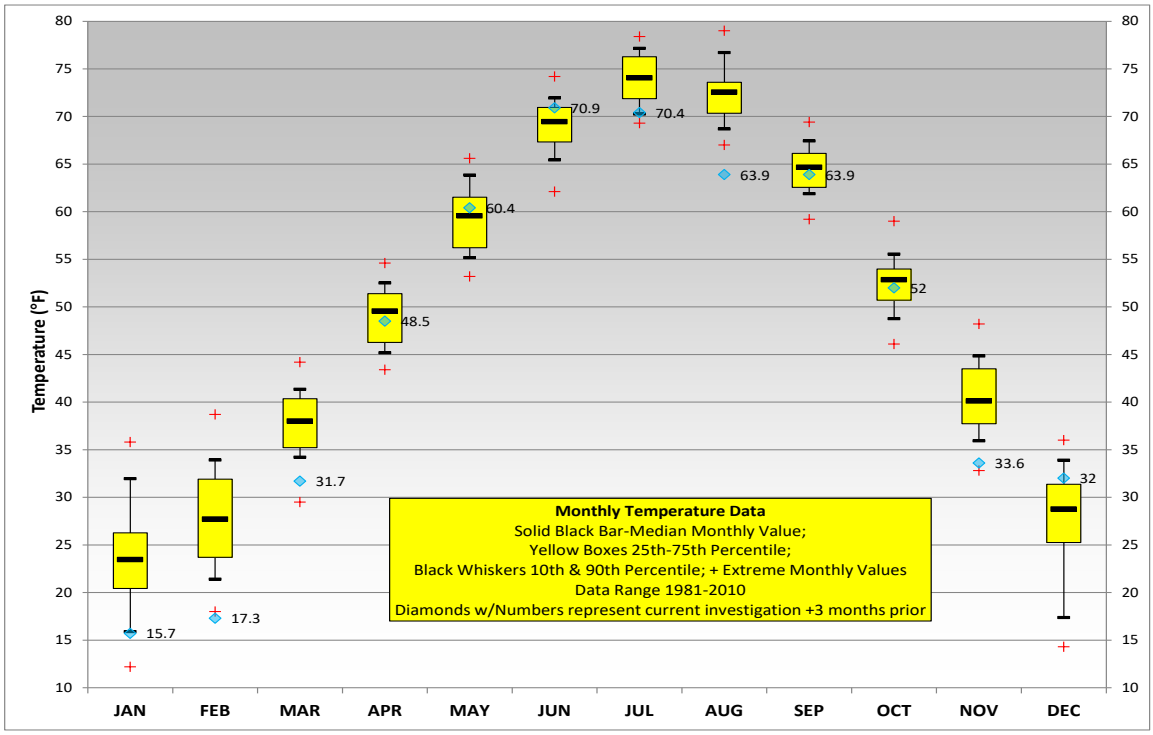

Figure 6: Monthly Temperature Data for 2014

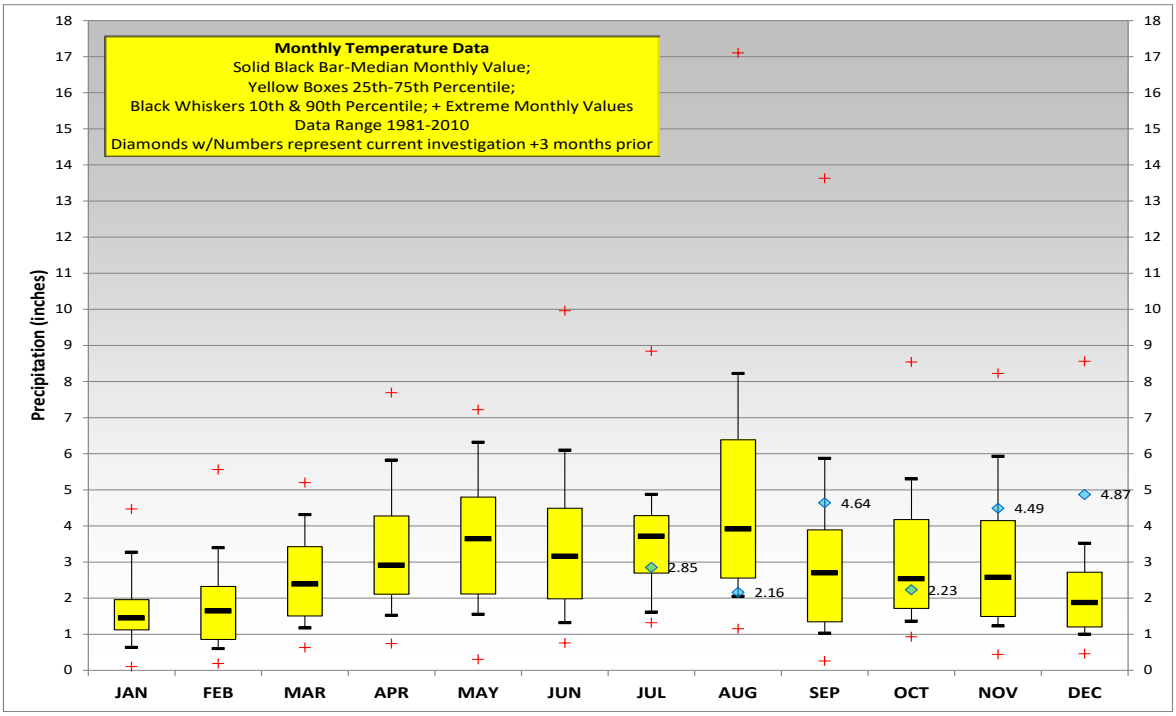

Figure 7: Monthly Precipitation Data for 2015

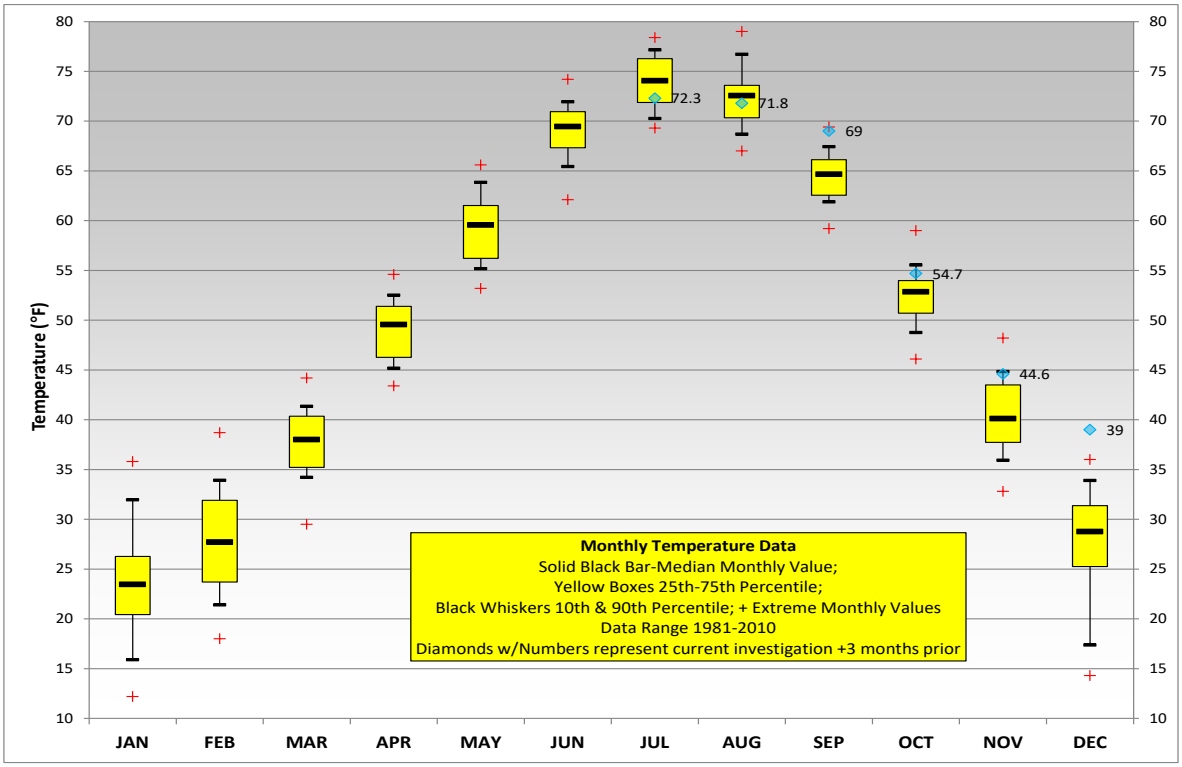

Figure 8: Monthly Temperature Data for 2015

3.0 METHODS OF INVESTIGATION

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

3.1 Subsurface Investigation

To characterize the subsurface soil and groundwater condition along each roadway alignment included in Contracts 60X79 and 60X93, we considered data from subgrade (SGB) borings, bridge (B) borings, retaining wall (RWB) borings, and vane shear (VST) borings. The roadway alignment limits and main reference borings are summarized in Table 2.

The as-drilled boring locations and elevation were surveyed by Dynasty; stations and offsets were provided by AECOM. The boring location information is shown in the *Boring Logs* (Appendix A) and the as-drilled locations are shown in the *Boring Location Plan and Soil Profiles* (Appendix E).

Truck-mounted or ATV drilling rigs equipped with hollow stem augers were used to advance and maintain open boreholes to 10 feet and mud rotary drilling technique was used below 10 feet to boring termination depths or to the bedrock. Soil sampling was performed according to AASHTO T 206, *"Penetration Test and Split Barrel Sampling of Soils."* The soil was sampled continuously in roadway boring and at 2.5-foot intervals to 30 feet bgs and at 5-foot intervals to bedrock or boring termination depths. Soil samples collected from each sampling interval were placed in sealed jars and transported to Wang Geotechnical Laboratory in Lombard, Illinois for further examination and laboratory testing.

Table 2: Summary of Alignment and Reference Borings

Alignment	Approximate Limits		Reference Boring IDs
	Start Station	End Station	
Ramp EN	1611+00.00	1620+27.93	0461-HA-01, 1703-B-04, 1704-B-04, 1705-B06A, 1706-B-01, 1710-B-01, 1710-B-02, 1712-B-03, 1715-B-02, 2055-B-05, 21-RWB-01. 21-RWB-03, 21-RWB-04, 21-RWB-05, 22-RWB-03, 22-RWB-04, 23-RWB-01, VST-06

Alignment	Approximate Limits		Reference Boring IDs
	Start Station	End Station	
Ramp SE	1400+00.00	1404+75.00	1705-B-10, 1714-B-01, 1714-B-02, 1718-B-01, 2055-B-03, 38-RWB-02
SB Taylor St Exit/Bypass Ramp	6400+75.27 6417+10.00	6407+50.00 6424+10.70	10-RWB-03 to 10-RWB-06, 14-RWB-02, 14-RWB-03, 15-RWB-01 to 15-RWB-03, 16-RWB-01A, 16-RWB-01B, 16-RWB-02, 1705-B-11, 1705-B-11A, 1714-B-01, 1714-B-02, 1715-B-04, 1718-B-01, 2055-B-03, 2081-B-03, 38-RWB-01, 38-RWB-02, 39-VST-01, SB90-SGB-21, SB90-SGB-25, VST-01
EB Taylor St Exit Ramp	7319+90.00	7326+25.98	10-RWB-06 to 10-RWB-09, 16-RWB-02 to 16-RWB-05
Ramp ES	1511+39.00	1526+48.46	1087-B-02, 10-RWB-02, 10-RWB-04, 14-RWB-01 to 14-RWB-03, 15-RWB-01, 15-RWB-03, 16-RWB-01 to 16-RWB-04, SB90-SGB-12 to SB90-SGB-14, SB90-SGB-24, SB90-SGB-25, VST-01
Ramp WS	1229+50.00	1241+20.44	10-RWB-03, 10-RWB-04, 10-RWB-06 to 10-RWB-08, 14-RWB-02, 14-RWB-03, 15-RWB-01 to 15-RWB-03, 16-RWB-01 to 16-RWB-04, SB90-SGB-12, SB90-SGB-13, SB90-SGB-25, VST-01
Ramp WN	1105+26.00	1108+21.88	1706-B-01, 1706-B-02, 1715-B-02, 2055-B-05

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

Groundwater observations were made in each boring during and at the completion of drilling operations. The borings were backfilled after completion, and the pavement was restored to its original condition.

3.2 Laboratory Testing

The soil samples were tested in the laboratory for moisture content (AASHTO T-265). Atterberg limits

(AASHTO T 89/T 90) and particle size (AASHTO T 88) analyses were performed to classify selected samples near the proposed roadway subgrade. Field visual descriptions of the soil samples were verified in the laboratory. The soils were classified according to the IDH Soil Classification System. Laboratory test results are shown on the *Boring Logs* (Appendix A) and in the *Laboratory Test Results* (Appendix B).

4.0 RESULTS OF FIELD AND LABORATORY INVESTIGATIONS

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

4.1 Surface Conditions

The proposed alignments will be constructed through areas with various surficial cover, including topsoil, pavement, and demolished structures. Topsoil thicknesses measured at various locations across the site range from 3 to 18 inches with an average of 9 inches. The topsoil thicknesses are summarized in Table 3.

Table 3: Summary of Topsoil Thickness

Alignment	Number of Measurements	Topsoil Thickness Range (inches)	Average Thickness (inches)
Ramp EN	6	3-15	7
Ramp SE	3	6-12	10
SB Taylor St Exit/Bypass Ramp	5	3-14	9
EB Taylor St Exit Ramp	0	NA	NA
Ramp ES	2	6-14	10

Alignment	Number of Measurements	Topsoil Thickness Range (inches)	Average Thickness (inches)
Ramp WS	2	11-14	13
Ramp WN	0	NA	NA

The borings were drilled mainly in the roadway lanes and shoulders. Some of the borings were drilled outside the paved areas, in spaces between the ramps. The borings drilled in the existing roadway show various pavement structures consisting of asphalt, asphalt over concrete, concrete over asphalt, or just concrete. The pavement thickness as reveled by our investigation ranges from 5 to 24 inches with an average of 14 inches. The aggregate base consists of either crushed stone or gravelly sand and its thickness ranges from 4 to 48 inches. The exiting pavement thicknesses are summarized in Table 4.

Table 4: Summary of Existing Pavement Thickness and Composition

Alignment	Total Number of Measurements (No)	Pavement Structure Thickness (inches)			Pavement Average Thickness (inches)
		Asphalt No[1]/Range	Concrete No[1]/Range	Total Pavement No[1]/Range	
Ramp EN	5	5/2-18	3/10-13	5/12-18	14
Ramp SE	2	2/4-5	1/8	2/5-12	9
SB Taylor St Exit/Bypass Ramp	14	12/4-15	10/8-24	14/5-24	15
EB Taylor St Exit Ramp	9	5/5-13	6/10-24	9/10-24	15
Ramp ES	16	11/3-13	11/12-16	16/6-20	15
Ramp WS	15	7/4-12	13/12-24	15/6-24	15
Ramp WN	4	4/2-16	2/10	4/12-16	14

[1]No = number of measurements along the alignment.

4.2 Soil Conditions

In descending order, the general lithologic succession encountered beneath the pavement structure and topsoil includes: 1) man-made ground (fill); 2) medium stiff to hard silty clay; and 3) very soft to medium stiff clay to silty clay. The soils deeper than the soft clay to silty clay will not impact the roadway pavement design.

1) Man-made ground (fill)

Underneath the surface (pavement or topsoil), the borings encountered 0.6 to 18.5 feet of cohesive and granular fill consisting of either medium stiff to hard, brown and gray silty clay to clay loam or very loose to very dense, brown silty loam, loam, sand to gravelly sand. The cohesive fill has unconfined compressive strength (Q_u) values of 0.7 to 6.6 tsf with an average of 2.9 tsf. Moisture content (MC) tests indicate values between 8 and 28% with an average of 17%. The granular fill material has N-values measures between 2 and more than 50 blows/foot with an average of 16 blows/foot and MC values of 4 to 57% averaging 12%. A summary of the fill properties, along each ramp alignment, is shown in Table 5.

Table 5: Summary of Existing Fill Properties

Alignment	Q_u Min-Max/Avg. (tsf)	SPT N-values Min-Max/Avg. (blows/foot)	Moisture Content Min-Max/Avg (%)	Liquid Limit Min-Max (%)	Plastic Limit Min-Max (%)
Ramp EN	0.8-6.6/3.4	6-33/15	6-26/15	NA	NA
Ramp SE	0.3-6.6/3.2	4-19/11	8-20/16	NA	NA
SB Taylor St Exit/Bypass Ramp	0.3-6.6/2.4	3-64/13	3-25/16	NA	NA
EB Taylor St Exit Ramp	0.7-1.4/1.1	4-33/20	4-23/11	NA	NA
Ramp ES	0.3-3.4/1.9	3-64/18	3-24/12	NA	NA
Ramp WS	0.3-3.4/1.7	3-64/17	3-25/14	NA	NA
Ramp WN	NA	8-11/10	16-23/20	NA	NA

2) Medium stiff to hard silty clay

Beneath the fill, most of the borings advanced through about 2- to 10-foot thick of medium stiff to hard silty clay to silty clay loam. This unit informally called "crust", has Q_u values of about 0.7 to 4.3 tsf, with an average of 1.8 tsf and is only encountered sporadically. Laboratory index testing performed on samples from this unit shows liquid limit (L_L) values of 24 to 37% and plastic limit (P_L) values of 15% to 19%. According to the AASHTO soil classification, the subgrade soil belongs mainly to the A-6 group. A summary of the unit properties along each ramp alignment is shown in Table 6.

Table 6: Summary of Crust Properties

Alignment	Q_u Min-Max/Avg. (tsf)	SPT N-values Min-Max/Avg. (blows/foot)	Moisture Content Min-Max/Avg (%)	Liquid Limit Min-Max (%)	Plastic Limit Min-Max (%)
Ramp EN	0.5-3.0/1.7	4-10/7	17-23/20	NA	NA
Ramp SE	1.0-3.5/1.5	5-8/6.6	16-24/19	NA	NA
SB Taylor St Exit/Bypass Ramp	0.3-3.0/1.5	2-16/7	8-29/21	NA	NA
EB Taylor St Exit Ramp	0.8-2.5/1.3	5-8/6	13-27/17	NA	NA
Ramp ES	0.3-3.7/1.8	5-16/8	8-26/20	NA	NA
Ramp WS	0.3-3.0/1.7	4-16/7	8-29/22	NA	NA
Ramp WN	3.28	8	19	NA	NA

3) Very soft to medium stiff clay to silty clay

At elevations 540.5 to 584.5 feet, the borings encountered about up to 40 feet of very soft to medium stiff and rarely stiff, gray clay to silty clay with Qu values of 0.03 to 0.9 tsf and occasionally 1.1 tsf with an average of 0.4 tsf and MC values of 13 to 39% averaging 25%. Laboratory index testing performed on samples from this unit shows L_L values of 27 to 41% and P_L values of 14 to 19%. According to the AASHTO soil classification, the subgrade soils belong mainly to the A-6 ans A-7-6 groups. This unit is informally known as the "Chicago Blue Clay." A

summary of the unit properties along each ramp alignment is shown in Table 7.

Table 7: Summary of Chicago Blue Clay Properties

Alignment	Q_u Min-Max/Avg. (tsf)	SPT N-values Min-Max/Avg. (blows/foot)	Moisture Content Min-Max/Avg (%)	Liquid Limit Min-Max (%)	Plastic Limit Min-Max (%)
Ramp EN	0.1-0.8/0.4	0-8/3	16-37/24	29-41	16-18
Ramp SE	0.1-0.7/0.4	0-6/3	19-28/24	33-35	17-18
SB Taylor St Exit/Bypass Ramp	0.1-0.9/0.4	0-8/3	13-39/25	33	17-18
EB Taylor St Exit Ramp	0.1-0.8/0.3	0-10/2	18-34/26	34	18
Ramp ES	0.1-1.0/0.3	0-8/3	13-39/25	32-34	17-18
Ramp WS	0.1-1.0/0.3	0-8/3	13-39/25	34	18
Ramp WN	0.2-0.8/0.4	1-5/3	16-27/24	34	17

4.3 Groundwater Conditions

Groundwater was observed in 35 out of 100 borings along the alignments during drilling at elevations of 497.6 to 588.9 feet (2.5 to 89.0 feet bgs). After drilling, the groundwater was measured in 8 borings at elevations of 493.5 to 533.9 feet (40.0 to 91.3 feet bgs). In seven borings, groundwater was measured after 24 to 144 hours of drilling completion, and its level was recorded at elevations of 507.0 to 581.4 feet, about 8.0 and 72.0 feet bgs.

Within this project limits, Wang installed two monitoring wells in boreholes 10-PZ-01 and 1703-PZ-01. The Piezometer 10-PZ-01 was installed at Station 7315+23.78 in the proposed EB Taylor Exit Ramp and Piezometer 1703-PZ-01 was installed at Station 1104+74.81 in the proposed Ramp WN. Both Piezometers were set within silty loam to sandy loam unit below the soft “Chicago blue clay” between 72.0 and 93.0 feet bgs. The monitoring wells showed an average water table elevation of 552.7 feet and 553.4 feet, respectively. However, is known that within the soft clay unit, possible thin lenses of saturated silt are prone to release water into excavated sections trough

this unit.

During periods of precipitation, we anticipate that perched groundwater may be encountered, but otherwise the static water level is deep seated and will not impact the roadway or pavement design.

5.0 ENGINEERING ANALYSIS AND RECOMMENDATIONS

The typical pavement section from the plan set dated November 11, 2017 (Appendix D) indicates the proposed pavement section will consist of 11 inches of jointed Portland Cement Concrete (PCC) pavement over 4 inches of stabilized hot-mix asphalt (HMA) base and 12 inches of improved aggregate subgrade. However, some roadway sections will have temporary pavement section that will consist of either 13 inches of layered HMA over 4 inches of subbase granular material or 11 inches of PCC over 4 inches of subbase granular material. The analysis and recommendations include the improvements along the sections listed in Table 1.

The cross sections show the alignments sharing the embankment and roadway sections. Ramp SE and SB Taylor Road Bypass Ramp are sharing the roadway from about Station 7400+00 to Station 7403+50. Ramp WS and EB Taylor Street Exit/Bypass Ramp are sharing the embankment and pavement structure between about Station 1233+50 (7317+00) to Station 1237+00 (7320+00) and recommendations are common for the two. Ramp ES, Ramp WS, and EB Taylor Exit Ramp are sharing the subgrade from about Station 1518+00 to Station 1520+50. Within the shared sections, the treatment will refer to the entire extent of common subgrade or foundation. When finished, the ramps will include one to two lanes and shoulders on both sides. The typical pavement sections are attached in Appendix D. The proposed ramps pavement section includes temporary pavement structures of asphalt over aggregate base and design pavement structure of asphalt/concrete pavement over aggregate base. The pavement section includes 12 inches of improved aggregate subgrade.

5.1 Site Preparation and Earthwork

It is recommended that the existing topsoil be stripped within the limits of the proposed pavement, shoulders, embankment fill, and grading. For estimating purposes, the average topsoil thickness to be stripped from the surface is 10 inches. According to IDOT District One policy, a shrinkage factor of 15% should be used to measure borrowed and furnished excavation quantities.

The exposed subgrade throughout the extent of the exit ramps will be soft clay to silty clay, stiff to

hard silty clay, and granular and cohesive fill. It should be anticipated that soft clay will fail attempts at proofrolling due to excessive deflection and rutting; therefore, the proofrolling of this soil is not recommended and additional subgrade treatment should be provided, as discussed in the following section.

5.2 Subgrade Treatment and Recommendations

Based on the result of our subsurface investigation we expect the subgrade will consist of stiff to hard silty clay diamicton and very soft to medium stiff clay. Table 8 summarizes subgrade soil conditions and treatment areas extent.

Table 8: Summary of Subgrade Soil Condition and Treatment Extent

Alignment	Stations	Width	Subgrade Soil Type and Properties	Recommended Treatment /Depth (inches)
Ramp EN	1613+60 to 1613+89	full width	Settlement >1inch	LCCF[2]/ see SGR for SN 016-1811
	1613+89 to 1619+50	full width	Very soft to med stiff clay (**Unit 3**) Qu=0.1-0.9 tsf ; N=0-5bw/ft; MC=28-31%; moist to wet	24[1]
Ramp SE	1404+50 to 1404+89	full width	Settlement >1inch	LCCF[2]/ see SGR for SN 016-1835
SB Taylor St Bypass Ramp	6404+00 to 6405+49	full width	Very soft to med stiff clay (**Unit 3**) Qu=0.2-0.6 tsf ; N=1-5bw/ft; MC=20-26%; moist to wet	24[1]
	6405+49 to 6407+69	full width	Settlement >1inch	LCCF[2]/ see SGR for SN 016-1834
SB Taylor St Bypass Ramp, (EB Taylor St, and Ramp WS)	6421+00 to 6424+11; (~7317+00 to 7320+00; ~1233+50 to 1237+00)	full width	Very soft to med stiff clay (**Unit 3**) Qu=0.1-0.7 tsf ; N=0-5blw/ft; MC=20-26%; moist to wet	24[1]
EB Taylor St Exit	7319+90 to 7320+75	full width	Very soft to med stiff clay (**Unit 3**) Qu=0.1-0.5 tsf ; N=0-4blw/ft; MC=20-27%; moist to wet	24[1]

Alignment	Stations	Width	Subgrade Soil Type and Properties	Recommended Treatment /Depth (inches)
Ramp ES	1511+39 to 1512+25	CL to 28 RT[3]	Very soft to med stiff clay (**Unit 3**) Qu=0.2-0.7tsf ; N=3-5blw/ft; MC=20-27%; moist to wet	24[1]
	1512+25 to 1513+25	15 RT to 28 RT	Very soft to med stiff clay (**Unit 3**) Qu=0.3-0.7tsf ; N=3-4blw/ft; MC=24-28%; moist to wet	24[1]
	1513+25 to 1517+75	medians and between existing roads	Match the existing subgrade	up to 24[1]
Ramp WS	1229+60 to 1230+50	full width	Settlement >1inch	LCCF[2]/ see SGR for SN 016-1803
	1233+50 to 1241+20	full width	Very soft to med stiff clay (**Unit 3**) Qu=0.1-0.7 tsf ; N=0-5blw/ft; MC=20-26%; moist to wet	24[1]
Ramp WN	1105+04 to 1105+50	full width	Settlement >1inch	LCCF[2] / see SGR for SN 016-1833

[1] Alternative: The 24 inches of undercut treatment can be reduced to 12 inches of undercut or eliminated by placing bi-axial or tri-axial geogrid. **The geogrid could be used within wall limits and reduce the undercut thickness to not interfere with the walls structural design.** The geogrid is designed specifically for the proposed average daily traffic volume, design life of the pavement, number of proposed axels, and axel loads;

[2]IDOT District One Class III Lightweight Cellular Concrete Fill (LCCF) for recommendation see SGRs;

[3]Offset from proposed alignment.

At locations shown in Table 8 the subgrade soil will not provide a stable working platform for placement and compaction of improved subgrade aggregate. At the base of the undercut excavation, we recommend placing of geotextile fabric for ground separation according to Section 210 (2016). The improved subgrade should be in accordance with the Bureau of Design and Environment special provision, *Aggregate Subgrade Improvement.*

5.3 Subgrade Support Rating

Laboratory testing on the subgrade soils shows a Subgrade Support Rating (SSR) of POOR to

FAIR. The pavement should be design based on SSR of POOR or on an IBR of 2, as per IDOT correlation to the A-7-6 soil classification encountered during the investigation (IDOT, 2015).

5.4 Roadway Drainage

The proposed subgrade and pavement should have proper surface grading to remove water accumulations and prevent the pooling of water. The clayey subgrade, encountered immediately beneath the proposed roadway pavement, have high clay and silt contents and will exhibit poor drainage characteristics. Although the soils are not frost susceptible, the installation of four-inch diameter transverse underdrains at the low points in the proposed profile and at 300-foot intervals between is recommend to ensure the long-term performance of the pavement. The underdrains should be installed at a depth immediately below the base of improved subgrade elevation and should not be wrapped in filter fabric.

5.5 Embankment Cuts

The existing embankments and slopes along SB and NB I-90/94 will be cut as part of the widening and realignment of the roadway section. To support the proposed cuts, several retaining walls will be constructed. Table 9 summarizes the structures along the proposed alignments. The retaining walls design was addressed in separate structure geotechnical reports.

Table 9: Summary of Structures

Alignment	Wall Number	Structure Number	Approximate Location
Ramp EN	20	SN 016-1811	North approach embankment
Ramp SE	48	SN 016-1835	North approach embankment
SB Taylor St Bypass	47	SN 016-1834	North approach embankment
	14	SN 016-1803	South approach embankment
Ramp WS	14	SN 016-1803	South approach embankment
Ramp WN	46	SN 016-1833	North approach embankment

5.5.1 Settlement

The approach roadway embankments are retained on each side by walls. By using regular IDOT fill (unit weight of 125 pcf), the embankment will undergo up to 4.5-inch settlement within the highest embankment sections. The treatment recommendations in Table 8 will reduce the settlement to 1 inch or less. The MSE retaining walls are designed with IDOT District One Class III LCCF and sometimes with ground improvement to satisfy the settlement criterion for the roadway.

5.5.2 Global Stability

The slopes along the ramp sections will be graded from 1:3 to 1:6 (V:H). Walls retain most of the ramps embankments. We estimate the slopes outside the walls meet the IDOT required minimum FOS of 1.5 where fill and 1.7 were in cut.

6.0 CONSTRUCTION CONSIDERATIONS

6.1 Excavation, Dewatering, and Utilities

Foundation excavations should be performed in accordance with local, State, and federal regulations. The potential effect of ground movements upon nearby roadways and utilities should be considered during construction. Excavations should be sloped at no greater than 1:2 (V:H). Excavations required to reach the base elevations of the retaining walls, as well as for undercutting, may require dewatering. Groundwater might be present within the soft clay (Unit 3) and in granular lenses encountered throughout. The Contractor should ensure proper surface grading to prevent the pooling of run-off into open excavations. Any water allowed to enter excavations should immediately be removed via sump pump.

6.2 Filling and Backfilling

General fill used as embankment material should be structural fill except as noted in Section 5.2. Pre-approved, compacted, cohesive or granular soil conforming to Section 204, *Borrow and Furnished Excavation* would be acceptable as structural fill (IDOT 2015). The fill material should be free of organic matter and debris and should be placed in lifts and compacted in accordance to Section 205, *Embankment.* The existing fill material excavated from the embankments may be reused elsewhere if it conforms to the following criteria: a) L_L less than 50%; b) plasticity index less than 20%; c) maximum dry density greater than 90 pcf according to AASHTO T 99; and d) organic content less than 10%.

6.3 Earthwork Operations

The required earthwork can be accomplished with conventional construction equipment. Moisture and traffic will cause deterioration of exposed subgrade soils. Precautions should be taken by the contractor to prevent water erosion of the exposed subgrade. A compacted subgrade will minimize water runoff erosion.

Earth moving operations should be scheduled to not coincide with excessive cold or wet weather (early spring, late fall or winter). Any soil allowed to freeze or soften due to the standing water should be removed. Wet weather can cause problems with subgrade compaction.

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

7.0 QUALIFICATIONS

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

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

Respectfully Submitted,

WANG ENGINEERING, INC.

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

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

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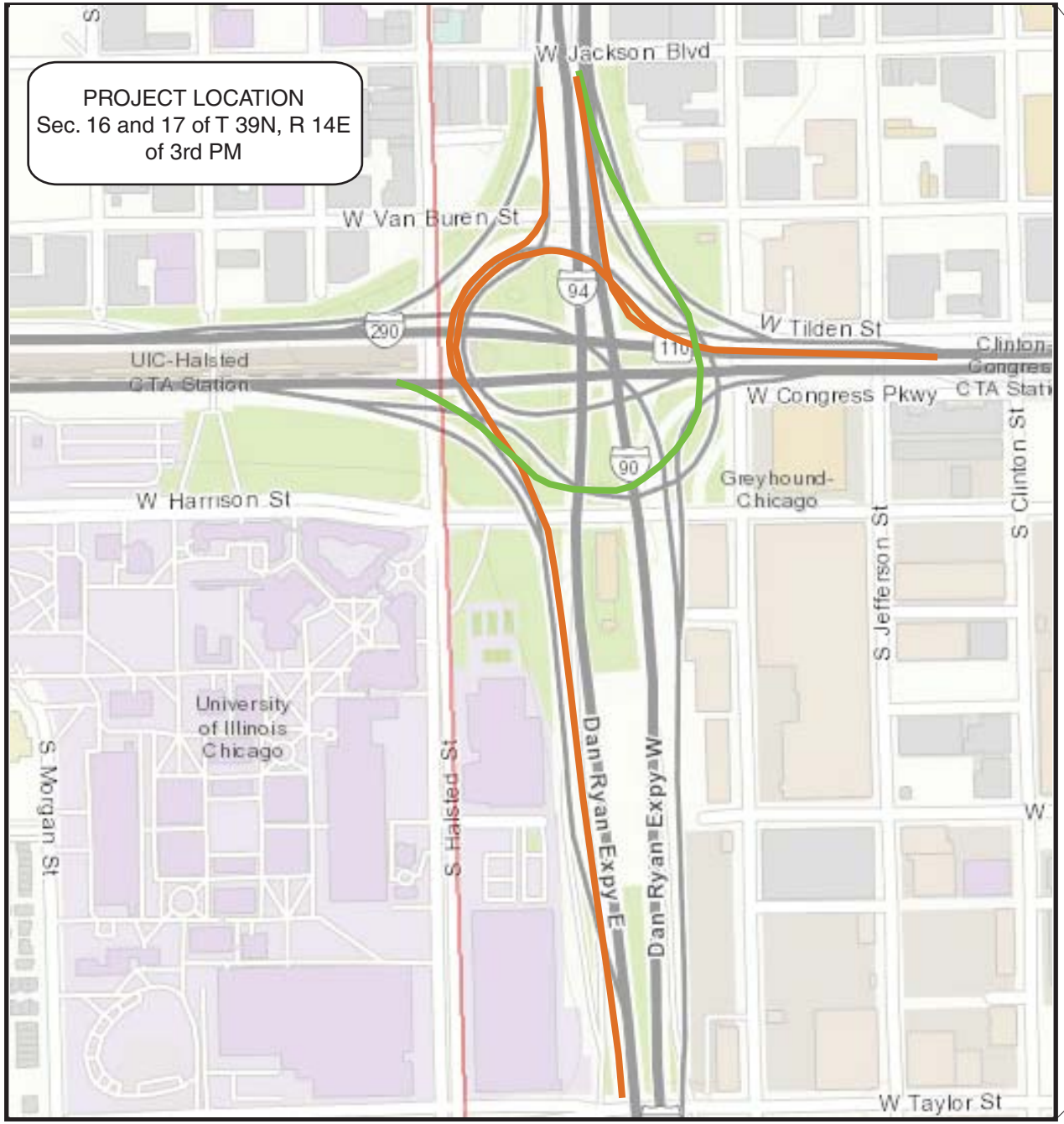
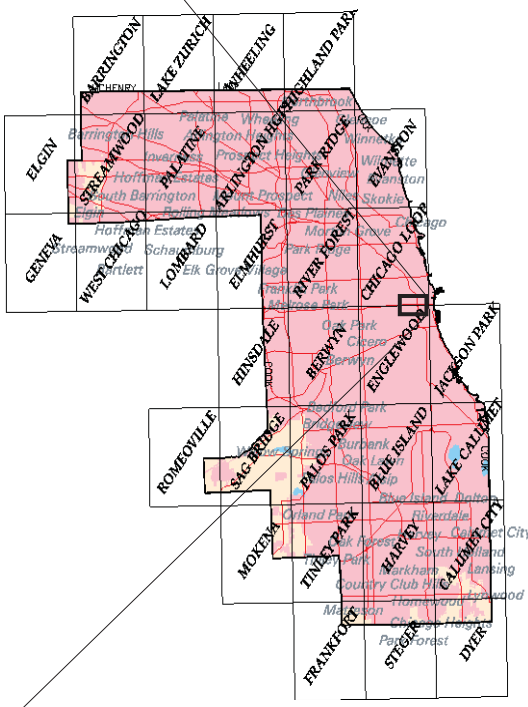
EXHIBITS





Cook County

Contract 60X79 Alignment (Ramp EN)

Contract 60X93 Alignments (Ramps SE, SB Taylor Bypass, EB Taylor Exit, ES, WS, and WN)

SITE LOCATION MAP: JANE BYRNE INTERCHANGE RAMP COMPLETION (60X93) AND RAMP EN (60X79), COOK COUNTY, ILLINOIS

SCALE: GRAPHICAL	EXHIBIT 1-1	DRAWN BY: T. Rothschild CHECKED BY: C. Marin

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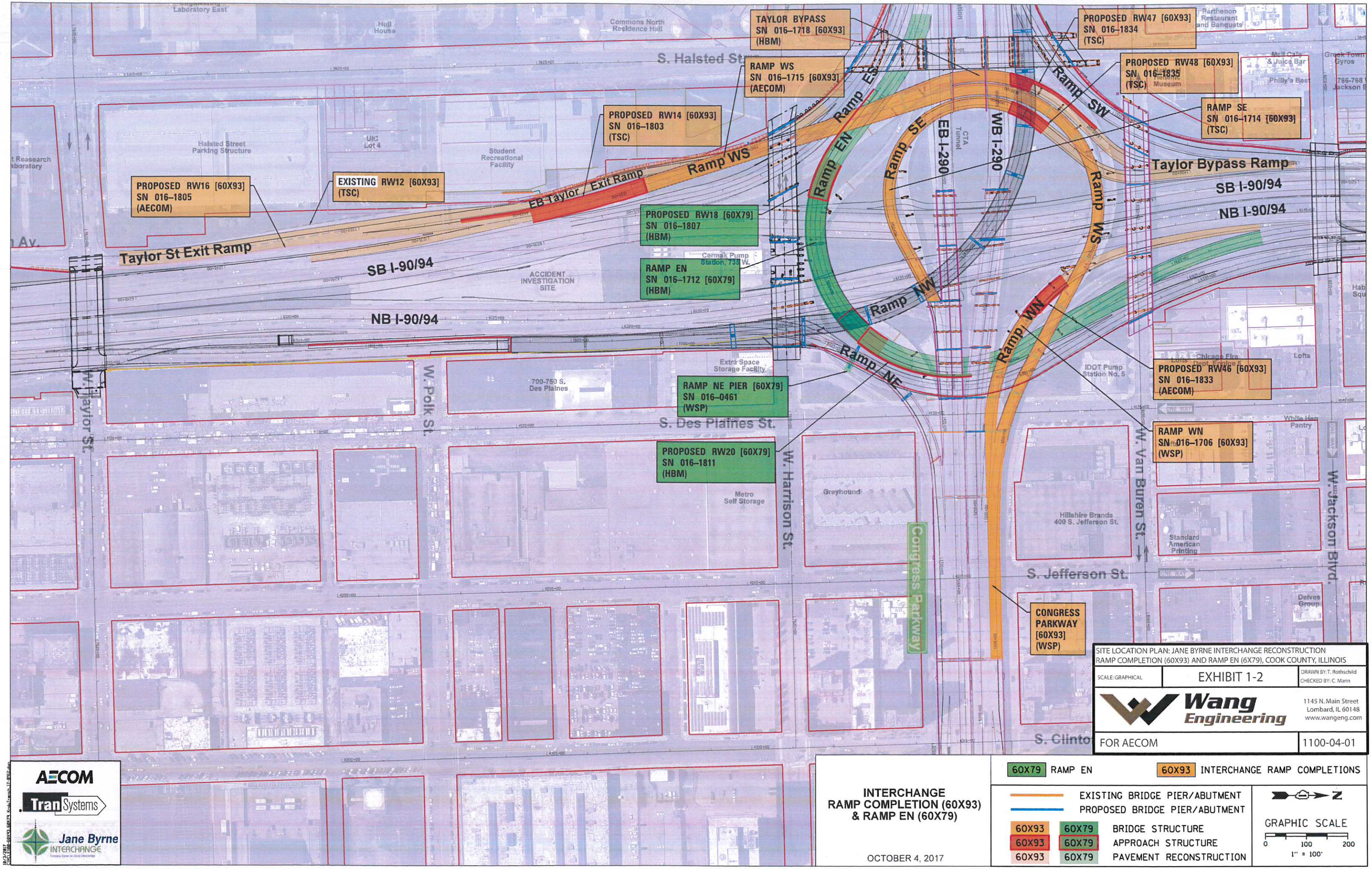

AECOM
TranSystems
Jane Byrne INTERCHANGE
Formerly Known as Circle Interchange

INTERCHANGE RAMP COMPLETION (60X93) & RAMP EN (60X79)

OCTOBER 4, 2017

60X79 RAMP EN

60X93 INTERCHANGE RAMP COMPLETIONS

EXISTING BRIDGE PIER/ABUTMENT
PROPOSED BRIDGE PIER/ABUTMENT

60X93	60X79	BRIDGE STRUCTURE
60X93	60X79	APPROACH STRUCTURE
60X93	60X79	PAVEMENT RECONSTRUCTION

GRAPHIC SCALE
0 100 200
1" = 100'

SITE LOCATION PLAN: JANE BYRNE INTERCHANGE RECONSTRUCTION
RAMP COMPLETION (60X93) AND RAMP EN (6X79), COOK COUNTY, ILLINOIS

SCALE: GRAPHICAL | EXHIBIT 1-2 | DRAWN BY: T. Rothschild | CHECKED BY: C. Marin

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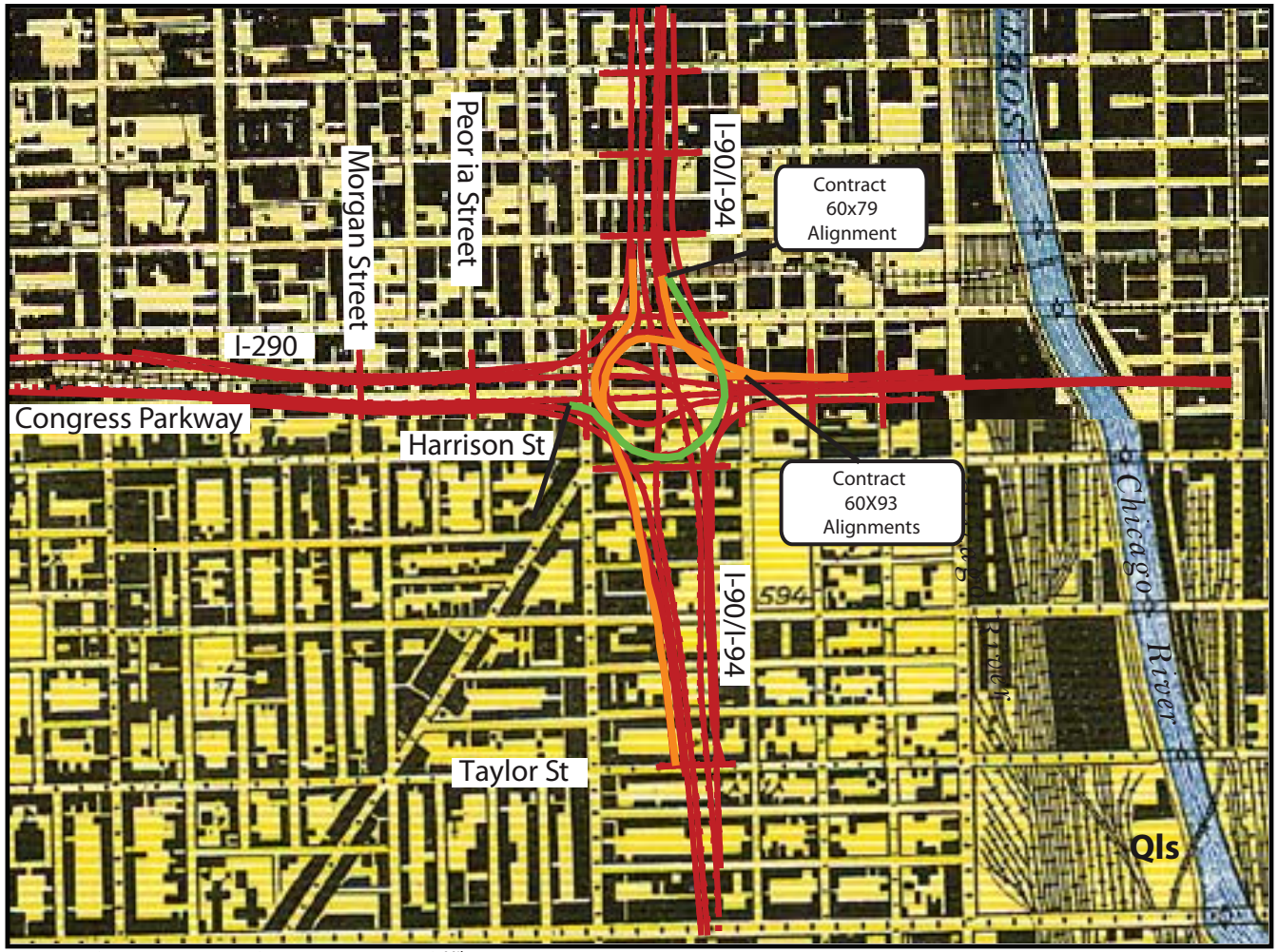
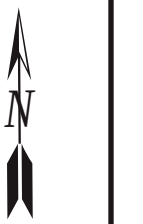
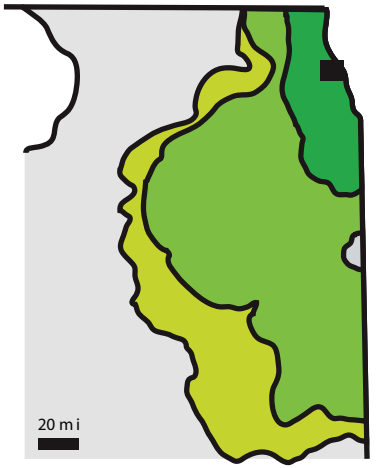


Modified after Bretz (1926)



REGIONAL GEOLOGY



Wedron Group

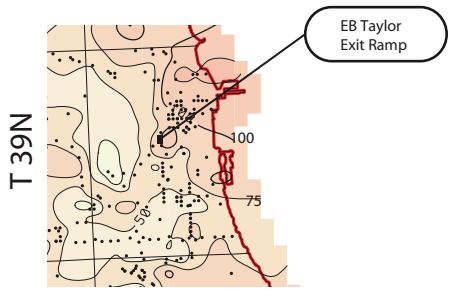
- Wadsworth Formation
- Lemont Formation
- Tiskilwa Formation

Modified after Hansel and Johnson (1996)

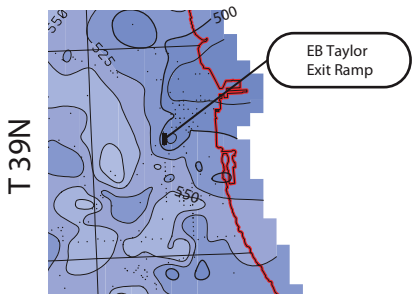
Legend

Qls	Glacial lake bottom (Covered by lacustrine deposits)

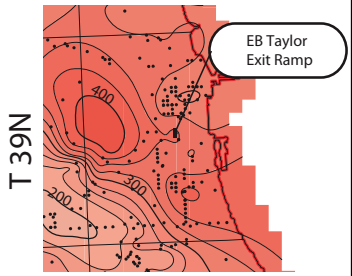
DRIFT THICKNESS



BEDROCK TOPOGRAPHY



BEDROCK THICKNESS



Modified after Leetaru et. al. (2004)

0 2 4 8 miles

SITE AND REGIONAL GEOLOGY: JANE BYNE INTERCHANGE RAMP COMPLETION (60X93) AND RAMP EN (60X79), COOK COUNTY, ILLINOIS

SCALE: GRAPHICAL	EXHIBIT 2	DRAWN BY: T. Rothschild CHECKED BY : M. Seyhun

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

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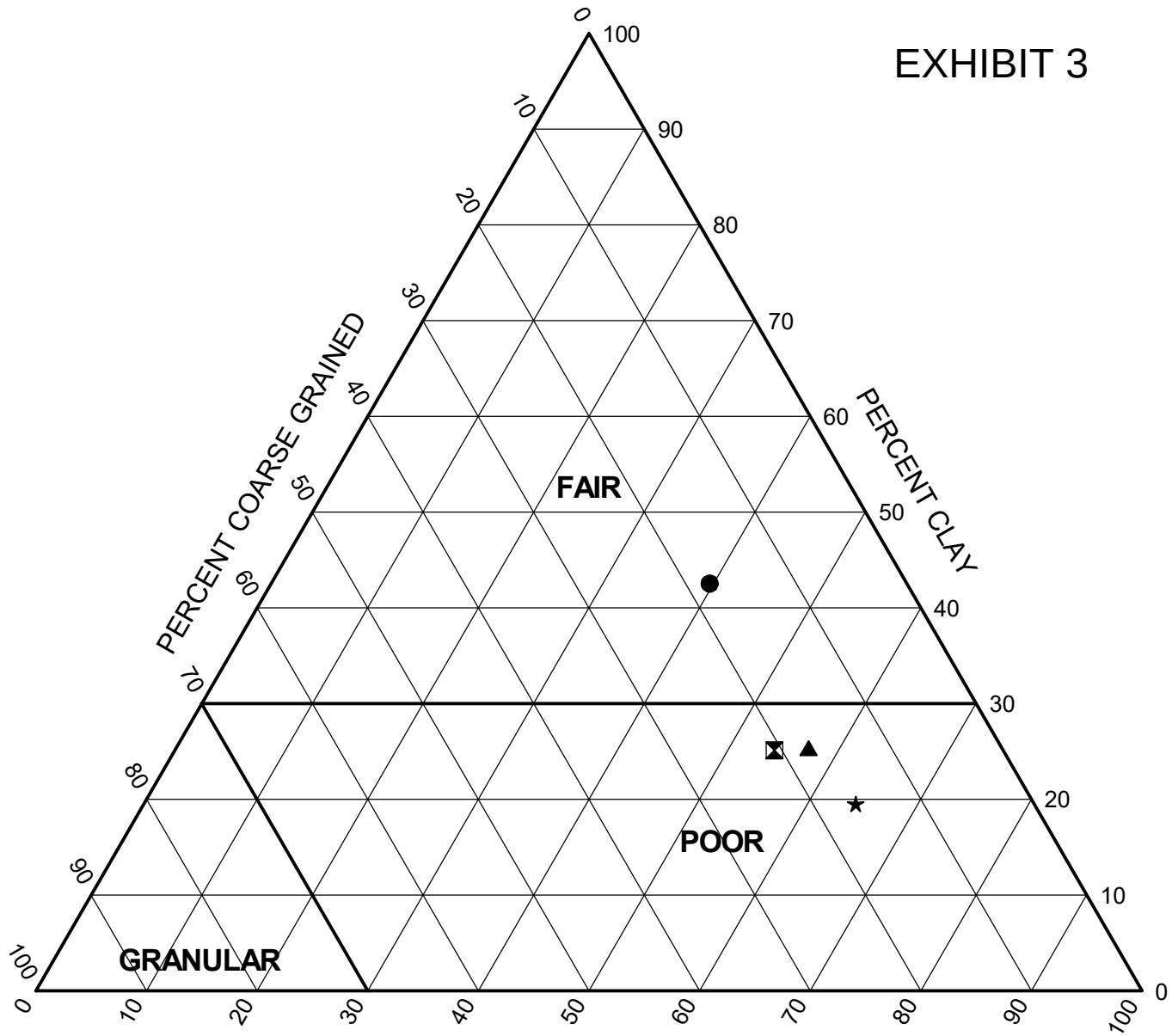
EXHIBIT 3



	Sample	Depth (ft)	Coarse (%)	Silt (%)	Clay (%)	Classification		
						IL DOT	AASHTO	RATING
●	10-RWB-03#6	13.5	17.8	39.6	42.5	Clay	A-6 (14)	FAIR
⊠	1703-B-04#4	8.5	20.7	54.2	25.1	Silty Clay Loam	A-6 (8)	POOR
▲	22-RWB-03#6	13.5	17.5	57.1	25.4	Silty Clay Loam	A-6 (10)	POOR
★	SB90-SGB-24#2	3.5	16.1	64.3	19.6	Silty Clay Loam	A-6 (8)	POOR

WEI SINCE 1982

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

Subgrade Support Rating Chart

Project: Circle Interchange Reconstruction

Location: Section 17, T39N, R14E of 3rd PM

Number: 1100-04-01

APPENDIX A

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

BORING LOG 0461-HA-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 585.66 ft
North: 1897981.87 ft
East: 1171951.70 ft
Station: 5213+02.90
Offset: 36.757 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	585.2	6-inch thick, gray CRUSHED STONE --FILL--						
		Brown SANDY LOAM, some gravel and brick --FILL--			1	PUSH	NP	11
					2	PUSH	NP	4
	581.4							
		Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	5		3	PUSH	0.75 P	22
					4	PUSH	0.25 P	24
					5	PUSH	< 0.25 P	20
	575.7		10					
		Boring terminated at 10.00 ft						
			15					
			20					

GENERAL NOTES

Begin Drilling: **10-26-2015** Complete Drilling: **10-26-2015**
Drilling Contractor: **Wang Testing Services** Drill Rig: **Geoprobe HA**
Driller: **B&N** Logger: **B. Wilson** Checked by: **C. Marin**
Drilling Method: **1" IDA Pneumatic Geoprobe LB Sampler**

WATER LEVEL DATA

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

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

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

BORING LOG 1087-B-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 577.83 ft
North: 1897618.19 ft
East: 1171373.71 ft
Station: 1225+43.65
Offset: 53.5267 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	577.5	4-inch thick ASPHALT --PAVEMENT--						
		15-inch thick CONCRETE --PAVEMENT--						
	576.2	Medium dense CRUSHED STONE --FILL--			1	10 9 12	NP	
			5		2	4 2 3	NP	7
	572.3	Medium stiff, gray SILTY CLAY, trace gravel			3	2 3 2	0.74 B	20
	569.8	Soft to medium stiff, gray CLAY, trace gravel	10		4	2 2 3	0.33 B	21
		--L_L(%)=32, P_L(%)=17-- --%Gravel=1.9-- --%Sand=15.6-- --%Silt=52.2-- --%Clay=30.3-- --A-6 (11)--			5	2 1 2	0.25 B	24
			15		6	1 2 1	0.16 B	27
					7	1 2 1	0.25 B	27
			20		8	1 2 2	0.25 P	28
			25		9	0 2 1	0.25 B	27
					10	0 0 3	0.41 B	26
			30		11	1 1 2	0.41 B	25
					12	1 2 2	0.57 B	26
	541.1	Hard, gray SILTY LOAM, trace gravel and sand lenses	35		13	0 1 1	0.49 B	29
			40		14	9 10 13	7.79 B	18

GENERAL NOTES

Begin Drilling: **03-06-2013** Complete Drilling: **03-14-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **R&J** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 20', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **3.50 ft**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1087-B-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 577.83 ft
North: 1897618.19 ft
East: 1171373.71 ft
Station: 1225+43.65
Offset: 53.5267 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--L_L(%)=24, P_L(%)=13--			15	7	6.47	13
		--%Gravel=3.5--				10	B	
		--%Sand=28.1--				18		
		--%Silt=52.4--	45					
		--%Clay=16.0--						
		--A-6 (5)--						
	530.8	Very stiff to hard, gray SILTY CLAY, trace gravel						
		--L_L(%)=40, P_L(%)=15--			16	7	6.72	20
		--%Gravel=0.4--				12	B	
		--%Sand=3.8--				20		
		--%Silt=49.8--	50					
		--%Clay=46.1--						
		--A-6 (24)--						
	520.8	Medium dense, gray, SANDY LOAM						
		--%Gravel=0.0--			17	6	2.05	24
		--%Sand=74.0--				6	S	
		--%Silt=25.1--	55			7		
					18	5	NP	23
			60			7		
						10		

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--%Clay=0.9--						
		--A-2-4 (0)--						
	515.8	Hard, gray SILTY LOAM, trace gravel						
					19	12	10.25	13
			65			20	B	
						25		
		--L_L(%)=22, P_L(%)=12--			20	19	5.00	13
		--%Gravel=4.6--				30	S	
		--%Sand=19.7--				34		
		--%Silt=61.8--	70					
		--%Clay=13.9--						
		--A-4 (5)--						
					21	27	> 4.50	18
			75			34	P	
						47		
	500.8	Very dense, gray GRAVELLY SANDY LOAM, some dolostone fragments						
					22	50/3	NP	15
			80					

GENERAL NOTES

Begin Drilling: **03-06-2013** Complete Drilling: **03-14-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **R&J** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 20', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **3.50 ft**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1087-B-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 577.83 ft
North: 1897618.19 ft
East: 1171373.71 ft
Station: 1225+43.65
Offset: 53.5267 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--HARD DRILLING--	85	O	23	50/3	NR	
	488.8	Strong, good rock quality, light gray, fresh, slightly fractured, joint breaks with little to no infill, slightly vuggy DOLOSTONE Run#1: 89 to 99 feet --RECOVERY=100%-- --RQD=84%-- ROCK MASS RATING: Strength of rock material = 12 Drill core quality RQD = 17 Spacing of joints = 20 Condition of joints =20 Groundwater condition =10	90			CORE		
			95		24			
	478.8	Boring terminated at 99.00 ft	100					

GENERAL NOTES

Begin Drilling: **03-06-2013** Complete Drilling: **03-14-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **R&J** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 20', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **3.50 ft**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 10-RWB-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.54 ft
North: 1897333.82 ft
East: 1171374.94 ft
Station: 1228+15.06
Offset: 31.338 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	593.0	6-inch thick, black and brown SILTY LOAM --TOPSOIL--						
		Loose to medium dense, brown, fine SAND --FILL--			1	3 5 6	NP	8
			5		2	3 4 7	NP	11
					3	8 7 6	NP	14
				▽				
			10		4	4 4 4	NP	21
	583.0	Stiff to very stiff, gray SILTY CLAY LOAM, trace gravel			5	3 5 8	3.69 B	25
			15		6	4 6 5	2.30 B	16
				▽				
					7	3 3 5	1.48 B	21
	575.5	Soft to stiff, gray CLAY to SILTY CLAY, trace gravel						
			20		8	2 2 3	0.66 B	28
			25		9	1 3 3	1.07 B	23
					10	2 2 2	0.49 B	28
					11	1 2 2	0.41 B	24
			30	◯	12	1 2 2	0.67 N/6	
			35		13	0 1 2	0.33 B	26
					14	1 2 2	0.49 B	23
			40					

GENERAL NOTES

Begin Drilling: **02-26-2014** Complete Drilling: **03-03-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **P&P** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: ▽ **8.00 ft**
At Completion of Drilling: ▼ **mud at 7 ft**
Time After Drilling: **144 hours**
Depth to Water: ▼ **16.00 ft**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 10-RWB-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.54 ft
North: 1897333.82 ft
East: 1171374.94 ft
Station: 1228+15.06
Offset: 31.338 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--disturbed sample--	45		15	1 1 2	0.25 P	21
		--disturbed sample--	50		16	2 2 3	0.25 P	26
	541.8	Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel						
			55		17	11 11 17	5.66 B	15
		--L_L(%)=23, P_L(%)=15-- --%Gravel=6.7-- --%Sand=26.9--	60		18	14 24 29	4.50 P	12
		--%Silt=49.7-- --%Clay=16.7-- --A-4 (3)--	65		19	11 19 23	8.12 B	15
	526.8	Dense to very dense, gray SILTY LOAM, trace gravel --Moist--						
			70		20	14 16 20	NP	18
			75		21	23 25 39	NP	12
	516.8	Hard, gray SILTY CLAY LOAM, trace gravel						
			80		22	16 26 31	9.68 B	15

GENERAL NOTES

Begin Drilling: **02-26-2014** Complete Drilling: **03-03-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **P&P** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **8.00 ft**
At Completion of Drilling: **mud at 7 ft**
Time After Drilling: **144 hours**
Depth to Water: **16.00 ft**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 10-RWB-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.54 ft
North: 1897333.82 ft
East: 1171374.94 ft
Station: 1228+15.06
Offset: 31.338 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
506.8	Very dense, gray SILT --Moist--	85		23	12 19 26	NP	18
		90		24	40 36 40	NP	19
501.8	Hard, gray SILTY CLAY LOAM, trace gravel	95		25	20 28 50/5	9.18 B	14
496.5	Very dense, gray GRAVELLY SILTY LOAM --Dry--	100		26	60/4	NP	10
493.0	--DIFFICULT DRILLING-- --WEATHERED BEDROCK--						
491.5	Strong, light gray, very poor rock mass quality, bedded fresh DOLOSTONE, up to 8-inch beds, up to 4-inch spaced joints, horizontal and vertical joints with none to more than 0.2-inch greenish gray infilling, hard joint wall, with stylolitic surfaces, and moderately vuggy porosity. --Run 1 - RECOVERY=97%-- --RQD=8%--	105		1	CORE		
	--Run 2 - RECOVERY=87%-- --RQD=20%--	110		2	CORE		
481.5	Boring terminated at 68.50 ft	115					
		120					

GENERAL NOTES

Begin Drilling: **02-26-2014** Complete Drilling: **03-03-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **P&P** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **8.00 ft**
At Completion of Drilling: **mud at 7 ft**
Time After Drilling: **144 hours**
Depth to Water: **16.00 ft**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 10-RWB-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.09 ft
North: 1897135.88 ft
East: 1171421.19 ft
Station: 7313+60.00
Offset: 3.91 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	592.2	11-inch thick, dark brown SILTY LOAM						
		--TOPSOIL--						
		Medium dense, black and reddish brown SILTY LOAM, trace gravel			1	16 9 10	NP	25
		--FILL--						
	589.1							
		Loose to medium dense. brown SAND, trace gravel			2	5 7 10	NP	6
		--FILL--	5					
					3	2 2 2	NP	22
	584.3							
		Stiff to very stiff, gray CLAY, trace gravel			4	2 4 8	2.46 B	24
			10					
					5	4 4 5	2.46 B	28
		--L_L(%)=37, P_L(%)=19--						
		--%Gravel=2.0--			6	2 3 4	2.21 B	22
		--%Sand=15.8--						
		--%Silt= 39.6--	15					
		--%Clay=42.5--						
		--A-6 (14)--			7	3 4 5	1.72 B	29
	575.1							
		Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			8	2 1 2	0.33 B	28
			20					
			25		9	1 1 1	0.16 B	31
					10	1 2 2	0.16 B	29
					11	2 2 2	0.16 B	27
			30		12	2 2 2	0.16 B	22
			35		13	2 1 3	0.16 B	26
			40		14	2 2 2	0.25 B	25

GENERAL NOTES

Begin Drilling: **02-21-2014** Complete Drilling: **02-25-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-25 ATV [93%]**
Driller: **N&J** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **59.00 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 10-RWB-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.09 ft
North: 1897135.88 ft
East: 1171421.19 ft
Station: 7313+60.00
Offset: 3.91 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			45		15	2 3 4	0.16 B	24
	543.8							
		Hard, gray SILTY CLAY, trace gravel	50		16	3 5 6	0.90 B	26
			55		17	10 17 25	6.15 B	17
	534.1			▽				
		Dense to very dense, gray, fine SAND and SILT laminations	60		18	16 28 34	NP	17

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--Moist to wet--	65		19	12 21 27	NP	22
		--L_L(%)=NP, P_L(%)=NP-- --%Gravel=0.1-- --%Sand=44.4-- --%Silt=51.6-- --%Clay=4.0-- --A-4 (0)--	70		20	16 21 31	NP	21
			75		21	21 20 25	NP	22
	514.4							
		Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel	80		22	18 27 31	4.50 P	14

GENERAL NOTES

Begin Drilling: **02-21-2014** Complete Drilling: **02-25-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-25 ATV [93%]**
Driller: **N&J** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **59.00 ft**
At Completion of Drilling ▼ **mud in the borehole**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 10-RWB-03

WEI Job No.: 1100-04-01

Client **AECOM**
Project **Circle Interchange Reconstruction**
Location **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.09 ft
North: 1897135.88 ft
East: 1171421.19 ft
Station: 7313+60.00
Offset: 3.91 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	506.3	Very dense, gray SILTY LOAM, trace to little gravel --Damp to dry--	85		23	20 27 46	4.92 S	14
			90		24	50/5	NP	12
			95		25	50/5	NP	14
		--HARD DRILLING--						
	495.6	Very dense, gray DOLOSTONE fragments -- WEATHERED BEDROCK--	100		26	50/1	NP	11
		--DIFFICULT DRILLING--	105					
		--AUGER REFUSAL--	110					
	490.1	Boring terminated at 103.00 ft	115					
			120					

GENERAL NOTES

Begin Drilling **02-21-2014** Complete Drilling **02-25-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **D-25 ATV [93%]**
Driller **N&J** Logger **A. Happel** Checked by **C. Marin**
Drilling Method **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **59.00 ft**
At Completion of Drilling ▼ **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 10-RWB-04

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.40 ft
North: 1896930.29 ft
East: 1171484.09 ft
Station: 7315+75.12
Offset: 1.47 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	592.9	6-inch thick ASPHALT --PAVEMENT--						
		Dense, brown GRAVELLY LOAM --BASE COURSE--			1	29 29 20	NP	16
	590.4	Very loose to medium dense, brown, coarse SAND --Dry to saturated-- --FILL--	5		2	6 9 7	NP	4
					3	3 3 4	NP	16
			10		4	4 8 6	NP	6
					5	3 2 3	NP	7
			15		6	2 2 1	NP	15
	577.9	Medium dense, gray GRAVELLY SAND --Wet--			7	3 7 9	NP	8
	574.4	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace	20		8	10 3 2	0.33 B	22
		gravel	25		9	0 0 1	0.08 B	36
					10	1 1 2	0.25 P	17
					11	0 0 2	0.33 N/6	
			30		12	1 1 1	0.16 B	27
			35		13	0 0 2	< 0.25 P	26
			40		14	1 2 3	< 0.25 P	27

GENERAL NOTES

Begin Drilling: **03-10-2014** Complete Drilling: **03-13-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **P&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 15', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **13.00 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **72 hours**
Depth to Water: **35.00 ft**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 10-RWB-04

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.40 ft
North: 1896930.29 ft
East: 1171484.09 ft
Station: 7315+75.12
Offset: 1.47 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			45		15	4 4 4	0.75 P	27
			50		16	1 3 6	0.57 B	26
	541.7	Hard, gray SILTY LOAM, trace gravel						
			55		17	15 50/3"	6.15 S	14
		--L_L(%)=24, P_L(%)=14-- --%Gravel=4.5-- --%Sand=26.8--	60		18	18 19 27	7.71 B	13
		--%Silt=51.5-- --%Clay=17.2-- --A-4 (4)--						
	531.7	Very stiff, gray SILTY CLAY LOAM, trace gravel						
	528.9	Dense to very dense, gray, medium to coarse SAND, trace gravel --Wet--	65		19	7 11 19	3.61 B	15
			70		20	14 22 20	NP	16
			75		21	16 17 36	NP	11
			80		22	16 18 20	NP	11

GENERAL NOTES

Begin Drilling: **03-10-2014** Complete Drilling: **03-13-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **P&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 15', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **13.00 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **72 hours**
Depth to Water: **35.00 ft**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 10-RWB-04

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.40 ft
North: 1896930.29 ft
East: 1171484.09 ft
Station: 7315+75.12
Offset: 1.47 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--HARD DRILLING--						
		--Possible Cobbles--						
	511.7							
		Very dense, gray GRAVELLY SAND						
		--Wet--						
					23	45 50/5	NP	10
			85					
		-HARD DRILLING up to 89.5 ft-						
		--Possible Cobbles--			24	50/2	NP	
	503.9							
		Hard, gray SILTY LOAM, trace to little gravel	90					
		--Dry--						
					25	70/5	> 4.50 P	9
			95					
		--HARD DRILLING at 97 ft--						
		--Possible Cobbles--						
	496.4							
		--WEATHERED BEDROCK--						
		--HARD DRILLING--			26	75/3	NP	
			100					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	492.4							
		Strong, light gray, fair rock mass quality, bedded fresh DOLOSTONE, up to 19-inch beds, 11-inch joint spacing, horizontal and vertical joints with none to more than 0.2-inch greenish gray infilling, hard joint wall, with stylolitic surfaces, and moderately vuggy porosity.	105			C O R E		
		--Run 1 - RECOVERY=96%--						
		--RQD=71%--			1			
			110					
	482.4							
		Boring terminated at 111.00 ft						
			115					
			120					

GENERAL NOTES

Begin Drilling: **03-10-2014** Complete Drilling: **03-13-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **P&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 15', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **13.00 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **72 hours**
Depth to Water: **35.00 ft**

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

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 10-RWB-05

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 580.22 ft
North: 1896756.05 ft
East: 1171508.19 ft
Station: 6236+85.54
Offset: 115.5731 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	579.9	4-inch thick ASPHALT --PAVEMENT--						
	578.7	14-inch thick CONCRETE --PAVEMENT--						
		Very dense, grayish white SANDY GRAVEL --FILL--			1	12 28 33	NP	5
	576.2	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	5		2	4 2 2	0.74 B	24
					3	1 2 2	0.60 P	20
			10		4	0 1 2	0.41 B	23
					5	0 0 0	0.25 B	26
			15		6	0 0 0	0.25 B	26
					7	0 0 2	< 0.25 P	29
			20		8	0 0 1	< 0.25 P	31
			25		9	0 0 0	0.33 B	27
					10	0 1 1	0.25 B	27
					11	0 1 2	< 0.25 P	26
			30		12	0 0 2	0.41 B	27
	543.5	Medium dense, SILTY LOAM, trace gravel	35		13	1 2 2	< 0.25 P	32
			40		14	5 7 14	NP	24

GENERAL NOTES

Begin Drilling: **07-31-2014** Complete Drilling: **07-31-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 15', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **59.50 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 10-RWB-05

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 580.22 ft
North: 1896756.05 ft
East: 1171508.19 ft
Station: 6236+85.54
Offset: 115.5731 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	538.5							
		Hard, gray SILTY CLAY, trace gravel						
					15	6 13 29	7.13 B	18
			45					
	533.5							
		Very dense, gray SILTY LOAM, trace gravel						
					16	11 27 39	NP	11
			50					
					17	12 18 24	NP	15
	525.7		55					
		Medium dense to dense, gray, fine SAND, trace gravel						
					18	10 11 14	NP	23
			60					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	515.7							
	515.2	Dense, gray SILTY LOAM, trace gravel	65		19	19 25 18	NP	12
		Boring terminated at 65.00 ft						
			70					
			75					
			80					

GENERAL NOTES

Begin Drilling: **07-31-2014** Complete Drilling: **07-31-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 15', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **59.50 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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

BORING LOG 10-RWB-06

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 578.32 ft
North: 1896599.90 ft
East: 1171526.13 ft
Station: 7319+07.86
Offset: 10.6588 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	576.3	24-inch thick, CONCRETE --PAVEMENT--						
	574.9	Dense, white CRUSHED STONE --BASE COURSE--			1	28 27 12	NP	4
	572.8	Stiff, brown and gray SILTY CLAY LOAM, trace gravel --FILL--	5		2	2 3 4	1.23 B	23
	570.3	Soft, gray SILTY CLAY LOAM, trace gravel			3	0 1 2	0.41 B	18
		Very soft to soft, gray CLAY	10		4	1 1 2	0.25 B	25
					5	0 0 2	0.25 B	26
			15		6	0 0 0	NR	
					7	0 0 0	0.16 B	24
			20		8	0 0 2	0.16 B	24
			25		9	0 0 1	0.25 B	25
					10	0 0 1	0.25 B	22
					11	0 0 2	0.41 B	23
	549.3	Medium stiff, gray SILTY CLAY	30		12	0 1 3	0.57 B	25
	546.3	Very stiff to hard, gray SILTY LOAM to SILTY CLAY LOAM, trace gravel	35		13	3 6 6	3.00 P	14
			40		14	9 14 13	4.92 S	14

GENERAL NOTES

Begin Drilling: **07-15-2014** Complete Drilling: **07-15-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **A&K** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 10-RWB-06

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 578.32 ft
North: 1896599.90 ft
East: 1171526.13 ft
Station: 7319+07.86
Offset: 10.6588 RT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	536.3	Very stiff to hard, gray SILTY CLAY LOAM, trace gravel					
45				15	10 11 12	7.95 B	12
50				16	6 8 12	6.23 B	16
		Ribboned Sample		17	5 7 7	2.33 N/6	28
55							
60				18	2 5 9	2.21 B	21
	513.8						
	513.3	Gray SANDY LOAM					
65		--Moist--		19	6 9 9	5.08 B	15
		Boring terminated at 65.00 ft					
70							
75							
80							

GENERAL NOTES

Begin Drilling: **07-15-2014** Complete Drilling: **07-15-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **A&K** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 10-RWB-07

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 576.99 ft
North: 1896456.57 ft
East: 1171549.47 ft
Station: 7320+53.06
Offset: 8.9634 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 CONCRETE --PAVEMENT--						
	575.7							
		Dense, white CRUSHED STONE --BASE COURSE--						
	573.7				1	18 23 16	NP	5
		Loose, brown and gray SILTY LOAM, trace gravel --FILL--			2	2 3 2	NP	16
	571.5		5					
		Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			3	1 1 2	0.41 B	25
					4	0 0 1	0.41 B	20
			10					
					5	0 1 2	0.16 B	24
					6	0 1 1	0.33 N/6	
			15					
					7	0 0 1	0.16 B	27
					8	0 0 1	0.16 B	26
			20					
					9	0 1 2	0.16 B	27
			25		10	0 1 1	0.41 B	25
					11	0 1 2	0.41 B	26
			30		12	1 2 2	0.41 B	25
					13	2 3 7	0.82 B	25
	540.2	Medium dense, gray SILTY LOAM, trace gravel --DRY--	35					
					14	8 8 13	3.94 S	14
			40					

GENERAL NOTES

Begin Drilling: **07-16-2014** Complete Drilling: **07-20-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **A&K** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10'; mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **44.50 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 10-RWB-07

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 576.99 ft
North: 1896456.57 ft
East: 1171549.47 ft
Station: 7320+53.06
Offset: 8.9634 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	535.2	Hard, gray SILTY CLAY LOAM, trace gravel						
	532.5	Gray, medium to coarse SAND, little gravel	45		15	5 12 13	5.08 B	12
	530.2	Stiff to hard, gray SILTY CLAY, trace gravel						
			50		16	4 9 12	4.51 B	17
			55		17	4 6 8	2.87 B	23
			60		18	2 4 5	1.31 B	22
	512.2 512.0	Gray SILTY LOAM	65		19	5 7 7	1.39 B	30
		--Moist--						
		Boring terminated at 65.00 ft	70					
			75					
			80					

GENERAL NOTES

Begin Drilling: **07-16-2014** Complete Drilling: **07-20-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **A&K** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10'; mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **44.50 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 10-RWB-08

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 579.69 ft
North: 1896379.22 ft
East: 1171563.12 ft
Station: 7321+31.58
Offset: 7.0147 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		12-inch thick, CONCRETE --PAVEMENT--						
	578.7							
		Dense, grayish white SANDY GRAVEL --BASE COURSE--			1	30 22 18	NP	4
	576.7							
		Medium stiff to stiff, brown and gray, SILTY CLAY LOAM, trace gravel	5		2	4 5 5	1.39 B	13
					3	1 2 2	0.74 B	18
	571.7							
		Very soft to soft, gray CLAY to SILTY CLAY, trace gravel	10		4	1 2 3	0.49 B	24
					5	0 0 0	0.41 B	24
		--L_L(%)=35, P_L(%)=17-- --%Gravel=2.7-- --%Sand=15.6-- --%Silt=51.1-- --%Clay=30.6-- --A-6 (14)--	15		1	PUSH	< 0.25 P	26
			20		6	0 0 0	0.25 B	25
			25		2	PUSH	< 0.25 P	
	552.9	Stiff, gray SILTY CLAY LOAM, trace gravel						
			30		7	2 3 3	1.23 B	18
	547.9	Soft, gray CLAY to SILTY CLAY, trace gravel						
			35		8	0 0 0	0.49 B	28
	542.9	Very stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel						
			40		9	2 4 9	2.05 B	17

GENERAL NOTES

Begin Drilling: **07-15-2014** Complete Drilling: **07-15-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 10-RWB-08

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 579.69 ft
North: 1896379.22 ft
East: 1171563.12 ft
Station: 7321+31.58
Offset: 7.0147 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	522.9	Dense, gray SILTY LOAM, trace gravel	45		10	5 8 13	4.18 B	18
			50		11	10 9 30	4.67 B	16
			55		12	3 4 7	2.05 B	24
			60		13	14 15 18	NP	12
	514.7	Boring terminated at 65.00 ft	65		14	16 22 19	NP	23
			70					
			75					
			80					

GENERAL NOTES

Begin Drilling: **07-15-2014** Complete Drilling: **07-15-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 10-RWB-09

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 586.92 ft
North: 1896241.34 ft
East: 1171587.89 ft
Station: 7322+71.61
Offset: 3.0944 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		12-inch thick CONCRETE --PAVEMENT--						
	585.9							
		Medium dense to dense, grayish white SANDY GRAVEL --FILL--			1	11 20 18	NP	5
			5		2	15 13 15	NP	5
					3	13 14 14	NP	4
	578.9							
		Medium stiff to stiff, brown and gray SILTY CLAY LOAM, trace gravel			4	2 2 3	0.82 B	13
			10		5	1 2 3	1.15 B	17
					6	1 2 3	1.07 B	13
	571.4		15					
		Very soft to soft, gray CLAY to SILTY CLAY, trace to some gravel			7	1 1 2	0.49 B	24
					8	0 0 0	0.41 B	26
			20					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
					9	0 0 1	< 0.25 P	31
			25		10	0 0 1	0.16 B	28
					11	0 0 0	0.25 B	28
			30		12	0 0 0	0.25 B	28
			35		13	0 2 2	< 0.25 P	33
			40		14	2 2 3	< 0.25 P	34

GENERAL NOTES

Begin Drilling: **07-15-2014** Complete Drilling: **07-16-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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

BORING LOG 10-RWB-09

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 586.92 ft
North: 1896241.34 ft
East: 1171587.89 ft
Station: 7322+71.61
Offset: 3.0944 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	545.2	Very stiff to hard, gray SILTY LOAM to SILTY CLAY LOAM, trace gravel --DRY--						
			45		15	10 11 21	3.12 S	18
			50		16	8 11 13	4.00 N/6	18
			55		17	9 14 17	5.82 S	12
			60		18	27 24 30	> 4.50 P	12
	521.9	Boring terminated at 65.00 ft	65		19	14 19 26	10.25 S	13
			70					
			75					
			80					

GENERAL NOTES

Begin Drilling: **07-15-2014** Complete Drilling: **07-16-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 14-RWB-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 580.85 ft
North: 1897238.90 ft
East: 1171475.76 ft
Station: 1229+27.47
Offset: 39.6372 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		15-inch thick CONCRETE --PAVEMENT--						
	579.6							
	579.3	3-inch thick ASPHALT						
		Medium dense, brownish white CRUSHED STONE --BASE COURSE--			1	15 17 9	NP	15
	577.6	Soft, gray CLAY to SILTY CLAY, trace gravel						
					2	3 2 3	0.49 B	22
			5					
					3	1 2 2	0.57 B	28
					4	1 2 1	0.41 B	27
			10					
					5	2 1 2	0.41 B	23
					6	2 2 2	0.25 B	27
			15					
					7	2 1 3	0.25 B	26
					8	1 1 1	0.25 B	28
			20					
					9	1 2 1	0.16 B	23
			25		10	1 2 1	0.25 B	25
					11	0 2 2	0.33 B	26
			30		12	2 3 3	0.49 B	25
	544.1	Very stiff to hard, gray SILTY CLAY, trace gravel						
			35		13	2 3 4	0.25 B	21
			40		14	3 4 5	3.00 P	19

GENERAL NOTES

Begin Drilling: **07-28-2014** Complete Drilling: **07-29-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 14-RWB-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 580.85 ft
North: 1897238.90 ft
East: 1171475.76 ft
Station: 1229+27.47
Offset: 39.6372 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	12 18 47	5.17 B	17
	534.1	Very stiff, gray SILTY LOAM to SILTY CLAY LOAM, trace gravel						
			50		16	33 45 32/4	3.28 S	15
	529.1	Very dense, gray SAND to SANDY LOAM, trace gravel						
			55		17	17 23 36	NP	18
			60		18	13 30 22	NP	19
	515.8	Boring terminated at 65.00 ft	65		19	14 23 33	NP	17
			70					
			75					
			80					

GENERAL NOTES

Begin Drilling: **07-28-2014** Complete Drilling: **07-29-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 14-RWB-01alt

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 580.56 ft
North: 1897248.15 ft
East: 1171476.60 ft
Station: 1514+49.75
Offset: 16.3127 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	579.6	12-inch thick CONCRETE --PAVEMENT--						
		Medium dense, grayish white CRUSHED STONE --FILL--			1	28 11 11	NP	3
	576.7	Soft, gray CLAY to SILTY CLAY, trace gravel	5		2	2 2 3	0.49 B	21
					3	0 1 1	0.25 B	29
	570.6		10		4	1 2 2	0.33 B	27
		Boring terminated at 10.00 ft						
			15					
			20					

GENERAL NOTES

Begin Drilling: **07-20-2014** Complete Drilling: **07-20-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" 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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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 14-RWB-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 582.26 ft
North: 1897133.58 ft
East: 1171489.78 ft
Station: 6233+15.05
Offset: 62.0541 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	581.9	4-inch thick, ASPHALT --PAVEMENT--						
		14-inch thick, CONCRETE --PAVEMENT--						
	580.8	Dense, grayish white CRUSHED STONE --FILL--			1	37 30 18	NP	5
	578.3	Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	5		2	1 2 3	0.41 B	24
					3	0 1 1	0.41 B	25
			10		4	0 0 1	0.25 B	27
					5	0 0 0	0.16 B	26
			15		6	0 0 2	0.49 B	24
					7	0 0 0	0.41 B	26
			20		8	0 0 0	0.25 B	20
			25		9	0 0 1	0.08 B	27
					10	0 0 1	0.57 B	25
					11	0 1 2	0.57 B	24
			30		12	0 0 2	0.41 B	25
			35		13	0 1 2	0.66 B	26
			40		14	0 0 1	0.25 B	37

GENERAL NOTES

Begin Drilling: **07-30-2014** Complete Drilling: **07-30-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **52.00 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 14-RWB-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 582.26 ft
North: 1897133.58 ft
East: 1171489.78 ft
Station: 6233+15.05
Offset: 62.0541 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	540.5							
		Hard, gray SILTY CLAY, trace gravel						
			45		15	6 11 19	7.13 B	19
	535.5							
		Gray SILTY LOAM, trace gravel						
	533.1							
		Medium dense, brown, fine SAND --Moist--	50		16	14 23 18	NP	17
			55		17	12 14 14	NP	27
	525.5							
		Dense, gray SILT --Moist--						
			60		18	11 17 19	NP	22
	520.5							
		Medium dense, brown fine SAND --Moist--						
	517.3		65		19	9 11 13	NP	21
		Boring terminated at 65.00 ft						
			70					
			75					
			80					

GENERAL NOTES

Begin Drilling: **07-30-2014** Complete Drilling: **07-30-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **52.00 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 14-RWB-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 582.96 ft
North: 1896992.53 ft
East: 1171501.15 ft
Station: 6234+52.32
Offset: 75.7462 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
581.6	16-inch thick CONCRETE --PAVEMENT--						
581.3	4-inch thick ASPHALT --PAVEMENT--						
	Dense, grayish white SANDY GRAVEL --FILL--			1	22 22 13	NP	3
579.0	Stiff, gray SILTY CLAY, trace gravel	5		2	4 3 5	1.64 B	23
				3	2 2 3	1.07 B	24
575.0	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	10		4	1 2 2	0.41 B	32
				5	0 0 0	0.16 B	39
		15		6	0 0 1	0.41 B	26
				7	0 0 0	0.25 B	25
		20		8	0 0 0	0.25 B	25
		25		9	0 0 0	0.16 B	27
				10	0 0 0	0.25 B	26
				11	0 1 1	0.33 B	24
		30		12	1 1 2	< 0.25 P	26
		35		13	1 2 2	0.82 B	24
		40		14	1 1 2	0.57 B	27

GENERAL NOTES

Begin Drilling: **07-20-2014** Complete Drilling: **07-20-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **57.00 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 14-RWB-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 582.96 ft
North: 1896992.53 ft
East: 1171501.15 ft
Station: 6234+52.32
Offset: 75.7462 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	541.2	Dense to very dense, gray CLAY LOAM to SILTY LOAM, trace gravel --Dry--						
			45		15	8 12 20	5.74 B	13
		--L_L(%)=26, P_L(%)=15-- --%Gravel=5.1-- --%Sand=25.2-- --%Silt=47.0-- --%Clay=22.7-- --A-6 (5)--	50		16	13 20 20	NP	12
	528.5	*--5-inch, brown, coarse SAND--*	55		17	9 18 47	NP	12
	526.2	Dense to very dense, brown, fine SAND --Moist--						
			60		18	15 21 37	NP	22

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			65		19	16 20 22	NP	22
	518.0	Boring terminated at 65.00 ft						
			70					
			75					
			80					

GENERAL NOTES

Begin Drilling: **07-20-2014** Complete Drilling: **07-20-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **57.00 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 15-RWB-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.54 ft
North: 1897200.61 ft
East: 1171415.26 ft
Station: 1229+54.23
Offset: 33.2105 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		14-inch thick, black SILTY LOAM --TOPSOIL--						
	592.4							
		Medium dense, black and brown LOAM, some gravel and brick fragments --FILL--			1	6 10 10	NP	15
	590.5							
		Medium dense to dense, black and brown SILTY LOAM, trace gravel and brick fragments --FILL--	5		2	3 17 14	NP	57
					3	9 6 5	NP	22
	585.5							
	584.8	Gray, medium SAND, trace gravel						
		Very stiff, gray SILTY CLAY, trace gravel	10		4	2 3 6	3.36 B	23
					5	5 6 7	3.03 B	26
	580.5							
		Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	15		6	2 1 2	0.33 B	27
					7	1 1 1	0.16 B	24
			20		8	1 1 1	0.16 B	29
			25		9	2 1 3	0.16 B	24
					10	2 2 2	0.25 B	20
					11	2 1 2	0.33 B	24
			30		12	1 2 3	0.16 B	26
			35		13	1 2 2	0.16 B	25
			40		14	2 3 3	0.25 B	24

GENERAL NOTES

Begin Drilling: **02-25-2014** Complete Drilling: **02-28-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-25 ATV [93%]**
Driller: **N&J** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **62.00 ft**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 15-RWB-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.54 ft
North: 1897200.61 ft
East: 1171415.26 ft
Station: 1229+54.23
Offset: 33.2105 RT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
45		--L_L(%)=34, P_L(%)= 18-- --%Gravel=4.4-- --%Sand=14.5-- --%Silt=47.7-- --%Clay=33.3-- --A-6 (12)--		15	3 4 5	0.50 P	25
50				16	2 2 2	0.82 B	27
	541.8	Hard, gray SILTY CLAY LOAM, trace gravel					
55				17	14 18 30	5.33 S	13
60				18	14 22 26	6.72 S	13
	531.8	Dense, gray, medium SAND, trace gravel --Moist to wet--					
65				19	13 20 25	NP	24
		--HARD DRILLING-- *--Possible Cobbles--*					
70		--%Gravel=0.2-- --%Sand=79.5-- --%Silt=18.3-- --%Clay=2.0-- --A-2-4 (0)--		20	22 16 24	NP	24
75				21	14 18 21	NP	19
	516.8	Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel					
80				22	18 39 50	4.50 P	13

GENERAL NOTES

Begin Drilling: **02-25-2014** Complete Drilling: **02-28-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-25 ATV [93%]**
Driller: **N&J** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **62.00 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

Wang Engineering
wangeng@wangeng.com
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Lombard, IL 60148
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BORING LOG 15-RWB-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.54 ft
North: 1897200.61 ft
East: 1171415.26 ft
Station: 1229+54.23
Offset: 33.2105 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			85		23	22 32 50	9.02 S	13
		--L_L(%)=26, P_L(%)=16-- --%Gravel=0.1-- --%Sand=11.7-- --%Silt=62.6-- --%Clay=25.6-- --A-4 (7)--						
	503.5		90		24	25 33 48	10.25 S	13
		Boring terminated at 90.00 ft	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: **02-25-2014** Complete Drilling: **02-28-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-25 ATV [93%]**
Driller: **N&J** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: ▽ **62.00 ft**
At Completion of Drilling: ▼ **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: ▼ **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 15-RWB-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 592.37 ft
North: 1897034.79 ft
East: 1171464.06 ft
Station: 7314+69.17
Offset: 7.23 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	591.4	12-inch thick, brown SANDY LOAM						
		--FILL--						
		Very stiff, gray SILTY CLAY LOAM, trace gravel and roots			1	3 6 7	2.05 S	17
		--FILL--						
	589.4	Medium dense, SILTY LOAM to SILTY CLAY LOAM, trace gravel, sand and brick			2	6 5 5	NP	17
		--FILL--	5					
	586.9	Very loose to loose, brown, fine SAND			3	3 4 4	NP	18
		--Wet--						
	582.9	Stiff, brown and gray SILTY CLAY, trace gravel	10		4	2 3 2	NP	17
					5	2 2 3	1.00 P	29
			15		6	0 2 2	1.23 B	24
	576.9	Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			7	0 2 2	0.82 B	24
			20		8	0 1 2	0.57 B	24
			25		9	0 0 2	0.41 B	24
					10	0 0 0	0.74 B	30
			30		11	1 1 1	0.74 B	22
					12	0 2 2	0.57 B	23
			35		13	0 0 1	0.41 B	25
			40		14	0 1 2	0.41 B	25

GENERAL NOTES

Begin Drilling: **04-03-2014** Complete Drilling: **04-03-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **M. de los Reyes** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 11', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **5.50 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 15-RWB-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 592.37 ft
North: 1897034.79 ft
East: 1171464.06 ft
Station: 7314+69.17
Offset: 7.23 LT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	540.6	Very stiff to hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel					
45				15	0 2 3	0.82 B	25
50				16	0 1 2	0.41 B	28
55		--HARD DRILLING-- *--Possible Cobbles--*		17	7 7 14	4.10 B	20
60				18	10 25 50/5	3.28 S	14
	530.6	Very dense, gray SILT --Wet--		19	55/5		NP
65	527.4	Boring terminated at 65.00 ft					
70							
75							
80							

GENERAL NOTES

Begin Drilling: **04-03-2014** Complete Drilling: **04-03-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **M. de los Reyes** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 11', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **5.50 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 15-RWB-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 580.75 ft
North: 1896801.76 ft
East: 1171517.06 ft
Station: 6236+42.48
Offset: 97.8444 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	580.4	3.5-inch thick ASPHALT --PAVEMENT--						
	579.3	13.5-inch thick CONCRETE --PAVEMENT--						
		Loose to very dense, grayish white SANDY GRAVEL --FILL--		X	1	21 / 50/5	NP	8
	576.7	Very soft to soft, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel	5	X	2	2 2 3	< 0.25 P	23
				X	3	1 1 2	0.33 B	13
	572.7	Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	10	X	4	1 1 2	0.25 B	25
			15		1	PUSH	0.25 P	
		--In-Situ Vane Shear, 18.5 feet-- --$S_{u\ undis}$ = 841.75 psf-- --$S_{u\ remold}$ = 362.60 psf--	20		1	VS	0.25 P	
		--Sensitivity = 2.32--	25		2	PUSH	0.25 P	
		--In-Situ Vane Shear, 28.5 feet-- --$S_{u\ undis}$ = 1061.90 psf-- --$S_{u\ remold}$ = 647.50 psf-- --Sensitivity = 1.64--	30		2	VS	0.25 P	
			35		3	PUSH	0.70 B	
	544.0	Very stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel	40		5	3 3 8	3.44 B	17

GENERAL NOTES

Begin Drilling: **08-08-2014** Complete Drilling: **08-08-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25 SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **52.00 ft**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 15-RWB-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 580.75 ft
North: 1896801.76 ft
East: 1171517.06 ft
Station: 6236+42.48
Offset: 97.8444 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			45		6	8 14 25	7.46 B	17
	534.0	Very dense, gray SILTY LOAM, trace gravel --Dry--						
			50		7	13 28 38	NP	12
	529.0	Medium dense to dense, brown fine SAND --Moist--						
			55		8	13 14 18	NP	21
			60		9	9 13 14	NP	23
			65		10	9 11 11	NP	23
	515.7	Boring terminated at 65.00 ft						
			70					
			75					
			80					

GENERAL NOTES

Begin Drilling: **08-08-2014** Complete Drilling: **08-08-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25 SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **52.00 ft**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 16-RWB-01A

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 578.13 ft
North: 1896646.77 ft
East: 1171609.88 ft
Station: 6238+13.84
Offset: 35.6064 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		12-inch thick, CONCRETE --PAVEMENT--						
	577.1	Dense to very dense, white and brown fine and medium SAND, trace to little gravel --FILL--			1	10 18 20	NP	3
			5		2	20 22 23	NP	4
					3	15 22 42	NP	8
					4	50/3	NP	4
	568.6	*--Steel plate--*						
		Boring terminated at 10.00 ft	10					
			15					
			20					

GENERAL NOTES

Begin Drilling: **07-29-2014** Complete Drilling: **07-29-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, 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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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 16-RWB-01B

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 577.89 ft
North: 1896657.18 ft
East: 1171559.32 ft
Station: 6237+94.68
Offset: 83.6541 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	576.9	12-inch thick, ASPHALT --PAVEMENT--						
		Medium dense, gray CRUSHED STONE --BASE COURSE--			1	5 5 5	NP	5
	574.9	Very stiff, grayish SILTY CLAY LOAM, trace gravel			2	2 4 4	2.62 B	17
			5		3	1 2 3	3.00 P	14
	569.9	Very soft to soft, gray CLAY to SILTY CLAY, trace to little gravel			4	0 1 2	0.25 B	24
			10		5	0 0 2	0.16 B	20
					6	0 1 1	0.08 B	26
			15		7	1 1 2	0.08 B	27
					8	0 1 2	< 0.25 P	30
			20					
			25		9	0 1 2	< 0.25 P	35
					10	0 1 1	< 0.25 P	32
					11	1 2 3	< 0.25 P	29
			30		12	4 4 4	< 0.25 P	27
	541.1	Very stiff to hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel --Dry--			13	0 1 3	0.25 B	27
			35					
					14	9 14 16	4.92 S	16
			40					

GENERAL NOTES

Begin Drilling: **08-06-2014** Complete Drilling: **08-06-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 16-RWB-01B

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 577.89 ft
North: 1896657.18 ft
East: 1171559.32 ft
Station: 6237+94.68
Offset: 83.6541 RT

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	11 14 26	2.79 S	18
			50		16	12 18 28	7.38 B	15
	526.1	Dense, gray SILTY LOAM, trace gravel						
			55		17	30 26 19	NP	11
	521.1	Stiff, gray SILTY CLAY, trace gravel						
			60		18	5 5 7	1.23 B	33
	516.1	Medium dense, brown, medium to coarse SAND --Dry--						
			65		19	5 6 7	NP	21
	512.9	Boring terminated at 65.00 ft						
			70					
			75					
			80					

GENERAL NOTES

Begin Drilling: **08-06-2014** Complete Drilling: **08-06-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 16-RWB-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 576.47 ft
North: 1896514.09 ft
East: 1171567.21 ft
Station: 6239+40.38
Offset: 98.1626 RT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	576.0	5-inch thick ASPHALT --PAVEMENT--					
		13-inch thick CONCRETE --PAVEMENT--					
	575.0	Very dense, grayish white CRUSHED STONE --FILL--					
	573.2	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel					
				1	40 35 25/5	NP	9
5				2	3 2 2	0.49 B	22
				3	1 2 2	0.49 B	20
10				4	0 2 2	0.33 B	19
				5	0 0 0	0.16 B	18
15				6	0 0 0	0.08 B	25
				7	0 0 0	< 0.25 B	28
20				8	0 0 0	NR	
25				9	0 0 0	0.25 B	25
				10	1 2 2	< 0.25 P	31
				11	0 1 2	0.33 B	25
30				12	0 0 2	0.41 B	27
	544.7	Medium dense, gray SILT to SILTY LOAM, trace gravel --Dry--					
35				13	4 10 7	NP	24
	539.7	Very stiff, gray SILTY CLAY, trace gravel					
40				14	4 8 12	3.28 B	19

GENERAL NOTES

Begin Drilling: **08-05-2014** Complete Drilling: **08-05-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 16-RWB-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 576.47 ft
North: 1896514.09 ft
East: 1171567.21 ft
Station: 6239+40.38
Offset: 98.1626 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	534.7	Dense, gray SILTY LOAM, trace gravel						
			45		15	14 16 22	NP	12
	529.7	Very stiff to hard, gray SILTY CLAY, trace gravel						
			50		16	8 12 18	4.35 B	21
			55		17	5 6 16	2.05 B	23
	519.7	Medium dense, brown fine SAND --Dry--						
			60		18	7 9 12	NP	24
	514.7	Medium stiff, gray SILTY CLAY, trace gravel						
			65		19	2 3 4	0.66 B	27
	511.5	Boring terminated at 65.00 ft						
			70					
			75					
			80					

GENERAL NOTES

Begin Drilling: **08-05-2014** Complete Drilling: **08-05-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 16-RWB-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 576.10 ft
North: 1896271.92 ft
East: 1171639.81 ft
Station: 1239+13.63
Offset: 4.6520 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	575.0	13.5-inch thick, CONCRETE --PAVEMENT--						
	574.6	4.5-inch thick, ASPHALT --BASE COURSE--						
		Dense, brown and gray SANDY GRAVEL			1	23 21 21	NP	11
	572.9	--FILL--						
		Medium stiff, gray SILTY CLAY, trace gravel	5		2	2 3 4	0.82 B	18
	570.6	Soft to very soft, gray CLAY to SILTY CLAY, trace gravel			3	1 2 2	0.25 B	24
			10		4	1 2 3	0.25 B	26
					5	1 1 2	0.08 B	27
			15		6	1 1 1	0.08 B	27
					7	1 1 1	0.16 B	26
			20		8	1 1 2	0.08 B	27
			25		9	1 2 2	0.41 B	25
					10	1 2 3	0.41 B	25
			30		11	0 2 3	0.33 B	26
					12	2 2 3	0.49 B	25
	544.4	Medium dense, gray SILTY LOAM, trace gravel --Dry--	35		13	8 11 11	NP	20
	537.4	Hard, gray CLAY to SILTY CLAY, trace gravel	40		14	11 12 18	4.92 B	20

GENERAL NOTES

Begin Drilling: **08-10-2014** Complete Drilling: **08-10-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

BORING LOG 16-RWB-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 576.10 ft
North: 1896271.92 ft
East: 1171639.81 ft
Station: 1239+13.63
Offset: 4.6520 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	534.4							
		Very stiff, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel						
					15	10 13 14	3.20 S	15
			45					
	529.4							
		Very dense, gray SILTY LOAM, trace gravel --Dry--						
					16	15 27 33	2.54 S	12
			50					
		Very dense, gray SILTY LOAM, trace gravel --Dry--						
					17	16 23 35	NP	15
			55					
					18	15 23 50/5	NP	14
			60					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
					19	50/3	NP	14
	511.1		65					
		Boring terminated at 65.00 ft						
			70					
			75					
			80					

GENERAL NOTES

Begin Drilling: **08-10-2014** Complete Drilling: **08-10-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 16-RWB-04

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 576.03 ft
North: 1896103.12 ft
East: 1171665.21 ft
Station: 1240+84.08
Offset: 12.2833 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		13-inch thick, CONCRETE						
	574.9							
		Medium dense to dense, white CRUSHED STONE --BASE COURSE--			1	13 13 20	NP	
					2	3 15 10	NP	4
			5					
					3	15 11 9	NP	5
	568.0			▽				
		Loose, gray SANDY LOAM --FILL--			4	5 2 7	NP	17
			10					
	565.5							
		Loose, gray SILTY LOAM, trace gravel --FILL--			5	5 3 4	0.57 S	17
	563.0							
		Medium dense, brown fine to medium SAND, trace gravel --FILL--			6	6 9 13	NP	16
			15					
					7	11 9 10	NP	14
					8	8 6 11	NP	22
			20					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--Boring terminated due to obstruction--						
	555.0				9	50/0		
		Boring terminated at 21.00 ft						
			25					
			30					
			35					
			40					

GENERAL NOTES

Begin Drilling: **07-23-2014** Complete Drilling: **07-23-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **A&K** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: ▽ **8.00 ft**
At Completion of Drilling: ▼ **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: ▼ **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 16-RWB-04A

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 592.85 ft
North: 1896141.99 ft
East: 1171632.40 ft
Station: 1240+42.08
Offset: 16.4134 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	592.0	10-inch thick, CONCRETE --PAVEMENT--						
		Medium dense to dense, grayish white CRUSHED STONE --FILL--			1	5 13 17	NP	7
			5		2	8 14 14	NP	4
	586.1	Medium dense, brown SAND to SANDY LOAM, trace gravel --FILL--			4	9 14 12	NP	11
			10		5	8 8 8	NP	14
					6	7 12 11	NP	15
			15		7	7 8 10	NP	17
		--Sampler Refusal--			8	2 14/4	NP	14
	573.5	Boring terminated at 19.32 ft	20					

GENERAL NOTES

Begin Drilling: **08-07-2014** Complete Drilling: **08-07-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 16-RWB-04B

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 573.83 ft
North: 1896134.97 ft
East: 1171629.13 ft
Station: 6243+28.19
Offset: 76.2948 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	572.7	13.5-inch thick, CONCRETE --PAVEMENT--						
	572.3	4.5-inch thick ASPHALT						
		Grayish white CRUSHED STONE			1	16 12 5	NP	6
	571.3	--BASE COURSE--						
		Stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel			2	2 4 4	1.56 B	15
	568.3		5					
		Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			3	1 1 2	0.08 B	29
					4	1 1 1	0.08 B	26
			10					
					5	1 1 1	0.08 B	27
					6	0 1 1	0.08 B	28
			15					
					7	1 1 1	0.08 B	28
					8	1 1 1	0.33 N/6	
			20					
					9	1 1 1	0.08 B	27
			25		10	1 2 3	0.16 B	25
					11	1 2 3	0.57 B	23
			30		12	1 3 3	0.74 B	26
	542.1	Medium dense, gray SILTY LOAM, trace gravel --damp--			13	6 7 18	NP	15
	537.1	Very stiff to hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel	35					
					14	11 13 18	3.61 S	14
			40					

GENERAL NOTES

Begin Drilling: **08-11-2014** Complete Drilling: **08-11-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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

BORING LOG 16-RWB-04B

WEI Job No.: 1100-04-01

Client **AECOM**
Project **Circle Interchange Reconstruction**
Location **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 573.83 ft
North: 1896134.97 ft
East: 1171629.13 ft
Station: 6243+28.19
Offset: 76.2948 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	526.8	Very dense, gray, SILTY LOAM, trace gravel --damp--	45		15	15 16 21	6.23 B	13
			50		16	27 37 36	NP	19
		Very dense, gray, SILTY LOAM, trace gravel --dry--	55		17	18 22 30	7.13 S	12
			60		18	24 32 28	NP	15
	508.8	Boring terminated at 65.00 ft	65		19	21 27 50	NP	12
			70					
			75					
			80					

GENERAL NOTES

Begin Drilling **08-11-2014** Complete Drilling **08-11-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR [85%]**
Driller **R&J** Logger **S. Woods** Checked by **C. Marin**
Drilling Method **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **mud in the borehole**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

BORING LOG 16-RWB-05

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 592.35 ft
North: 1895983.56 ft
East: 1171638.82 ft
Station: 7325+32.44
Offset: 17.9588 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	591.5	10-inch thick CONCRETE --PAVEMENT--						
		Dense, white CRUSHED STONE --FILL--			1	20 22 22	NP	4
			5		2	4 14 19	NP	4
	586.2	Stiff, black and brown SILTY CLAY LOAM, trace gravel --FILL--			3	6 6 7	1.15 B	16
	584.4	Stiff, black and brown LOAM to SILTY LOAM, trace gravel --FILL--	10		4	3 2 3	NP	11
	581.9	Very stiff, brownish gray SILTY CLAY, trace gravel			5	3 4 4	2.46 B	27
	579.4	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	15		6	2 2 2	0.49 B	28
					7	0 0 0	0.16 B	33
			20		8	0 0 0	0.25 B	30
			25		9	0 1 2	0.41 B	19
					10	0 0 0	0.16 B	28
					11	0 0 1	< 0.25 P	25
			30		12	0 0 0	0.16 B	26
			35		13	0 0 0	0.08 B	28
			40		14	0 0 1	0.16 B	27

GENERAL NOTES

Begin Drilling: **07-24-2014** Complete Drilling: **07-24-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25' SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 16-RWB-05

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 592.35 ft
North: 1895983.56 ft
East: 1171638.82 ft
Station: 7325+32.44
Offset: 17.9588 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	0 0 3	0.57 B	24
	545.6	Medium dense, gray SILT to SILTY LOAM, trace gravel --DRY--						
			50		16	11 10 11	NP	15
	540.6	Brown, coarse SAND						
	538.5	Hard, gray SILTY CLAY LOAM, trace gravel	55		17	10 11 15	5.25 B	16
	535.6	Dense to very dense, gray SILTY LOAM to SILT, trace gravel, occasional sand seams --DRY--						
			60		18	14 18 18	NP	12
			65		19	28 30 32	NP	17
	527.4	Boring terminated at 65.00 ft						
			70					
			75					
			80					

GENERAL NOTES

Begin Drilling: **07-24-2014** Complete Drilling: **07-24-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25' SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1703-B-04

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 584.72 ft
North: 1898071.44 ft
East: 1171813.94 ft
Station: 1104+42.63
Offset: 42.6570 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	584.5	3-inch thick CRUSHED STONE						
		--FILL--						
		Very stiff, dark brown and gray SILTY CLAY LOAM, trace gravel, brick and glass fragments			1	5 11 15	2.25 P	26
		--FILL--						
			5		2	3 7 9	2.75 P	16
	579.2							
		Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			3	2 3 4	0.66 B	19
		--L_L(%)=29, P_L(%)=16--			4	2 2 3	0.57 B	21
		--%Gravel=3.8--						
		--%Sand=16.9--						
		--%Silt=54.2--	10					
		--%Clay=25.1--			5	0 1 3	0.49 B	24
		--A-6(8)--						
					6	0 2 2	0.44 B	23
			15					
					7	0 2 2	0.41 B	25
					8	0 0 0	0.41 B	25
			20					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
					9	0 1 2	0.25 B	26
			25		10	0 0 2	0.25 B	26
					11	0 0 1	0.25 B	27
			30		12	0 0 2	0.33 B	26
					13	0 2 2	0.16 B	25
			35					
		--L_L(%)=36, P_L(%)=18--			14	0 1 2	0.33 B	28
		--%Gravel=1.8--						
		--%Sand=10.7--	40					

GENERAL NOTES

Begin Drilling: **10-10-2013** Complete Drilling: **10-17-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&R** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **74.00 ft**
At Completion of Drilling: **91.25 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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

BORING LOG 1703-B-04

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 584.72 ft
North: 1898071.44 ft
East: 1171813.94 ft
Station: 1104+42.63
Offset: 42.6570 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--%Silt=50.0-- --%Clay=37.5-- --A-6(15)--						
			45		15	3 4 4	0.66 B	20
	538.0	Very stiff, gray SILTY CLAY, trace gravel						
		--L_L(%)=27, P_L(%)=16-- --%Gravel=6.1-- --%Sand=20.1-- --%Silt=50.9-- --%Clay=22.9-- --A-6(6)--	50		16	4 7 11	3.53 B	23
	533.0	Dense, gray SANDY LOAM, trace gravel						
	530.5	Hard, gray SILTY LOAM, trace gravel	55		17	11 14 26	NP	12
			60		18	18 15 22	5.49 S	13
		--L_L(%)=23, P_L(%)=16-- --%Gravel=7.7-- --%Sand=23.1-- --%Silt=55.2-- --%Clay=14.0-- --A-4(2)--	65		19	15 25 35	8.61 S	12
			70		20	14 19 25	8.45 S	14
	510.7	Very dense, gray SILTY LOAM, trace gravel			21	18 36 50/5	NP	20
		--Saturated--	75					
	508.0	Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel						
			80		22	34 50/6	7.95 S	11

GENERAL NOTES

Begin Drilling: **10-10-2013** Complete Drilling: **10-17-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&R** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **74.00 ft**
At Completion of Drilling: **91.25 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1703-B-04

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 584.72 ft
North: 1898071.44 ft
East: 1171813.94 ft
Station: 1104+42.63
Offset: 42.6570 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			85		23	50/6	> 4.50 P	
		--HARD DRILLING-- *--Possible Cobbles--*						
			90		24	28 50/5	3.69 S	17
		--HARD DRILLING-- *--Possible Cobbles--*						
	493.5	Very dense, gray GRAVELLY SAND --Saturated--	95		25	50/3	NP	10
			100		26	19 50/2	NP	10
			105		27	21 50/3	NP	14
	478.7	Strong, light gray, poor to excellent rock mass quality, bedded fresh DOLOSTONE, up to 30-inch beds, 17-inch spaced joints, horizontal joints with less than 0.2-inch infilling, hard joint wall, with stylolitic surfaces, and moderately vuggy porosity.			1	CORE		
		--Run 1 - RECOVERY=88%-- --RQD=26%-- 109.5ft-Qu=10990 psi ---> --Run 2 - RECOVERY=99%-- --RQD=92%--	110					
		113.0ft-Qu=9060 psi --->			2	CORE		
	466.7	Boring terminated at 118.00 ft	115					
			120					

GENERAL NOTES

Begin Drilling: **10-10-2013** Complete Drilling: **10-17-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&R** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **74.00 ft**
At Completion of Drilling: **91.25 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1704-B-04

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 584.72 ft
North: 1897903.29 ft
East: 1171842.81 ft
Station: 5159+38.86
Offset: 50.4076 RT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Medium dense, gray GRAVELLY LOAM, trace brick fragments --FILL--					
	583.2			1	14 10 6	NP	6
		Medium dense, brown and black SILTY LOAM. trace plants --FILL--					
	581.7						
		Loose, gray GRAVEL --FILL--		2	7 4 3	NP	6
5	579.2						
		Soft to medium stiff gray SILTY CLAY LOAM, trace gravel --L_L(%)=31, P_L(%)=16-- --%Gravel=2.9-- --%Sand=19.5-- --%Silt=49.6-- --%Clay=28.0-- --A-6(10)--		3	2 1 1	0.57 B	24
				4	0 0 0	0.33 B	24
10	574.2	▽					
		Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel		5	0 0 0	0.25 B	29
				6	0 0 0	0.16 B	20
15				7	0 0 0	< 0.25 P	27
				8	0 0 0	< 0.25 P	32
20							
25				9	0 0 0	< 0.25 P	32
				10	0 0 0	< 0.25 P	24
				11	0 0 0	< 0.25 P	37
30				12	0 0 0	< 0.25 P	36
35				13	0 1 3	0.66 B	23
		--L_L(%)=37, P_L(%)=18-- --%Gravel=3.1-- --%Sand=11.1--		14	0 2 4	0.90 B	24
40							

GENERAL NOTES

Begin Drilling: **10-02-2013** Complete Drilling: **10-03-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&R** Logger: **A. Tomaras** Checked by: **C. Marin**
Drilling Method: **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: ▽ **10.50 ft**
At Completion of Drilling: ▼ **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: ▼ **NA**

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

BORING LOG 1704-B-04

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 584.72 ft
North: 1897903.29 ft
East: 1171842.81 ft
Station: 5159+38.86
Offset: 50.4076 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--%Silt=49.9--						
		--%Clay=35.9--						
		--A-6(16)--						
	543.0							
		Very stiff to hard, gray SILTY CLAY, trace gravel						
				○	15	4 5 7	2.00 N/6	
			45					
		--Coarse gravel and cobbles-->						
				☒	16	12 13 18	5.17 N/6	13
			50					
				☒	17	7 6 10	2.79 B	20
			55					
	528.0							
		Very dense, gray SILT						
				○	18	16 20 25	NA	
			60					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
				☒	19	26 34 43	NP	15
			65					
	518.0							
		Very dense, gray SILTY LOAM to SILTY CLAY LOAM, trace gravel						
		--L_L(%)=20, P_L(%)=13--		☒	20	22 22 28	6.56 S	12
		--%Gravel=8.3--						
		--%Sand=24.4--	70					
		--%Silt=57.2--						
		--%Clay=10.1--						
		--A-4(2)--						
				☒	21	11 30 50/5	4.00 P	8
			75					
				☒	22	21 50 30/2	> 4.50 P	9
			80					

GENERAL NOTES

Begin Drilling: **10-02-2013** Complete Drilling: **10-03-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&R** Logger: **A. Tomaras** Checked by: **C. Marin**
Drilling Method: **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: ▽ **10.50 ft**
At Completion of Drilling: ▼ **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: ▼ **NA**

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

BORING LOG 1704-B-04

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 584.72 ft
North: 1897903.29 ft
East: 1171842.81 ft
Station: 5159+38.86
Offset: 50.4076 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			85		23	33 70/3	8.94 B	20
	497.2	Very dense, gray SANDY GRAVEL --Saturated--	90		24	39 33 31	NP	10
	487.7	Very dense, gray GRAVELLY SILTY LOAM, some cobbles and boulders --AUGER REFUSAL--	95		25	45 37 27	NP	7
	484.7		100		26	39 60/2	NP	11

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--WEATHERED BEDROCK--						
	481.2	--ROLLER BIT REFUSAL--						
		Strong, light gray, fair rock mass quality, bedded fresh DOLOSTONE, up to 24-inch beds, 1 to 24-inch spaced joints, horizontal and oblique joints with less than 0.2-inch infilling, hard joint wall, with stylolitic surfaces, and moderately vuggy porosity. --Run 1 - RECOVERY=94%-- --RQD=69%-- --Highly fragmented--->	105 110		1	CORE		
	471.2	Boring terminated at 113.50 ft	115 120					

GENERAL NOTES

Begin Drilling: **10-02-2013** Complete Drilling: **10-03-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&R** Logger: **A. Tomaras** Checked by: **C. Marin**
Drilling Method: **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: ▽ **10.50 ft**
At Completion of Drilling: ▼ **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: ▼ **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1705-B-06A

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 591.98 ft
North: 1897749.88 ft
East: 1171805.18 ft
Station: 1827+13.77
Offset: 38.2558 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	591.5	6-inch thick, black SILTY LOAM --TOPSOIL--						
		Medium dense to dense, brown LOAM, little gravel and brick fragments --FILL--			1	9 17 13	NP	6
			5		2	2 15 9	NP	14
	586.5	Very stiff, gray SILTY CLAY LOAM, trace gravel			3	2 3 4	2.95 B	17
			10		4	2 4 4	2.54 B	22
	581.5	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			5	3 3 3	< 0.25 P	21
			15		6	0 2 2	0.41 B	24
					7	0 1 1	0.25 B	22
			20		8	0 0 2	0.41 B	26
			25		9	0 0 1	0.08 B	26
					10	0 0 2	0.25 B	26
			30		11	0 0 3	0.25 B	28
					12	0 1 2	0.57 B	23
			35		13	0 1 2	0.50 P	21
			40		14	0 3 2	0.49 B	24

GENERAL NOTES

Begin Drilling: **07-25-2013** Complete Drilling: **07-26-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **A. Tomaras** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1705-B-06A

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 591.98 ft
North: 1897749.88 ft
East: 1171805.18 ft
Station: 1827+13.77
Offset: 38.2558 RT

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	0 2 2	0.41 B	25
			50		16	1 1 2	0.33 B	25
	540.2	Very stiff to hard, gray SILTY CLAY, trace gravel						
			55		17	6 7 13	3.36 B	19
			60		18	13 18 21	4.84 B	14
			65		19	10 12 19	4.92 B	18
	525.2	Very stiff, gray CLAY, trace gravel						
		--L_L(%)=41, P_L(%)=18-- --%Gravel=0.1-- --%Sand=3.0-- --%Silt=46.6-- --%Clay=50.3-- --A-7-6 (23)--	70		20	6 9 10	2.54 B	24
	518.2	Loose, gray SILT --Wet--	75		21	2 4 5	NP	19
	515.2	Hard, gray SILTY CLAY, trace gravel						
			80		22	13 20 28	8.94 S	13

GENERAL NOTES

Begin Drilling: **07-25-2013** Complete Drilling: **07-26-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **A. Tomaras** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the 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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wangeng@wangeng.com
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Lombard, IL 60148
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BORING LOG 1705-B-06A

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 591.98 ft
North: 1897749.88 ft
East: 1171805.18 ft
Station: 1827+13.77
Offset: 38.2558 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	510.2	Very dense to hard, gray SILTY LOAM to SILTY CLAY LOAM, trace gravel						
			85		23	33 46 50/6	> 4.50 P	10
			90		24	13 20 26	8.61 S	11
		--HARD DRILLING-- *--Possible Cobbles--*						
	499.0	Very dense, SANDY GRAVEL, with rock fragments						
			95		25	21 24 29	NP	11
		--HARD DRILLING-- *--Possible Cobbles--*						
			100					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	490.0	Strong, fair to good rock quality, light gray, fresh, joint breaks with little to no infill, slightly vuggy DOLOSTONE with stylolites --Run 1 - RECOVERY=100%-- --RQD (top 5ft)=45%-- --RQD= (10ft)=62%--			26	60/6 C O R E	NP	17
			105					
					1		NP	
			110					
	480.0	Boring terminated at 112.00 ft						
			115					
			120					

GENERAL NOTES

Begin Drilling: **07-25-2013** Complete Drilling: **07-26-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **A. Tomaras** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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

BORING LOG 1705-B-10

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 588.29 ft
North: 1898131.01 ft
East: 1171315.43 ft
Station: 1833+49.70
Offset: 2.5590 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		12-inch thick, dark brown LOAM --TOPSOIL--						
	587.3							
		Medium dense, brown LOAM, trace gravel, crushed stone, and brick fragments --FILL--			1	4 10 7	NP	10
	584.3							
		Medium dense, brown SAND --FILL--	5		2	9 6 5	NP	8
	582.8							
		Very stiff, gray SILTY CLAY, trace gravel			3	3 3 3	3.50 P	16
	580.3							
		Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	10		4	3 2 3	0.41 B	22
					5	1 2 3	0.49 B	19
		--In-Situ Vane Shear, 13.0 feet-- --$S_{u\ undis}$ = 1061.9 psf-- --$S_{u\ remold}$ = 543.9 psf-- --Sensitivity = 1.95--			1			
			15		6	2 2 3	0.41 B	20
					7	0 2 1	0.33 B	25
		--In-Situ Vane Shear, 18.0 feet-- --$S_{u\ undis}$ = 1191.4 psf-- --$S_{u\ remold}$ = 543.9 psf-- --Sensitivity = 2.19--			2			
			20		8	1 2 2	0.41 B	22
					9	0 0 1	0.16 B	22
		--In-Situ Vane Shear, 23.0 feet-- --$S_{u\ undis}$ = 802.9 psf-- --$S_{u\ remold}$ = 414.4 psf-- --Sensitivity = 1.94--			3			
			25		10	0 2 1	0.25 B	24
		--L_L(%)=35, P_L(%)=17-- --%Gravel=2.9-- --%Sand=13.3-- --%Silt=49.9-- --%Clay=33.9-- --A-6 (14)--			11	1 1 2	0.08 B	26
					4			
		--In-Situ Vane Shear, 28.0 feet-- --$S_{u\ undis}$ = 699.3 psf-- --$S_{u\ remold}$ = 414.9 psf-- --Sensitivity = 1.69--	30		12	0 2 2	0.08 B	22
					13	0 0 1	0.16 B	25
		--In-Situ Vane Shear, 35.5 feet-- --$S_{u\ undis}$ = 880.6 psf-- --$S_{u\ remold}$ = 518.0 psf-- --Sensitivity = 1.70--	35		5			
			40		14	0 3 3	0.57 B	23

GENERAL NOTES

Begin Drilling: **07-30-2013** Complete Drilling: **08-01-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **A. Tomaras** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

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

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1705-B-10

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 588.29 ft
North: 1898131.01 ft
East: 1171315.43 ft
Station: 1833+49.70
Offset: 2.5590 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--In-Situ Vane Shear, 40.5 feet--						
		--$S_{u\ undis}$ = 1809.5 psf--						
		--$S_{u\ remold}$ = 1137.4 psf--						
		--Sensitivity = 1.59--			6			
		--In-Situ Vane Shear, 45.5 feet--				2 2 4	0.33 B	19
		--$S_{u\ undis}$ = 2585.0 psf--	45		15			
		--$S_{u\ remold}$ = 1551.0 psf--						
		--Sensitivity = 1.66--			7			
	541.5	Very stiff, gray SILTY CLAY, trace gravel						
			50		16	5 8 14	2.79 B	19
	533.8	Medium dense, gray, medium SAND	55		17	8 12 17	4.84 B	14
	531.5	Hard, gray SILTY CLAY, trace gravel and fine sand lenses						
			60		18	6 10 20	4.02 B	19
	521.5	Stiff, gray, laminated layers of CLAY and SILT	65		18	5 12 30	4.18 B	19
			70		20	5 4 6	1.31 B	27
	516.5	Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel						
			75		21	10 14 31	9.51 S	12
			80		22	18 22 25	8.94 S	13

GENERAL NOTES

Begin Drilling: **07-30-2013** Complete Drilling: **08-01-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **A. Tomaras** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

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

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1705-B-10

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 588.29 ft
North: 1898131.01 ft
East: 1171315.43 ft
Station: 1833+49.70
Offset: 2.5590 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	504.0	Very dense, gray SILT to SILTY LOAM, trace to some gravel	85		23	37 37 50/5	4.35 S	13
		--HARD DRILLING (5 min/0.5')-- *--Possible Cobbles--*	90		24	50/2	NP	11
		--HARD DRILLING-- *--Possible Cobbles--*	95		25	50/6	NP	11
	492.0	Very dense, gray SILT	100		26	20 26 40	NP	17

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	486.5	Very dense, gray GRAVELLY SAND, trace cobbles --HARD DRILLING-- *--Possible Cobbles--*	105		27	50/2	NR	
	481.3	Strong, poor to fair rock quality, light gray, fresh, vertical and horizontal joints, joint breaks with little to no infill, horizontal stylolites, slightly vuggy DOLOSTONE --Run 1 - RECOVERY= 97.5%-- --RQD(top 5ft)=73%-- --RQD(10ft)=50%--	110 115 120	CORE	1		NP	
	471.3	Boring terminated at 117.00 ft						

GENERAL NOTES

Begin Drilling: **07-30-2013** Complete Drilling: **08-01-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **A. Tomaras** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

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

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1705-B-11

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 580.50 ft
North: 1898132.10 ft
East: 1171174.95 ft
Station: 1834+90.93
Offset: 2.3250 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	579.8	8-inch thick CRUSHED STONE						
		Medium dense, brown SILTY LOAM, trace gravel and pieces of cinders --FILL--			1	4 5 6	NP	14
	577.5	Medium stiff to very stiff, brown SILTY CLAY LOAM, trace gravel, pockets of fine sand	5		2	2 1 1	2.50 P	14
					3	2 3 3	1.07 B	18
			10		4	2 1 3	0.74 B	17
					5	0 2 3	1.15 B	18
	567.5	Very soft to medium stiff, gray and brown CLAY to SILTY CLAY, trace gravel	15		6	0 0 0	0.74 B	25
					7	0 0 1	0.74 B	25
			20		8	0 0 2	0.74 B	22
			25		9	0 0 0	0.49 B	26
					10	0 0 0	0.33 B	28
					11	0 0 2	0.16 B	24
			30		12	0 0 1	0.33 B	26
			35		13	0 2 3	0.82 B	27
			40		14	2 2 3	0.66 B	23

GENERAL NOTES

Begin Drilling: **07-28-2013** Complete Drilling: **07-29-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&N** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1705-B-11

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 580.50 ft
North: 1898132.10 ft
East: 1171174.95 ft
Station: 1834+90.93
Offset: 2.3250 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	538.8	Very stiff to hard, gray CLAY to SILTY CLAY , trace gravel	45		15	5 9 13	4.92 B	16
		--L_L(%)=37, P_L(%)=17-- --%Gravel=1.9-- --%Sand=11.6-- --%Silt=47.1-- --%Clay=39.5-- --A-6 (17)--	50		16	7 10 15	4.20 B	16
			55		17	6 12 18	3.77 B	14
	523.8	Medium dense, gray SILT --Moist--	60		18	8 11 16	NP	22
	518.8	Dense to very dense, gray SILTY LOAM, trace gravel	65		19	20 27 42	NP	13
			70		20	14 20 29	NP	15
			75		21	29 45 50/4	NP	10
		--HARD DRILLING-- *--Possible Cobbles--*						
	503.8	Hard, gray SILTY CLAY LOAM, trace gravel	80		22	12 25 36	6.97 B	11

GENERAL NOTES

Begin Drilling: **07-28-2013** Complete Drilling: **07-29-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&N** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1705-B-11

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 580.50 ft
North: 1898132.10 ft
East: 1171174.95 ft
Station: 1834+90.93
Offset: 2.3250 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	498.8	Very dense, gray SILT, trace gravel						
		--%Gravel=1.0-- --%Sand=1.5-- --%Silt=92.3-- --%Clay=5.2-- --A-4 (0)--	85		23	26 46 50/5	NP	24
	492.5	Very dense, GRAVEL, trace cobbles			24	50/3	NA	
		--HARD DRILLING to 94'-- *--Possible Cobbles--*	90					
	486.5	Strong, fair rock quality, light gray, fresh, vertical and horizontal joints, joint breaks with little to no infill, horizontal stylolites, slightly vuggy DOLOSTONE			25	50/3 CORE	NP	15
		--Run 1 - RECOVERY=100%-- --RQD (top 5ft)=70%-- --RQD (10ft)=82%--	95					
			100				NP	

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	476.5	Boring terminated at 104.00 ft	105					
			110					
			115					
			120					

GENERAL NOTES

Begin Drilling: **07-28-2013** Complete Drilling: **07-29-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&N** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

BORING LOG 1705-B-11A

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 586.03 ft
North: 1898136.23 ft
East: 1171162.02 ft
Station: 1835+03.58
Offset: 2.6066 RT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--Drilled without sampling--					
5							
10							
	573.0	Hard, gray SILTY CLAY, trace gravel					
15				1	PUSH	> 4.50 P	
	569.5	Soft to stiff, gray CLAY to SILTY CLAY, trace gravel					
		--L_L(%)=34, P_L(%)=17-- --%Gravel=2.6-- --%Sand=14.5-- --%Silt=48.2--		2	PUSH	0.88 B	23
20							
		--%Clay=34.8-- --A-6 (13)--					
		--L_L(%)=33, P_L(%)=17-- --%Gravel=2.7-- --%Sand=14.4-- --%Silt=48.7-- --%Clay=34.3-- --A-6 (12)--		3	PUSH	0.62 B	24
25							
		--L_L(%)=34, P_L(%)=17-- --%Gravel=4.6-- --%Sand=13.0-- --%Silt=48.4-- --%Clay=34.0-- --A-6 (13)--		4	PUSH	0.52 B	23
30							
		--L_L(%)=37, P_L(%)=17-- --%Gravel=2.6-- --%Sand=10.1-- --%Silt=48.2-- --%Clay=39.1-- --A-6 (17)--		5	PUSH	1.12 B	24
35							
		--L_L(%)=33, P_L(%)=16-- --%Gravel=4.2-- --%Sand=11.8-- --%Silt=49.7-- --%Clay=34.4-- --A-6 (13)--		6	PUSH	1.38 B	21
40	546.0	Boring terminated at 40.00 ft					

GENERAL NOTES

Begin Drilling: **08-04-2013** Complete Drilling: **08-05-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&K** Logger: **A. Tomaras** Checked by: **C. Marin**
Drilling Method: **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1706-B-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 586.37 ft
North: 1898150.62 ft
East: 1171768.12 ft
Station: 1105+20.19
Offset: 0.3840' LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	586.1	3-inch thick ASPHALT --PAVEMENT--						
	585.3	10-inch thick CONCRETE --PAVEMENT--						
		Medium dense, brown CRUSHED STONE --BASE COURSE--			1	7 12 8	NP	7
	583.1	Medium dense, brown, fine SAND --FILL--	5		2	4 4 7	NP	23
					3	3 4 4	NP	16
	579.2	Very stiff (2.5P), brown and gray SILTY CLAY LOAM, trace gravel --FILL--						
	578.4	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	10		4	1 2 3	0.57 B	22
					5	2 1 2	0.25 B	22
			15		6	1 2 3	0.74 B	19
					7	2 2 2	0.49 B	21
			20		8	1 2 3	0.41 B	25
			25		9	0 0 1	0.33 B	26
					10	1 2 1	0.25 B	25
					11	0 1 1	0.16 B	27
			30		12	2 1 2	0.16 B	26
			35		13	0 1 1	0.16 B	26
			40		14	1 1 1	0.41 B	26

GENERAL NOTES

Begin Drilling: **03-16-2014** Complete Drilling: **03-18-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **P&P** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **57.00 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA hours**
Depth to Water: **NA ft**

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

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1706-B-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 586.37 ft
North: 1898150.62 ft
East: 1171768.12 ft
Station: 1105+20.19
Offset: 0.3840' 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	3 5 8	0.66 B	13
	539.6	Very stiff to hard, gray SILTY CLAY LOAM, trace gravel						
			50		16	5 8 15	3.61 B	21
			55		17	8 9 19	5.08 B	15
	529.4	Very dense, gray GRAVELLY LOAM						
			60		18	15 40 25	NP	10
		--HARD DRILLING-- *--Possible Cobbles--*						
	524.6	Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel						
			65		19	18 27 21	> 4.50 P	12
		--HARD DRILLING-- *--Possible Cobbles--*						
			70		20	15 22 24	> 4.50 P	14
			75		21	15 24 32	> 10.25 B	13
			80		22	32 50	> 8.33 N/6	9

GENERAL NOTES

Begin Drilling: **03-16-2014** Complete Drilling: **03-18-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **P&P** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **57.00 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA hours**
Depth to Water: **NA ft**

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

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BORING LOG 1706-B-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 586.37 ft
North: 1898150.62 ft
East: 1171768.12 ft
Station: 1105+20.19
Offset: 0.3840' LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	504.6	Very dense, gray GRAVELLY SILTY LOAM						
		--Wet--						
		--%Gravel=19.6--						
		--%Sand=26.3--						
		--%Silt=51.0--						
		--%Clay=3.1--	85					
		--A-4 (0)--						
		--HARD DRILLING--						
		--Possible Cobbles--						
					23	50/5	NP	11
					24	50/5	NP	12
			90					
	494.6	Gray SILT						
		--Wet--						
	492.4	Hard, gray SILTY CLAY LOAM, to SILTY LOAM, trace gravel			25	27 24 38	5.00 S	16
			95					
			100		26	13 26 40	4.92 S	17

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			105					
		--HARD DRILLING--						
		--Possible Cobbles--						
	480.4	--WEATHERED BEDROCK--						
		--VERY HARD DRILLING--						
					27	50/3	NP	11
	477.4	Strong, light gray, good rock mass quality, bedded fresh DOLOSTONE, up to 18-inch beds, 8-inch joints spacing, horizontal and vertical joints with none to more than 0.2-inch infilling, up to 4-inch greenish gray argillaceous partings, hard joint wall, with stylolitic surfaces, and moderately vuggy porosity.	110			C O R E		
		--Run 1 - RECOVERY=100%--			1			
		--RQD=76%--	115					
	467.4	Boring terminated at 119.00 ft	120					

GENERAL NOTES

Begin Drilling: **03-16-2014** Complete Drilling: **03-18-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **P&P** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **57.00 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA hours**
Depth to Water: **NA ft**

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

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

BORING LOG 1706-B-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 573.51 ft
North: 1898279.12 ft
East: 1171636.73 ft
Station: 1214+88.11
Offset: 8.0782 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		16-inch thick ASPHALT \--PAVEMENT--						
	572.2	Medium dense, white and gray CRUSHED STONE --BASE COURSE--			1	6 12 13	NP	
	570.3	Very stiff, gray SILTY CLAY LOAM, trace gravel	5		2	2 4 4	3.28 B	19
	568.0	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			3	1 1 1	0.41 B	16
			10		4	0 0 2	0.41 B	27
					5	0 1 1	0.41 B	27
			15		6	0 1 1	0.25 B	26
					7	0 1 1	0.41 B	25
		--L_L(%)=34, P_L(%)=17-- --%Gravel=4.2-- --%Sand=15.6--	20		8	0 0 1	0.41 B	24
		--%Silt=49.0-- --%Clay=31.3-- --A-6 (12)--			9	0 0 1	0.49 B	25
			25		10	0 1 2	< 0.25 P	27
					11	1 2 3	< 0.25 P	24
			30		12	2 2 3	0.82 B	25
	541.8	Stiff to hard, gray SILTY CLAY, trace gravel			13	7 6 7	1.23 B	18
			35					
					14	4 7 8	3.03 B	20
			40					

GENERAL NOTES

Begin Drilling: **03-27-2014** Complete Drilling: **03-31-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **M. de los Reyes** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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wangeng@wangeng.com
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Lombard, IL 60148
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BORING LOG 1706-B-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 573.51 ft
North: 1898279.12 ft
East: 1171636.73 ft
Station: 1214+88.11
Offset: 8.0782 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	4 6 18	2.87 B	18
	524.0		50		16	5 15 13	4.10 B	16
		Medium dense, gray SILT						
		--Wet--	55		17	7 7 8	NP	23
	516.8	Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel						
			60		18	15 20 27	6.97 S	13
			65		19	15 20 27	9.02 S	16
			70		20	16 26 50/2	4.74 B	13
	501.8	--HARD DRILLING-- *--Possible Cobbles--*						
		Very dense, gray GRAVELLY SANDY LOAM	75		21	50/2	NP	
		--Wet--	80		22	50/3	NP	13

GENERAL NOTES

Begin Drilling: **03-27-2014** Complete Drilling: **03-31-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **M. de los Reyes** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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Wang Engineering
wangeng@wangeng.com
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Lombard, IL 60148
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BORING LOG 1706-B-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 573.51 ft
North: 1898279.12 ft
East: 1171636.73 ft
Station: 1214+88.11
Offset: 8.0782 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--HARD DRILLING--						
		--Possible Cobbles--						
	491.8							
		Very dense, gray SILT, trace CLAY lamination						
		--DRY--			23	20 33 28	NP	20
			85					
		--DRY--				17 50 43	NP	16
	484.3				24			
		Very dense, gray GRAVELLY SAND	90					
		--Wet--						
	481.5							
		Strong, light gray, good rock mass quality, bedded fresh DOLOSTONE, up to 12-inch beds, 9-inch joints spacing, horizontal and vertical joints with none to more than 0.2-inch infilling, up to 2-inch greenish gray argillaceous partings, hard joint wall, with stylolitic surfaces, and moderately vuggy porosity.				C O R E		
			95		1			
		--Run 1 - RECOVERY=100%--						
		--RQD=83%--						
		--Run 2 - RECOVERY=97%--				C O R E		
		--RQD=92%--			2			
			100					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	471.5							
		Boring terminated at 102.00 ft						
			105					
			110					
			115					
			120					

GENERAL NOTES

Begin Drilling: **03-27-2014** Complete Drilling: **03-31-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **M. de los Reyes** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1710-B-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 589.38 ft
North: 1897814.39 ft
East: 1171841.78 ft
Station: 1704+98.15
Offset: 72.7367 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	589.0	5-inch thick, brown SILTY CLAY LOAM --TOPSOIL--						
		Medium dense, brown SILTY LOAM, trace gravel --FILL--			1	5 7 8	NP	13
	586.4	Very stiff, brown SILTY CLAY LOAM, trace gravel, brick fragments --FILL--	5		2	5 7 5	2.54	15
	583.9	Dense, brown, SANDY LOAM, trace gravel, brick fragments --FILL--			3	10 16 17	NP	22
	581.4	Stiff, gray SILTY CLAY LOAM, trace gravel	10		4	3 3 4	1.07 B	22
	578.9	Soft to medium stiff, CLAY to SILTY CLAY, trace gravel			5	1 1 2	0.33 B	25
			15		6	1 1 2	0.33 B	24
					7	1 1 2	0.41 B	26
			20		8	1 1 2	0.49 B	24
					9	1 2 2	0.41 B	23
			25		10	1 1 2	0.25 B	22
					11	1 1 2	0.41 B	24
			30		12	1 2 2	0.41 B	24
			35		13	1 1 3	0.49 B	23
			40		14	1 2 3	0.33 B	24

GENERAL NOTES

Begin Drilling: **09-24-2013** Complete Drilling: **09-25-2013**
Drilling Contractor: **K&S** Drill Rig: **D-120 TMR**
Driller: **R&E** Logger: **F. Bozga** Checked by: **L. Iordache**
Drilling Method: **4.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **85.00 ft**
At Completion of Drilling: **90.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1710-B-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 589.38 ft
North: 1897814.39 ft
East: 1171841.78 ft
Station: 1704+98.15
Offset: 72.7367 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	1 2 3	0.41 B	25
			50		16	2 3 5	0.66 B	20
	537.6	Very stiff, gray SILTY CLAY, trace gravel						
			55		17	4 7 12	3.94 B	20
	532.6	Dense to very dense, gray SILTY LOAM, trace gravel						
			60		18	11 14 20	NP	11
			65		19	23 39 37	NP	7
			70		20	12 20 20	NP	10
			75		21	13 20 37	NP	11
			80		22	10 22 40	NP	15

GENERAL NOTES

Begin Drilling: **09-24-2013** Complete Drilling: **09-25-2013**
Drilling Contractor: **K&S** Drill Rig: **D-120 TMR**
Driller: **R&E** Logger: **F. Bozga** Checked by: **L. Iordache**
Drilling Method: **4.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **85.00 ft**
At Completion of Drilling: **90.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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Wang Engineering
wangeng@wangeng.com
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Lombard, IL 60148
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BORING LOG 1710-B-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 589.38 ft
North: 1897814.39 ft
East: 1171841.78 ft
Station: 1704+98.15
Offset: 72.7367 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			85		23	17 25 37	NP	9
	502.6	Very dense, gray SILT						
			90		24	13 50/2"	NP	26
	497.6	Dense, gray GRAVELLY SAND						
			95		25	10 18 20	NP	14
	492.4	--HARD DRILLING--						
		Very dense, gray DOLOSTONE fragments						
	491.2	--WEATHERED BEDROCK--			26	50/2"	NP	9
		--AUGER REFUSAL--						
		Boring terminated at 98.20 ft	100					

GENERAL NOTES

Begin Drilling: **09-24-2013** Complete Drilling: **09-25-2013**
Drilling Contractor: **K&S** Drill Rig: **D-120 TMR**
Driller: **R&E** Logger: **F. Bozga** Checked by: **L. Iordache**
Drilling Method: **4.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **85.00 ft**
At Completion of Drilling: **90.00 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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Wang Engineering
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Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG 1710-B-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 586.37 ft
North: 1897868.08 ft
East: 1171913.23 ft
Station: 1705+72.43
Offset: 55.5596 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	585.5	10-inch thick, brown SILTY LOAM --TOPSOIL--						
		Hard, brown, SILTY CLAY LOAM, little gravel, wood and brick fragments --FILL--			1	22 18 11	> 4.50 P	13
			5		2	5 6 7	2.71 S	17
	580.9	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			3	2 3 3	0.57 B	24
			10		4	0 1 2	0.33 B	25
					5	0 0 0	0.25 B	25
			15		6	0 2 2	0.33 B	16
					7	0 0 1	0.33 B	26
			20		8	1 1 1	0.25 B	24
			25		9	0 1 1	< 0.25 P	23
					10	0 0 0	0.25 B	19
			30		11	0 2 2	< 0.25 P	18
					12	0 1 2	0.41 B	25
			35		13	1 1 2	0.33 B	26
			40		14	0 1 1	0.33 B	26

GENERAL NOTES

Begin Drilling: **10-01-2013** Complete Drilling: **10-01-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&R** Logger: **B. Wilson** Checked by: **L. Iordache**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **88.50 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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Wang Engineering
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Lombard, IL 60148
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BORING LOG 1710-B-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 586.37 ft
North: 1897868.08 ft
East: 1171913.23 ft
Station: 1705+72.43
Offset: 55.5596 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	0 1 2	0.25 B	29
	539.6							
		Very stiff, gray SILTY CLAY LOAM, trace gravel	50		16	3 5 8	2.21 B	22
			55		17	8 10 22	3.00 P	16
	529.6							
		Very stiff to hard, gray SILTY LOAM to SILTY CLAY LOAM, trace gravel	60		18	23 33 33	5.74 S	11
			65		19	11 18 24	5.90 S	17
			70		20	11 19 26	7.30 S	12
			75		21	50/2"	> 4.50 S	17
			80		22	30 36 43	5.66 S	9

GENERAL NOTES

Begin Drilling: **10-01-2013** Complete Drilling: **10-01-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&R** Logger: **B. Wilson** Checked by: **L. Iordache**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **88.50 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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Wang Engineering
wangeng@wangeng.com
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BORING LOG 1710-B-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 586.37 ft
North: 1897868.08 ft
East: 1171913.23 ft
Station: 1705+72.43
Offset: 55.5596 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--Cobble at 83.5'-84'--	85		23	13 21 26	3.53 S	24
	499.6	Very dense, gray GRAVELLY SAND						
		--possible underpressure groundwater bearing--	90		24	22 32 43	NP	12
		--HARD DRILLING-- *--Possible Cobbles--*						
			95		25	50/4"	NP	6
		--HARD DRILLING-- *--Possible Cobbles--*						
			100		26	50/3"	NP	11
		--HARD DRILLING-- *--Possible Cobbles--*	105					
	483.9	--ROLLER BIT REFUSAL-- Boring terminated at 102.50 ft						
			110					
			115					
			120					

GENERAL NOTES

Begin Drilling: **10-01-2013** Complete Drilling: **10-01-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&R** Logger: **B. Wilson** Checked by: **L. Iordache**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **88.50 ft**
At Completion of Drilling: **mud in the 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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Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG 1712-B-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 584.78 ft
North: 1898322.61 ft
East: 1171738.21 ft
Station: 1618+05.95
Offset: 4.7838 RT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	583.8	3-inch thick, ASPHALT over 9-inch thick, CONCRETE --PAVEMENT--					
	582.5	Medium dense, grayish white SANDY GRAVEL --DRY-- --BASE COURSE--		1	12 11 9	NP	5
5		Stiff, brown to gray SILTY CLAY LOAM, trace gravel --FILL--		2	2 4 5	1.50 N/6	8
				3	1 3 3	1.64 B	17
	576.8	Soft to stiff, gray CLAY to SILTY CLAY, trace gravel					
10				4	1 3 3	0.82 B	18
				5	0 0 2	0.57 B	23
15				6	0 1 2	0.57 B	22
				7	0 0 1	0.49 B	24
20				8	0 1 2	0.41 B	24
25				9	0 0 2	0.41 B	25
				10	0 0 1	0.49 B	25
				11	0 0 1	0.25 B	25
30				12	0 0 1	0.25 B	26
35				13	0 1 1	0.41 B	25
40				14	0 2 3	0.66 B	26

GENERAL NOTES

Begin Drilling: **07-28-2014** Complete Drilling: **08-20-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

BORING LOG 1712-B-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 584.78 ft
North: 1898322.61 ft
East: 1171738.21 ft
Station: 1618+05.95
Offset: 4.7838 RT

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	0 0 2	0.33 B	20
	538.0							
		Stiff to very stiff, gray SILTY CLAY, trace gravel	50		16	3 6 9	1.00 P	21
			55		17	2 5 10	2.87 B	17
	528.0							
		Medium dense, gray SILTY LOAM, trace gravel	60		18	5 8 13	NP	21
	523.0							
		Medium dense, gray fine SAND, trace gravel --Dry-	65		19	10 8 13	NP	13
	518.0							
		Dense, gray SILTY LOAM, trace gravel --Dry-	70		20	13 15 28	NP	13
			75		21	14 17 26	NP	13
			80		22	18 27 50/4	NP	23

GENERAL NOTES

Begin Drilling: **07-28-2014** Complete Drilling: **08-20-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

BORING LOG 1712-B-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 584.78 ft
North: 1898322.61 ft
East: 1171738.21 ft
Station: 1618+05.95
Offset: 4.7838 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			85		23	80/6	NP	13
			90		24	80/4	NR	
	493.6							
		Very dense, gray, very fine to fine SAND --possible water bearing--	95		25	90/6	NP	10
					26	100/5	NR	
	484.8		100					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Very dense, greenish gray, shaly DOLOSTONE; moist to wet	105		27	100/4	NP	21
			110		28	100/3	NR	
	474.8							
		Boring terminated at 111.00 ft	115					
			120					

GENERAL NOTES

Begin Drilling: **07-28-2014** Complete Drilling: **08-20-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1714-B-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.22 ft
North: 1898191.77 ft
East: 1171304.89 ft
Station: 1218+92.09
Offset: 41.4568 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	593.0	3-inch thick, brown LOAM --TOPSOIL--						
		Hard, brown CLAY LOAM, trace gravel and brick fragments --FILL--			1	6 10 9	> 4.50 P	13
			5		2	7 7 7	4.25 B	20
	587.7	Very stiff to hard, brown and gray SILTY CLAY, trace gravel --FILL--			3	3 3 4	3.25 B	16
			10		4	6 8 8	6.56 B	20
	582.7	Medium stiff to stiff, gray SILTY CLAY, trace gravel			5	2 3 3	1.15 B	19
			15		6	2 2 3	0.98 B	17
					7	2 2 4	1.00 N/6	24
			20		8	2 4 4	1.48 B	18
	572.7	Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			9	2 3 3	0.74 B	24
			25		10	2 3 2	0.74 B	25
					11	2 2 2	0.66 B	25
			30		12	2 2 2	0.49 B	24
			35		13	1 2 2	0.25 B	26
			40		14	1 1 2	0.33 B	26

GENERAL NOTES

Begin Drilling: **10-16-2013** Complete Drilling: **10-16-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **A. Tomaras** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1714-B-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.22 ft
North: 1898191.77 ft
East: 1171304.89 ft
Station: 1218+92.09
Offset: 41.4568 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	2 2 2	0.25 B	25
			50		16	2 2 2	0.33 B	27
	541.5	Very stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel	55		17	7 7 12	2.95 B	20
			60		18	16 15 16	5.17 B	12
			65		19	18 20 23	7.17 N/6	
			70		20	10 13 19	2.54 S	11
	516.5	Gray SANDY LOAM --Wet--	75		21	12 17 23	6.67 N/6	
	514.3	Hard, gray SILTY CLAY LOAM, trace gravel	80		22	33 41 40	6.69 S	11

GENERAL NOTES

Begin Drilling: **10-16-2013** Complete Drilling: **10-16-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **A. Tomaras** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1714-B-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.22 ft
North: 1898191.77 ft
East: 1171304.89 ft
Station: 1218+92.09
Offset: 41.4568 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			85		23	16 21 25	7.30 S	13
		--HARD DRILLING-- *--Possible Cobbles--*						
	506.2	Very dense, gray SILTY LOAM, trace gravel and cobbles						
			90		24	50/1	NP	12
		--HARD DRILLING-- *--Possible Cobbles--*						
					26	50/5	NP	11
			95					
		--HARD DRILLING-- *--Possible Cobbles--*						
	496.2	Very dense, gray SILT --Saturated--						
					27	50/4	NP	18
			100					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			105		28	30 45 50/3	NP	24
	486.5	Very dense, gray GRAVELLY LOAM, trace pyrite and dolostone fragments						
	484.5	--WEATHERED BEDROCK-- --ROLLER BIT REFUSAL--			29	50/2	NP	12
			110					
	482.2	Boring terminated at 111.00 ft						
			115					
			120					

GENERAL NOTES

Begin Drilling: **10-16-2013** Complete Drilling: **10-16-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **A. Tomaras** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

BORING LOG 1714-B-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 582.53 ft
North: 1898095.52 ft
East: 1171244.20 ft
Station: 1220+22.80
Offset: 32.5079 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	582.2	4-inch thick ASPHALT --PAVEMENT--						
	581.5	8-inch thick CONCRETE --PAVEMENT--						
	581.0	6-inch thick CRUSHED STONE --BASE COURSE--						
		Very stiff, brown and gray SILTY CLAY LOAM, trace gravel --FILL--		1	1	6 5 6	3.77 B	16
			5	2	2	3 4 5	2.62 B	20
	577.0	Medium stiff to stiff, gray SILTY LOAM, trace gravel --L_L(%)=24, P_L(%)=15-- --%Gravel=14.0-- --%Sand=28.0-- --%Silt=45.7-- --%Clay=12.4--		3	3	2 3 4	1.64 B	18
			10	4	4	3 4 4	0.98 B	19
	572.0	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace to some gravel		5	5	0 2 2	0.57 B	24
		--L_L(%)=33, P_L(%)=18-- --%Gravel=10.6-- --%Sand=13.5-- --%Silt=45.8-- --%Clay=30.1-- --A-6 (10)--	15	6	6	1 1 2	0.25 B	22
				7	7	1 1 2	< 0.25 P	23
			20	8	8	1 1 2	0.49 B	25
			25	9	9	0 0 1	0.33 B	25
				10	10	0 0 0	0.16 B	24
				11	11	0 0 2	0.08 B	28
		--L_L(%)=33, P_L(%)=17-- --%Gravel=23.0-- --%Sand=12.5-- --%Silt=38.7-- --%Clay=25.9-- --A-6 (8)--	30	12	12	0 1 2	0.08 B	26
			35	13	13	0 0 2	0.25 B	25
			40	14	14	2 2 3	0.33 B	36

GENERAL NOTES

Begin Drilling: **10-08-2013** Complete Drilling: **10-08-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&R** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1714-B-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 582.53 ft
North: 1898095.52 ft
East: 1171244.20 ft
Station: 1220+22.80
Offset: 32.5079 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--L_L(%)=33, P_L(%)=17-- --%Gravel=8.5-- --%Sand=12.3-- --%Silt=46.1-- --%Clay=33.1-- --A-6 (11)--	45		15	2 4 6	0.98 B	22
	535.8	Very stiff, gray SILTY CLAY, trace gravel						
			50		16	5 8 12	3.94 B	15
	530.8	Very stiff, gray CLAY						
			55		17	4 9 14	2.95 B	21
		--L_L(%)=35, P_L(%)=17-- --%Gravel=2.9-- --%Sand=11.2--	60		18	6 8 12	2.46 B	24
		--%Silt=47.7-- --%Clay=38.2-- --A-6 (15)--	65		19	8 7 6	NP	22
	520.8	Medium dense, gray SILT						
	515.8	Hard, gray SILTY CLAY LOAM, trace gravel						
		--L_L(%)=31, P_L(%)=17-- --%Gravel=3.5-- --%Sand=14.1-- --%Silt=55.7-- --%Clay=26.7-- --A-6 (10)--	70		20	13 21 33	10.25 B	16
	508.5	Very dense, gray SILT to SILTY LOAM, trace gravel	75		21	11 17 50	NP	16
			80		22	54/6	NP	9

GENERAL NOTES

Begin Drilling: **10-08-2013** Complete Drilling: **10-08-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&R** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

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

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

Wang Engineering
wangeng@wangeng.com
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Lombard, IL 60148
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BORING LOG 1714-B-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 582.53 ft
North: 1898095.52 ft
East: 1171244.20 ft
Station: 1220+22.80
Offset: 32.5079 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			85		23	69/6	NP	14
		--%Gravel=1.9-- --%Sand=6.8-- --%Silt=83.8-- --%Clay=7.4-- --A-4 (0)--	90		24	31 45 36	NP	18
			95		25	50/5	NP	14
	486.5	--HARD DRILLING-- --WEATHERED BEDROCK--						
	484.5	Strong, white and light gray, rock quality, horizontally bedded DOLOSTONE, beds up to 18 inch, joint spacing up to 18 inch,	100			CORE		
		joints with less than 0.2 inch or no infilling, vuggy and cherty, with stylolitic surfaces. --Run 1 - RECOVERY= 93%-- --RQD= 86%--	105		1			
	474.5	Boring terminated at 108.00 ft	110					
			115					
			120					

GENERAL NOTES

Begin Drilling: **10-08-2013** Complete Drilling: **10-08-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&R** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **DRY**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1715-B-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 578.98 ft
North: 1898224.57 ft
East: 1171745.64 ft
Station: 1105+89.73
Offset: 39.7965 RT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
0	578.8	2-inch thick ASPHALT --PAVEMENT--					
	578.0	10-inch thick CONCRETE --PAVEMENT--					
		Loose, light brown CRUSHED STONE					
	576.0	--BASE COURSE--					
		Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel					
				1	4 5 4	NP	10
				2	0 1 2	0.82 B	23
5							
				3	2 2 3	0.41 B	19
				4	2 2 3	0.49 B	22
10							
				5	1 2 2	0.74 B	20
				6	0 1 2	0.33 B	23
15							
				7	1 1 2	0.33 B	26
				8	1 1 2	0.25 B	26
20							
25				9	0 1 2	0.25 B	27
				10	1 1 2	0.50 N/6	
				11	0 2 2	0.41 B	26
30				12	1 1 2	0.57 B	26
				13	2 2 2	0.33 B	28
35							
				14	4 6 9	0.67 B	18
40							

GENERAL NOTES

Begin Drilling: **02-23-2014** Complete Drilling: **03-23-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **P&P** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: ▽ **3.00 ft**
At Completion of Drilling: ▼ **mud in the borehole**
Time After Drilling: **24 hours**
Depth to Water: ▼ **72.00 ft**

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

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1715-B-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 578.98 ft
North: 1898224.57 ft
East: 1171745.64 ft
Station: 1105+89.73
Offset: 39.7965 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	537.2	Very stiff, gray SILTY CLAY LOAM, trace gravel	45		15	7 7 7	3.36 B	22
			50		16	6 10 12	2.54 B	16
	527.2	Dense, gray SILT --Wet--	55		17	14 16 18	NP	16
	522.2	Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel	60		18	18 24 27	8.19 S	12
	507.2	Very dense, gray SILTY LOAM, trace to some gravel --WET--	65		19	20 31 42	4.59 S	14
			70		20	20 50/4	5.74 S	13
		--HARD DRILLING-- *--Possible Cobbles--*	75		21	30 50/4	NP	10
			80		22	50/5	NP	12

GENERAL NOTES

Begin Drilling: **02-23-2014** Complete Drilling: **03-23-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **P&P** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **3.00 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **24 hours**
Depth to Water: **72.00 ft**

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

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1715-B-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 578.98 ft
North: 1898224.57 ft
East: 1171745.64 ft
Station: 1105+89.73
Offset: 39.7965 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--HARD DRILLING-- *--Possible Cobbles--*	85		23	50/3	NP	
		--HARD DRILLING-- *--Possible Cobbles--*	90		24	50/3	NP	10
	488.0	--VERY HARD, STEADY DRILLING-- --WEATHERED BEDROCK--						
	486.0	--ROLLER BIT REFUSAL-- Boring terminated at 93.00 ft	95					
			100					

GENERAL NOTES

Begin Drilling: **02-23-2014** Complete Drilling: **03-23-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **P&P** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 10', mud rotary thereafter, boring**
backfilled upon completion

WATER LEVEL DATA

While Drilling: ▽ **3.00 ft**
At Completion of Drilling: ▼ **mud in the borehole**
Time After Drilling: **24 hours**
Depth to Water: ▼ **72.00 ft**

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

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1715-B-04

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 589.41 ft
North: 1898275.77 ft
East: 1171292.09 ft
Station: 1218+40.95
Offset: 27.5424 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	589.2	3-inch thick, black SILTY LOAM --TOPSOIL--						
		Stiff to very stiff, brown and gray SILTY CLAY LOAM, trace gravel --FILL--			1	50/5	2.50 P	14
			5		2	2 3 2	1.15 B	18
					3	4 5 7	2.13 B	15
	581.4			▼				
		Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	10		4	1 2 3	0.57 B	24
					5	0 0 2	0.16 B	24
			15		6	1 2 2	0.33 B	21
					7	1 2 3	0.41 B	20
			20		8	1 2 3	0.49 B	23
			25		9	2 2 3	0.49 B	21
					10	1 2 3	0.49 B	24
					11	1 2 2	0.49 B	25
			30		12	1 1 2	0.33 B	26
			35		13	0 1 2	0.25 B	26
			40		14	1 2 3	0.74 B	24

GENERAL NOTES

Begin Drilling: **03-17-2014** Complete Drilling: **03-18-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud at 8 ft**
Time After Drilling: **24 hours**
Depth to Water: **8.00 ft**

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

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1715-B-04

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 589.41 ft
North: 1898275.77 ft
East: 1171292.09 ft
Station: 1218+40.95
Offset: 27.5424 RT

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	2 2 3	0.74 B	26
			50		16	2 3 5	0.74 B	21
	537.7							
		Very stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel	55		17	4 7 11	3.20 B	15
		--L_L(%)=31, P_L(%)=15-- --%Gravel=2.8-- --%Sand=19.7--	60		18	3 5 11	3.03 B	18
		--%Silt=49.4-- --%Clay=28.0-- --A-6 (10)--	65		19	4 10 12	4.10 B	23
	522.7							
		Medium dense, gray SILT, trace fine sand interbeds --Wet--	70		20	6 11 14	NP	17
	517.7							
		Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel	75		21	13 17 30	10.25 B	14
			80		22	19 29 42	8.53 B	14

GENERAL NOTES

Begin Drilling: **03-17-2014** Complete Drilling: **03-18-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud at 8 ft**
Time After Drilling: **24 hours**
Depth to Water: **8.00 ft**

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

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

BORING LOG 1715-B-04

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 589.41 ft
North: 1898275.77 ft
East: 1171292.09 ft
Station: 1218+40.95
Offset: 27.5424 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	507.7	Dense to very dense, gray SILT, trace gravel						
		--L_L(%)=NP, P_L(%)=NP--						
		--%Gravel=1.1--						
		--%Sand=7.3--						
		--%Silt=83.5--	85		23	17 22 26	NP	18
		--%Clay=8.2--						
		--A-4 (0)--						
		--HARD DRILLING--						
		--Possible Cobbles--						
					24	50/5	NP	12
			90					
	498.2	Hard, gray SILTY CLAY, trace gravel						
					25	28 50/5	5.41 B	18
			95					
	492.7	Very dense, gray SILT						
		--MOIST--						
					26	18 33 42	NP	22
			100					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	487.7	Very dense, gray GRAVELLY SANDY LOAM						
		--MOIST--						
					27	30 50/4	NP	12
			105					
		--HARD DRILLING--						
		--Possible Cobbles--						
	480.9				28	50/1	NA	
		--DIFFICULT DRILLING--						
		--WEATHERED BEDROCK--						
	479.4	--ROLLER BIT REFUSAL--	110					
		Boring terminated at 110.00 ft						
			115					
			120					

GENERAL NOTES

Begin Drilling: **03-17-2014** Complete Drilling: **03-18-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud at 8 ft**
Time After Drilling: **24 hours**
Depth to Water: **8.00 ft**

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

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1718-B-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 584.10 ft
North: 1898363.96 ft
East: 1171365.16 ft
Station: 6404+45.17
Offset: 0.9314 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	583.1	12-inch thick, dark brown SILTY LOAM						
		--TOPSOIL--						
		Medium dense, brown SILTY LOAM, trace gravel and brick fragments			1	5 6 7	NP	15
	581.1	--FILL--						
		Stiff, brown SILTY CLAY LOAM, trace gravel						
		--FILL--	5		2	3 3 5	1.64 B	19
					3	2 2 4	1.00 N/6	19
	576.1	Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel						
			10		4	0 1 2	0.41 B	22
					5	0 1 2	0.50 N/6	22
			15		6	0 1 2	0.49 B	22
					7	0 1 2	0.41 B	25
			20		8	0 2 2	0.49 B	24
			25		9	0 0 3	0.49 B	23
					10	0 0 1	0.33 B	26
					11	0 0 1	0.25 B	27
			30		12	0 0 2	0.33 B	25
		--L_L(%)=33, P_L(%)=17-- --%Gravel=5.2-- --%Sand=16.2-- --%Silt=19.8--	35		13	1 2 3	0.33 B	26
			40		14	0 1 3	0.74 B	22

GENERAL NOTES

Begin Drilling: **04-01-2014** Complete Drilling: **04-01-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **M. de los Reyes** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 11', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **82.00 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1718-B-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 584.10 ft
North: 1898363.96 ft
East: 1171365.16 ft
Station: 6404+45.17
Offset: 0.9314 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--%Clay=28.7-- --A-6 (11)--	45		15	1 2 4	0.82 B	25
	537.4	Very stiff, gray SILTY CLAY, trace gravel	50		16	3 4 9	3.28 B	15
			55		17	3 6 11	2.83 N/6	22
			60		18	4 6 8	2.05 B	22
	522.4	Medium dense, gray SILTY LOAM	65		19	7 8 11	NP	18
	517.4	Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel	70		20	17 22 30	4.10 B	15
		--L_L(%)=25, P_L(%)=17-- --%Gravel=7.3-- --%Sand=6.7-- --%Silt=71.6-- --%Clay=14.3-- --A-4 (5)--	75		21	17 24 50/2"	9.85 S	14
	507.4	Gray GRAVELLY SAND						
	505.1	Very dense, gray SILTY LOAM, occasional SAND lenses	80		22	20 30 50/2"	NP	13

GENERAL NOTES

Begin Drilling: **04-01-2014** Complete Drilling: **04-01-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **M. de los Reyes** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 11', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **82.00 ft**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 1718-B-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 584.10 ft
North: 1898363.96 ft
East: 1171365.16 ft
Station: 6404+45.17
Offset: 0.9314 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	502.4	Very dense, gray, fine SAND						
					23	50/5"	NP	15
			85					
	497.9	Hard, gray SILTY CLAY						
					24	12 20 34	6.15 B	21
			90					
	492.4	Very dense, gray SILT						
					25	20 30 50/4"	NP	19
			95					
					26	25 35 45	NP	22
			100					
	480.6	--ROLLER BIT REFUSAL-- Boring terminated at 103.50 ft						
			105					
			110					
			115					
			120					

GENERAL NOTES

Begin Drilling: **04-01-2014** Complete Drilling: **04-01-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&J** Logger: **M. de los Reyes** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 11', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **82.00 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 2055-B-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 579.03 ft
North: 1898462.94 ft
East: 1171413.63 ft
Station: 8149+26.26
Offset: 58.3388 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	578.5	6-inch thick, black SILTY CLAY LOAM --TOPSOIL--						
		Very stiff to hard, brown and gray SILTY CLAY LOAM, trace gravel and brick --FILL--			1	7 9 9	> 4.50 P	14
			5		2	3 4 4	2.46 B	14
					3	4 5 5	2.50 P	16
	571.0	Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			4	1 2 2	0.49 B	24
			10		5	0 2 1	0.41 B	25
					6	0 2 2	0.57 B	26
			15		7	0 1 2	0.49 B	26
					8	0 1 2	0.41 B	26
			20					
			25		9	1 1 1	0.41 B	27
					10	1 1 1	0.49 B	27
					11	0 2 1	0.49 B	27
			30		12	0 2 1	0.49 B	27
	542.3	Medium stiff to very stiff, gray SILTY CLAY to CLAY, trace gravel	35		13	1 1 2	0.49 B	26
			40		14	2 2 4	0.74 B	20

GENERAL NOTES

Begin Drilling: **05-15-2013** Complete Drilling: **05-16-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **P&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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

BORING LOG 2055-B-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 579.03 ft
North: 1898462.94 ft
East: 1171413.63 ft
Station: 8149+26.26
Offset: 58.3388 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	522.3	Medium dense, gray SILT	45		15	3 7 9	2.30 B	16
			50		16	4 8 11	2.46 B	18
			55		17	3 7 8	2.30 B	24
			60		18	2 4 6	NP	23
	517.3	Hard, gray SILTY CLAY LOAM, trace gravel	65		19	13 18 30	> 4.50 P	16
			70		20	13 23 32	> 10.25 B	15
	507.3	Very dense, gray SILT to SILTY LOAM, trace gravel	75		21	32 50/5"	NP	10
			80		22	40 50/2"	NP	9

GENERAL NOTES

Begin Drilling: **05-15-2013** Complete Drilling: **05-16-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **P&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 2055-B-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 579.03 ft
North: 1898462.94 ft
East: 1171413.63 ft
Station: 8149+26.26
Offset: 58.3388 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			85		23	26 38 44	NP	19
	492.3	Hard, gray SILTY CLAY LOAM						
			90		24	18 21 35	8.20 B	14
	487.3	Very dense, gray SANDY GRAVEL with dolostone clasts						
	485.0	Probably weathered DOLOSTONE			25	48 50/1"	NP	13
	484.0	--AUGER REFUSAL--	95					
		Boring terminated at 95.00 ft	100					

GENERAL NOTES

Begin Drilling: **05-15-2013** Complete Drilling: **05-16-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **P&N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 2055-B-05

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 576.97 ft
North: 1898475.15 ft
East: 1171596.44 ft
Station: 8151+09.33
Offset: 65.9333 LT

Elevation (ft)	Depth (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
575.8	0	14-inch thick ASPHALT --PAVEMENT--					
		Medium dense, brown SANDY GRAVEL --BASE COURSE--		1	18 17 9	NP	6
573.1	5	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel		2	8 4 2	0.33 B	21
		--In-Situ Vane Shear, 5.5 feet-- --$S_{u\ undis}$ = 945.4 psf-- --$S_{u\ remold}$ = 673.4 psf-- --Sensitivity = 1.40--		1 3	VS 1 2 2	0.25 B	24
	10	--In-Situ Vane Shear, 8.0 feet-- --$S_{u\ undis}$ = 1036 psf-- --$S_{u\ remold}$ = 751 psf-- --Sensitivity = 1.38--		2 4	VS 1 2 2	0.25 B	22
		--In-Situ Vane Shear, 10.5 feet-- --$S_{u\ undis}$ = 854.7 psf-- --$S_{u\ remold}$ = 621.6 psf-- --Sensitivity = 1.375--		3 5	VS 1 1 2	0.25 B	24
	15	--In-Situ Vane Shear, 13.0 feet-- --$S_{u\ undis}$ = 1010 psf-- --$S_{u\ remold}$ = 699 psf-- --Sensitivity = 1.44-- --L_L(%)=35, P_L(%)=15-- --%Gravel=3.8-- --%Sand=15.1-- --%Silt=47.7-- --%Clay=33.4-- --A-6 (15)--		4 6	VS 0 1 2	0.33 B	25
		--In-Situ Vane Shear, 15.5 feet-- --$S_{u\ undis}$ = 1087.8 psf-- --$S_{u\ remold}$ = 751.1 psf-- --Sensitivity = 1.448--		5 7	VS 0 1 2	0.25 B	23
	20	--In-Situ Vane Shear, 18.0 feet-- --$S_{u\ undis}$ = 932.4 psf--		6 8	VS 1 1 2	0.16 B	25
		--$S_{u\ remold}$ = 569.8 psf-- --Sensitivity = 1.636--		7	VS 0 2 2	0.25 B	25
	25	--In-Situ Vane Shear, 20.5 feet-- --$S_{u\ undis}$ = 1217.3 psf-- --$S_{u\ remold}$ = 751.1 psf-- --Sensitivity = 1.621--		9			
		--In-Situ Vane Shear, 23.0 feet-- --$S_{u\ undis}$ = 802.9 psf-- --$S_{u\ remold}$ = 569.8 psf-- --Sensitivity = 1.409--		8 10	VS 0 2 2	0.25 B	25
		--In-Situ Vane Shear, 25.5 feet-- --$S_{u\ undis}$ = 1424.5 psf-- --$S_{u\ remold}$ = 906.5 psf-- --Sensitivity = 1.571--		9 11	VS 0 2 2	0.33 B	25
	30			12	2 2 2	0.57 B	24
540.2	35	6-inch thick or more, gray sand lenses		13	2 2 4	0.49 B	26
		Stiff to hard, gray SILTY CLAY to CLAY, trace gravel					
	40	--L_L(%)=38, P_L(%)=16-- --%Gravel=0.9-- --%Sand=9.8--		14	2 3 5	1.15 B	24

GENERAL NOTES

Begin Drilling: **05-21-2013** Complete Drilling: **05-23-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **P/N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 25', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 2055-B-05

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 576.97 ft
North: 1898475.15 ft
East: 1171596.44 ft
Station: 8151+09.33
Offset: 65.9333 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--%Silt=46.9-- --%Clay=42.3-- --A-6 (19)--	45		15	6 9 13	4.35 B	11
			50		16	5 9 10	3.69 B	19
			55		17	4 5 7	1.07 B	26
	520.2	Loose, gray SILT	60		18	3 4 5	NP	23
	515.2	Hard, gray SILTY CLAY LOAM, trace gravel	65		19	10 18 23	10.25 B	15
	510.2	Very dense, gray SILTY LOAM to SILT, trace to some gravel	70		20	22 30 35	NP	20
		--HARD DRILLING--	75		21	50/5"	NR	
			80		22	70/3"	NP	9

GENERAL NOTES

Begin Drilling: **05-21-2013** Complete Drilling: **05-23-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **P/N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 25', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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wangeng@wangeng.com
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Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG 2055-B-05

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 576.97 ft
North: 1898475.15 ft
East: 1171596.44 ft
Station: 8151+09.33
Offset: 65.9333 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	481.0	Probably weathered DOLOSTONE						
	480.0	--AUGER REFUSAL--						
		Strong, light gray, good rock mass quality, bedded fresh DOLOSTONE, with shale partings, up to 18-inch beds, 1- to 18-inch spaced joints, horizontal joints with less than	100			C 0 R E		
		--HARD DRILLING-- *dolostone clasts*	95		25	50/5"	NP	18
			90		24	14 25 48	NP	18
			85		23	40 50/5"	NP	19

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		0.2- to 2-inch greenish gray silty infilling, hard joint wall, with stylolitic surfaces, and moderately vuggy porosity. Run 1 - RECOVERY=98% RQD=82% 98.5ft-Qu=10300 psi --->	120		1			
	470.0	Boring terminated at 107.00 ft	115					
			110					
			105					

GENERAL NOTES

Begin Drilling: **05-21-2013** Complete Drilling: **05-23-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **P/N** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 25', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the 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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Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG 2081-B-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 576.15 ft
North: 1898095.00 ft
East: 1171065.77 ft
Station: 3836+54.98
Offset: 52.7088 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 CONCRETE --PAVEMENT--						
	574.6							
	574.5	1-inch thick CRUSHED STONE --BASE COURSE--						
		Very stiff, brown and gray SILTY CLAY, trace gravel			1	2 3 4	2.46 B	16
	572.8	--FILL--						
		Soft to medium stiff, gray CLAY to SILTY CLAY. trace gravel			2	2 3 4	0.98 B	19
			5		3	2 4 5	0.66 B	20
					4	2 2 2	0.57 B	23
			10		5	1 1 1	0.49 B	24
					6	1 1 2	0.41 B	25
			15		7	0 1 1	0.25 B	25
					8	0 2 2	0.25 B	25
			20		9	1 1 1	0.25 B	27
					10	0 1 2	0.41 B	26
			25		11	1 1 2	0.41 B	26
	548.1	Medium stiff to stiff, gray SILTY CLAY, trace gravel			12	1 2 2	0.91 B	25
			30		13	2 3 5	1.72 B	21
	536.8	Very stiff, gray SILTY LOAM,			14	4 9 12	3.61 B	17
			40					

GENERAL NOTES

Begin Drilling: **04-01-2013** Complete Drilling: **04-01-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **P&N** Logger: **D. Wind** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 2081-B-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 576.15 ft
North: 1898095.00 ft
East: 1171065.77 ft
Station: 3836+54.98
Offset: 52.7088 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		trace gravel						
	534.4							
		Very stiff to hard, gray SILTY CLAY, trace gravel						
			45		15	11 6 7	2.87 B	15
			50		16	6 11 17	5.17 B	21
			55		17	5 8 14	2.46 B	16
	519.4							
		Dense to very dense, gray SILTY LOAM, trace to little gravel						
			60		18	19 23 32	1.80 B	12
			65		19	11 18 25	7.95 S	14
			70		20	12 14 50/5	7.65 B	9
	499.4							
		Very dense, gray SILT --WET--	75		21	50/1	> 4.50 P	17
			80		22	27 48 48	1.97 B	20

GENERAL NOTES

Begin Drilling: **04-01-2013** Complete Drilling: **04-01-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **P&N** Logger: **D. Wind** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

BORING LOG 2081-B-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 576.15 ft
North: 1898095.00 ft
East: 1171065.77 ft
Station: 3836+54.98
Offset: 52.7088 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	494.4							
		Very dense, gray GRAVELLY SANDY LOAM						
					23	50/5	NP	12
	491.1		85					
		Boring terminated at 85.00 ft						
			90					
			95					
			100					

GENERAL NOTES

Begin Drilling: **04-01-2013** Complete Drilling: **04-01-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **P&N** Logger: **D. Wind** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 21-RWB-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 585.23 ft
North: 1897682.52 ft
East: 1171760.80 ft
Station: 1610+92.09
Offset: 7.9354 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	584.1	13-inch thick CONCRETE --PAVEMENT--						
	583.9	3-inch thick ASPHALT --PAVEMENT--						
		CRUSHED STONE --BASE COURSE--			1	13 20 18	NP	8
	582.0	Medium dense to very dense, brown GRAVELLY SAND --FILL--	5		2	9 10 5	NP	12
					3	25 50/3	NP	12
	577.2	Very dense, brown SILTY LOAM, trace gravel						
	576.3	--FILL--			4	50/5	NP	16
		--AUGER REFUSAL-- --Obstruction--	10					
		Boring terminated at 8.90 ft	15					
			20					

GENERAL NOTES

Begin Drilling: **10-13-2013** Complete Drilling: **10-13-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR [78%]**
Driller: **R&N** Logger: **D. Kolpacki** Checked by: **L. Iordache**
Drilling Method: **2.25" SSA , 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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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 21-RWB-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 591.97 ft
North: 1897787.89 ft
East: 1171858.64 ft
Station: 1612+32.77
Offset: 11.8407 RT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
0		Very stiff to hard, brown CLAY LOAM, trace brick fragments --FILL--		1	3 4 8	3.50 P	11
5				2	5 5 7	3.12 B	14
		--3-inch thick, red, crushed Brick--		3	13 8 6	NP	19
10				4	5 5 7	6.56 B	15
	581.5	Stiff, gray SILTY CLAY, trace gravel		5	2 3 4	1.97 B	23
	579.0	Very soft to medium stiff, gray CLAY, trace gravel		6	2 1 3	0.57 B	25
15				7	2 1 2	0.49 B	25
20				8	2 2 2	< 0.25 P	28
25				9	0 0 0	0.33 B	23
				10	0 0 2	0.25 B	26
				11	0 1 2	0.45 B	26
30				12	2 2 2	< 0.25 P	25
35				13	1 2 2	0.57 B	24
40				14	2 3 3	0.49 B	25

GENERAL NOTES

Begin Drilling: **09-23-2013** Complete Drilling: **09-23-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **A. Tomaras** Checked by: **L. Iordache**
Drilling Method: **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 21-RWB-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 591.97 ft
North: 1897787.89 ft
East: 1171858.64 ft
Station: 1612+32.77
Offset: 11.8407 RT

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	2 3 3	< 0.25 P	27
			50		16	0 2 2	0.41 B	28
	540.2	Very stiff to hard, SILTY CLAY to SILTY CLAY LOAM, trace gravel	55		17	4 5 8	1.48 B	22
			60		18	14 12 15	3.00 P	16
	520.2	Dense, gray SILT	65		19	15 17 24	4.10 B	27
			70		20	16 17 20	8.53 B	12
			75		21	20 26 23	NP	21
	515.2	Hard, gray SILTY CLAY LOAM, trace gravel	80		22	19 20 28	8.61 S	14

GENERAL NOTES

Begin Drilling: **09-23-2013** Complete Drilling: **09-23-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **A. Tomaras** Checked by: **L. Iordache**
Drilling Method: **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
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BORING LOG 21-RWB-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 591.97 ft
North: 1897787.89 ft
East: 1171858.64 ft
Station: 1612+32.77
Offset: 11.8407 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	510.2	Very dense, gray SILT --HARD DRILLING--						
					23	31 32 50/5	NP	15
			85					
	505.2	Very dense, gray SILTY LOAM, trace gravel						
					24	23 33 29	6.81 S	21
			90					
					25	66/6 ~~44/3~~	NP	15
			95					
	495.2	--HARD DRILLING-- Very dense, brown SANDY GRAVEL --possibly underpressure groundwater bearing--						
					26	30 70/6	NP	6
			100					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	490.2	Very dense, weathered DOLOSTONE fragments --WEATHERED BEDROCK--						
					27	50/1	NP	
	487.5	--ROLLER BIT REFUSAL--						
	487.0	--BEDROCK--	105					
		Boring terminated at 104.50 ft						
			110					
			115					
			120					

GENERAL NOTES

Begin Drilling: **09-23-2013** Complete Drilling: **09-23-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **A. Tomaras** Checked by: **L. Iordache**
Drilling Method: **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 21-RWB-04

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 587.85 ft
North: 1897850.59 ft
East: 1171897.08 ft
Station: 1613+02.29
Offset: 21.9615 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	587.4	5 -inch thick, black SILTY LOAM --TOPSOIL--						
		Very stiff to hard, brown SILTY CLAY LOAM, trace gravel --FILL--			1	5 6 7	4.51 S	16
			5		2	5 3 5	3.50 P	18
	582.4	Stiff, brown and gray SILTY CLAY, trace gravel			3	3 3 3	1.97 B	22
	579.9	Very soft to medium stiff, brown CLAY to SILTY CLAY, trace gravel			4	1 1 2	0.57 B	23
			10		5	1 1 2	0.41 B	25
					6	1 1 2	0.33 B	24
			15		7	1 1 2	0.33 B	23
					8	0 1 1	0.16 B	26
			20					
		--L_L(%)=34, P_L(%)=17-- --%Gravel=7.3-- --%Sand=16.1-- --%Silt=47.5-- --%Clay=29.0-- --AASHTO--	25		9	1 1 2	0.16 B	25
					10	1 1 1	0.16 B	27
					11	1 2 2	0.33 B	20
			30		12	1 1 2	0.16 B	23
					13	1 2 3	0.66 B	21
			35		14	2 2 2	0.41 B	24
			40					

GENERAL NOTES

Begin Drilling: **09-23-2013** Complete Drilling: **09-23-2013**
Drilling Contractor: **K&S** Drill Rig: **D-120 TMR**
Driller: **R&E** Logger: **F. Bozga** Checked by: **L. Iordache**
Drilling Method: **4.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
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BORING LOG 21-RWB-04

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 587.85 ft
North: 1897850.59 ft
East: 1171897.08 ft
Station: 1613+02.29
Offset: 21.9615 RT

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	1 2 3	0.33 B	26
			50		16	3 5 8	0.66 B	20
	536.1	Very stiff, gray SILTY CLAY, trace gravel						
			55		17	4 7 11	3.28 B	22
	531.1	Dense to very dense, gray SILTY LOAM to SILTY CLAY LOAM, trace to little gravel						
			60		18	16 26 38	6.23 S	14

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			65		19	26 25 30	5.66 S	13
		--HARD DRILLING-- *--Possible Cobbles--*						
			70		20	38 50/5"	NP	15
			75		21	12 19 29	8.04 S	13
			80		22	22 50/5"	NP	11

GENERAL NOTES

Begin Drilling: **09-23-2013** Complete Drilling: **09-23-2013**
Drilling Contractor: **K&S** Drill Rig: **D-120 TMR**
Driller: **R&E** Logger: **F. Bozga** Checked by: **L. Iordache**
Drilling Method: **4.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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

BORING LOG 21-RWB-04

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 587.85 ft
North: 1897850.59 ft
East: 1171897.08 ft
Station: 1613+02.29
Offset: 21.9615 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
			85		23	19 25 31	NP	10
			90		24	50/5"	NP	11
	496.6	Dense, gray SANDY GRAVEL						
	492.9		95		25	11 21 19	NP	13
		Boring terminated at 95.00 ft	100					

GENERAL NOTES

Begin Drilling: **09-23-2013** Complete Drilling: **09-23-2013**
Drilling Contractor: **K&S** Drill Rig: **D-120 TMR**
Driller: **R&E** Logger: **F. Bozga** Checked by: **L. Iordache**
Drilling Method: **4.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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

BORING LOG 21-RWB-05

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 583.32 ft
North: 1897919.78 ft
East: 1171915.09 ft
Station: 1613+69.21
Offset: 25.0245 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	582.9	5-inch thick, white CRUSHED STONE						
		--FILL--						
		Hard, gray and brown CLAY LOAM, trace gravel			1	6 9 9	6.56 S	15
		--FILL--						
	580.3	Medium stiff to stiff, gray SILTY CLAY, trace gravel			2	2 2 2	0.82 B	20
			5		3	1 3 3	1.23 B	17
	575.3	Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			4	0 2 1	0.41 B	25
			10		5	0 0 0	0.41 B	26
					6	0 0 2	0.57 B	22
			15		7	2 3 2	0.66 B	22
					8	0 2 3	0.74 B	24
			20		9	2 2 4	0.82 B	23
			25		10	2 3 3	0.74 B	23
					11	2 2 3	0.66 B	24
			30		12	3 4 6	0.66 B	23
			35		13	2 3 3	0.49 B	25
			40		14	3 3 4	0.41 B	23

GENERAL NOTES

Begin Drilling: **09-24-2013** Complete Drilling: **09-25-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **A. Tomaras** Checked by: **L. Iordache**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 21-RWB-05

WEI Job No.: 1100-04-01

Client **AECOM**
Project **Circle Interchange Reconstruction**
Location **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 583.32 ft
North: 1897919.78 ft
East: 1171915.09 ft
Station: 1613+69.21
Offset: 25.0245 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	541.6	Stiff to hard, gray SILTY CLAY LOAM, trace gravel	45		15	2 4 8	1.23 B	18
			50		16	6 12 18	4.26 B	15
	531.6	Gray, coarse SAND						
	529.6	Hard, gray SILTY CLAY LOAM, trace gravel	55		17	13 15 21	5.66 B	14
			60		18	16 24 31	7.13 S	11
	516.6	Very dense, gray SILTY LOAM, trace to some gravel	65		19	10 16 21	6.81 S	14
			70		20	15 25 30	9.02 S	11
			75		21	41 60/3"	NP	10
			80		22	34 45 20/2"	8.69 S	10

GENERAL NOTES

Begin Drilling **09-24-2013** Complete Drilling **09-25-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR [85%]**
Driller **R&J** Logger **A. Tomaras** Checked by **L. Iordache**
Drilling Method **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **mud in the borehole**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

BORING LOG 21-RWB-05

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 583.32 ft
North: 1897919.78 ft
East: 1171915.09 ft
Station: 1613+69.21
Offset: 25.0245 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	501.6	Very dense, gray SANDY LOAM, trace gravel						
					23	78/6" 22/1"	NP	9
			85					
		--HARD DRILLING-- *--Possible Cobbles--*						
					24	64 45/6"	NP	13
			90					
	491.6	Very dense, gray GRAVELLY SILTY LOAM, trace to some cobbles						
					25	100/6"	1.31 S	13
			95					
		--HARD DRILLING-- *--Possible Cobbles--*						
					26	64 40/2"	0.49 S	9
			100					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	482.3							
		--WEATHERED BEDROCK-- --ROLLER BIT REFUSAL--						
	481.3	Boring terminated at 102.00 ft						
			105					
			110					
			115					
			120					

GENERAL NOTES

Begin Drilling: **09-24-2013** Complete Drilling: **09-25-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **A. Tomaras** Checked by: **L. Iordache**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring**
backfilled upon completion

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 22-RWB-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 587.62 ft
North: 1898185.65 ft
East: 1171879.86 ft
Station: 1212+29.37
Offset: 21.9731 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		15-inch thick, black and brown SILTY LOAM						
	586.4	--TOPSOIL--						
		Hard, brown CLAY LOAM, trace gravel			1	7 8 10	4.50 P	16
		--FILL--						
	584.6							
		Very stiff, gray SILTY CLAY LOAM, trace gravel			2	3 4 6	2.05 B	18
	582.1		5					
		Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			3	2 2 3	0.57 B	24
					4	1 1 2	0.25 B	25
			10					
					5	1 2 2	0.41 B	26
		--L_L(%)=32, P_L(%)=18--			6	1 2 2	0.41 B	23
		--%Gravel=2.5--						
		--%Sand=15.0--						
		--%Silt=57.1--	15					
		--%Clay=25.4--						
		--A-6 (10)--						
					7	2 2 3	0.33 B	21
					8	2 2 3	0.57 B	21
			20					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
					9	1 2 2	0.41 B	26
			25		10	1 2 2	0.25 B	27
					11	2 2 2	< 0.25 P	27
			30		12	2 1 2	0.25 B	26
		--L_L(%)=33, P_L(%)=18--			13	1 2 2	0.16 B	26
		--%Gravel=2.7--						
		--%Sand=15.7--						
		--%Silt=57.1--	35					
		--%Clay=25.4--						
		--A-6 (11)--						
					14	2 2 4	< 0.25 P	26
			40					

GENERAL NOTES

Begin Drilling: **03-07-2014** Complete Drilling: **03-10-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-25 ATV [93%]**
Driller: **N&J** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: ▽ **62.00 ft**
At Completion of Drilling: ▼ **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: ▼ **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 22-RWB-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 587.62 ft
North: 1898185.65 ft
East: 1171879.86 ft
Station: 1212+29.37
Offset: 21.9731 RT

Depth (ft)	Elevation (ft)	Soil and Rock Description	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
45	540.9	Very stiff to hard, gray SILTY CLAY LOAM, trace gravel		15	2 2 3	0.16 B	29
50				16	5 9 12	3.50 P	22
55				17	10 9 16	4.17 N/6	
60		--L_L(%)=35, P_L(%)=18-- --%Gravel=1.8-- --%Sand=10.2--		18	8 10 22	2.30 B	21
65	525.9	--%Silt=54.1-- --%Clay=33.9-- --A-6 (14)-- Very dense, gray, coarse SAND, little gravel --Moist--		19	35 50/5	NP	20
70	523.3	Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel		20	25 33 37	4.50 P	13
75				21	16 27 38	7.38 B	17
80	510.6	--HARD DRILLING from 77 ft-- *--Possible Cobbles--* Very dense, gray SILTY LOAM, trace gravel		22	50/0	NP	

GENERAL NOTES

Begin Drilling: **03-07-2014** Complete Drilling: **03-10-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-25 ATV [93%]**
Driller: **N&J** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **62.00 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

BORING LOG 22-RWB-03

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 587.62 ft
North: 1898185.65 ft
East: 1171879.86 ft
Station: 1212+29.37
Offset: 21.9731 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	491.4	Very dense, gray SANDY GRAVEL; wet --possible water bearing--	85		23	50/5	NP	14
			90		24	50/2	NP	11
			95		25	50/4	3.69 S	16
	487.6		100		26	50/2	NP	

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--VERY HARD, STEADY DRILLING-- --WEATHERED BEDROCK--						
	484.6	--ROLLER BIT REFUSAL-- Boring terminated at 103.00 ft	105					
			110					
			115					
			120					

GENERAL NOTES

Begin Drilling: **03-07-2014** Complete Drilling: **03-10-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-25 ATV [93%]**
Driller: **N&J** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **62.00 ft**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 22-RWB-04

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 586.36 ft
North: 1898208.77 ft
East: 1171849.77 ft
Station: 1212+66.85
Offset: 28.4715 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	586.1	3-inch thick, brown SILTY LOAM --TOPSOIL--						
		Hard, brown SILTY CLAY LOAM, trace gravel --FILL--			1	3 4 6	4.10 B	21
	583.4	Stiff to very stiff, gray SILTY CLAY, trace gravel			2	3 4 5	2.87 B	20
			5		3	2 3 3	1.56 B	22
	578.4	Soft, gray CLAY, trace gravel			4	1 1 2	0.33 B	25
			10		5	1 1 2	0.33 B	25
	573.4	Medium stiff, gray SILTY CLAY LOAM, trace gravel			6	1 2 4	0.57 B	17
			15					
	570.9	Soft, gray CLAY to SILTY CLAY, trace gravel			7	1 2 3	0.41 B	25
			20		8	2 2 4	0.41 B	22
			25		9	1 1 2	0.41 B	26
					10	2 2 2	0.49 B	26
					11	2 1 2	0.41 B	27
			30		12	1 2 3	0.41 B	25
			35		13	1 2 3	0.41 B	25
			40		14	1 2 3	0.25 P	26

GENERAL NOTES

Begin Drilling: **08-05-2014** Complete Drilling: **08-05-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-25 ATV [93%]**
Driller: **P&N** Logger: **M. de los Reyes** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

BORING LOG 22-RWB-04

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 586.36 ft
North: 1898208.77 ft
East: 1171849.77 ft
Station: 1212+66.85
Offset: 28.4715 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--HARD DRILLING at 42.5 ft-- *--Possible Cobbles--*						
	543.9	Stiff to very stiff, gray SILTY CLAY LOAM, trace gravel						
			45		15	2 4 5	1.50 N/6	18
			50		16	5 9 12	2.87 B	18
			55		17	9 11 14	2.62 B	14
	529.6	Very stiff, gray SILTY LOAM to SILTY CLAY LOAM, trace gravel and sand seams						
			60		18	13 19 35	3.69 S	13
	524.6	Very dense, gray SANDY LOAM, trace gravel --Moist--						
	521.4	Boring terminated at 65.00 ft	65		19	13 19 35	NP	11
			70					
			75					
			80					

GENERAL NOTES

Begin Drilling: **08-05-2014** Complete Drilling: **08-05-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-25 ATV [93%]**
Driller: **P&N** Logger: **M. de los Reyes** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 23-RWB-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 575.29 ft
North: 1898467.55 ft
East: 1171687.36 ft
Station: 6334+12.89
Offset: 30.5965 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 --FILL--						
	573.8							
		Loose to medium dense, white CRUSHED STONE --BASE COURSE--			1	5 6 6	NP	6
					2	3 3 3	NP	8
			5					
	569.8							
		Stiff, brown and gray SILTY CLAY LOAM, trace gravel			3	2 3 4	1.17 N/6	19
	567.3							
		Very soft to soft, gray CLAY to SILTY CLAY, trace gravel			4	2 2 4	0.49 B	19
			10					
					5	1 1 3	0.41 B	23
					6	1 2 2	0.49 B	26
			15					
					7	3 4 4	0.41 B	25
					8	2 3 2	0.25 P	27
			20					
			25		9	2 2 3	0.25 B	26
					10	1 2 2	0.25 B	23
					11	1 2 3	0.25 B	25
			30		12	2 2 3	0.41 B	25
					13	2 3 2	0.83 N/6	
			35					
	538.5							
		Stiff to very stiff, gray SILTY CLAY, trace gravel			14	5 7 9	1.64 B	22
			40					

GENERAL NOTES

Begin Drilling: **07-27-2014** Complete Drilling: **07-27-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 23-RWB-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 575.29 ft
North: 1898467.55 ft
East: 1171687.36 ft
Station: 6334+12.89
Offset: 30.5965 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	7 13 16	2.54 B	22
			50		16	28 25 32	3.00 P	24
	523.5	Medium stiff, gray CLAY						
			55		17	4 5 5	0.87 B	26
	518.5	Dense, gray SANDY LOAM, trace gravel --Wet--						
			60		18	16 14 16	NP	16
	513.5	Hard, gray SILTY CLAY LOAM, trace gravel						
			65		19	23 30 45	7.38 B	15
	510.3	Boring terminated at 65.00 ft						
			70					
			75					
			80					

GENERAL NOTES

Begin Drilling: **07-27-2014** Complete Drilling: **07-27-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **A. Happel** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 38-RWB-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 577.87 ft
North: 1898674.22 ft
East: 1171408.18 ft
Station: 1316+53.06
Offset: 42.7366 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	576.6	4.5-inch thick, ASPHALT over 10.5-inch thick, CONCRETE --PAVEMENT--						
	575.6	13-inch thick SANDY GRAVEL --BASE COURSE--						
	574.6	Stiff, gray SILTY CLAY, trace gravel --FILL--						
		Very soft to soft, gray CLAY to SILTY CLAY, trace gravel						
					1	8 3 3	1.50 P	18
			5		2	1 1 2	0.16 B	23
					3	1 1 2	0.16 B	24
			10		4	0 1 2	0.16 B	23
					5	1 1 1	0.08 B	26
			15		6	1 1 2	0.50 N/6	
					7	1 1 2	0.16 B	26
			20		8	1 1 2	0.08 B	26
			25		9	1 2 3	0.16 B	26
					10	1 2 2	0.16 B	25
					11	1 2 2	0.67 N/6	
			30		12	2 3 3	0.25 B	27
			35		13	1 1 3	0.08 B	23
			40		14	2 4 6	0.25 B	26

GENERAL NOTES

Begin Drilling: **08-19-2014** Complete Drilling: **08-19-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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

BORING LOG 38-RWB-01

WEI Job No.: 1100-04-01

Client **AECOM**
Project **Circle Interchange Reconstruction**
Location **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 577.87 ft
North: 1898674.22 ft
East: 1171408.18 ft
Station: 1316+53.06
Offset: 42.7366 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	536.1							
		Very stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel						
			45		15	6 8 10	4.10 B	13
			50		16	4 6 12	2.38 B	17
			55		17	5 9 10	2.54 B	23
	521.1							
		Very soft (0.16B), gray CLAY						
	518.6							
		Dense, gray SILTY LOAM, trace gravel	60		18	2 3 6	NP	20
			65		19	15 21 25	NP	19
	512.9	Boring terminated at 65.00 ft						
			70					
			75					
			80					

GENERAL NOTES

Begin Drilling **08-19-2014** Complete Drilling **08-19-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR [85%]**
Driller **R&J** Logger **S. Woods** Checked by **C. Marin**
Drilling Method **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **mud in the borehole**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 38-RWB-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 576.09 ft
North: 1898515.97 ft
East: 1171368.28 ft
Station: 1318+10.03
Offset: 21.6181 LT

Elevation (ft)	Depth (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
575.6		5-inch thick, ASPHALT --PAVEMENT--					
574.8		10-inch thick, gray SANDY GRAVEL --FILL--					
573.3		Stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel --FILL--					
		Soft, gray CLAY to SILTY CLAY, trace gravel					
	5			1	1 2 2	1.97 B	17
				2	1 1 1 2	0.33 B	26
				3	1 1 2 2	0.33 B	25
				4	0 1 2 2	0.33 B	26
	10			5	2 2 2 2	0.25 B	26
				6	1 1 1	0.33 B	25
	15			7	1 1 1	0.33 B	26
				8	1 1 1	0.25 B	23
	20			9	1 1 1	0.33 B	24
	25			10	1 1 2	0.33 B	25
				11	1 1 2	0.25 B	25
				12	1 1 2	0.33 B	24
	30			13	1 2 3	0.49 B	25
539.3		Stiff to very stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel		14	2 3 3	0.49 B	20
	35						
				15	5 6 8	2.46 B	19
	40						

GENERAL NOTES

Begin Drilling: **08-20-2014** Complete Drilling: **08-20-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **Solid flight auger to 11', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

BORING LOG 38-RWB-02

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 576.09 ft
North: 1898515.97 ft
East: 1171368.28 ft
Station: 1318+10.03
Offset: 21.6181 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		16	5 9 12	1.60 P	17
			50		17	9 10 10	3.33 N/6	
	524.3	Very stiff, gray CLAY to SILTY CLAY, trace gravel						
			55		18	6 7 11	2.21 B	28
	519.3	Hard, gray SILTY CLAY LOAM, trace gravel						
			60		19	8 13 22	4.43 B	17
			65		20	15 28 32	NP	14
	511.1	Very dense, gray SILTY LOAM, trace gravel --DRY--						
		Boring terminated at 65.00 ft	70					
			75					
			80					

GENERAL NOTES

Begin Drilling: **08-20-2014** Complete Drilling: **08-20-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **Solid flight auger to 11', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG 39-VST-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 574.85 ft
North: 1898266.68 ft
East: 1171202.33 ft
Station: 1321+07.61
Offset: 5.7540' RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
574.5	4.5-inch thick ASPHALT --PAVEMENT--						
573.9	7.5-inch thick CONCRETE --PAVEMENT--						
573.4	5-inch thick, brown SANDY GRAVEL, crushed stone --SUB-BASE--						
	Stiff to very stiff, brown to gray SILTY CLAY LOAM, trace gravel --FILL--			1	6 6 4	2.00 P	17
		5		2	4 3 4	1.00 P	20
569.4	Medium stiff, gray CLAY to SILTY CLAY, trace gravel			3	2 2 2	0.90 B	25
		10		4	1 2 2	0.82 B	22
	--In-Situ Vane Shear, 13.0 feet-- --$S_{u\ undis}$ = 1551.0-- --$S_{u\ remold}$ = 878.9-- --Sensitivity = 1.76--	15		1	VS		
	--In-Situ Vane Shear, 18.0 feet-- --$S_{u\ undis}$ = 827.2-- --$S_{u\ remold}$ = 517.0-- --Sensitivity = 1.60--	20		2	VS		
	--In-Situ Vane Shear, 23.0 feet-- --$S_{u\ undis}$ = 1240.8-- --$S_{u\ remold}$ = 775.5-- --Sensitivity = 1.60--	25		3	VS		
	--In-Situ Vane Shear, 28.0 feet-- --$S_{u\ undis}$ = 1654.4-- --$S_{u\ remold}$ = 1137.4-- --Sensitivity = 1.45--	30		4	VS		
544.1	Very stiff, gray SILTY CLAY LOAM, trace gravel						
	--In-Situ Vane Shear, 33.0 feet-- --$S_{u\ undis}$ = 2533.3-- --$S_{u\ remold}$ = 1912.9-- --Sensitivity = 1.32--	35		5	VS		
		40					

GENERAL NOTES

Begin Drilling: **10-15-2014** Complete Drilling: **10-19-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **F. Bozga** Checked by: **CLM (-coord)**
Drilling Method: **2.25" IDA HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

BORING LOG 39-VST-01

WEI Job No.: 1100-04-01

Client **AECOM**
Project **Circle Interchange Reconstruction**
Location **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 574.85 ft
North: 1898266.68 ft
East: 1171202.33 ft
Station: 1321+07.61
Offset: 5.7540' RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	529.9	Boring terminated at 45.00 ft	45		5	3 6 8	2.79 B	15

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

GENERAL NOTES

Begin Drilling **10-15-2014** Complete Drilling **10-19-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR [85%]**
Driller **R&J** Logger **F. Bozga** Checked by **CLM (-coord)**
Drilling Method **2.25" IDA HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **mud in the borehole**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG SB90-SGB-12

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 581.56 ft
North: 1896939.61 ft
East: 1171610.99 ft
Station: 6235+25.90
Offset: 21.4718 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	580.5	13-inch thick, CONCRETE --PAVEMENT--						
	578.8	Medium dense, gray SANDY GRAVEL, crushed stone --BASE COURSE--			1	8 10 14 14	NP	5
	576.8	Stiff, brown and gray SILTY CLAY LOAM, trace gravel --FILL--			2	3 4 5 5	3.03 B	14
		Medium stiff, gray SILTY CLAY LOAM, trace gravel	5		3	1 2 2 3	0.90 B	20
					4	2 2 2 2	0.98 B	24
	570.6		10		5	1 2 3 2	0.74 B	23
		Boring terminated at 11.00 ft	15					
			20					

GENERAL NOTES

Begin Drilling: **10-30-2014** Complete Drilling: **10-30-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **P&P** Logger: **F. Bozga** Checked by: **RKC**
Drilling Method: **2.25" SSA, boring backfilled upon completion**

WATER LEVEL DATA

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

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

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG SB90-SGB-13

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 577.81 ft
North: 1896596.82 ft
East: 1171656.56 ft
Station: 6238+70.90
Offset: 2.3791 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	576.7	13-inch thick, CONCRETE --PAVEMENT--						
	575.8	Brown SANDY GRAVEL, crushed stone --BASE COURSE--			1	10 10 5 4	3.75 P	24
	574.8	Very stiff, brown SILTY CLAY LOAM, trace gravel --FILL--						
		Soft to stiff, gray SILTY CLAY LOAM, trace gravel			2	2 3 4 4	1.23 B	20
			5		3	1 2 2 2	0.66 B	20
					4	0 0 2 2	0.33 B	23
			10		5	1 1 2 2	0.41 B	23
	566.8	Boring terminated at 11.00 ft						
			15					
			20					

GENERAL NOTES

Begin Drilling: **10-30-2014** Complete Drilling: **10-30-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **P&P** Logger: **F. Bozga** Checked by: **RKC**
Drilling Method: **2.25" SSA, 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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Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SB90-SGB-14

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 576.72 ft
North: 1896346.54 ft
East: 1171688.76 ft
Station: 6241+23.12
Offset: 2.8608 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	575.7	12-inch thick, CONCRETE --PAVEMENT--						
	574.5	Medium dense, gray SANDY GRAVEL, crushed stone --BASE COURSE--			1	9 9 8 7	NP	5
		Soft to medium stiff, gray SILTY CLAY, trace gravel			2	3 3 2 2	0.98 B	19
			5		3	1 1 2 1	0.49 B	21
					4	1 1 1 2	0.49 B	23
			10		5	1 1 2 2	0.33 B	25
	565.7	Boring terminated at 11.00 ft						
			15					
			20					

GENERAL NOTES

Begin Drilling: **10-30-2014** Complete Drilling: **10-30-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **P&P** Logger: **F. Bozga** Checked by: **RKC**
Drilling Method: **2.25" SSA, boring backfilled upon completion**

WATER LEVEL DATA

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

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

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

BORING LOG SB90-SGB-21

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 574.97 ft
North: 1898288.91 ft
East: 1171224.08 ft
Station: 1320+76.26
Offset: 4.4481 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	574.6	4.5-inch thick ASPHALT --PAVEMENT--						
	574.0	7.5-inch thick CONCRETE --PAVEMENT--						
		Loose, brown SANDY GRAVEL, crushed stone			1	7 3 3 4		7
	572.0	-- AGGREGATE BASE--						
		Very stiff, brown SILTY CLAY LOAM, trace gravel			2	6 6 5 5	3.50 P	18
	570.7	--FILL--						
		Medium stiff, gray CLAY to SILTY CLAY, trace gravel	5		3	2 2 3 3	0.95 B	25
					4	1 2 3 3	0.90 B	24
			10		5	2 2 3 4	0.90 B	25
	564.0							
		Boring terminated at 11.00 ft						
			15					
			20					

GENERAL NOTES

Begin Drilling: **10-15-2014** Complete Drilling: **10-15-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&J** Logger: **F. Bozga** Checked by: **C. Marin**
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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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG SB90-SGB-24

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 578.24 ft
North: 1897470.25 ft
East: 1171446.01 ft
Station: 1512+28.05
Offset: 14.8803 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	577.0	15-inch thick, CONCRETE --PAVEMENT--						
		Medium dense, gray SANDY GRAVEL, crushed stone --BASE COURSE--			1	13 14 13 6	NP	5
	574.5	Soft to medium stiff, gray CLAY to CLAY LOAM, trace gravel --L_L(%)=28, P_L(%)=16-- --%Gravel=2.8-- --%Sand=13.3-- --%Silt=64.3-- --%Clay=19.6-- --A-6 (8)--	5		2	2 2 2 3	0.74 B	23
					3	1 1 2 2	0.66 B	19
					4	1 1 2 2	0.41 B	20
			10		5	0 1 2 2	0.25 B	24
	566.7	Boring terminated at 11.50 ft						
			15					
			20					

GENERAL NOTES

Begin Drilling: **10-26-2014** Complete Drilling: **10-26-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **P&P** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **2.25" SSA, 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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Wang Engineering
wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

BORING LOG SB90-SGB-25

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 581.55 ft
North: 1897164.83 ft
East: 1171487.22 ft
Station: 1515+33.53
Offset: 22.3627 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	580.5	13-inch thick, CONCRETE --PAVEMENT--						
	578.8	Dense, gray SANDY GRAVEL, crushed stone --BASE COURSE--			1	17 18 13 13	NP	7
		Very soft to medium stiff, gray SILTY CLAY LOAM, trace gravel	5		2	2 2 2 2	0.98 B	25
					3	1 2 2 3	0.57 B	30
					4	0 2 1 2	0.33 B	28
	570.5		10		5	1 1 2 2	< 0.25 P	25
		Boring terminated at 11.00 ft	15					
			20					

GENERAL NOTES

Begin Drilling: **10-26-2014** Complete Drilling: **10-26-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR [100%]**
Driller: **P&P** Logger: **F. Bozga** Checked by: **RKC**
Drilling Method: **2.25" SSA, boring backfilled upon completion**

WATER LEVEL DATA

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

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

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG VST-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.55 ft
North: 1897108.36 ft
East: 1171435.63 ft
Station: 7313+90.47
Offset: 2.00 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Very stiff, brown SILTY CLAY LOAM, trace gravel --FILL--			1	3 5 7	2.75 P	14
	590.5	Medium dense, fine SAND	5		2	5 5 6	NP	7
	586.8	Medium stiff to stiff, gray SILTY CLAY	10		3	2 2 3	1.31 B	26
			15		4	2 2 3	0.98 B	28
	578.0	Soft, gray SILTY CLAY			5	1 2 2	0.25 P	29
	575.3	--In-Situ Vane Shear, 19.5 feet--	20		1			
		--$S_{u\ undis}$ = 786.3 psf-- --$S_{u\ remold}$ = 371.3 psf-- --Sensitivity = 2.1--				VS		
		--In-Situ Vane Shear, 22.0 feet-- --$S_{u\ undis}$ = 742.6 psf-- --$S_{u\ remold}$ = 305.8 psf-- --Sensitivity = 2.4--			2	VS		
		--In-Situ Vane Shear, 24.5 feet-- --$S_{u\ undis}$ = 578.8 psf-- --$S_{u\ remold}$ = 382.2 psf-- --Sensitivity = 1.5--	25		3	VS		
		--In-Situ Vane Shear, 27.0 feet-- --$S_{u\ undis}$ = 742.6 psf-- --$S_{u\ remold}$ = 415.0 psf-- --Sensitivity = 1.8--			4	VS		
		--In-Situ Vane Shear, 29.5 feet-- --$S_{u\ undis}$ = 589.7 psf-- --$S_{u\ remold}$ = 283.9 psf-- --Sensitivity = 2.1--	30		5	VS		
		--In-Situ Vane Shear, 32.0 feet-- --$S_{u\ undis}$ = 1026.6 psf-- --$S_{u\ remold}$ = 447.8 psf-- --Sensitivity = 2.3--			6	VS		
		--In-Situ Vane Shear, 34.5 feet-- --$S_{u\ undis}$ = 764.5 psf-- --$S_{u\ remold}$ = 480.5 psf-- --Sensitivity = 1.6--	35		7	VS		
		--In-Situ Vane Shear, 37.0 feet-- --$S_{u\ undis}$ = 1026.6 psf-- --$S_{u\ remold}$ = 589.7 psf-- --Sensitivity = 1.7--			8	VS		
			40					

GENERAL NOTES

Begin Drilling: **12-01-2015** Complete Drilling: **12-01-2015**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&N** Logger: **F. Bozga** Checked by: **A. Kurnia**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG VST-01

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 593.55 ft
North: 1897108.36 ft
East: 1171435.63 ft
Station: 7313+90.47
Offset: 2.00 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--Equipment Slipped--	45		9	VS		
		--In-Situ Vane Shear, 46.5 feet-- --$S_{u\ undis}$ = 1070.2 psf-- --$S_{u\ remold}$ = 633.4 psf-- --Sensitivity = 1.7--			10	VS		
	544.0	--In-Situ Vane Shear, 49.0 feet-- --$S_{u\ undis}$ = 1157.6 psf-- --$S_{u\ remold}$ = 611.6 psf-- --Sensitivity = 2.3--	50		11	VS		
		Boring terminated at 49.50 ft	55					
			60					

GENERAL NOTES

Begin Drilling: **12-01-2015** Complete Drilling: **12-01-2015**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&N** Logger: **F. Bozga** Checked by: **A. Kurnia**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the 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.

WANGENGINC 11000401.GPJ WANGENG.GDT 1/31/18

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

BORING LOG VST-06

WEI Job No.: 1100-04-01

Client: **AECOM**
Project: **Circle Interchange Reconstruction**
Location: **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 585.69 ft
North: 1898109.29 ft
East: 1171902.18 ft
Station: 1103+77.81
Offset: 27.3835 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Hard, brown SILTY CLAY LOAM, trace gravel --FILL--						
			5		1	7 6 6	> 4.50 P	16
	580.2							
		Soft, gray SILTY CLAY LOAM			2	1 2 3	0.41 B	23
	576.7							
			10					
		--In-Situ Vane Shear, 10.5 feet-- --$S_{u\ undis}$ = 972.0 psf-- --$S_{u\ remold}$ = 611.6 psf-- --Sensitivity = 1.6--			1	VS		
		--In-Situ Vane Shear, 13.0 feet-- --$S_{u\ undis}$ = 982.9 psf-- --$S_{u\ remold}$ = 589.7 psf-- --Sensitivity = 1.7--			2	VS		
			15					
		--In-Situ Vane Shear, 15.5 feet-- --$S_{u\ undis}$ = 873.7 psf-- --$S_{u\ remold}$ = 513.3 psf-- --Sensitivity = 1.7--			3	VS		
		--In-Situ Vane Shear, 18.0 feet-- --$S_{u\ undis}$ = 928.3 psf-- --$S_{u\ remold}$ = 360.4 psf-- --Sensitivity = 2.6--			4	VS		
			20					
		--In-Situ Vane Shear, 20.5 feet-- --$S_{u\ undis}$ = 775.4 psf-- --$S_{u\ remold}$ = 360.4 psf-- --Sensitivity = 2.2--			5	VS		
		--In-Situ Vane Shear, 23.0 feet-- --$S_{u\ undis}$ = 600.6 psf-- --$S_{u\ remold}$ = 305.8 psf-- --Sensitivity = 2.0--			6	VS		
			25					
		--In-Situ Vane Shear, 25.5 feet-- --$S_{u\ undis}$ = 578.8 psf-- --$S_{u\ remold}$ = 316.7 psf-- --Sensitivity = 1.8--			7	VS		
		--In-Situ Vane Shear, 28.0 feet-- --$S_{u\ undis}$ = 611.6 psf-- --$S_{u\ remold}$ = 338.5 psf-- --Sensitivity = 1.8--			8	VS		
			30					
		--In-Situ Vane Shear, 30.5 feet-- --$S_{u\ undis}$ = 786.3 psf-- --$S_{u\ remold}$ = 382.2 psf-- --Sensitivity = 2.1--			9	VS		
		--In-Situ Vane Shear, 33.0 feet-- --$S_{u\ undis}$ = 698.9 psf-- --$S_{u\ remold}$ = 404.1 psf-- --Sensitivity = 1.7--			10	VS		
			35					
		--In-Situ Vane Shear, 35.5 feet-- --$S_{u\ undis}$ = 808.1 psf-- --$S_{u\ remold}$ = 502.4 psf-- --Sensitivity = 1.6--			11	VS		
		--In-Situ Vane Shear, 38.0 feet-- --$S_{u\ undis}$ = 982.9 psf-- --$S_{u\ remold}$ = 546.0 psf-- --Sensitivity = 1.8--			12	VS		
			40					

GENERAL NOTES

Begin Drilling: **12-09-2015** Complete Drilling: **12-14-2015**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR [85%]**
Driller: **R&N** Logger: **F. Bozga** Checked by: **A. Kurnia**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **mud in the borehole**
Time After Drilling: **NA**
Depth to Water: **NA**

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

BORING LOG VST-06

WEI Job No.: 1100-04-01

Client **AECOM**
Project **Circle Interchange Reconstruction**
Location **Section 17, T39N, R14E of 3rd PM**

Datum: NAVD 88
Elevation: 585.69 ft
North: 1898109.29 ft
East: 1171902.18 ft
Station: 1103+77.81
Offset: 27.3835 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--In-Situ Vane Shear, 40.5 feet--			13	VS		
		--$S_{u\ undis}$ = 906.4 psf--						
		--$S_{u\ remold}$ = 524.2 psf--						
		--Sensitivity = 1.7--						
		--In-Situ Vane Shear, 43.0 feet--			14	VS		
	542.2	--$S_{u\ undis}$ = 677.1 psf--						
		--$S_{u\ remold}$ = 393.1 psf--						
		--Sensitivity = 1.7--						
		Boring terminated at 43.50 ft	45					
			50					
			55					
			60					

GENERAL NOTES

Begin Drilling **12-09-2015** Complete Drilling **12-14-2015**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR [85%]**
Driller **R&N** Logger **F. Bozga** Checked by **A. Kurnia**
Drilling Method **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **mud in the 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.

APPENDIX B

Illinois Department of Transportation

Summary Report on Pavement, Base and Subbase Design

State Job Number: D-91-227-13 Project: Jane Byrne Interchange Route: I-290 / I-90/94

Section: _____ City or County: Chicago Date: 2/08/2018

ADT: NA Year: _____ Design Period: _____ Class Highway: _____

Passenger Cars Per Day: NA Trucks S.U. Per Day: NA Trucks M.U. Per Day: NA

Pavement Structure: PCC

Type Surface Course: NA Thickness: _____

Type Base Course: NA Thickness: _____

Type Subbase Material: NA Thickness: _____

Sta. to Sta.	1611+00 to 1620+00	7319+90 to 7326+26	1229+50 to 1241+20	+ to +
*Sta. of Test	1616+15.67	7310+47.36	1227+06.53	
*Drainage Class	POOR	POOR	POOR	
*Ave. Frost Penetration	42	42	42	
Illinois Textural Classification	Silty Clay Loam	Silty Clay Loam	Silty Clay Loam	
Classification and Group Index (AASHTO M 145)	A-6 (10)	A-6 (8)	A-6 (8)	
*Percent Silt (AASHTO T 88)	57.1	64.3	64.3	
*Illinois Bearing Ratio (%)				
Std. Dry Density (IL Mod. AASHTO T 99)				
Optimum Moisture (IL Mod AASHTO T 99)				

* Indicates worst condition within the above station limits.

Remarks: _____

SOIL TEST DATA

ROUTE
Ramp EN (60X79)

PROJECT
1100-04-01
Jane Byrne Interchange

SECTION
Ramp EN (Sta. 1611+00.00 to Sta. 1620+00.00)

COUNTY
Cook

Lab. No.	1703-B-04 No.4	22-RWB-03 No.6
Station ft)	1615+43.49	1616+15.67
Offset (ft)	56.17 LT	56.29 RT
Depth (ft)	8.5	13.5
AASHTO M 145 Classification and Group Index	A-6 (8)	A-6 (10)
Illinois Textural Classification (Illinois Method)	Silty Clay Loam	Silty Clay Loam
Gradation--Passing 1" Sieve %		
--"-- 3/4" Sieve %		
--"-- 1/2" Sieve %	100.0	
--"-- No.4 Sieve %	99.4	100.0
--"-- No.10 Sieve %	96.2	97.5
--"-- No.4 0 Sieve %	89.8	91.4
--"-- No.100 Sieve %	83.5	85.9
--"-- No.200 Sieve %	79.3	82.5
Sand % (AASHTO T 88)	16.9	15.0
Silt % (AASHTO T 88)	54.2	57.1
Clay % (AASHTO T 88)	25.1	25.4
Liquid limit % (AASHTO T 89)	29.0	32.0
Plasticity index % (AASHTO T 90)	13.0	14.0
IBR % (Illinois Method)		
Standard Dry Density % (AASHTO T 99)		
Optimum Moisture % (AASHTO T 99)		
Subgrade Support Rating	POOR	POOR
Insitu Moisture % (AASHTO T 99)	21	23

SOIL TEST DATA

ROUTE
EB Taylor Street Exit Ramp (60X93)

PROJECT
1100-04-01
Jane Byrne Interchange

SECTION
EB Taylor Street (Sta. 7319+90.00 to Sta. 7326+25.98)

COUNTY
Cook

Lab. No.	10-RWB-03 No.6	SB90-SGB-24 No.2
Station ft)	7313+60.04	7310+47.36
Offset (ft)	3.91 RT	88.28 LT
Depth (ft)	13.5	3.5
AASHTO M 145 Classification and Group Index	A-6 (14)	A-6 (8)
Illinois Textural Classification (Illinois Method)	Clay	Silty Clay Loam
Gradation--Passing 1" Sieve %		
--"-- 3/4" Sieve %		
--"-- 1/2" Sieve %	100.0	100.0
--"-- No.4 Sieve %	99.9	98.6
--"-- No.10 Sieve %	98.0	97.2
--"-- No.4 0 Sieve %	92.5	92.1
--"-- No.100 Sieve %	86.1	87.3
--"-- No.200 Sieve %	82.2	83.9
Sand % (AASHTO T 88)	15.8	13.3
Silt % (AASHTO T 88)	39.6	64.3
Clay % (AASHTO T 88)	42.5	19.6
Liquid limit % (AASHTO T 89)	37.0	28.0
Plasticity index % (AASHTO T 90)	18.0	12.0
IBR % (Illinois Method)		
Standard Dry Density % (AASHTO T 99)		
Optimum Moisture % (AASHTO T 99)		
Subgrade Support Rating	FAIR	POOR
Insitu Moisture % (AASHTO T 99)	22	23

SOIL TEST DATA

ROUTE
Ramp WS (60X93)

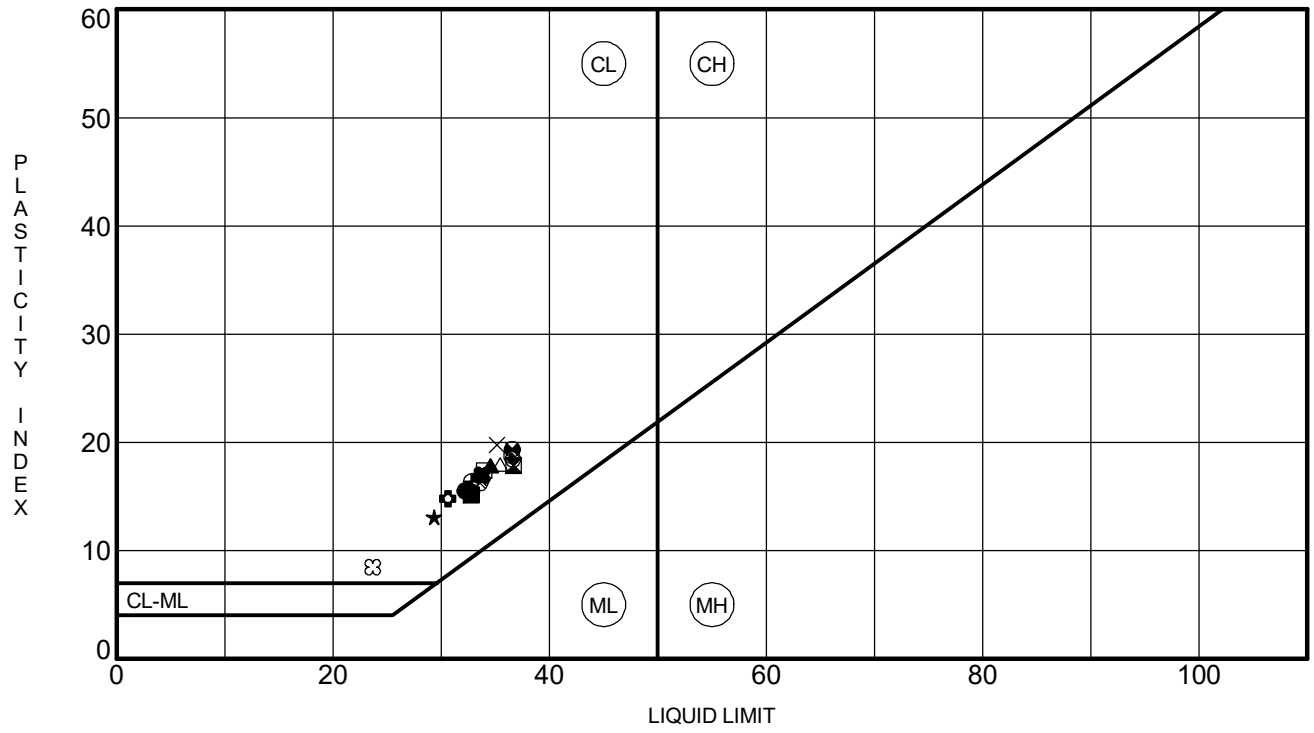
PROJECT
1100-04-01
Jane Byrne Interchange

SECTION
Ramp WS (Sta. 1229+50.00 to Sta. 1241+20.44)

COUNTY
Cook

Lab. No.	10-RWB-03 No.6	SB90-SGB-24 No.2
Station ft)	1230+17.71	1227+06.53
Offset (ft)	47.14 RT	77.68 LT
Depth (ft)	13.5	3.5
AASHTO M 145 Classification and Group Index	A-6 (14)	A-6 (8)
Illinois Textural Classification (Illinois Method)	Clay	Silty Clay Loam
Gradation--Passing 1" Sieve %		
--"-- 3/4" Sieve %		
--"-- 1/2" Sieve %	100.0	100.0
--"-- No.4 Sieve %	99.9	98.6
--"-- No.10 Sieve %	98.0	97.2
--"-- No.4 0 Sieve %	92.5	92.1
--"-- No.100 Sieve %	86.1	87.3
--"-- No.200 Sieve %	82.2	83.9
Sand % (AASHTO T 88)	15.8	13.3
Silt % (AASHTO T 88)	39.6	64.3
Clay % (AASHTO T 88)	42.5	19.6
Liquid limit % (AASHTO T 89)	37.0	28.0
Plasticity index % (AASHTO T 90)	18.0	12.0
IBR % (Illinois Method)		
Standard Dry Density % (AASHTO T 99)		
Optimum Moisture % (AASHTO T 99)		
Subgrade Support Rating	FAIR	POOR
Insitu Moisture % (AASHTO T 99)	22	23

APPENDIX C



Specimen Identification			LL	PL	PI	Fines	IDH Classification
●	1087-B-02#5	11.0 ft	32	17	15	83	Silty Clay
⊠	10-RWB-03#6	13.5 ft	37	19	18	82	Clay
▲	10-RWB-08#1	13.5 ft	35	17	18	82	Silty Clay
★	1703-B-04#4	8.5 ft	29	16	13	80	Silty Clay Loam
⊙	1703-B-04#14	38.5 ft	36	18	18	88	Silty Clay
✿	1704-B-04#3	6.0 ft	31	16	15	78	Silty Clay Loam
○	1704-B-04#14	38.5 ft	37	18	19	86	Silty Clay
△	1705-B-10#11	26.0 ft	35	17	18	84	Silty Clay
⊗	1705-B-11A#2	18.0 ft	34	17	17	83	Clay
⊕	1705-B-11A#3	23.0 ft	33	17	16	83	Silty Clay
□	1705-B-11A#4	28.0 ft	34	17	17	83	Silty Clay
⊛	1705-B-11A#5	33.0 ft	37	17	20	87	Clay
◕	1705-B-11A#6	38.0 ft	33	16	17	84	Silty Clay
☆	1706-B-02#8	18.5 ft	34	17	17	80	Silty Clay
⊠	1714-B-02#3	6.0 ft	24	15	9	58	Silty Loam
■	1714-B-02#6	13.5 ft	33	18	15	76	Silty Clay
◆	1714-B-02#12	28.5 ft	33	17	16	65	Gravelly Silty Clay
◇	1714-B-02#15	43.5 ft	33	17	16	79	Silty Clay
×	2055-B-05#6	13.5 ft	35	15	20	81	Clay
✱	21-RWB-04#10	23.5 ft	34	17	17	77	Silty Clay

WEI SINCE 1982

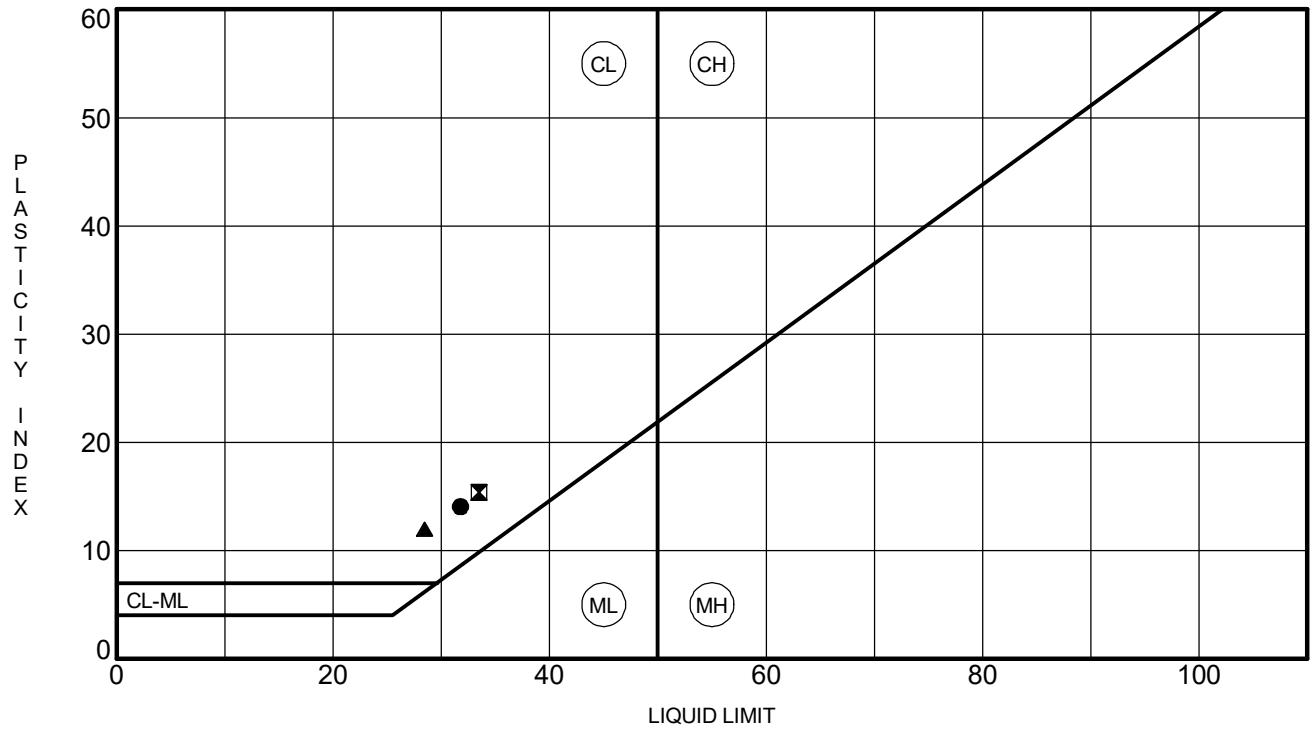
Wang Engineering, Inc.
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
Fax: (630) 953-9938

ATTERBERG LIMITS' RESULTS

Project: Circle Interchange Reconstruction

Location: Section 17, T39N, R14E of 3rd PM

Number: 1100-04-01



Specimen Identification		LL	PL	PI	Fines	IDH Classification
● 22-RWB-03#6	13.5 ft	32	18	14	83	Silty Clay Loam
⊠ 22-RWB-03#13	33.5 ft	33	18	15	82	Silty Clay
▲ SB90-SGB-24#2	3.5 ft	28	16	12	84	Silty Clay Loam

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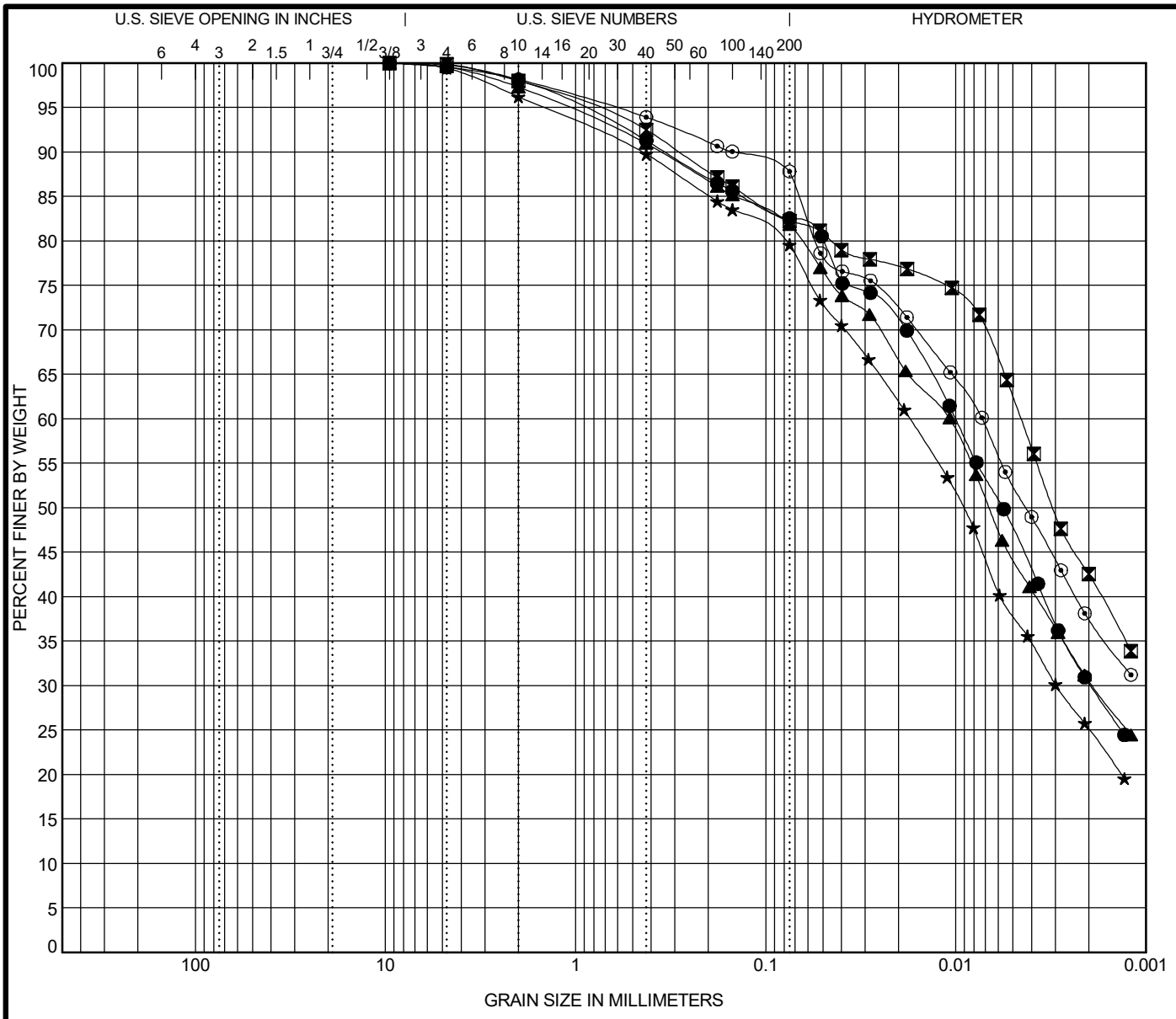
ATTERBERG LIMITS' RESULTS

Project: Circle Interchange Reconstruction

Location: Section 17, T39N, R14E of 3rd PM

Number: 1100-04-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

	Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
●	1087-B-02#5	11.0 ft	**Silty Clay**	**32**	**17**	**15**		
⊠	10-RWB-03#6	13.5 ft	**Clay**	**37**	**19**	**18**		
▲	10-RWB-08#1	13.5 ft	**Silty Clay**	**35**	**17**	**18**		
★	1703-B-04#4	8.5 ft	**Silty Clay Loam**	**29**	**16**	**13**		
⊙	1703-B-04#14	38.5 ft	**Silty Clay**	**36**	**18**	**18**		

	Specimen Identification		D95	D90	D84	D50	%Gravel	%Sand	%Silt	%Clay
●	1087-B-02#5	11.0 ft	**0.991**	**0.337**	**0.104**	**0.006**	**1.9**	**15.6**	**52.2**	**30.3**
⊠	10-RWB-03#6	13.5 ft	**0.857**	**0.285**	**0.103**	**0.003**	**2.0**	**15.8**	**39.6**	**42.5**
▲	10-RWB-08#1	13.5 ft	**1.138**	**0.357**	**0.118**	**0.007**	**2.7**	**15.6**	**51.1**	**30.6**
★	1703-B-04#4	8.5 ft	**1.492**	**0.449**	**0.164**	**0.009**	**3.8**	**16.9**	**54.2**	**25.1**
⊙	1703-B-04#14	38.5 ft	**0.63**	**0.148**	**0.064**	**0.004**	**1.8**	**10.7**	**50.0**	**37.5**

WEI SINCE 1982
Wang Engineering, Inc.
1145 N Main Street
Lombard, IL 60148
Telephone: (630) 953-9928
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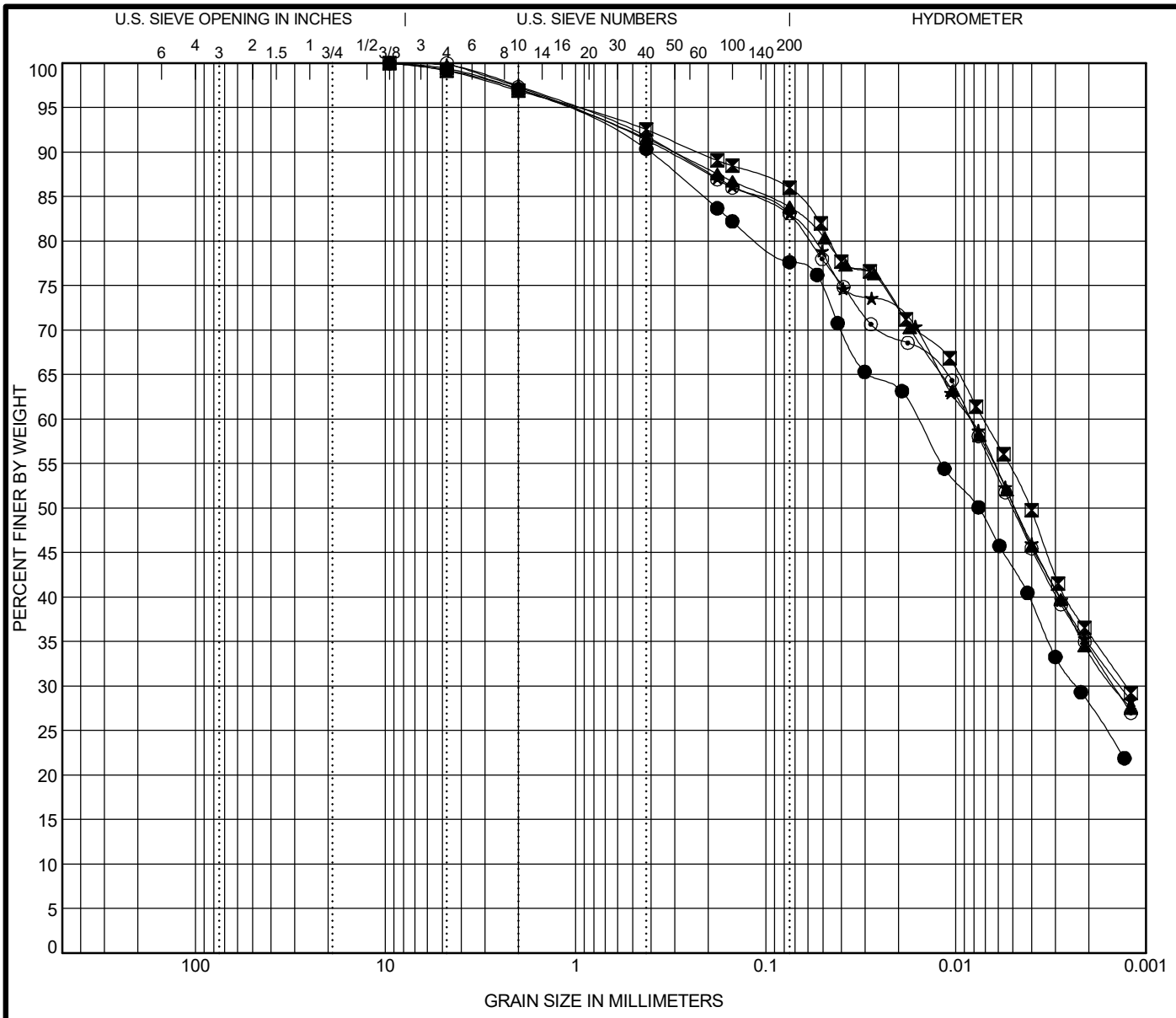
GRAIN SIZE DISTRIBUTION

Project: Circle Interchange Reconstruction

Location: Section 17, T39N, R14E of 3rd PM

Number: 1100-04-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

	Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
●	1704-B-04#3	6.0 ft	**Silty Clay Loam**	**31**	**16**	**15**		
⊠	1704-B-04#14	38.5 ft	**Silty Clay**	**37**	**18**	**19**		
▲	1705-B-10#11	26.0 ft	**Silty Clay**	**35**	**17**	**18**		
★	1705-B-11A#2	18.0 ft	**Clay**	**34**	**17**	**17**		
⊙	1705-B-11A#3	23.0 ft	**Silty Clay**	**33**	**17**	**16**		

	Specimen Identification		D95	D90	D84	D50	%Gravel	%Sand	%Silt	%Clay
●	1704-B-04#3	6.0 ft	**1.236**	**0.405**	**0.187**	**0.008**	**2.9**	**19.5**	**49.6**	**28.0**
⊠	1704-B-04#14	38.5 ft	**1.019**	**0.227**	**0.062**	**0.004**	**3.1**	**11.1**	**49.9**	**35.9**
▲	1705-B-10#11	26.0 ft	**1.117**	**0.305**	**0.078**	**0.005**	**2.9**	**13.3**	**49.9**	**33.9**
★	1705-B-11A#2	18.0 ft	**1.026**	**0.307**	**0.092**	**0.005**	**2.6**	**14.5**	**48.2**	**34.8**
⊙	1705-B-11A#3	23.0 ft	**1.095**	**0.326**	**0.093**	**0.005**	**2.7**	**14.4**	**48.7**	**34.3**

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Wang Engineering, Inc.
1145 N Main Street
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Telephone: (630) 953-9928
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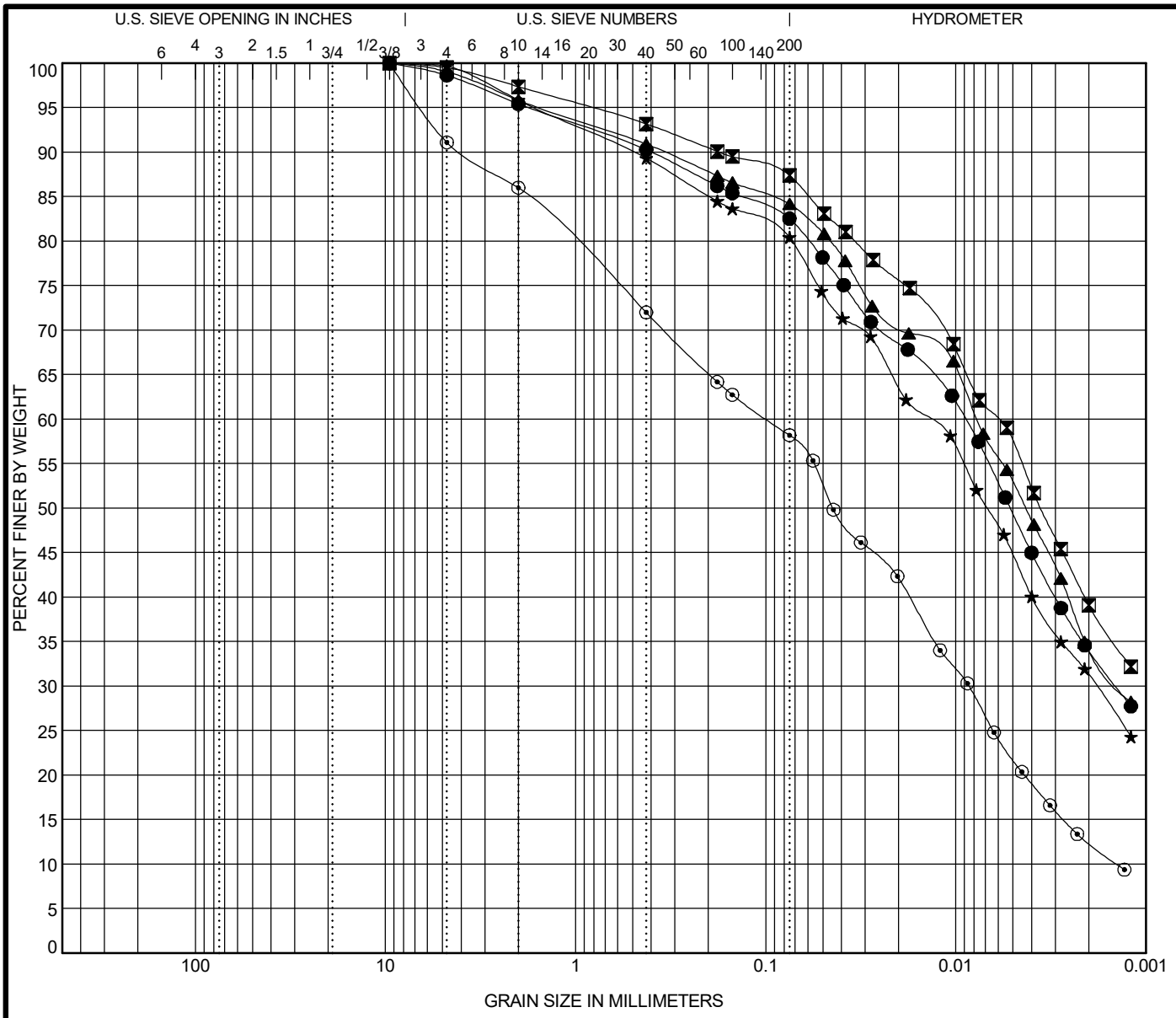
GRAIN SIZE DISTRIBUTION

Project: Circle Interchange Reconstruction

Location: Section 17, T39N, R14E of 3rd PM

Number: 1100-04-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

	Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
●	1705-B-11A#4	28.0 ft	**Silty Clay**	**34**	**17**	**17**		
⊠	1705-B-11A#5	33.0 ft	**Clay**	**37**	**17**	**20**		
▲	1705-B-11A#6	38.0 ft	**Silty Clay**	**33**	**16**	**17**		
★	1706-B-02#8	18.5 ft	**Silty Clay**	**34**	**17**	**17**		
⊙	1714-B-02#3	6.0 ft	**Silty Loam**	**24**	**15**	**9**	**0.52**	**69.46**

	Specimen Identification		D95	D90	D84	D50	%Gravel	%Sand	%Silt	%Clay
●	1705-B-11A#4	28.0 ft	**1.759**	**0.4**	**0.107**	**0.005**	**4.6**	**13.0**	**48.4**	**34.0**
⊠	1705-B-11A#5	33.0 ft	**0.835**	**0.175**	**0.054**	**0.004**	**2.6**	**10.1**	**48.2**	**39.1**
▲	1705-B-11A#6	38.0 ft	**1.537**	**0.342**	**0.073**	**0.004**	**4.2**	**11.8**	**49.7**	**34.4**
★	1706-B-02#8	18.5 ft	**1.641**	**0.499**	**0.162**	**0.007**	**4.2**	**15.6**	**49.0**	**31.3**
⊙	1714-B-02#3	6.0 ft	**6.437**	**3.943**	**1.602**	**0.044**	**14.0**	**28.0**	**45.7**	**12.4**

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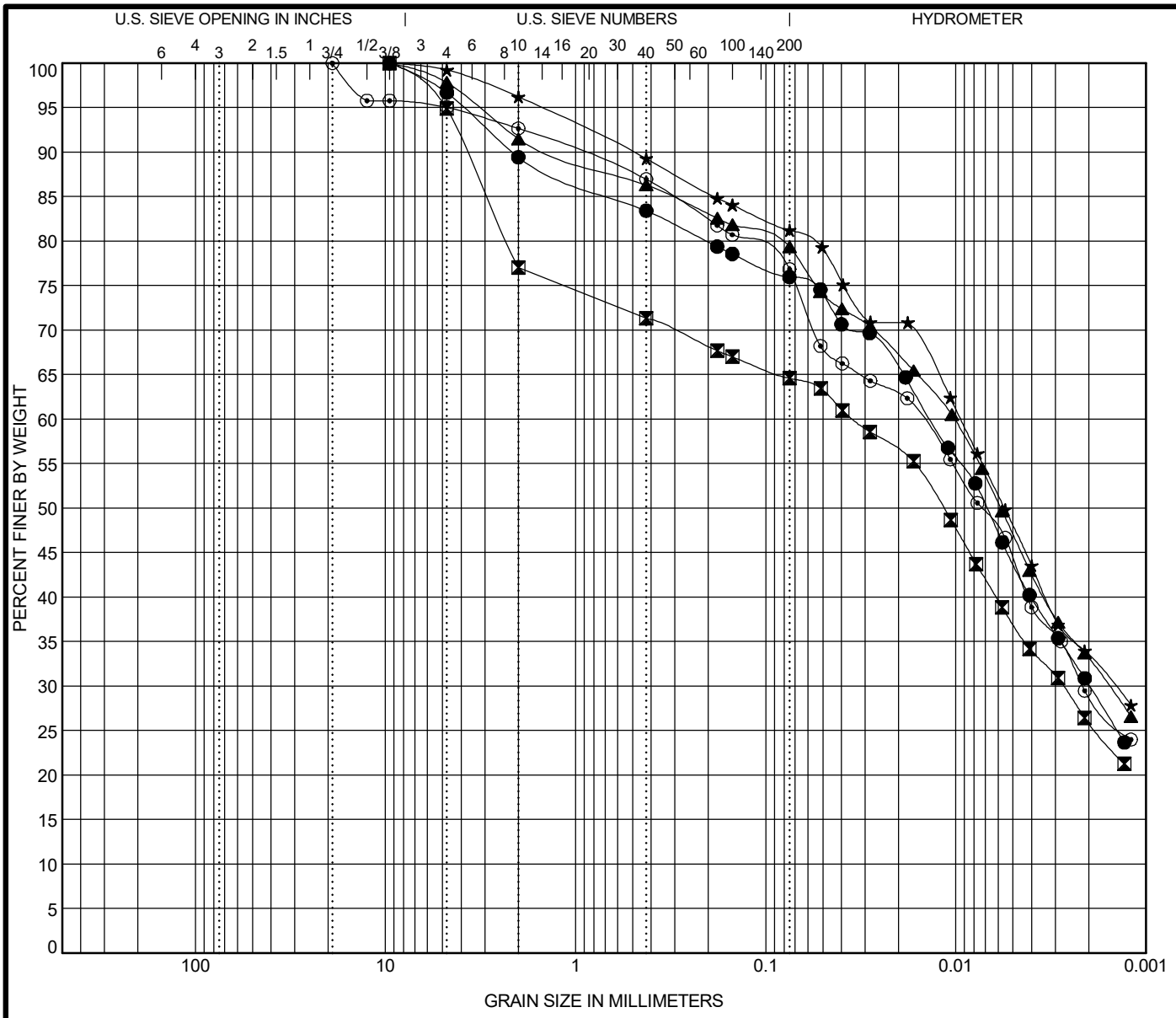
GRAIN SIZE DISTRIBUTION

Project: Circle Interchange Reconstruction

Location: Section 17, T39N, R14E of 3rd PM

Number: 1100-04-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

	Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
●	1714-B-02#6	13.5 ft	**Silty Clay**	33	18	15		
⊠	1714-B-02#12	28.5 ft	**Gravelly Silty Clay**	33	17	16		
▲	1714-B-02#15	43.5 ft	**Silty Clay**	33	17	16		
★	2055-B-05#6	13.5 ft	**Clay**	35	15	20		
⊙	21-RWB-04#10	23.5 ft	**Silty Clay**	34	17	17		

	Specimen Identification		D95	D90	D84	D50	%Gravel	%Sand	%Silt	%Clay
●	1714-B-02#6	13.5 ft	**3.884**	**2.14**	**0.494**	**0.007**	**10.6**	**13.5**	**45.8**	**30.1**
⊠	1714-B-02#12	28.5 ft	**4.826**	**3.749**	**2.803**	**0.012**	**23.0**	**12.5**	**38.7**	**25.9**
▲	1714-B-02#15	43.5 ft	**3.23**	**1.282**	**0.25**	**0.006**	**8.5**	**12.3**	**46.1**	**33.1**
★	2055-B-05#6	13.5 ft	**1.524**	**0.498**	**0.148**	**0.006**	**3.8**	**15.1**	**47.7**	**33.4**
⊙	21-RWB-04#10	23.5 ft	**4.667**	**0.97**	**0.26**	**0.007**	**7.3**	**16.1**	**47.5**	**29.0**

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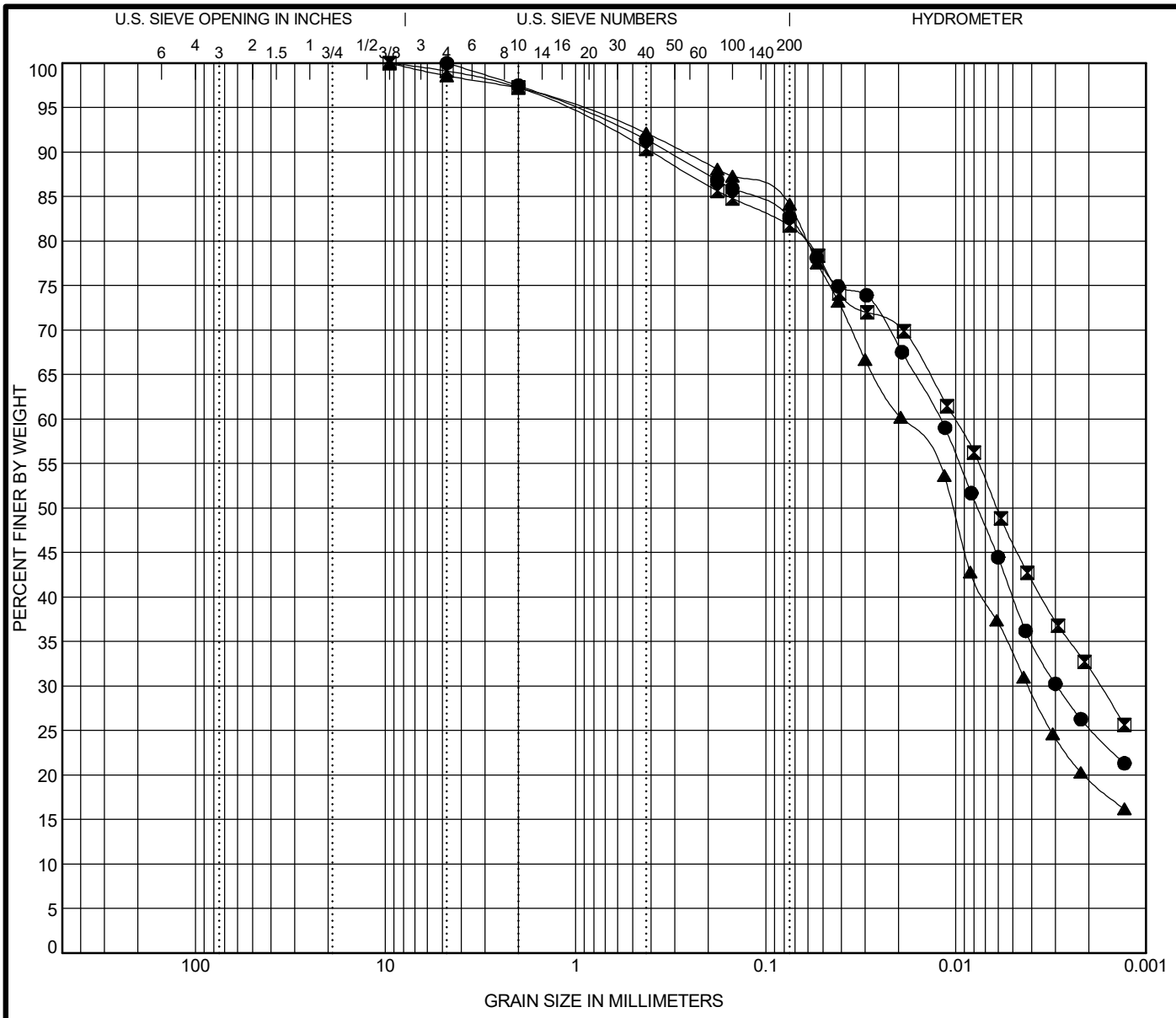
Project: Circle Interchange Reconstruction

Location: Section 17, T39N, R14E of 3rd PM

Number: 1100-04-01



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

	Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
●	22-RWB-03#6	13.5 ft	**Silty Clay Loam**	**32**	**18**	**14**		
⊠	22-RWB-03#13	33.5 ft	**Silty Clay**	**33**	**18**	**15**		
▲	SB90-SGB-24#2	3.5 ft	**Silty Clay Loam**	**28**	**16**	**12**		

	Specimen Identification		D95	D90	D84	D50	%Gravel	%Sand	%Silt	%Clay
●	22-RWB-03#6	13.5 ft	**1.063**	**0.327**	**0.099**	**0.008**	**2.5**	**15.0**	**57.1**	**25.4**
⊠	22-RWB-03#13	33.5 ft	**1.2**	**0.396**	**0.125**	**0.006**	**2.7**	**15.7**	**49.6**	**32.0**
▲	SB90-SGB-24#2	3.5 ft	**1.021**	**0.27**	**0.074**	**0.01**	**2.8**	**13.3**	**64.3**	**19.6**

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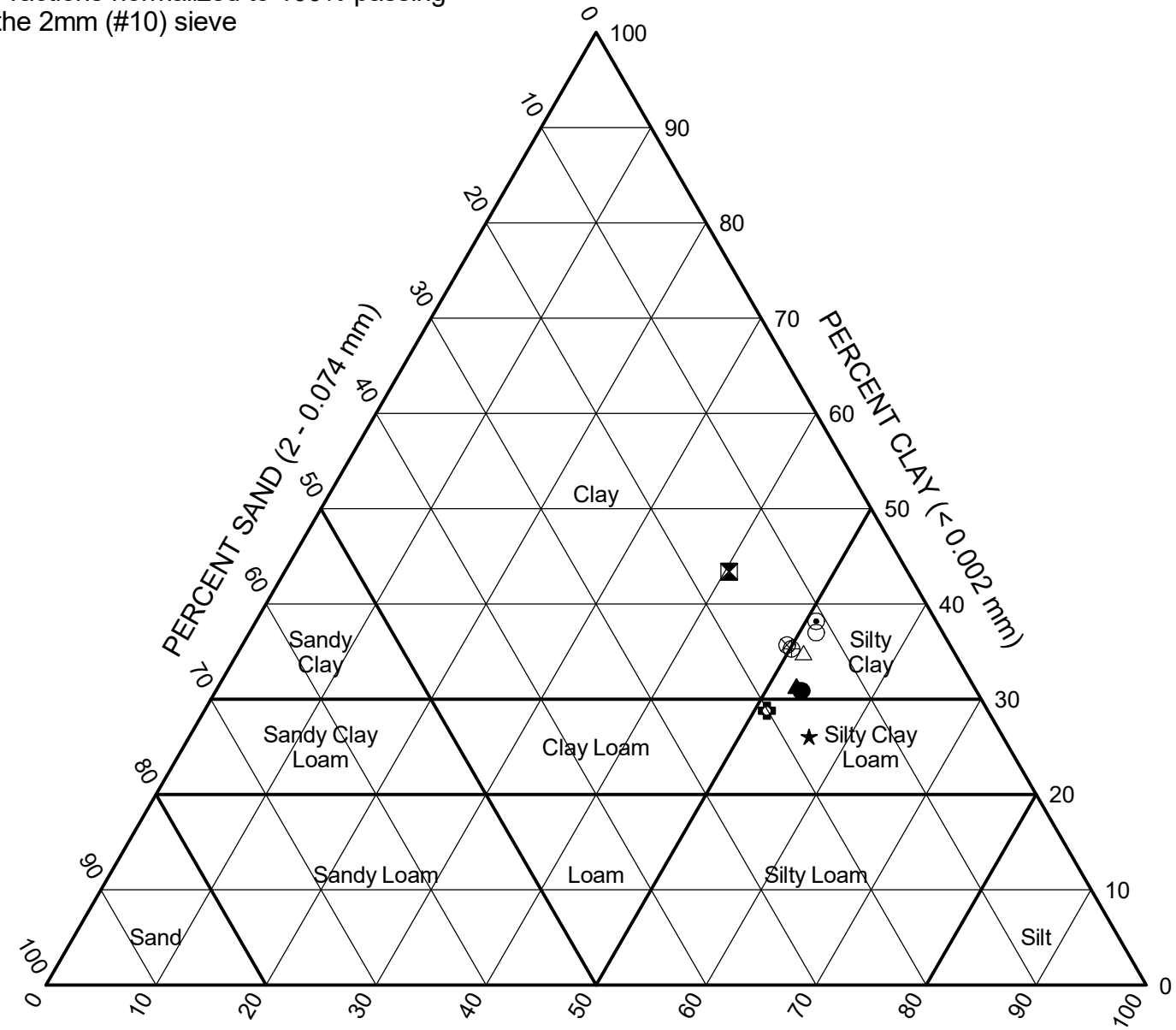
GRAIN SIZE DISTRIBUTION

Project: Circle Interchange Reconstruction

Location: Section 17, T39N, R14E of 3rd PM

Number: 1100-04-01

Fractions normalized to 100% passing the 2mm (#10) sieve



	Sample	Depth (ft)	Sand (%)	Silt (%)	Clay (%)	Classification		
						IL DOT	AASHTO	ASTM
●	1087-B-02#5	11.0	15.9	53.2	30.9	Silty Clay	A-6 (11)	CL
⊠	10-RWB-03#6	13.5	16.1	40.4	43.4	Clay	A-6 (14)	CL
▲	10-RWB-08#1	13.5	16.0	52.5	31.4	Silty Clay	A-6 (14)	CL
★	1703-B-04#4	8.5	17.6	56.3	26.1	Silty Clay Loam	A-6 (8)	CL
⊙	1703-B-04#14	38.5	10.9	50.9	38.2	Silty Clay	A-6 (15)	CL
✿	1704-B-04#3	6.0	20.1	51.1	28.8	Silty Clay Loam	A-6 (10)	CL
○	1704-B-04#14	38.5	11.5	51.5	37.0	Silty Clay	A-6 (16)	CL
△	1705-B-10#11	26.0	13.7	51.4	34.9	Silty Clay	A-6 (14)	CL
⊗	1705-B-11A#2	18.0	14.9	49.5	35.7	Clay	A-6 (13)	CL
⊕	1705-B-11A#3	23.0	14.8	50.1	35.3	Silty Clay	A-6 (12)	CL

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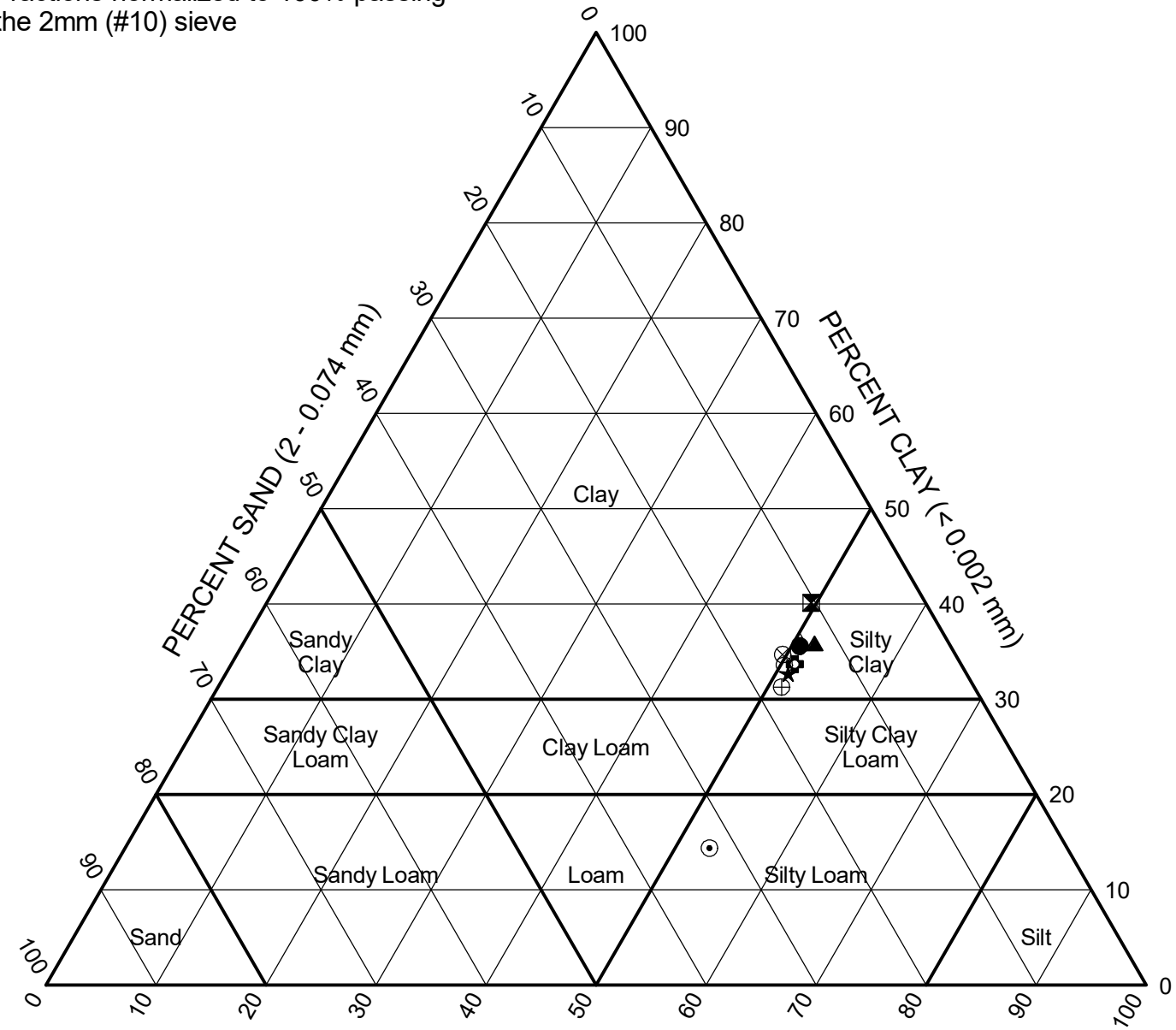
IDH Textural Classification Chart

Project: Circle Interchange Reconstruction

Location: Section 17, T39N, R14E of 3rd PM

Number: 1100-04-01

Fractions normalized to 100% passing the 2mm (#10) sieve



	Sample	Depth (ft)	Sand (%)	Silt (%)	Clay (%)	Classification		
						IL DOT	AASHTO	ASTM
●	1705-B-11A#4	28.0	13.6	50.7	35.6	Silty Clay	A-6 (13)	CL
⊠	1705-B-11A#5	33.0	10.4	49.5	40.1	Clay	A-6 (17)	CL
▲	1705-B-11A#6	38.0	12.3	51.9	35.9	Silty Clay	A-6 (13)	CL
★	1706-B-02#8	18.5	16.3	51.1	32.7	Silty Clay	A-6 (12)	CL
⊙	1714-B-02#3	6.0	32.6	53.1	14.4	Silty Loam	A-4 (2)	CL
✿	1714-B-02#6	13.5	15.1	51.2	33.7	Silty Clay	A-6 (10)	CL
○	1714-B-02#12	28.5	16.2	50.3	33.6	Gravelly Silty Clay	A-6 (8)	CL
△	1714-B-02#15	43.5	13.4	50.4	36.2	Silty Clay	A-6 (11)	CL
⊗	2055-B-05#6	13.5	15.7	49.6	34.7	Clay	A-6 (15)	CL
⊕	21-RWB-04#10	23.5	17.4	51.2	31.3	Silty Clay	A-6 (11)	CL

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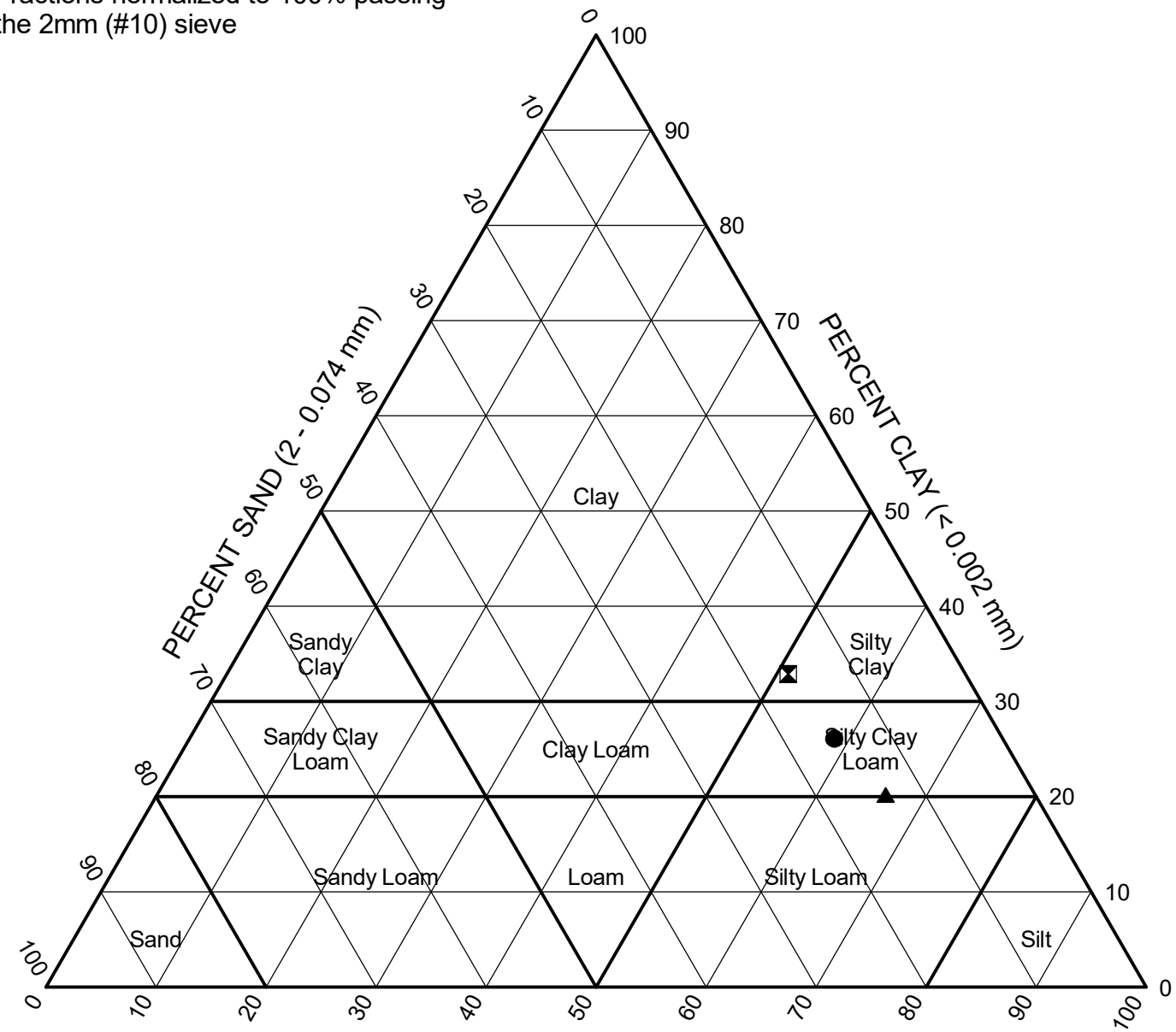
Fractions normalized to 100% passing the 2mm (#10) sieve



	Sample	Depth (ft)	Sand (%)	Silt (%)	Clay (%)	Classification		
						IL DOT	AASHTO	ASTM
●	**22-RWB-03#6**	**13.5**	**15.4**	**58.6**	**26.1**	**Silty Clay Loam**	**A-6 (10)**	**CL**
⧓	**22-RWB-03#13**	**33.5**	**16.1**	**51.0**	**32.9**	**Silty Clay**	**A-6 (11)**	**CL**
▲	**SB90-SGB-24#2**	**3.5**	**13.7**	**66.2**	**20.2**	**Silty Clay Loam**	**A-6 (8)**	**CL**

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Telephone: (630) 953-9928
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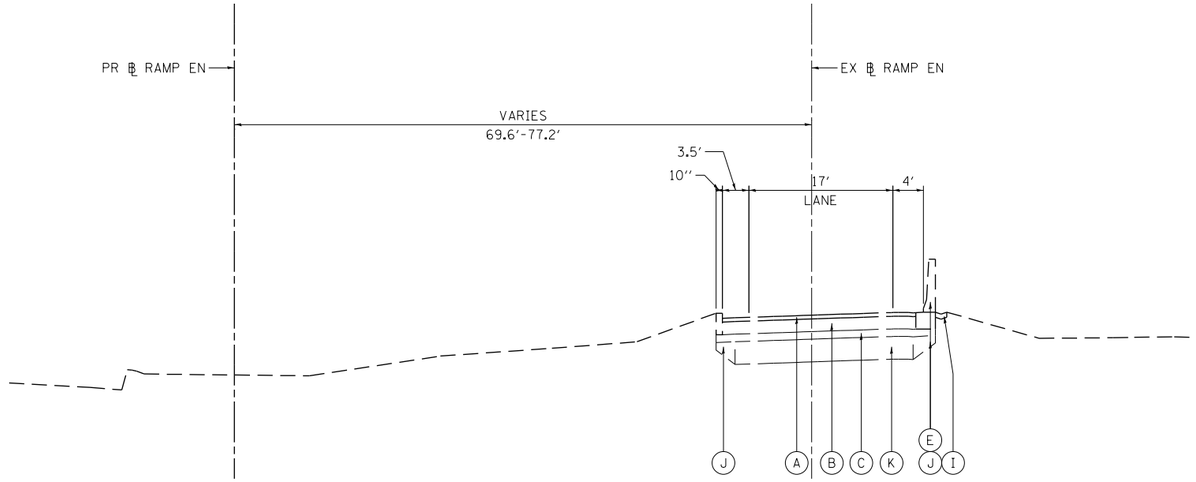
IDH Textural Classification Chart

Project: Circle Interchange Reconstruction

Location: Section 17, T39N, R14E of 3rd PM

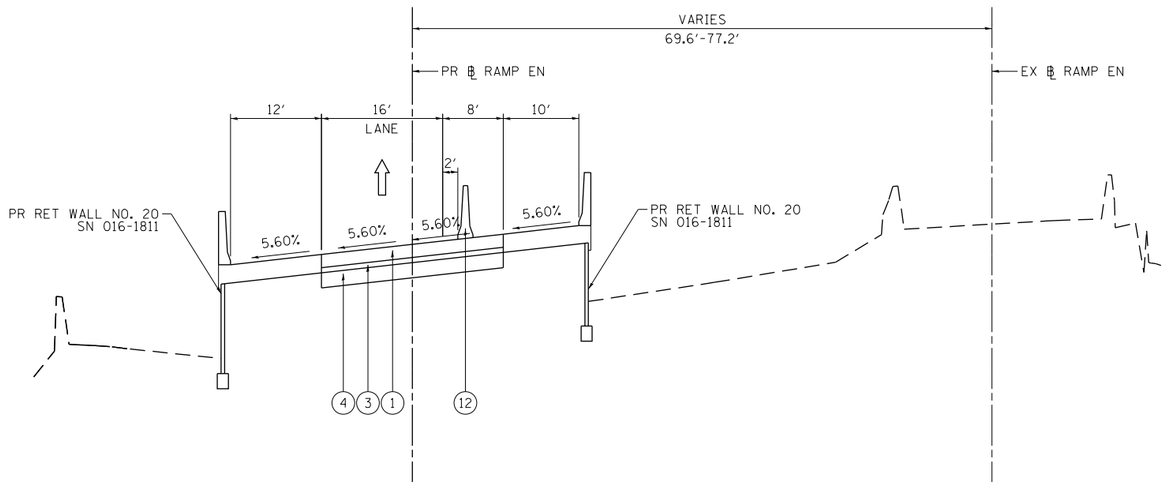
Number: 1100-04-01

APPENDIX D



EXISTING TYPICAL SECTION (LOOKING NORTHEAST)

EX ℄ RAMP EN
STA 23+27.87 TO STA 23+62.76



PROPOSED TYPICAL SECTION (LOOKING NORTHEAST)

PR ℄ RAMP EN
STA 1611+04.65 TO STA 1611+59.91

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4'' TO 7''
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7'' TO 10''
- (C) GRANULAR SUBBASE, 6''
- (D) HOT MIX ASPHALT SHOULDER, 10''
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4''
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) SUBBASE GRANULAR MATERIAL, 12''
- (K) POROUS GRANULAR EMBANKMENT, SPECIAL, 0'' TO 30''
- (L) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24

PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11'' (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11''
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4''
- (4) AGGREGATE SUBGRADE IMPROVEMENT, 12''
- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4''
- (6) CONCRETE BARRIER WALL, SINGLE FACE, 42 INCH HEIGHT
- (7) CONCRETE BARRIER BASE (SPECIAL NO. 4)
- (8) TOPSOIL FURNISH AND PLACE, 4'' AND SEEDING OR SODDING, (SEE EROSION CONTROL PLANS)
- (9) PIPE UNDERDRAIN TYPE 2 6''
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET 33 FOR DETAILS)
- (11) SUBBASE GRANULAR MATERIAL, TYPE B 4''
- (12) TEMPORARY CONCRETE BARRIER (TO REMAIN PERMANENTLY)

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	PLOT DATE = 11/10/2017	DATE - 12-08-2017	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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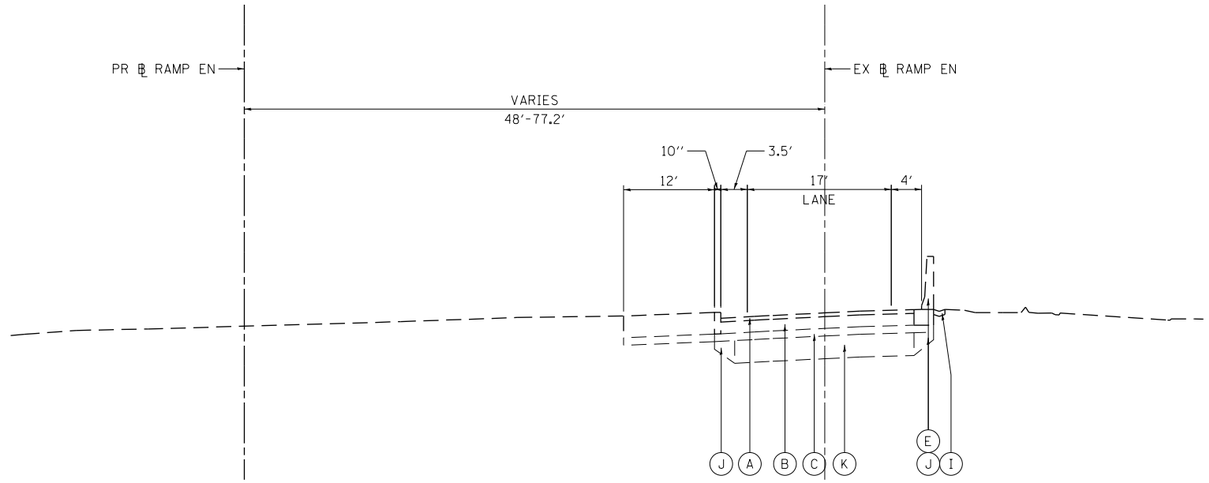
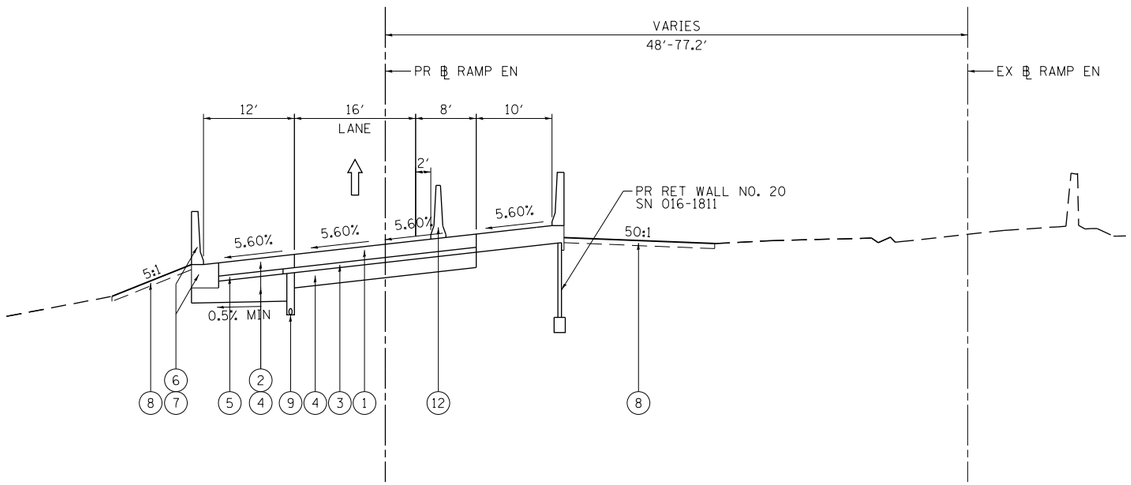
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			



EXISTING TYPICAL SECTION (LOOKING NORTHEAST)

EX ℄ RAMP EN
STA 23+62.76 TO STA 26+05.29



PROPOSED TYPICAL SECTION (LOOKING NORTHEAST)

PR ℄ RAMP EN
STA 1611+59.91 TO STA 1613+88.64

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4" TO 7"
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7" TO 10"
- (C) GRANULAR SUBBASE, 6"
- (D) HOT MIX ASPHALT SHOULDER, 10"
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4"
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) SUBBASE GRANULAR MATERIAL, 12"
- (K) POROUS GRANULAR EMBANKMENT, SPECIAL, 0" TO 30"
- (L) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24

PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11" (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11"
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4"
- (4) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4"
- (6) CONCRETE BARRIER WALL, SINGLE FACE, 42 INCH HEIGHT
- (7) CONCRETE BARRIER BASE (SPECIAL NO. 4)
- (8) TOPSOIL FURNISH AND PLACE, 4" AND SEEDING OR SODDING, (SEE EROSION CONTROL PLANS)
- (9) PIPE UNDERDRAIN TYPE 2 6"
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET 33 FOR DETAILS)
- (11) SUBBASE GRANULAR MATERIAL, TYPE B 4"
- (12) TEMPORARY CONCRETE BARRIER (TO REMAIN PERMANENTLY)

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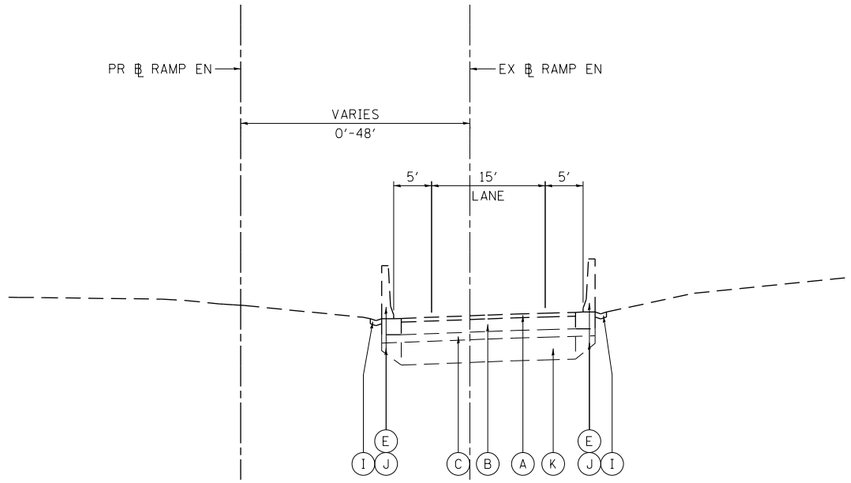
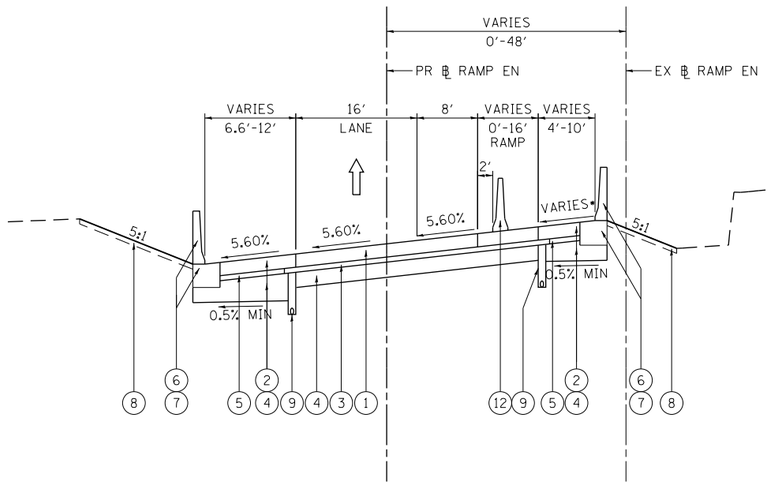
	PLOT DATE = 11/10/2017	DATE - 12-08-2017	REVISED -		SCALE: NONE | SHEET 5 OF 8 SHEETS | STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	363	30
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			



EXISTING TYPICAL SECTION (LOOKING NORTH)

EX ℄ RAMP EN
STA 26+05.29 TO STA 30+45.69



PROPOSED TYPICAL SECTION (LOOKING NORTH)

PR ℄ RAMP EN
STA 1613+88.64.00 TO STA 1617+75.14

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4'' TO 7''
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7'' TO 10''
- (C) GRANULAR SUBBASE, 6''
- (D) HOT MIX ASPHALT SHOULDER, 10''
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4''
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) SUBBASE GRANULAR MATERIAL, 12''
- (K) POROUS GRANULAR EMBANKMENT, SPECIAL, 0'' TO 30''
- (L) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24

PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11'' (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11''
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4''
- (4) AGGREGATE SUBGRADE IMPROVEMENT, 12''
- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4''
- (6) CONCRETE BARRIER WALL, SINGLE FACE, 42 INCH HEIGHT
- (7) CONCRETE BARRIER BASE (SPECIAL NO. 4)
- (8) TOPSOIL FURNISH AND PLACE, 4'' AND SEEDING OR SODDING, (SEE EROSION CONTROL PLANS)
- (9) PIPE UNDERDRAIN TYPE 2 6''
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET 33 FOR DETAILS)
- (11) SUBBASE GRANULAR MATERIAL, TYPE B 4''
- (12) TEMPORARY CONCRETE BARRIER (TO REMAIN PERMANENTLY)

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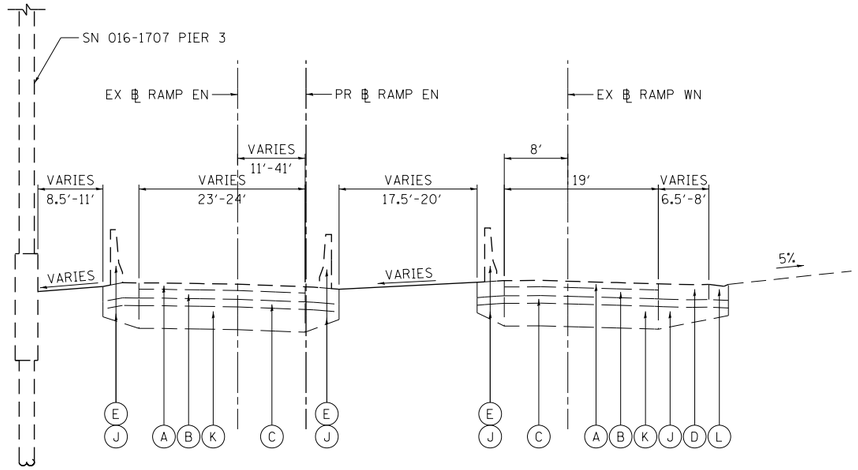
PLOT DATE = 11/10/2017	DATE - 12-08-2017	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
RAMP EN

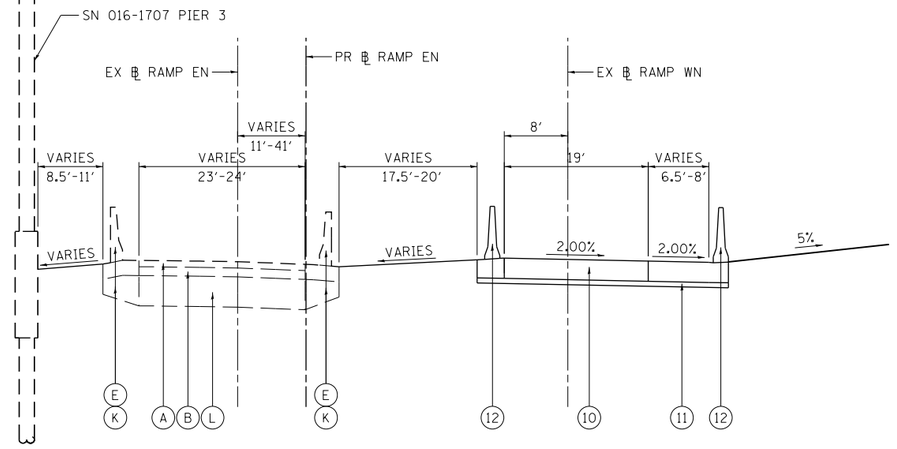
SCALE: NONE | SHEET 6 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	363	31
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			



EXISTING TYPICAL SECTION (LOOKING NORTHWEST)

EX ℄ RAMP EN
STA 30+45.69 TO STA 32+23.13



PROPOSED TYPICAL SECTION (LOOKING NORTHWEST)

PR ℄ RAMP EN
STA 1617+75.14 TO STA 1620+30.87

PR ℄ RAMP ENI3
STA 3617+71.00 TO STA 3620+24.49

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4'' TO 7''
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7'' TO 10''
- (C) GRANULAR SUBBASE, 6''
- (D) HOT MIX ASPHALT SHOULDER, 10''
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4''
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) SUBBASE GRANULAR MATERIAL, 12''
- (K) POROUS GRANULAR EMBANKMENT, SPECIAL, 0'' TO 30''
- (L) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24

PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11'' (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11''
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4''
- (4) AGGREGATE SUBGRADE IMPROVEMENT, 12''
- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4''
- (6) CONCRETE BARRIER WALL, SINGLE FACE, 42 INCH HEIGHT
- (7) CONCRETE BARRIER BASE (SPECIAL NO. 4)
- (8) TOPSOIL FURNISH AND PLACE, 4'' AND SEEDING OR SODDING, (SEE EROSION CONTROL PLANS)
- (9) PIPE UNDERDRAIN TYPE 2 6''
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET 33 FOR DETAILS)
- (11) SUBBASE GRANULAR MATERIAL, TYPE B 4''
- (12) TEMPORARY CONCRETE BARRIER (TO REMAIN PERMANENTLY)

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TranSystems	D160X79-sht-Typical-01.dgn	DESIGNED - MKW	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TYPICAL SECTIONS RAMP EN
	USER NAME = vljanachione	DRAWN - DWH	REVISED -		
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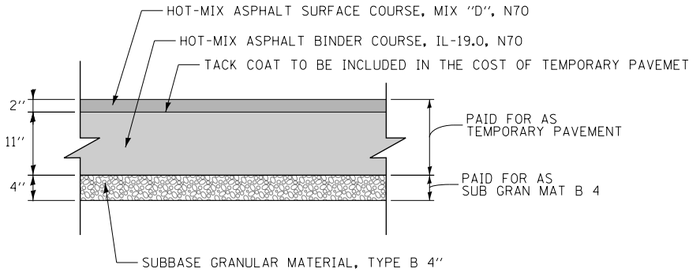
	PLOT DATE = 11/10/2017	DATE - 12-08-2017	REVISED -		SCALE: NONE | SHEET 7 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	363	32
		CONTRACT NO. 60X79		
		ILLINOIS FED. AID PROJECT		

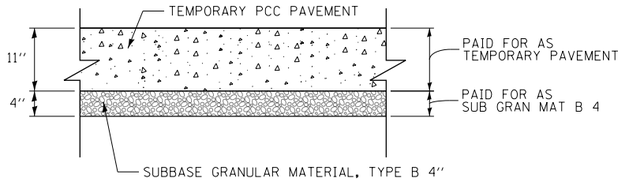
TEMPORARY PAVEMENT DETAILS:

DETAIL A: FULL DEPTH TEMPORARY HMA PAVEMENT



TEMPORARY HMA PAVEMENT

DETAIL B: TEMPORARY PCC PAVEMENT



TEMPORARY PCC PAVEMENT

TEMPORARY PAVEMENT GENERAL NOTES:

1. THE CONTRACTOR SHALL HAVE THE OPTION OF USING HMA OR PCC SECTION FOR TEMPORARY PAVEMENT, UNLESS OTHERWISE SHOWN ON THE PLANS.
2. TEMPORARY HMA TEMPORARY PAVEMENT SHALL CONSIST OF TWO ITEMS: HMA BINDER COURSE AND HMA SURFACE COURSE.
3. PORTLAND CEMENT CONCRETE TEMPORARY PAVEMENT SHALL CONSIST OF CLASS PV CONCRETE MEETING THE REQUIREMENTS OF ARTICLE 1020 OF THE STANDARD SPECIFICATIONS. TEMPORARY PCC PAVEMENT DOES NOT REQUIRE DOWEL BARS.

HOT MIX ASPHALT MIXTURE REQUIREMENTS

MIXTURE TYPE	AIR VOIDS (%) @NDES	QMP
PAVEMENT RECONSTRUCTION		
EB I-290		
STABILIZED SUBBASE - HOT-MIX ASPHALT, 4" (HMA BINDER IL-19MM)	3% @ 50 GYR	QCP
CONGRESS PARKWAY		
HOT-MIX ASPHALT SURFACE COURE, MIX "D", N70 (IL-9.5 MM): 1½	4% @ 70 GYR	QC/QA
HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70: 2¼	4% @ 70 GYR	QC/QA
UIC PARKING LOT		
HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70 (IL-9.5MM): 2"	4% @ 70 GYR	QC/QA
HOT-MIX ASPHALT BASE COURSE, (HMA BINDER IL-19 MM): 8"	4% @ 70 GYR	QC/QA
TEMPORARY PAVEMENT (IF HMA OPTION IS SELECTED BY CONTRACTOR)		
EB I-290 / RAMP EN / RAMP ES		
HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70, (IL-9.5 MM): 2"	4% @ 70 GYR	QC/QA
HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70: 11" (IN 4 LIFTS)	4% @ 70 GYR	QCP
TEMPORARY ASPHALT PAVEMENT TRANSITION		
EB I-290 / RAMP EN / RAMP ES		
HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70 (IL-9.5 MM): 2"	4% @ 70 GYR	QC/QA
HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70: VARIABLE DEPTH	4% @ 70 GYR	QC/QA
PATCHING		
EB I-290		
CLASS D PATCH (HMA BINDER IL-19 MM)	4% @ 70 GYR	QC/QA
TEMPORARY ENTRANCE		
MORGAN STREET		
HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N70 (IL-9.5 MM): 2"	4% @ 70 GYR	QC/QA
HOT-MIX ASPHALT BASE COURSE, (HMA BINDER IL-19 MM): 8"	4% @ 70 GYR	QC/QA
QMP DESIGNATION: QUALITY CONTROL/QUALITY ASSURANCE (QC/QA); QUALITY CONTROL FOR PERFORMANCE (QCP)		

1. THE UNIT WEIGHT USED TO CALCULATE ALL HMA SURFACE MIXTURE QUANTITIES IS 112 LBS/SQ YD/IN.
2. THE "AC TYPE" FOR POLYMERIZED HMA MIXTURES SHALL BE "SBS/SBR PG 76-22" AND FOR NON-POLYMERIZED HMA THE AC TYPE SHALL BE "PG 64-22" UNLESS MODIFIED BY DISTRICT ONE SPECIAL PROVISIONS. FOR USE OF RECYCLED MATERIALS SEE DISTRICT ONE SPECIAL PROVISIONS.
3. QUALITY MANAGEMENT PROGRAM (QMP) IDENTIFIES THE PARTICULAR QUALITY CONTROL SPECIFICATION THAT APPLIES TO THE HMA MIXTURE.

TranSystems

D160X79-sht-Typical-01.dgn	DESIGNED - MKW	REVISED -
USER NAME = vljanachione	DRAWN - DWH	REVISED -
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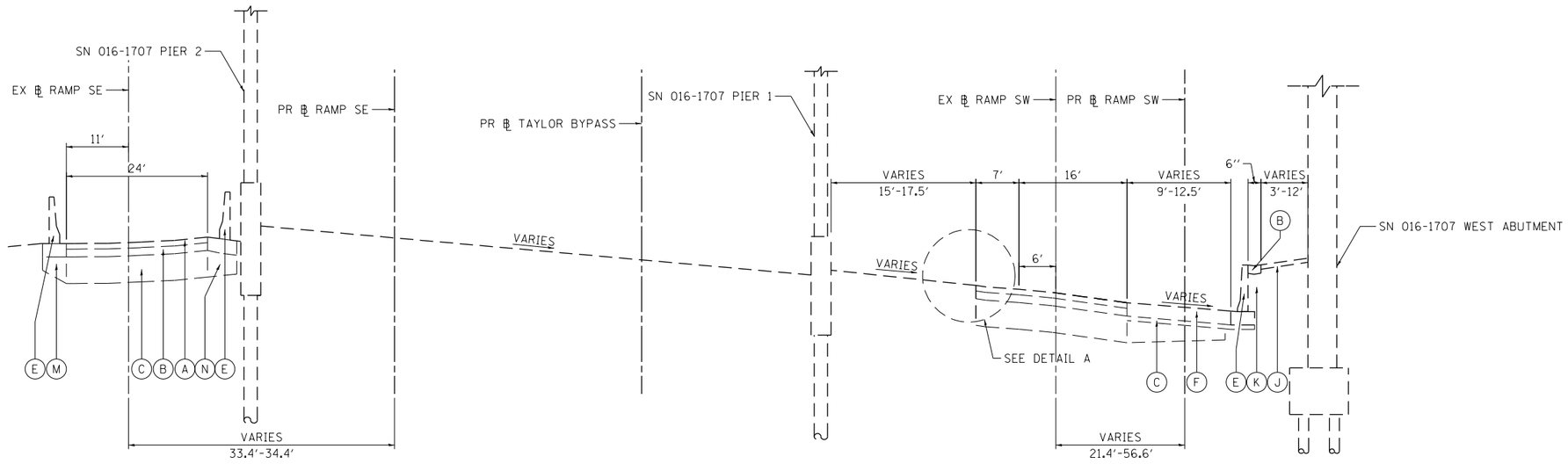
PLOT DATE = 11/10/2017	DATE - 12-08-2017	REVISED -

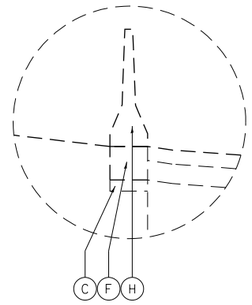
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
RAMP EN

SCALE: NONE | SHEET 8 OF 8 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	363	33
		CONTRACT NO. 60X79		
	ILLINOIS	FED. AID PROJECT		



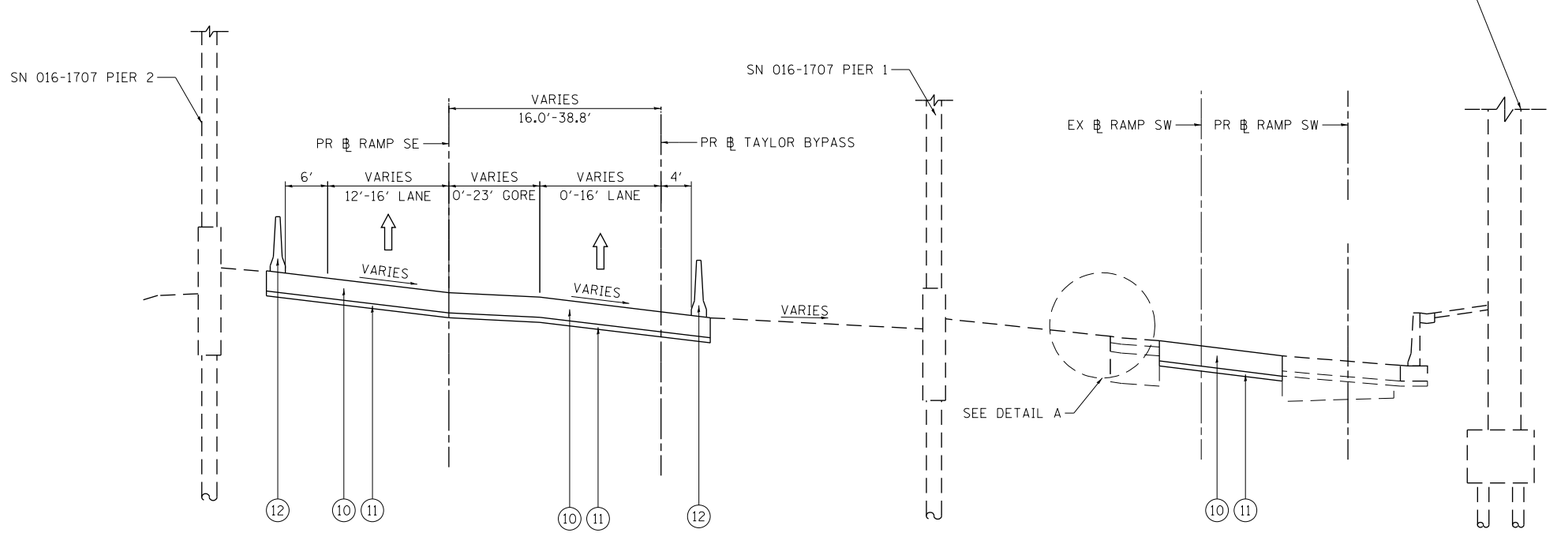


DETAIL A

BARRIER WALL FROM PR ℄ RAMP SW
STA 1317+86.80 TO STA 1321+00.00

EXISTING TYPICAL SECTION (LOOKING SOUTH)

EX ℄ RAMP SE
STA 12+63.48 TO STA 17+76.48
EX ℄ RAMP SW
STA 12+63.48 TO STA 18+33.78



PROPOSED TYPICAL SECTION (LOOKING SOUTH)

PR ℄ TAYLOR BYPASS RAMP
STA 6398+97.13 TO STA 6404+00.00
PR ℄ RAMP SW
STA 1314+20.84 TO STA 1319+70.59

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4'' TO 7''
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7'' TO 10''
- (C) GRANULAR SUBBASE, 4'' OR 6''
- (D) HOT MIX ASPHALT SHOULDER, 10''
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4''
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) CONCRETE MEDIAN SURFACE, 4''
- (K) SELECT GRANULAR BACKFILL
- (L) STABILIZED SUBBASE - HOT-MIX ASPHALT, 4''
- (M) AGGREGATE SUBGRADE IMPROVEMENT, 12''
- (N) SUBBASE GRANULAR MATERIAL, 12''
- (O) POROUS GRANULAR EMBANKMENT, SPECIAL, 0'' TO 30''
- (P) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
- (Q) TEMPORARY PAVEMENT (TO REMAIN PERMANENTLY)
- (R) SUB-BASE GRANULAR MATERIAL, TYPE B, 8''

PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11'' (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11''
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4''
- (4) AGGREGATE SUBGRADE IMPROVEMENT, 12''
- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4''
- (6) CONCRETE BARRIER WALL, SINGLE FACE, 42 INCH HEIGHT
- (7) CONCRETE BARRIER BASE
- (8) TOPSOIL FURNISH AND PLACE, 4'' AND SEEDING OR SODDING, (SEE EROSION CONTROL PLANS)
- (9) PIPE UNDERDRAIN TYPE 2 6''
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET FOR DETAILS)
- (11) SUBBASE GRANULAR MATERIAL, TYPE B 4''
- (12) TEMPORARY CONCRETE BARRIER (TO REMAIN PERMANENTLY)
- (13) CONCRETE GUTTER, TYPE B
- (14) #6 TIE BARS, 24'' LONG AT 24'' C-C (INCLUDED IN PRICE FOR BID FOR CURB AND GUTTER)

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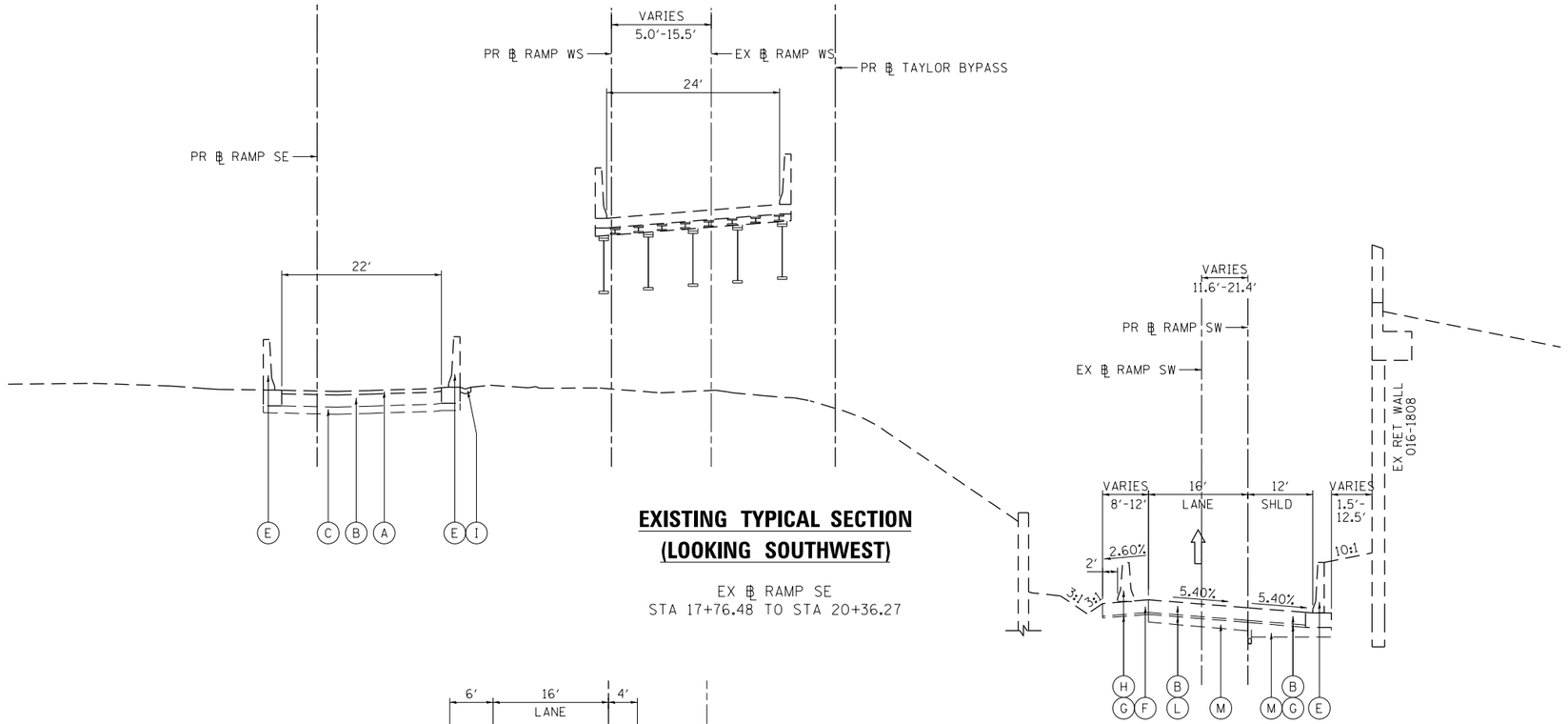
TranSystems	D160X93-sht-Typical-01.dgn	DESIGNED - JLV	REVISED -
	USER NAME = MSBilliot	DRAWN - SED	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - JMG	REVISED -
	PLOT DATE = 11/10/2017	DATE - 11-10-2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
RAMP INTERCHANGE COMPLETIONS

SCALE: NONE | SHEET 1 OF 17 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	409	26
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			



EXISTING TYPICAL SECTION (LOOKING SOUTHWEST)

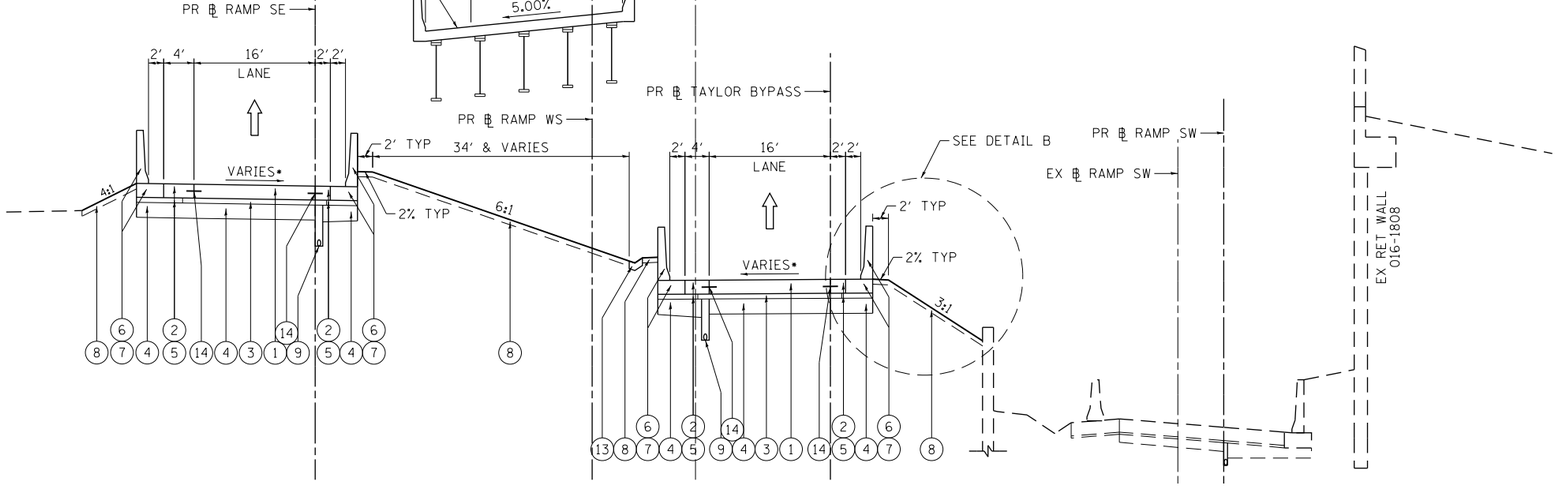
EX ℄ RAMP SE
STA 17+76.48 TO STA 20+36.27

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4'' TO 7''
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7'' TO 10''
- (C) GRANULAR SUBBASE, 4'' OR 6''
- (D) HOT MIX ASPHALT SHOULDER, 10''
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4''
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) CONCRETE MEDIAN SURFACE, 4''
- (K) SELECT GRANULAR BACKFILL
- (L) STABILIZED SUBBASE - HOT-MIX ASPHALT, 4''
- (M) AGGREGATE SUBGRADE IMPROVEMENT, 12''
- (N) SUBBASE GRANULAR MATERIAL, 12''
- (O) POROUS GRANULAR EMBANKMENT, SPECIAL, 0'' TO 30''
- (P) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
- (Q) TEMPORARY PAVEMENT (TO REMAIN PERMANENTLY)
- (R) SUB-BASE GRANULAR MATERIAL, TYPE B, 8''

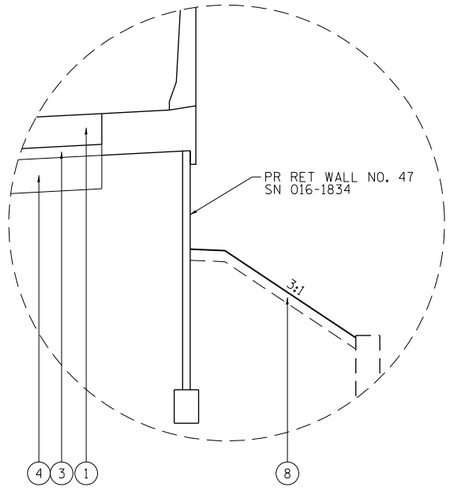
PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11'' (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11''
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4''
- (4) AGGREGATE SUBGRADE IMPROVEMENT, 12''
- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4''
- (6) CONCRETE BARRIER WALL, SINGLE FACE, 42 INCH HEIGHT
- (7) CONCRETE BARRIER BASE
- (8) TOPSOIL FURNISH AND PLACE, 4'' AND SEEDING OR SODDING, (SEE EROSION CONTROL PLANS)
- (9) PIPE UNDERDRAIN TYPE 2 6''
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET FOR DETAILS)
- (11) SUBBASE GRANULAR MATERIAL, TYPE B 4''
- (12) TEMPORARY CONCRETE BARRIER (TO REMAIN PERMANENTLY)
- (13) CONCRETE GUTTER, TYPE B
- (14) #6 TIE BARS, 24'' LONG AT 24'' C-C (INCLUDED IN PRICE FOR BID FOR CURB AND GUTTER)



PROPOSED TYPICAL SECTION (LOOKING SOUTHWEST)

PR ℄ TAYLOR BYPASS RAMP
STA 6404+00.00 TO STA 6406+10.04
PR ℄ RAMP SE
STA 1401+40.00 TO STA 1403+78.00



DETAIL B

RETAINING WALL FROM PR ℄ TAYLOR BYPASS RAMP
STA 6405+25.00 TO STA 6406+10.04

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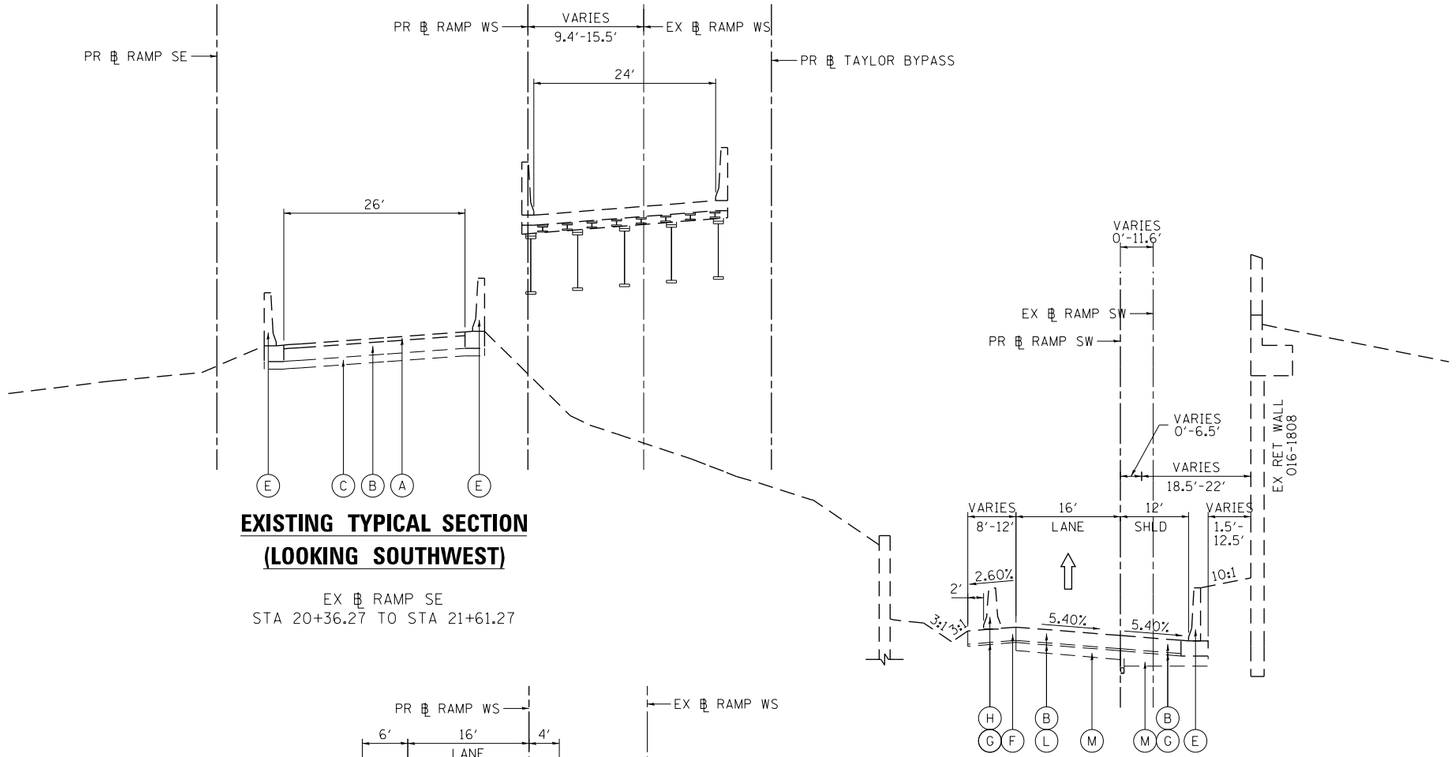
USER NAME = MSBilliot	DRAWN - SED	REVISED -	
PLOT SCALE = 20.0000 ' / in.	CHECKED - JMG	REVISED -	
PLOT DATE = 11/10/2017	DATE - 11-10-2017	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
RAMP INTERCHANGE COMPLETIONS

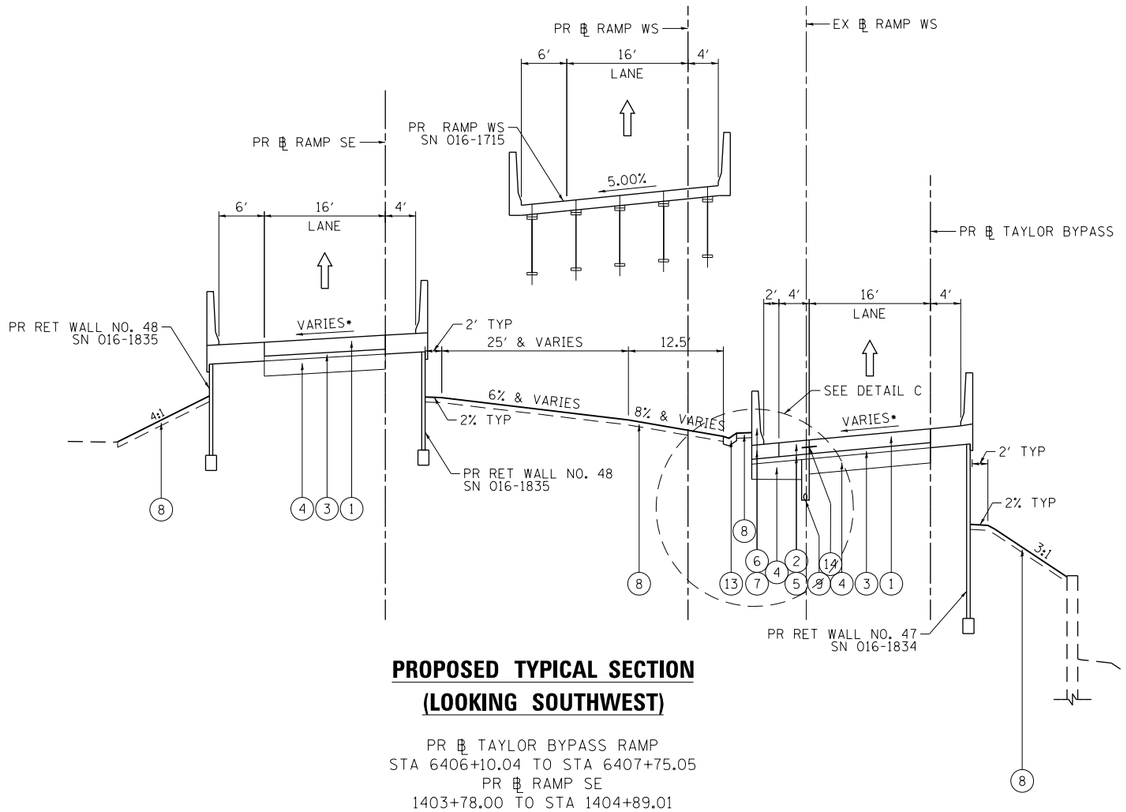
SCALE: NONE | SHEET 2 OF 17 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	409	27
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			



EXISTING TYPICAL SECTION (LOOKING SOUTHWEST)

EX ℄ RAMP SE
STA 20+36.27 TO STA 21+61.27



PROPOSED TYPICAL SECTION (LOOKING SOUTHWEST)

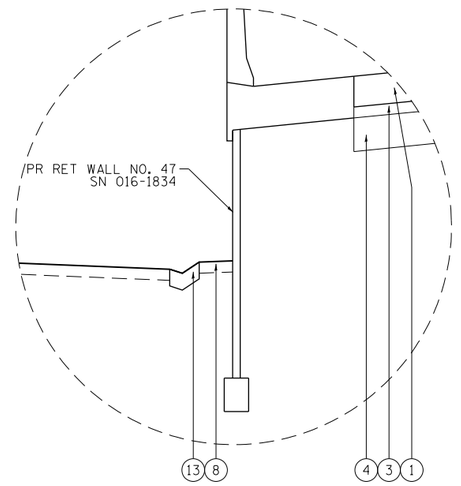
PR ℄ TAYLOR BYPASS RAMP
STA 6406+10.04 TO STA 6407+75.05
PR ℄ RAMP SE
1403+78.00 TO STA 1404+89.01

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4" TO 7"
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7" TO 10"
- (C) GRANULAR SUBBASE, 4" OR 6"
- (D) HOT MIX ASPHALT SHOULDER, 10"
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4"
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) CONCRETE MEDIAN SURFACE, 4"
- (K) SELECT GRANULAR BACKFILL
- (L) STABILIZED SUBBASE - HOT-MIX ASPHALT, 4"
- (M) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (N) SUBBASE GRANULAR MATERIAL, 12"
- (O) POROUS GRANULAR EMBANKMENT, SPECIAL, 0" TO 30"
- (P) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
- (Q) TEMPORARY PAVEMENT (TO REMAIN PERMANENTLY)
- (R) SUB-BASE GRANULAR MATERIAL, TYPE B, 8"

PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11" (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11"
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4"
- (4) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4"
- (6) CONCRETE BARRIER WALL, SINGLE FACE, 42 INCH HEIGHT
- (7) CONCRETE BARRIER BASE
- (8) TOPSOIL FURNISH AND PLACE, 4" AND SEEDING OR SODDING, (SEE EROSION CONTROL PLANS)
- (9) PIPE UNDERDRAIN TYPE 2 6"
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET FOR DETAILS)
- (11) SUBBASE GRANULAR MATERIAL, TYPE B 4"
- (12) TEMPORARY CONCRETE BARRIER (TO REMAIN PERMANENTLY)
- (13) CONCRETE GUTTER, TYPE B
- (14) #6 TIE BARS, 24" LONG AT 24" C-C (INCLUDED IN PRICE FOR BID FOR CURB AND GUTTER)



DETAIL C

RETAINING WALL FROM PR ℄ TAYLOR BYPASS RAMP
STA 6406+14.61 TO STA 6407+75.05

TranSystems

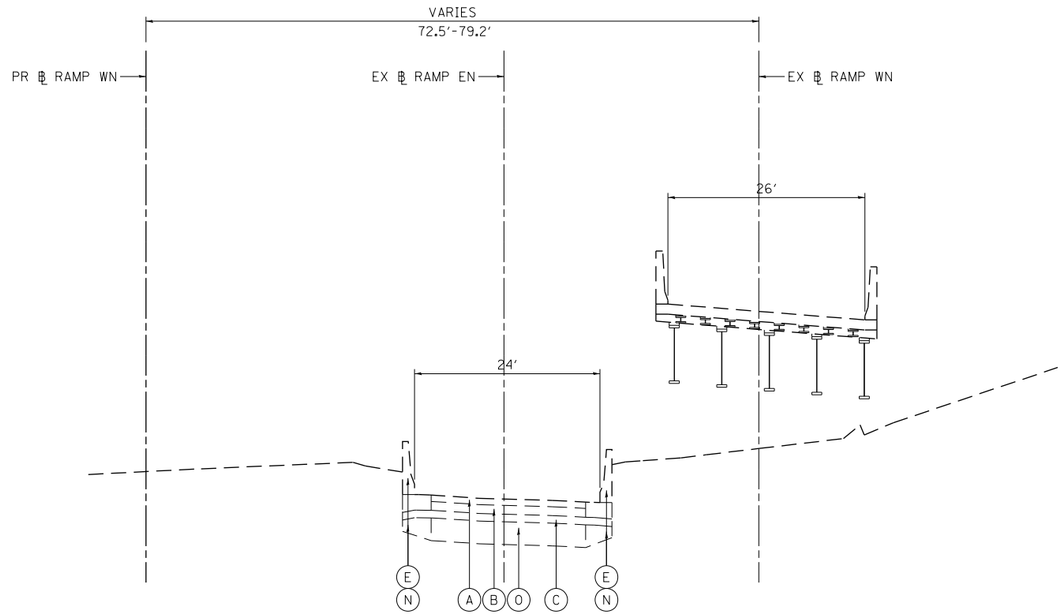
D160X93-sht-Typical-01.dgn	DESIGNED - JLV	REVISED -
USER NAME = MSBilliot	DRAWN - SED	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED - JMG	REVISED -
PLOT DATE = 11/10/2017	DATE - 11-10-2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
RAMP INTERCHANGE COMPLETIONS

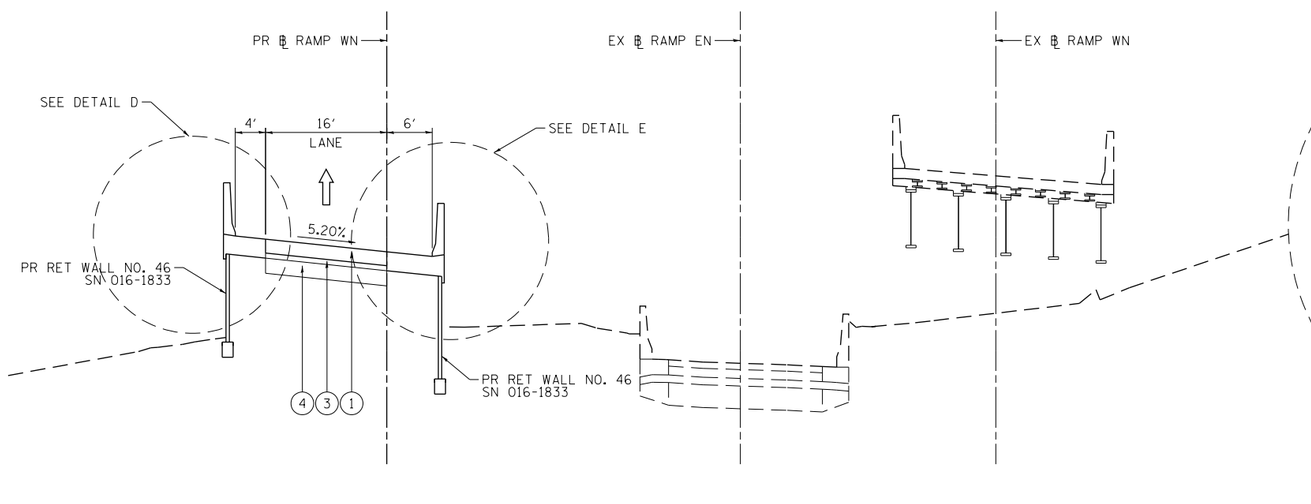
SCALE: NONE | SHEET 3 OF 17 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	409	28
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			



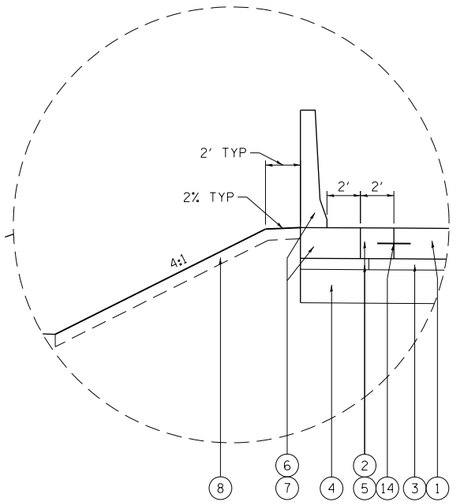
EXISTING TYPICAL SECTION (LOOKING NORTHWEST)

EX ℄ RAMP WN
STA 14+82.54 TO STA 15+28.12



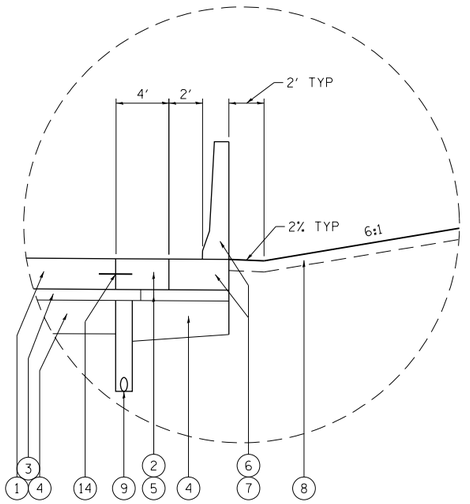
PROPOSED TYPICAL SECTION (LOOKING NORTHWEST)

PR ℄ RAMP WN
STA 1105+03.64 TO STA 1105+69.00



DETAIL D

BARRIER WALL FROM PR ℄ RAMP WN
STA 1105+30.00 TO STA 1105+46.50



DETAIL E

BARRIER WALL FROM PR ℄ RAMP WN
STA 1105+60.00 TO STA 1105+69.00

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4'' TO 7''
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7'' TO 10''
- (C) GRANULAR SUBBASE, 4'' OR 6''
- (D) HOT MIX ASPHALT SHOULDER, 10''
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4''
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) CONCRETE MEDIAN SURFACE, 4''
- (K) SELECT GRANULAR BACKFILL
- (L) STABILIZED SUBBASE - HOT-MIX ASPHALT, 4''
- (M) AGGREGATE SUBGRADE IMPROVEMENT, 12''
- (N) SUBBASE GRANULAR MATERIAL, 12''
- (O) POROUS GRANULAR EMBANKMENT, SPECIAL, 0'' TO 30''
- (P) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
- (Q) TEMPORARY PAVEMENT (TO REMAIN PERMANENTLY)
- (R) SUB-BASE GRANULAR MATERIAL, TYPE B, 8''

PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11'' (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11''
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4''
- (4) AGGREGATE SUBGRADE IMPROVEMENT, 12''
- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4''
- (6) CONCRETE BARRIER WALL, SINGLE FACE, 42 INCH HEIGHT
- (7) CONCRETE BARRIER BASE
- (8) TOPSOIL FURNISH AND PLACE, 4'' AND SEEDING OR SODDING, (SEE EROSION CONTROL PLANS)
- (9) PIPE UNDERDRAIN TYPE 2 6''
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET FOR DETAILS)
- (11) SUBBASE GRANULAR MATERIAL, TYPE B 4''
- (12) TEMPORARY CONCRETE BARRIER (TO REMAIN PERMANENTLY)
- (13) CONCRETE GUTTER, TYPE B
- (14) #6 TIE BARS, 24'' LONG AT 24'' C-C (INCLUDED IN PRICE FOR BID FOR CURB AND GUTTER)

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TranSystems

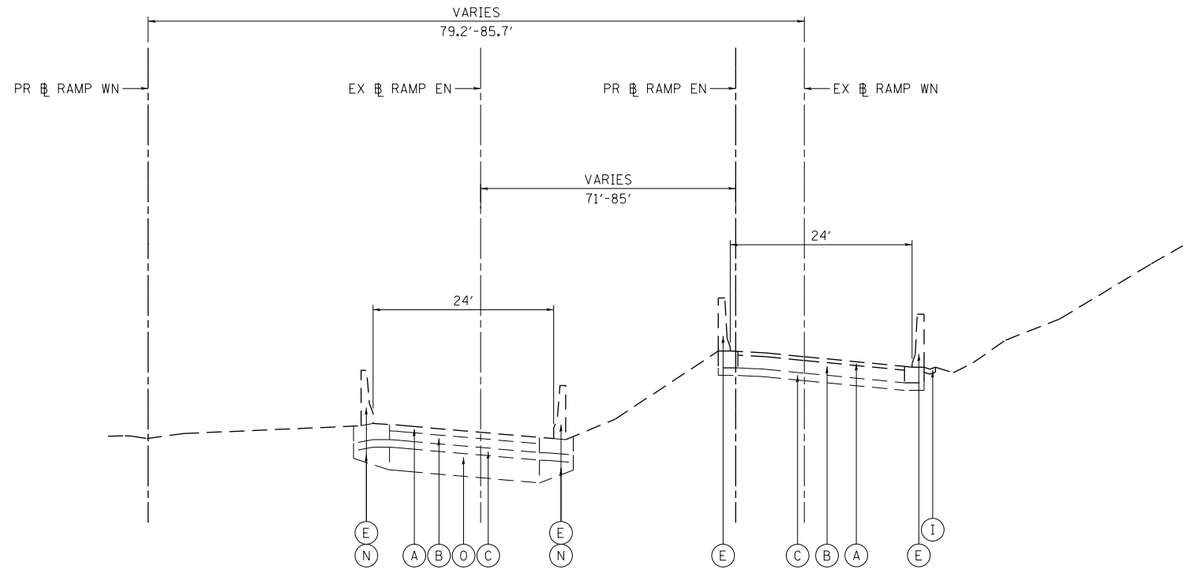
D160X93-sht-Typical-01.dgn	DESIGNED - JLV	REVISED -	
USER NAME = MSBilliot	DRAWN - SED	REVISED -	
PLOT SCALE = 20.0000 '/ in.	CHECKED - JMG	REVISED -	
PLOT DATE = 11/10/2017	DATE - 11-10-2017	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
RAMP INTERCHANGE COMPLETIONS

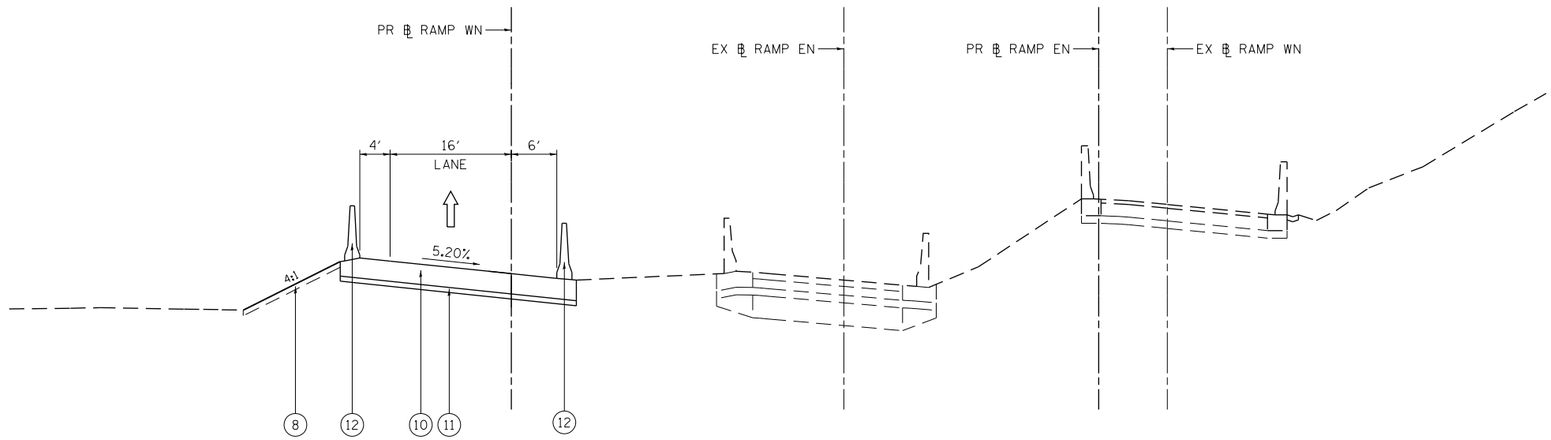
SCALE: NONE | SHEET 4 OF 17 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	409	29
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			



EXISTING TYPICAL SECTION (LOOKING NORTHWEST)

EX ℄ RAMP WN
STA 15+28.12 TO STA 16+01.51



PROPOSED TYPICAL SECTION (LOOKING NORTHWEST)

PR ℄ RAMP WN
STA 1105+69.00 TO STA 1106+48.00

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4'' TO 7''
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7'' TO 10''
- (C) GRANULAR SUBBASE, 4'' OR 6''
- (D) HOT MIX ASPHALT SHOULDER, 10''
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4''
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) CONCRETE MEDIAN SURFACE, 4''
- (K) SELECT GRANULAR BACKFILL
- (L) STABILIZED SUBBASE - HOT-MIX ASPHALT, 4''
- (M) AGGREGATE SUBGRADE IMPROVEMENT, 12''
- (N) SUBBASE GRANULAR MATERIAL, 12''
- (O) POROUS GRANULAR EMBANKMENT, SPECIAL, 0'' TO 30''
- (P) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
- (Q) TEMPORARY PAVEMENT (TO REMAIN PERMANENTLY)
- (R) SUB-BASE GRANULAR MATERIAL, TYPE B, 8''

PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11'' (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11''
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4''
- (4) AGGREGATE SUBGRADE IMPROVEMENT, 12''
- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4''
- (6) CONCRETE BARRIER WALL, SINGLE FACE, 42 INCH HEIGHT
- (7) CONCRETE BARRIER BASE
- (8) TOPSOIL FURNISH AND PLACE, 4'' AND SEEDING OR SODDING, (SEE EROSION CONTROL PLANS)
- (9) PIPE UNDERDRAIN TYPE 2 6''
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET FOR DETAILS)
- (11) SUBBASE GRANULAR MATERIAL, TYPE B 4''
- (12) TEMPORARY CONCRETE BARRIER (TO REMAIN PERMANENTLY)
- (13) CONCRETE GUTTER, TYPE B
- (14) #6 TIE BARS, 24'' LONG AT 24'' C-C (INCLUDED IN PRICE FOR BID FOR CURB AND GUTTER)

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TranSystems

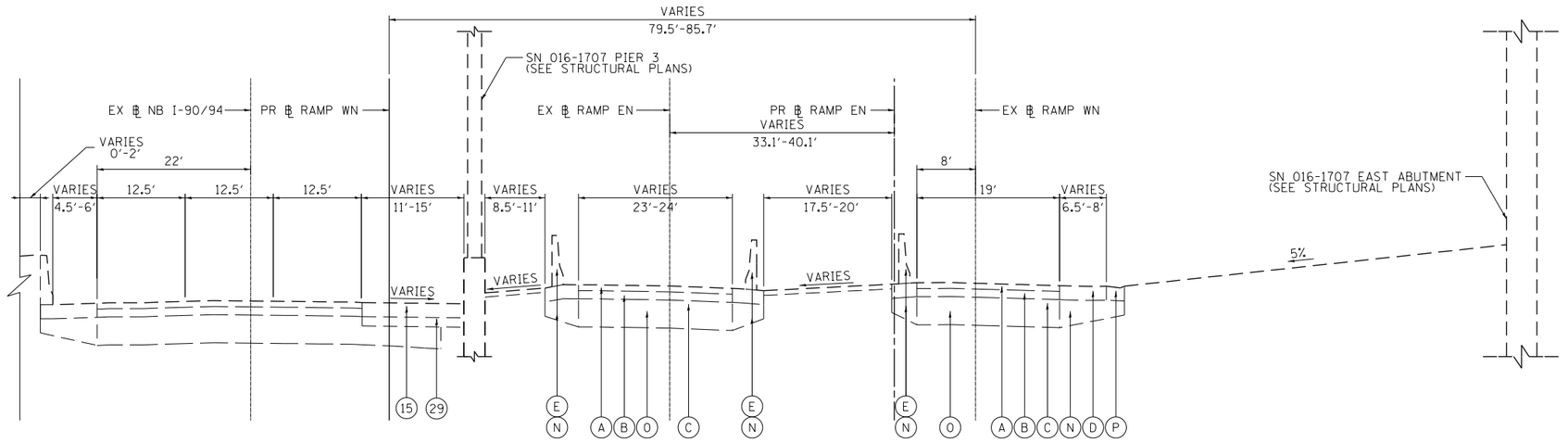
D160X93-sht-Typical-01.dgn	DESIGNED - JLV	REVISED -	
USER NAME = MSBilliot	DRAWN - SED	REVISED -	
PLOT SCALE = 20.0000 ' / in.	CHECKED - JMG	REVISED -	
PLOT DATE = 11/10/2017	DATE - 11-10-2017	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
RAMP INTERCHANGE COMPLETIONS

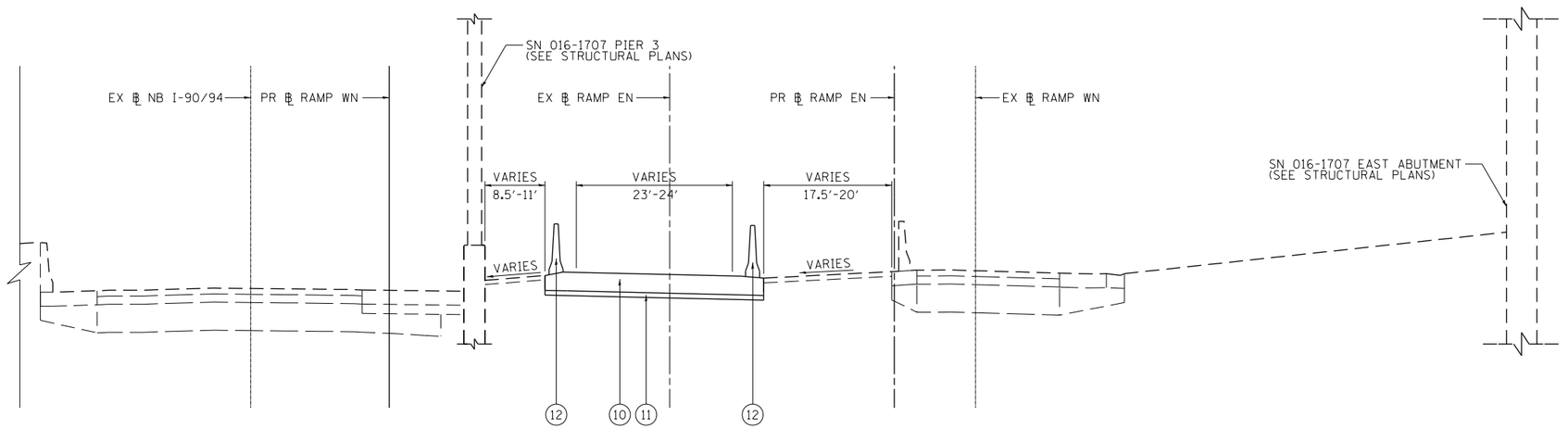
SCALE: NONE | SHEET 5 OF 17 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	409	30
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			



EXISTING TYPICAL SECTION (LOOKING NORTH)

EX ℄ RAMP WN
STA 16+01.51 TO STA 18+00.00



PROPOSED TYPICAL SECTION (LOOKING NORTH)

PR ℄ RAMP WN
STA 1106+48.00 TO STA 1109+41.70

PR ℄ RAMP WNI (INTERIM ALIGNMENT)
STA 2106+71.73 TO STA 2109+32.00

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4" TO 7"
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7" TO 10"
- (C) GRANULAR SUBBASE, 4" OR 6"
- (D) HOT MIX ASPHALT SHOULDER, 10"
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4"
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) CONCRETE MEDIAN SURFACE, 4"
- (K) SELECT GRANULAR BACKFILL
- (L) STABILIZED SUBBASE - HOT-MIX ASPHALT, 4"
- (M) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (N) SUBBASE GRANULAR MATERIAL, 12"
- (O) POROUS GRANULAR EMBANKMENT, SPECIAL, 0" TO 30"
- (P) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
- (Q) TEMPORARY PAVEMENT (TO REMAIN PERMANENTLY)
- (R) SUB-BASE GRANULAR MATERIAL, TYPE B, 8"

PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11" (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11"
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4"
- (4) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4"
- (6) CONCRETE BARRIER WALL, SINGLE FACE, 42 INCH HEIGHT
- (7) CONCRETE BARRIER BASE
- (8) TOPSOIL FURNISH AND PLACE, 4" AND SEEDING OR SODDING, (SEE EROSION CONTROL PLANS)
- (9) PIPE UNDERDRAIN TYPE 2 6"
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET FOR DETAILS)
- (11) SUBBASE GRANULAR MATERIAL, TYPE B 4"
- (12) TEMPORARY CONCRETE BARRIER (TO REMAIN PERMANENTLY)
- (13) CONCRETE GUTTER, TYPE B
- (14) #6 TIE BARS, 24" LONG AT 24" C-C (INCLUDED IN PRICE FOR BID FOR CURB AND GUTTER)

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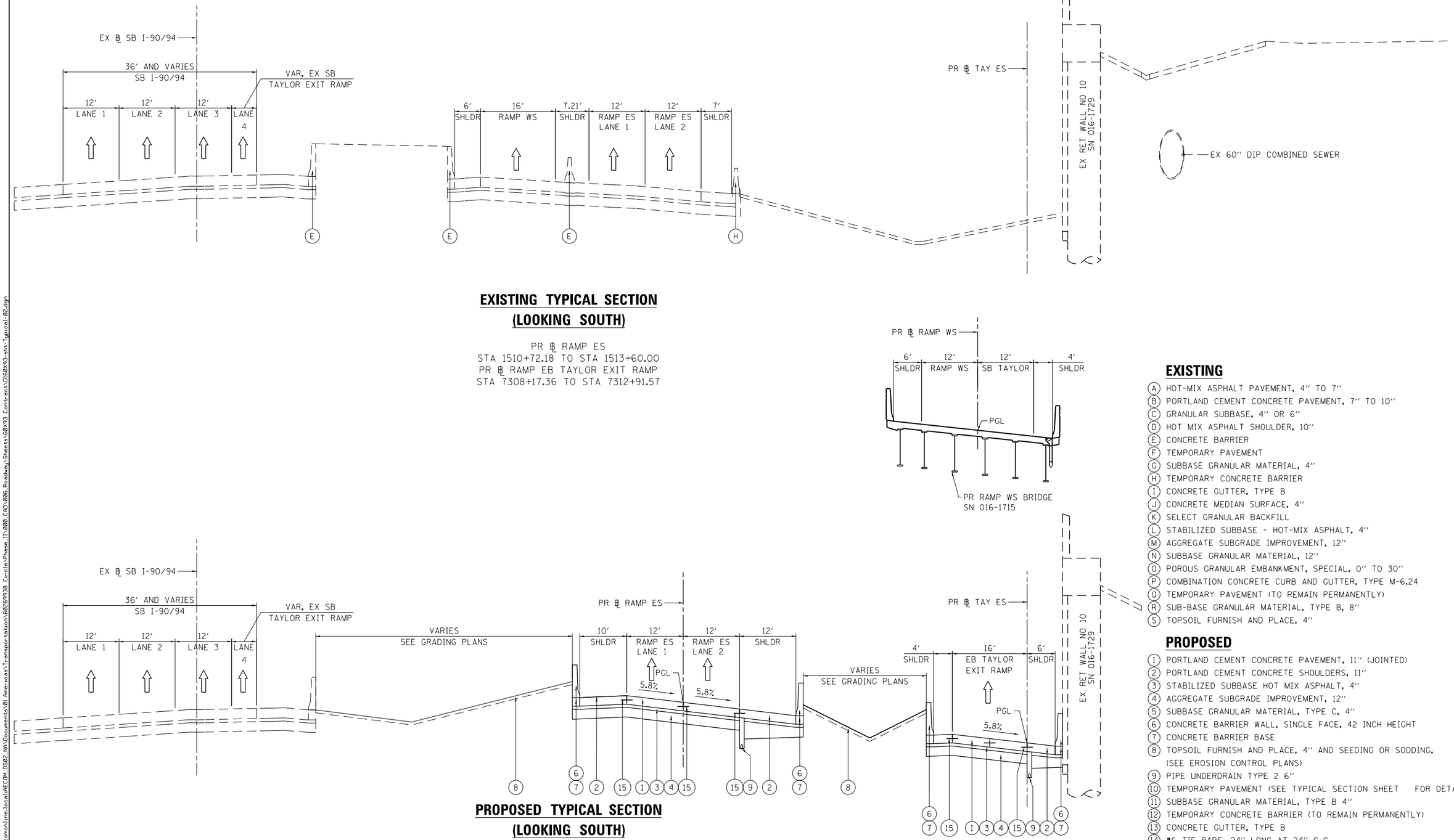
TranSystems	D160X93-sht-Typical-01.dgn	DESIGNED - JLV	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TYPICAL SECTIONS RAMP INTERCHANGE COMPLETIONS
	USER NAME = MSBillot	DRAWN - SED	REVISED -		
	PLOT SCALE = 20.0000 ' / in.	CHECKED - JMG	REVISED -		
	PLOT DATE = 11/10/2017	DATE - 11-10-2017	REVISED -		SCALE: NONE | SHEET 6 OF 17 SHEETS | STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	409	31
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			



EXISTING TYPICAL SECTION (LOOKING SOUTH)

PR ℄ RAMP ES
STA 1510+72.18 TO STA 1513+60.00
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7308+17.36 TO STA 7312+91.57

PROPOSED TYPICAL SECTION (LOOKING SOUTH)

PR ℄ RAMP ES
STA 1510+72.18 TO STA 1513+60.00
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7308+17.36 TO STA 7312+91.57

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4" TO 7"
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7" TO 10"
- (C) GRANULAR SUBBASE, 4" OR 6"
- (D) HOT MIX ASPHALT SHOULDER, 10"
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4"
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) CONCRETE MEDIAN SURFACE, 4"
- (K) SELECT GRANULAR BACKFILL
- (L) STABILIZED SUBBASE - HOT-MIX ASPHALT, 4"
- (M) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (N) SUBBASE GRANULAR MATERIAL, 12"
- (O) POROUS GRANULAR EMBANKMENT, SPECIAL, 0" TO 30"
- (P) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
- (Q) TEMPORARY PAVEMENT (TO REMAIN PERMANENTLY)
- (R) SUB-BASE GRANULAR MATERIAL, TYPE B, 8"
- (S) TOPSOIL FURNISH AND PLACE, 4"

PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11" (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11"
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4"
- (4) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4"
- (6) CONCRETE BARRIER WALL, SINGLE FACE, 42 INCH HEIGHT
- (7) CONCRETE BARRIER BASE
- (8) TOPSOIL FURNISH AND PLACE, 4" AND SEEDING OR SODDING, (SEE EROSION CONTROL PLANS)
- (9) PIPE UNDERDRAIN TYPE 2 6"
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET FOR DETAILS)
- (11) SUBBASE GRANULAR MATERIAL, TYPE B 4"
- (12) TEMPORARY CONCRETE BARRIER (TO REMAIN PERMANENTLY)
- (13) CONCRETE GUTTER, TYPE B
- (14) #6 TIE BARS, 24" LONG AT 24" C-C (INCLUDED IN PRICE FOR BID FOR CURB AND GUTTER)
- (15) #6 TIE BARS, 30" LONG AT 36" C-C (INCLUDED IN PRICE FOR BID FOR PCC PAVEMENT)

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AECOM Tran Systems

D160X93-sht-Typical-02.dgn	DESIGNED - OPS	REVISED -	
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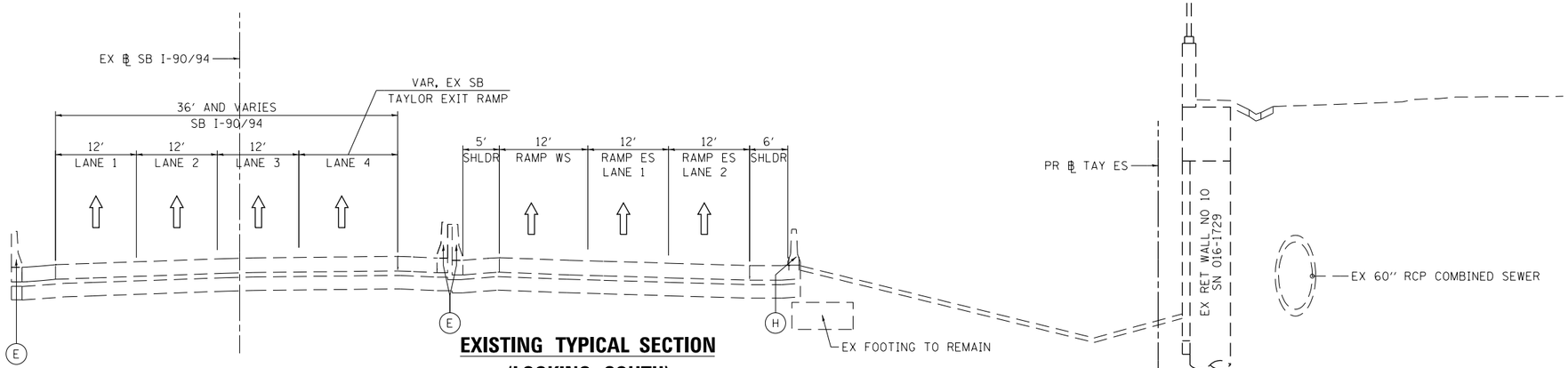
PLOT SCALE = 20.0000 ' / in.	CHECKED - MJE	REVISED -	
PLOT DATE = 11/10/2017	DATE - 11-10-2017	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
RAMP INTERCHANGE COMPLETIONS

SCALE: NONE | SHEET 8 OF 17 SHEETS | STA. | TO STA.

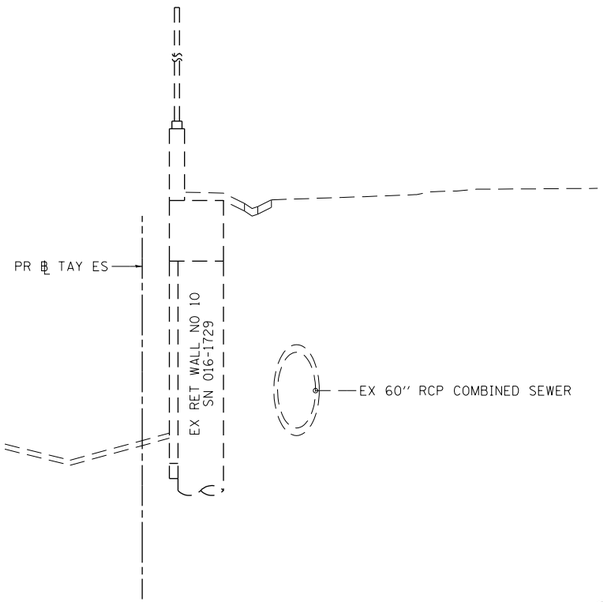
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	409	33
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

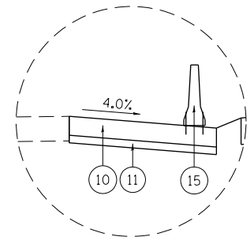


EXISTING TYPICAL SECTION (LOOKING SOUTH)

PR ℄ RAMP ES
STA 1513+60.00 TO STA 1516+27.40
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7312+91.57 TO STA 7315+20.97

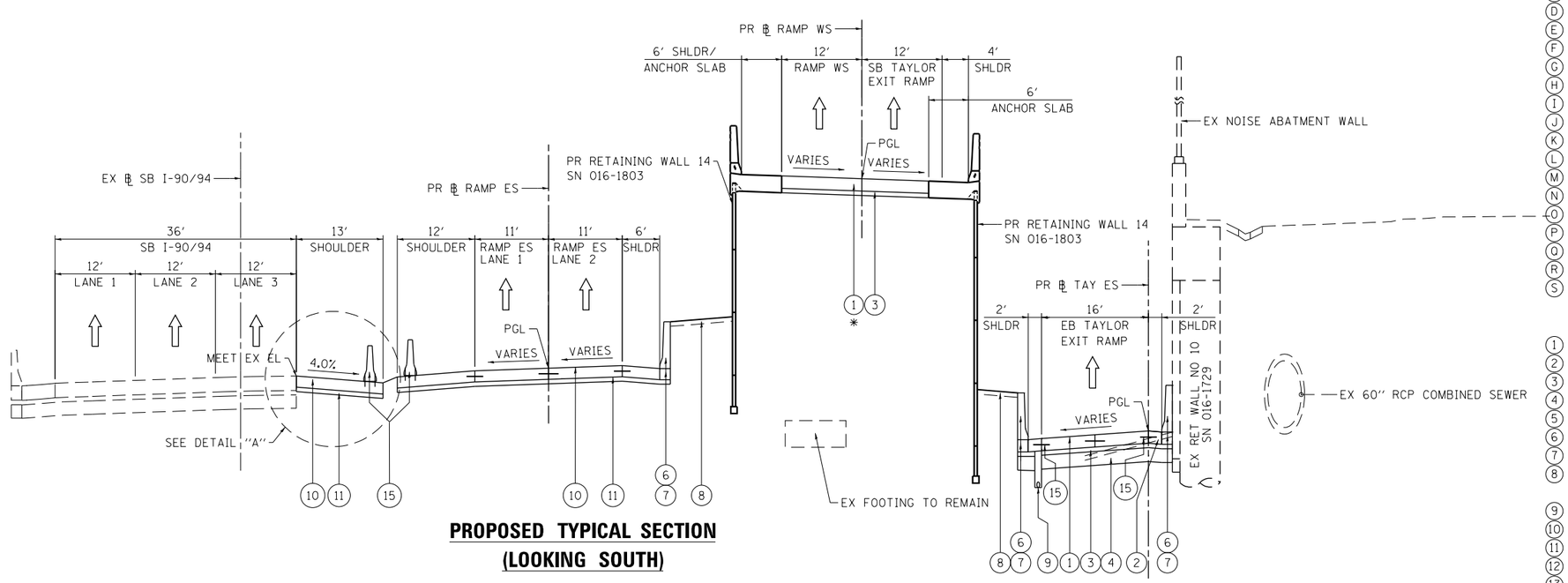
PR ℄ RAMP WS
STA 1229+89.75 TO STA 1231+80.05
EX SB I-90/94
STA 8+60.54 TO STA 5+00.55





DETAIL A

TEMPORARY PAVEMENT & TEMPORARY CONCRETE BARRIER
(TO REMAIN PERMANENTLY)FOR
SB I-90/94 RT SHOULDER FROM EX ℄ SB I-90/94
STA 8+60.54 TO STA 5+00.55



PROPOSED TYPICAL SECTION (LOOKING SOUTH)

PR ℄ RAMP ES
STA 1513+60.00 TO STA 1516+27.40
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7312+91.57 TO STA 7315+20.97

PR ℄ RAMP WS
STA 1229+89.75 TO STA 1231+80.05
EX SB I-90/94
STA 8+60.54 TO STA 5+00.55

* PAVEMENT CONNECTOR (PCC) FOR BRIDGE APPROACH SLAB
STA 1229+89.75 TO STA 1230+04.75

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4″ TO 7″
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7″ TO 10″
- (C) GRANULAR SUBBASE, 4″ OR 6″
- (D) HOT MIX ASPHALT SHOULDER, 10″
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4″
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) CONCRETE MEDIAN SURFACE, 4″
- (K) SELECT GRANULAR BACKFILL
- (L) STABILIZED SUBBASE - HOT-MIX ASPHALT, 4″
- (M) AGGREGATE SUBGRADE IMPROVEMENT, 12″
- (N) SUBBASE GRANULAR MATERIAL, 12″
- (O) POROUS GRANULAR EMBANKMENT, SPECIAL, 0″ TO 30″
- (P) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
- (Q) TEMPORARY PAVEMENT (TO REMAIN PERMANENTLY)
- (R) SUB-BASE GRANULAR MATERIAL, TYPE B, 8″
- (S) TOPSOIL FURNISH AND PLACE, 4″

PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11″ (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11″
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4″
- (4) AGGREGATE SUBGRADE IMPROVEMENT, 12″
- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4″
- (6) CONCRETE BARRIER WALL, SINGLE FACE, 42 INCH HEIGHT
- (7) CONCRETE BARRIER BASE
- (8) TOPSOIL FURNISH AND PLACE, 4″ AND SEEDING OR SODDING, (SEE EROSION CONTROL PLANS)
- (9) PIPE UNDERDRAIN TYPE 2 6″
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET FOR DETAILS)
- (11) SUBBASE GRANULAR MATERIAL, TYPE B 4″
- (12) TEMPORARY CONCRETE BARRIER (TO REMAIN PERMANENTLY)
- (13) CONCRETE GUTTER, TYPE B
- (14) #6 TIE BARS, 24″ LONG AT 24″ C-C (INCLUDED IN PRICE FOR BID FOR CURB AND GUTTER)
- (15) #6 TIE BARS, 30″ LONG AT 36″ C-C (INCLUDED IN PRICE FOR BID FOR PCC PAVEMENT)

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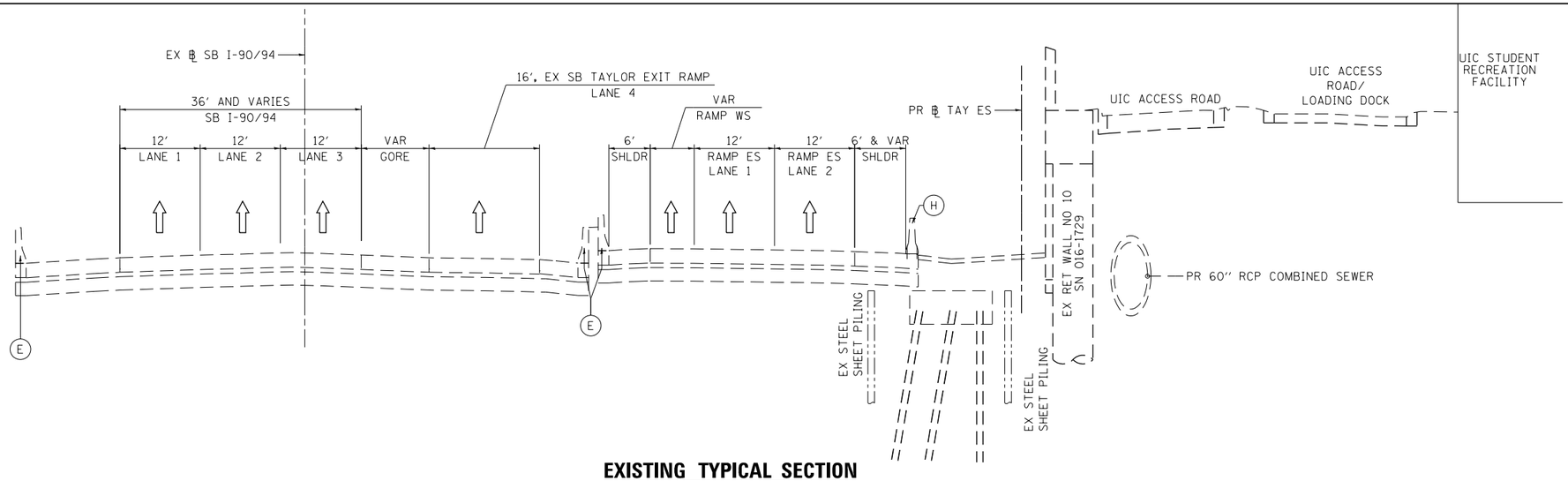
AECOM Tran Systems	D160X93-sht-Typical-02.dgn	DESIGNED - OPS	REVISED -
	USER NAME = MSBilliot	DRAWN - OPS	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - MJE	REVISED -
	PLOT DATE = 11/10/2017	DATE - 11-10-2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
RAMP INTERCHANGE COMPLETIONS

SCALE: NONE | SHEET 9 OF 17 SHEETS | STA. | TO STA.

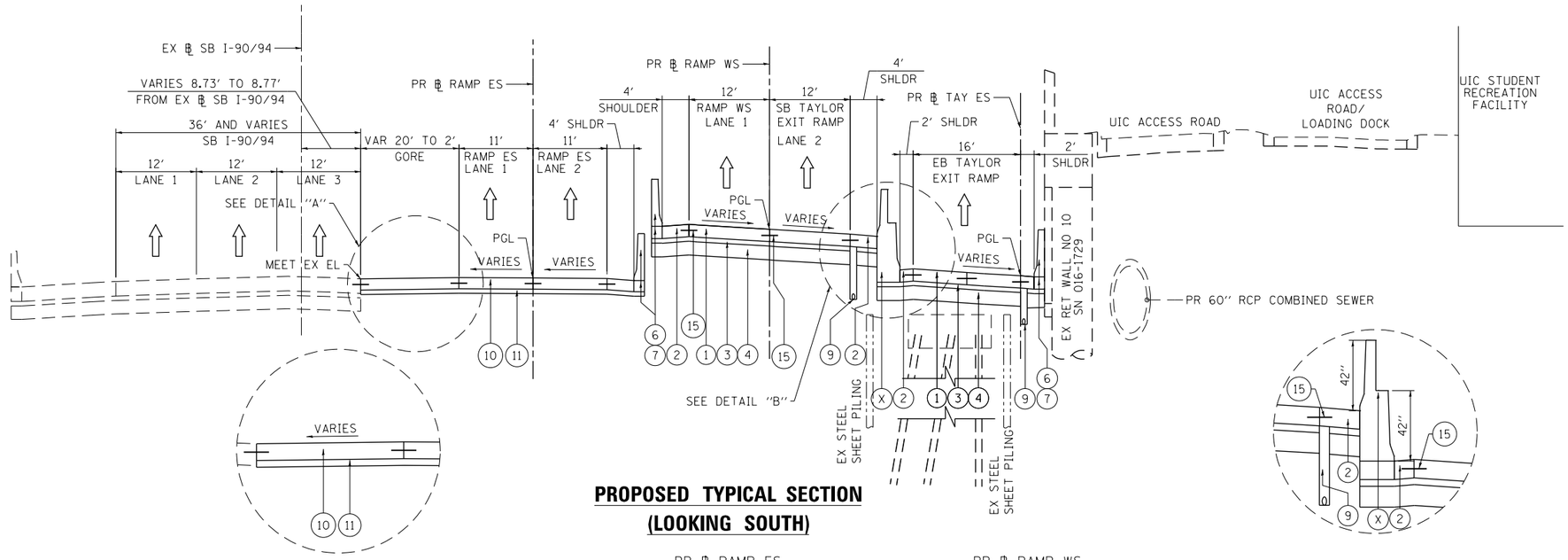
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	409	34
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			



EXISTING TYPICAL SECTION (LOOKING SOUTH)

PR ℄ RAMP ES
STA 1516+27.40 TO STA 1518+88.11
PR ℄ RAMP WS
STA TO STA 1233+72.63
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7315+20.97 TO STA 7316+08.37

PR ℄ RAMP WS
STA 1231+80.05 TO STA 1233+72.63



PROPOSED TYPICAL SECTION (LOOKING SOUTH)

PR ℄ RAMP ES
STA 1516+27.40 TO STA 1518+88.11
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7315+20.97 TO STA 7316+08.37

PR ℄ RAMP WS
STA 1231+80.05 TO STA 1232+71.27

DETAIL A

GORE FROM PR ℄ RAMP ES
STA 1516+27.40 TO STA 1518+88.11
SEE GORE GRADING ON SHEET

DETAIL B

BARRIER WALL FROM PR ℄ EB TAYLOR EXIT RAMP
STA 1517+96.63 TO STA 1519+40.62

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4" TO 7"
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7" TO 10"
- (C) GRANULAR SUBBASE, 4" OR 6"
- (D) HOT MIX ASPHALT SHOULDER, 10"
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4"
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) CONCRETE MEDIAN SURFACE, 4"
- (K) SELECT GRANULAR BACKFILL
- (L) STABILIZED SUBBASE - HOT-MIX ASPHALT, 4"
- (M) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (N) SUBBASE GRANULAR MATERIAL, 12"
- (O) POROUS GRANULAR EMBANKMENT, SPECIAL, 0" TO 30"
- (P) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
- (Q) TEMPORARY PAVEMENT (TO REMAIN PERMANENTLY)
- (R) SUB-BASE GRANULAR MATERIAL, TYPE B, 8"
- (S) TOPSOIL FURNISH AND PLACE, 4"

PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11" (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11"
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4"
- (4) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4"
- (6) CONCRETE BARRIER WALL, SINGLE FACE, 42 INCH HEIGHT
- (7) CONCRETE BARRIER BASE
- (8) TOPSOIL FURNISH AND PLACE, 4" AND SEEDING OR SODDING, (SEE EROSION CONTROL PLANS)
- (9) PIPE UNDERDRAIN TYPE 2 6"
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET FOR DETAILS)
- (11) SUBBASE GRANULAR MATERIAL, TYPE B 4"
- (12) TEMPORARY CONCRETE BARRIER (TO REMAIN PERMANENTLY)
- (13) CONCRETE GUTTER, TYPE B
- (14) #6 TIE BARS, 24" LONG AT 24" C-C (INCLUDED IN PRICE FOR BID FOR CURB AND GUTTER)
- (15) #6 TIE BARS, 30" LONG AT 36" C-C (INCLUDED IN PRICE FOR BID FOR PCC PAVEMENT)

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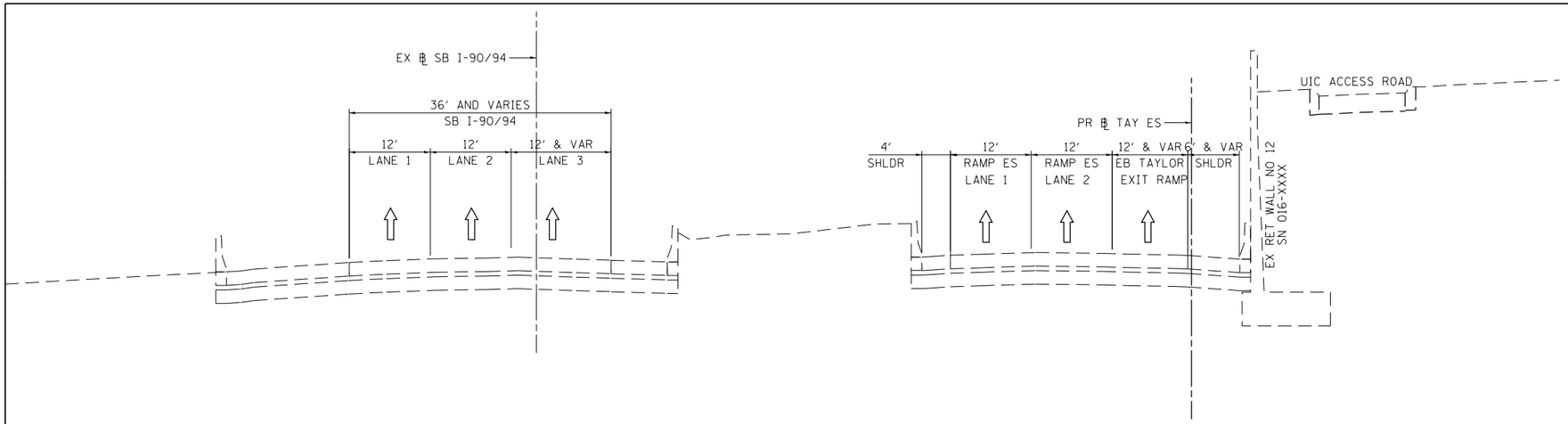
AECOM Tran Systems	D160X93-sht-Typical-02.dgn	DESIGNED - OPS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TYPICAL SECTIONS RAMP INTERCHANGE COMPLETIONS
	USER NAME = MSBilliot	DRAWN - OPS	REVISED -		
	PLOT SCALE = 20.0000 ' / in.	CHECKED - MJE	REVISED -		SCALE: NONE SHEET 10 OF 17 SHEETS STA. TO STA.
	PLOT DATE = 11/10/2017	DATE - 11-10-2017	REVISED -		

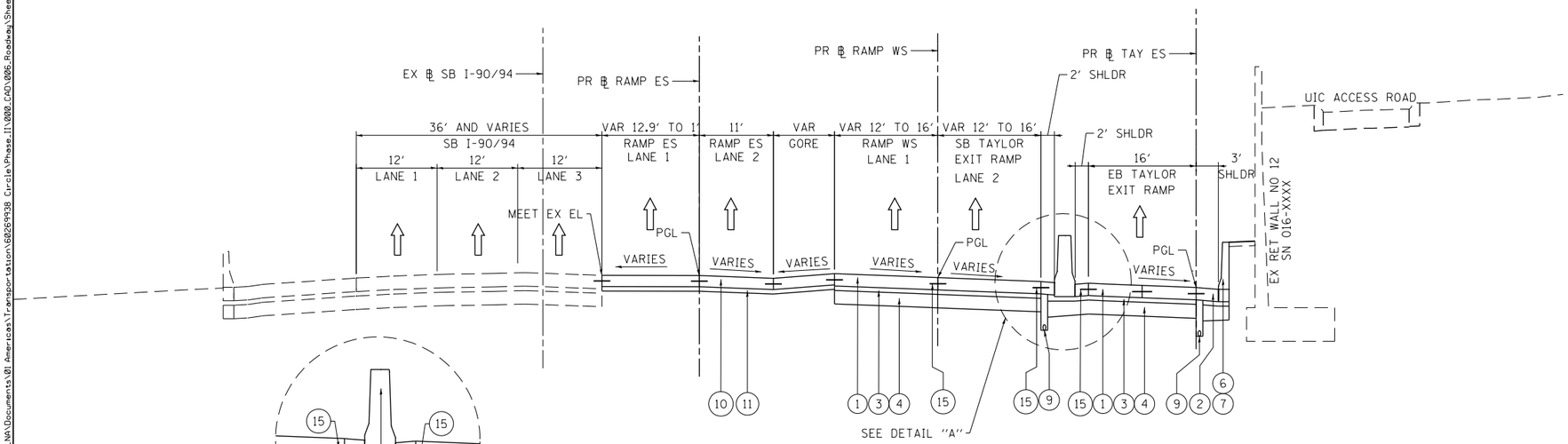
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	409	35
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

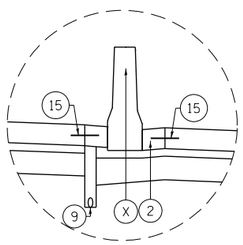


EXISTING TYPICAL SECTION (LOOKING SOUTH)

PR ℄ RAMP ES
STA 1516+27.40 TO STA 1518+88.11
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7316+08.37 TO STA 7317+52.14

PR ℄ RAMP WS
STA 1231+80.05 TO STA 1233+72.63





DETAIL A

CONCRETE BARRIER, DOUBLE FACE, 42 INCH HEIGHT
PR ℄ RAMP WS
STA 1232+71.27 TO STA 1234+14.54

PROPOSED TYPICAL SECTION (LOOKING SOUTH)

PR ℄ RAMP ES
STA 1516+27.40 TO STA 1518+88.11
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7316+08.37 TO STA 7317+52.14

PR ℄ RAMP WS
STA 1232+71.27 TO STA 1234+14.54

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4'' TO 7''
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7'' TO 10''
- (C) GRANULAR SUBBASE, 4'' OR 6''
- (D) HOT MIX ASPHALT SHOULDER, 10''
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4''
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) CONCRETE MEDIAN SURFACE, 4''
- (K) SELECT GRANULAR BACKFILL
- (L) STABILIZED SUBBASE - HOT-MIX ASPHALT, 4''
- (M) AGGREGATE SUBGRADE IMPROVEMENT, 12''
- (N) SUBBASE GRANULAR MATERIAL, 12''
- (O) POROUS GRANULAR EMBANKMENT, SPECIAL, 0'' TO 30''
- (P) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
- (Q) TEMPORARY PAVEMENT (TO REMAIN PERMANENTLY)
- (R) SUB-BASE GRANULAR MATERIAL, TYPE B, 8''
- (S) TOPSOIL FURNISH AND PLACE, 4''

PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11'' (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11''
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4''
- (4) AGGREGATE SUBGRADE IMPROVEMENT, 12''
- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4''
- (6) CONCRETE BARRIER WALL, SINGLE FACE, 42 INCH HEIGHT
- (7) CONCRETE BARRIER BASE
- (8) TOPSOIL FURNISH AND PLACE, 4'' AND SEEDING OR SODDING, (SEE EROSION CONTROL PLANS)
- (9) PIPE UNDERDRAIN TYPE 2 6''
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET FOR DETAILS)
- (11) SUBBASE GRANULAR MATERIAL, TYPE B 4''
- (12) TEMPORARY CONCRETE BARRIER (TO REMAIN PERMANENTLY)
- (13) CONCRETE GUTTER, TYPE B
- (14) #6 TIE BARS, 24'' LONG AT 24'' C-C (INCLUDED IN PRICE FOR BID FOR CURB AND GUTTER)
- (15) #6 TIE BARS, 30'' LONG AT 36'' C-C (INCLUDED IN PRICE FOR BID FOR PCC PAVEMENT)

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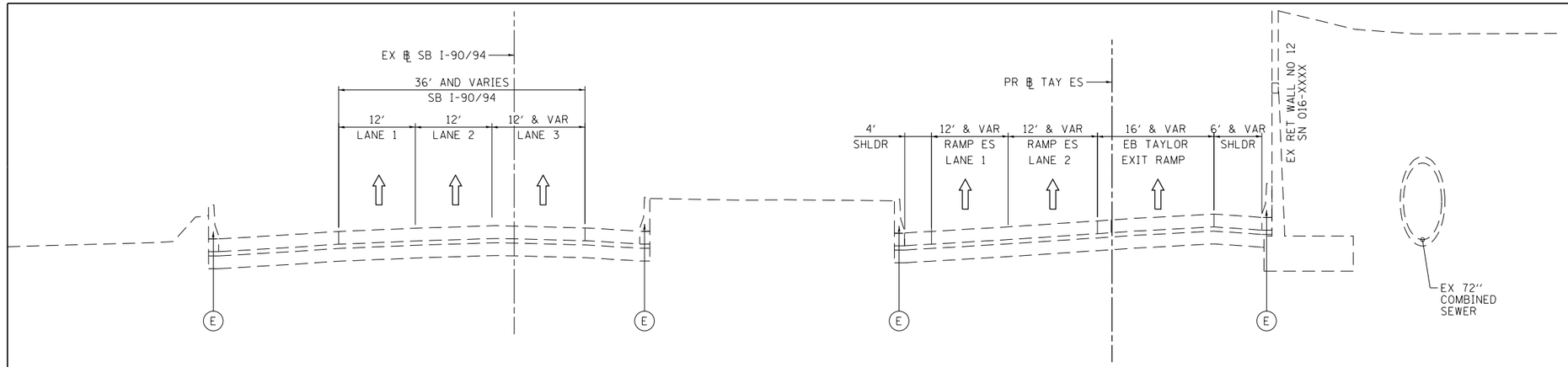
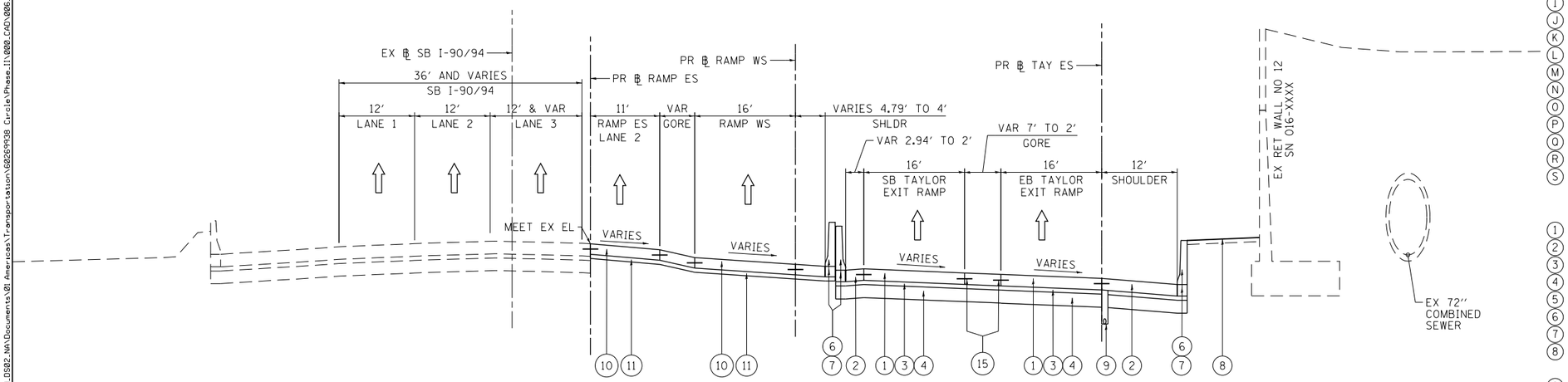
AECOM Tran Systems	D160X93-sht-Typical-02.dgn	DESIGNED - OPS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TYPICAL SECTIONS RAMP INTERCHANGE COMPLETIONS
	USER NAME = MSBilliot	DRAWN - OPS	REVISED -		
	PLOT SCALE = 20.0000 ' / in.	CHECKED - MJE	REVISED -		SCALE: NONE | SHEET 11 OF 17 SHEETS | STA. TO STA.
	PLOT DATE = 11/10/2017	DATE - 11-10-2017	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	409	36
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			



EXISTING TYPICAL SECTION (LOOKING SOUTH)

PR ℄ RAMP ES
STA 1518+88.11 TO STA 1521+28.47
PR ℄ RAMP WS
STA 1233+72.63 TO STA 1236+56.30
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7317+52.14 TO STA 7319+92.10



PROPOSED TYPICAL SECTION (LOOKING SOUTH)

PR ℄ RAMP ES
STA 1518+88.11 TO STA 1521+28.47
PR ℄ RAMP WS
STA 1234+14.54 TO STA 1236+56.30
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7317+52.14 TO STA 7319+92.10

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4" TO 7"
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7" TO 10"
- (C) GRANULAR SUBBASE, 4" OR 6"
- (D) HOT MIX ASPHALT SHOULDER, 10"
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4"
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) CONCRETE MEDIAN SURFACE, 4"
- (K) SELECT GRANULAR BACKFILL
- (L) STABILIZED SUBBASE - HOT-MIX ASPHALT, 4"
- (M) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (N) SUBBASE GRANULAR MATERIAL, 12"
- (O) POROUS GRANULAR EMBANKMENT, SPECIAL, 0" TO 30"
- (P) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
- (Q) TEMPORARY PAVEMENT (TO REMAIN PERMANENTLY)
- (R) SUB-BASE GRANULAR MATERIAL, TYPE B, 8"
- (S) TOPSOIL FURNISH AND PLACE, 4"

PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11" (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11"
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4"
- (4) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4"
- (6) CONCRETE BARRIER WALL, SINGLE FACE, 42 INCH HEIGHT
- (7) CONCRETE BARRIER BASE
- (8) TOPSOIL FURNISH AND PLACE, 4" AND SEEDING OR SODDING, (SEE EROSION CONTROL PLANS)
- (9) PIPE UNDERDRAIN TYPE 2 6"
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET FOR DETAILS)
- (11) SUBBASE GRANULAR MATERIAL, TYPE B 4"
- (12) TEMPORARY CONCRETE BARRIER (TO REMAIN PERMANENTLY)
- (13) CONCRETE GUTTER, TYPE B
- (14) #6 TIE BARS, 24" LONG AT 24" C-C (INCLUDED IN PRICE FOR BID FOR CURB AND GUTTER)
- (15) #6 TIE BARS, 30" LONG AT 36" C-C (INCLUDED IN PRICE FOR BID FOR PCC PAVEMENT)

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AECOM Tran Systems

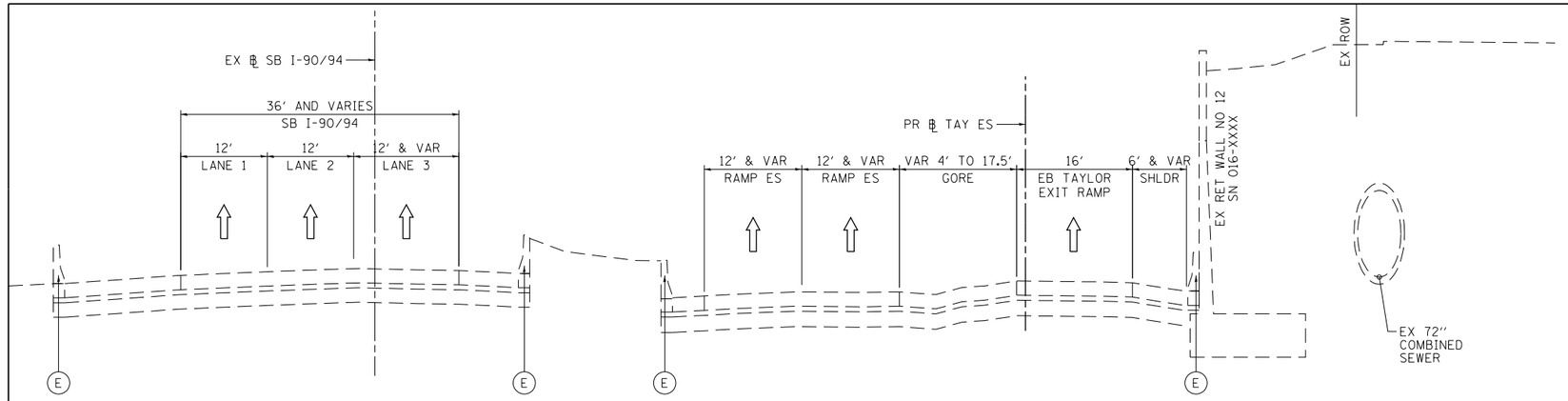
D160X93-sht-Typical-02.dgn	DESIGNED - OPS	REVISED -
USER NAME = MSBilliot	DRAWN - OPS	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED - MJE	REVISED -
PLOT DATE = 11/10/2017	DATE - 11-10-2017	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
RAMP INTERCHANGE COMPLETIONS

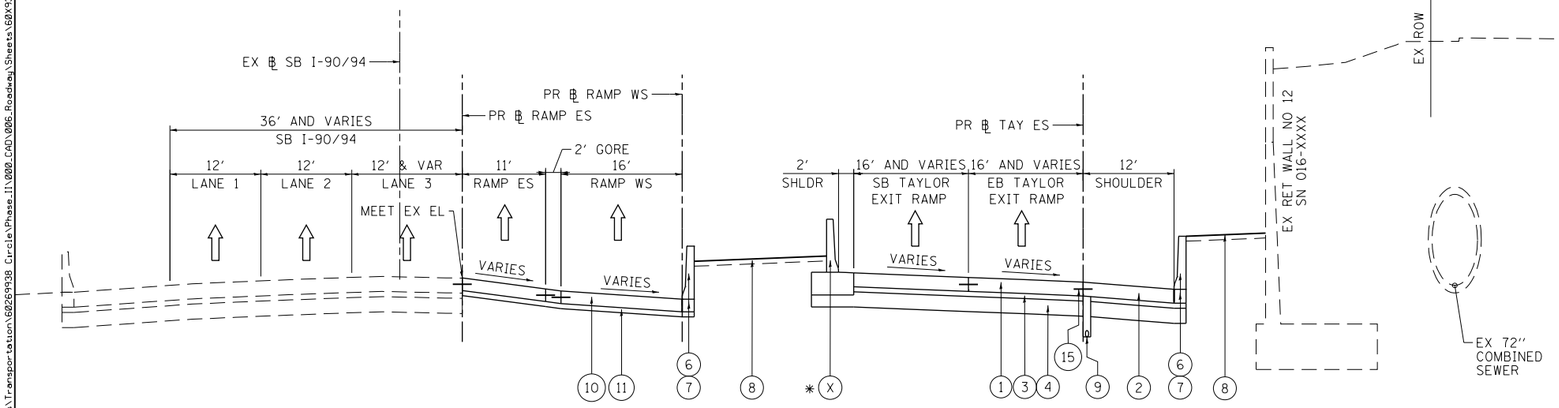
SCALE: NONE | SHEET 12 OF 17 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	409	37
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			



EXISTING TYPICAL SECTION
(LOOKING SOUTH)

PR ℄ RAMP ES
STA 1521+28.47 TO STA 1522+40.95
PR ℄ RAMP WS
STA 1236+56.30 TO STA 1237+13.79
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7319+92.10 TO STA 7320+50.00



*(X) STA 7318+83.45 TO 7320+49.54

PROPOSED TYPICAL SECTION
(LOOKING SOUTH)

PR ℄ RAMP ES
STA 1521+28.47 TO STA 1522+40.95
PR ℄ RAMP WS
STA 1236+56.30 TO STA 1237+13.79
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7319+92.10 TO STA 7320+50.00

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4" TO 7"
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7" TO 10"
- (C) GRANULAR SUBBASE, 4" OR 6"
- (D) HOT MIX ASPHALT SHOULDER, 10"
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4"
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) CONCRETE MEDIAN SURFACE, 4"
- (K) SELECT GRANULAR BACKFILL
- (L) STABILIZED SUBBASE - HOT-MIX ASPHALT, 4"
- (M) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (N) SUBBASE GRANULAR MATERIAL, 12"
- (O) POROUS GRANULAR EMBANKMENT, SPECIAL, 0" TO 30"
- (P) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
- (Q) TEMPORARY PAVEMENT (TO REMAIN PERMANENTLY)
- (R) SUB-BASE GRANULAR MATERIAL, TYPE B, 8"
- (S) TOPSOIL FURNISH AND PLACE, 4"

PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11" (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11"
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4"
- (4) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4"
- (6) CONCRETE BARRIER WALL, SINGLE FACE, 42 INCH HEIGHT
- (7) CONCRETE BARRIER BASE
- (8) TOPSOIL FURNISH AND PLACE, 4" AND SEEDING OR SODDING, (SEE EROSION CONTROL PLANS)
- (9) PIPE UNDERDRAIN TYPE 2 6"
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET FOR DETAILS)
- (11) SUBBASE GRANULAR MATERIAL, TYPE B 4"
- (12) TEMPORARY CONCRETE BARRIER (TO REMAIN PERMANENTLY)
- (13) CONCRETE GUTTER, TYPE B
- (14) #6 TIE BARS, 24" LONG AT 24" C-C (INCLUDED IN PRICE FOR BID FOR CURB AND GUTTER)
- (15) #6 TIE BARS, 30" LONG AT 36" C-C (INCLUDED IN PRICE FOR BID FOR PCC PAVEMENT)

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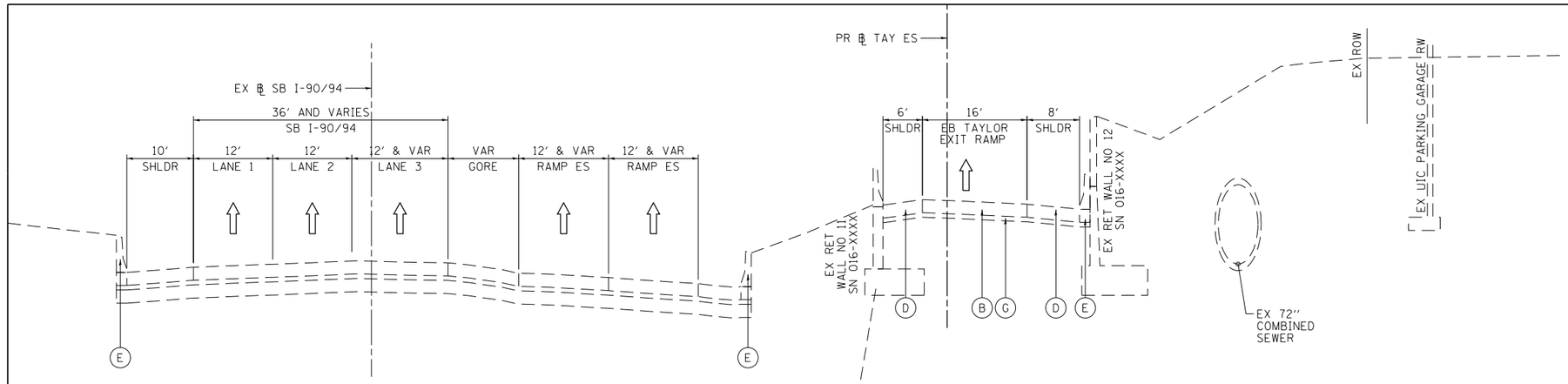
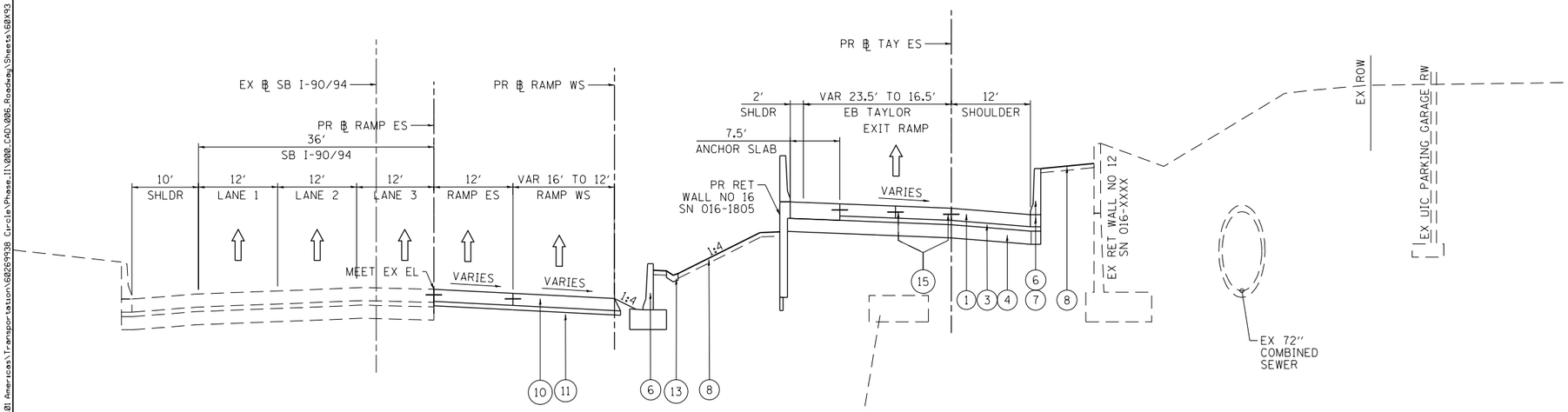
AECOM . TranSystems	D160X93-sht-Typical-02.dgn	DESIGNED - OPS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TYPICAL SECTIONS RAMP INTERCHANGE COMPLETIONS
	USER NAME = MSBilliot	DRAWN - OPS	REVISED -		
	PLOT SCALE = 20.0000 ' / in.	CHECKED - MJE	REVISED -		
	PLOT DATE = 11/10/2017	DATE - 11-10-2017	REVISED -		SCALE: NONE SHEET 13 OF 17 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	409	38
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			



EXISTING TYPICAL SECTION (LOOKING SOUTH)

PR ℄ RAMP ES
STA 1522+40.95 TO STA 1524+17.55
PR ℄ RAMP WS
STA 1237+13.79 TO STA 1238+90.35
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7320+50.00 TO STA 7322+26.08



PROPOSED TYPICAL SECTION (LOOKING SOUTH)

PR ℄ RAMP ES
STA 1522+40.95 TO STA 1524+17.55
PR ℄ RAMP WS
STA 1237+13.79 TO STA 1238+90.35
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7320+50.00 TO STA 7322+26.08

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4" TO 7"
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7" TO 10"
- (C) GRANULAR SUBBASE, 4" OR 6"
- (D) HOT MIX ASPHALT SHOULDER, 10"
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4"
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) CONCRETE MEDIAN SURFACE, 4"
- (K) SELECT GRANULAR BACKFILL
- (L) STABILIZED SUBBASE - HOT-MIX ASPHALT, 4"
- (M) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (N) SUBBASE GRANULAR MATERIAL, 12"
- (O) POROUS GRANULAR EMBANKMENT, SPECIAL, 0" TO 30"
- (P) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
- (Q) TEMPORARY PAVEMENT (TO REMAIN PERMANENTLY)
- (R) SUB-BASE GRANULAR MATERIAL, TYPE B, 8"
- (S) TOPSOIL FURNISH AND PLACE, 4"

PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11" (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11"
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4"
- (4) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4"
- (6) CONCRETE BARRIER WALL, SINGLE FACE, 42 INCH HEIGHT
- (7) CONCRETE BARRIER BASE
- (8) TOPSOIL FURNISH AND PLACE, 4" AND SEEDING OR SODDING, (SEE EROSION CONTROL PLANS)
- (9) PIPE UNDERDRAIN TYPE 2 6"
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET FOR DETAILS)
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- (13) CONCRETE GUTTER, TYPE B
- (14) #6 TIE BARS, 24" LONG AT 24" C-C (INCLUDED IN PRICE FOR BID FOR CURB AND GUTTER)
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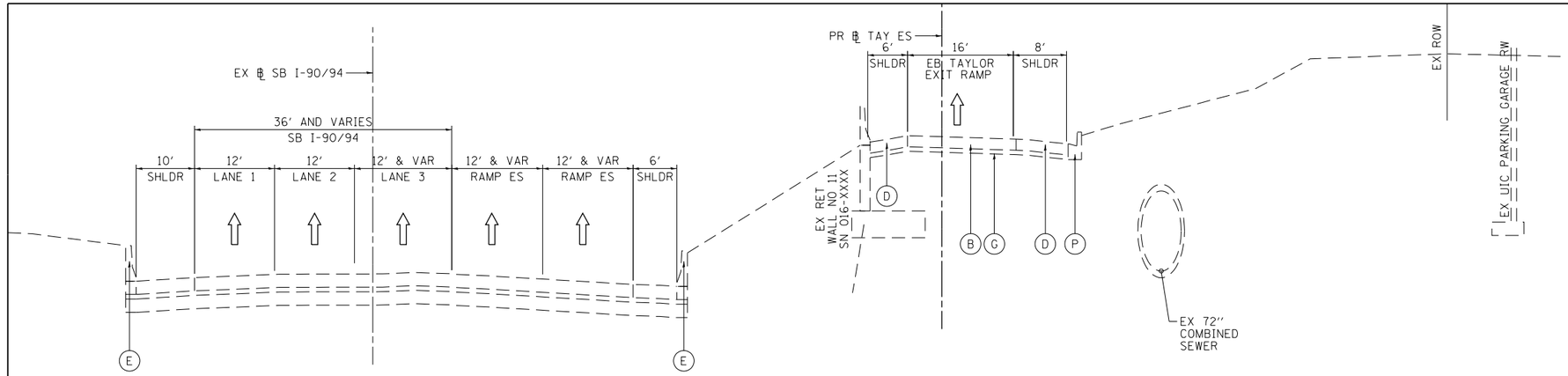
AECOM . TranSystems	D160X93-sht-Typical-02.dgn	DESIGNED - OPS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	USER NAME = MSBillot	DRAWN - OPS	REVISED -	
	PLOT SCALE = 20.0000 ' / in.	CHECKED - MJE	REVISED -	
	PLOT DATE = 11/10/2017	DATE - 11-10-2017	REVISED -	

TYPICAL SECTIONS
RAMP INTERCHANGE COMPLETIONS

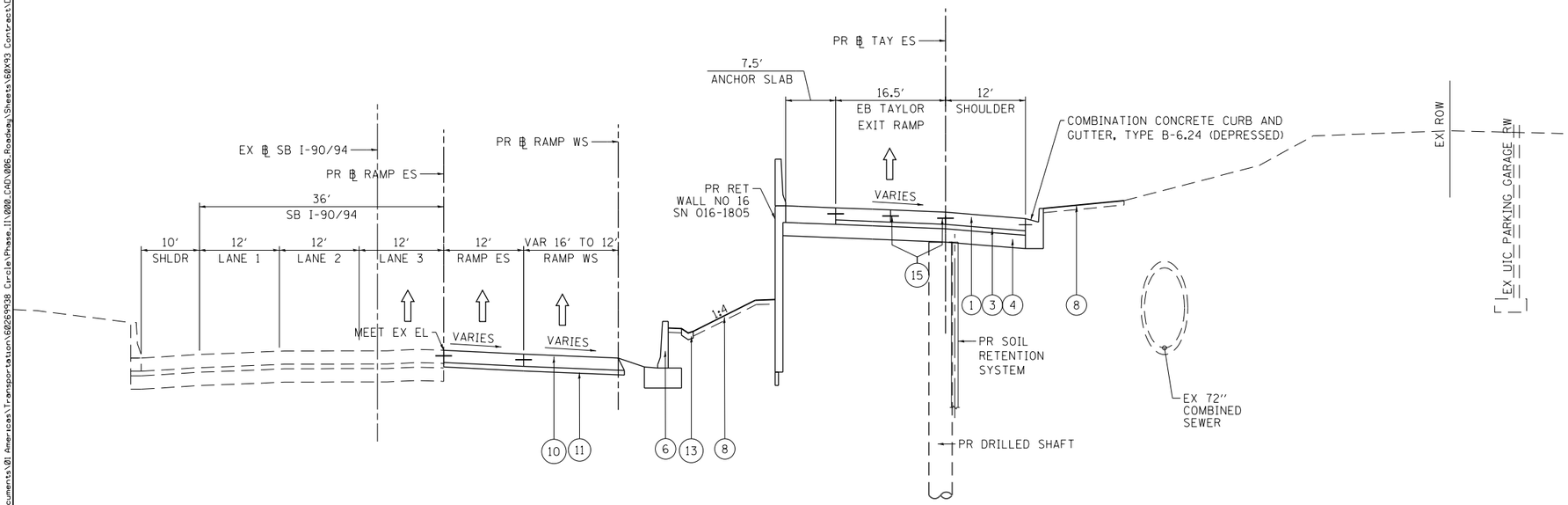
SCALE: NONE | SHEET 14 OF 17 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	409	39
		CONTRACT NO. 60X93		
		ILLINOIS	FED. AID PROJECT	



EXISTING TYPICAL SECTION (LOOKING SOUTH)

PR ℄ RAMP ES
STA 1524+17.55 TO STA 1525+02.61
PR ℄ RAMP WS
STA 1238+90.35 TO STA 1239+75.39
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7322+26.08 TO STA 7323+11.10



PROPOSED TYPICAL SECTION (LOOKING SOUTH)

PR ℄ RAMP ES
STA 1524+17.55 TO STA 1525+02.61
PR ℄ RAMP WS
STA 1238+90.35 TO STA 1239+75.39
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7322+26.08 TO STA 7323+11.10

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4" TO 7"
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7" TO 10"
- (C) GRANULAR SUBBASE, 4" OR 6"
- (D) HOT MIX ASPHALT SHOULDER, 10"
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4"
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) CONCRETE MEDIAN SURFACE, 4"
- (K) SELECT GRANULAR BACKFILL
- (L) STABILIZED SUBBASE - HOT-MIX ASPHALT, 4"
- (M) AGGREGATE SUBGRADE IMPROVEMENT, 12"
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- (Q) TEMPORARY PAVEMENT (TO REMAIN PERMANENTLY)
- (R) SUB-BASE GRANULAR MATERIAL, TYPE B, 8"
- (S) TOPSOIL FURNISH AND PLACE, 4"

PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11" (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11"
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4"
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- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4"
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- (9) PIPE UNDERDRAIN TYPE 2 6"
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET FOR DETAILS)
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AECOM . TranSystems

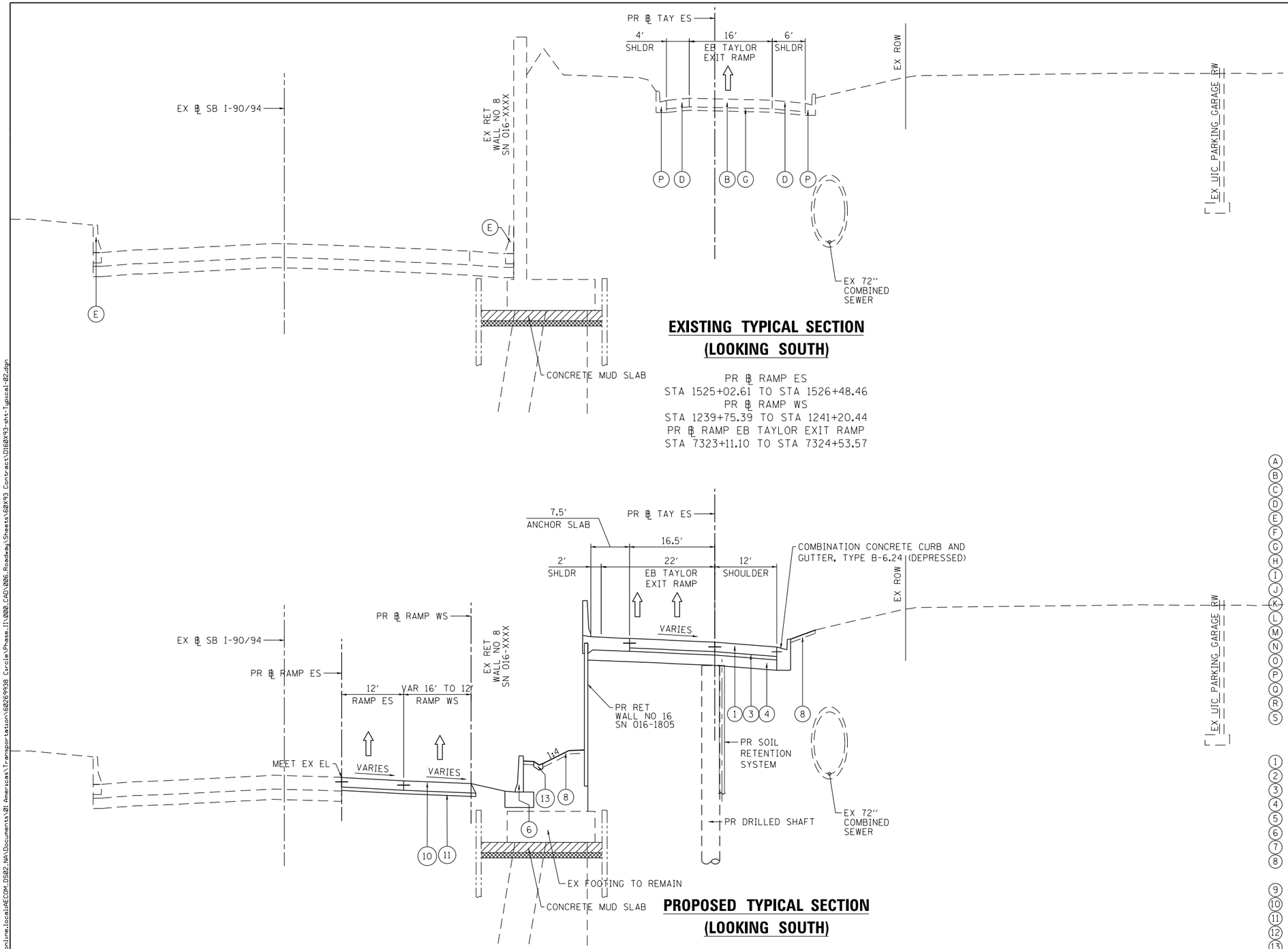
D160X93-sht-Typical-02.dgn	DESIGNED - OPS	REVISED -	
USER NAME = MSBillot	DRAWN - OPS	REVISED -	
PLOT SCALE = 20.0000 ' / in.	CHECKED - MJE	REVISED -	
PLOT DATE = 11/10/2017	DATE - 11-10-2017	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
RAMP INTERCHANGE COMPLETIONS

SCALE: NONE | SHEET 15 OF 17 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	409	40
		CONTRACT NO. 60X93		
	ILLINOIS	FED. AID PROJECT		



EXISTING TYPICAL SECTION (LOOKING SOUTH)

PR ℄ RAMP ES
STA 1525+02.61 TO STA 1526+48.46
PR ℄ RAMP WS
STA 1239+75.39 TO STA 1241+20.44
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7323+11.10 TO STA 7324+53.57

PROPOSED TYPICAL SECTION (LOOKING SOUTH)

PR ℄ RAMP ES
STA 1525+02.61 TO STA 1526+48.46
PR ℄ RAMP WS
STA 1239+75.39 TO STA 1241+20.44
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7323+11.10 TO STA 7324+53.57

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4" TO 7"
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7" TO 10"
- (C) GRANULAR SUBBASE, 4" OR 6"
- (D) HOT MIX ASPHALT SHOULDER, 10"
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4"
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) CONCRETE MEDIAN SURFACE, 4"
- (K) SELECT GRANULAR BACKFILL
- (L) STABILIZED SUBBASE - HOT-MIX ASPHALT, 4"
- (M) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (N) SUBBASE GRANULAR MATERIAL, 12"
- (O) POROUS GRANULAR EMBANKMENT, SPECIAL, 0" TO 30"
- (P) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
- (Q) TEMPORARY PAVEMENT (TO REMAIN PERMANENTLY)
- (R) SUB-BASE GRANULAR MATERIAL, TYPE B, 8"
- (S) TOPSOIL FURNISH AND PLACE, 4"

PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11" (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11"
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4"
- (4) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4"
- (6) CONCRETE BARRIER WALL, SINGLE FACE, 42 INCH HEIGHT
- (7) CONCRETE BARRIER BASE
- (8) TOPSOIL FURNISH AND PLACE, 4" AND SEEDING OR SODDING, (SEE EROSION CONTROL PLANS)
- (9) PIPE UNDERDRAIN TYPE 2 6"
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET FOR DETAILS)
- (11) SUBBASE GRANULAR MATERIAL, TYPE B 4"
- (12) TEMPORARY CONCRETE BARRIER (TO REMAIN PERMANENTLY)
- (13) CONCRETE GUTTER, TYPE B
- (14) #6 TIE BARS, 24" LONG AT 24" C-C (INCLUDED IN PRICE FOR BID FOR CURB AND GUTTER)
- (15) #6 TIE BARS, 30" LONG AT 36" C-C (INCLUDED IN PRICE FOR BID FOR PCC PAVEMENT)

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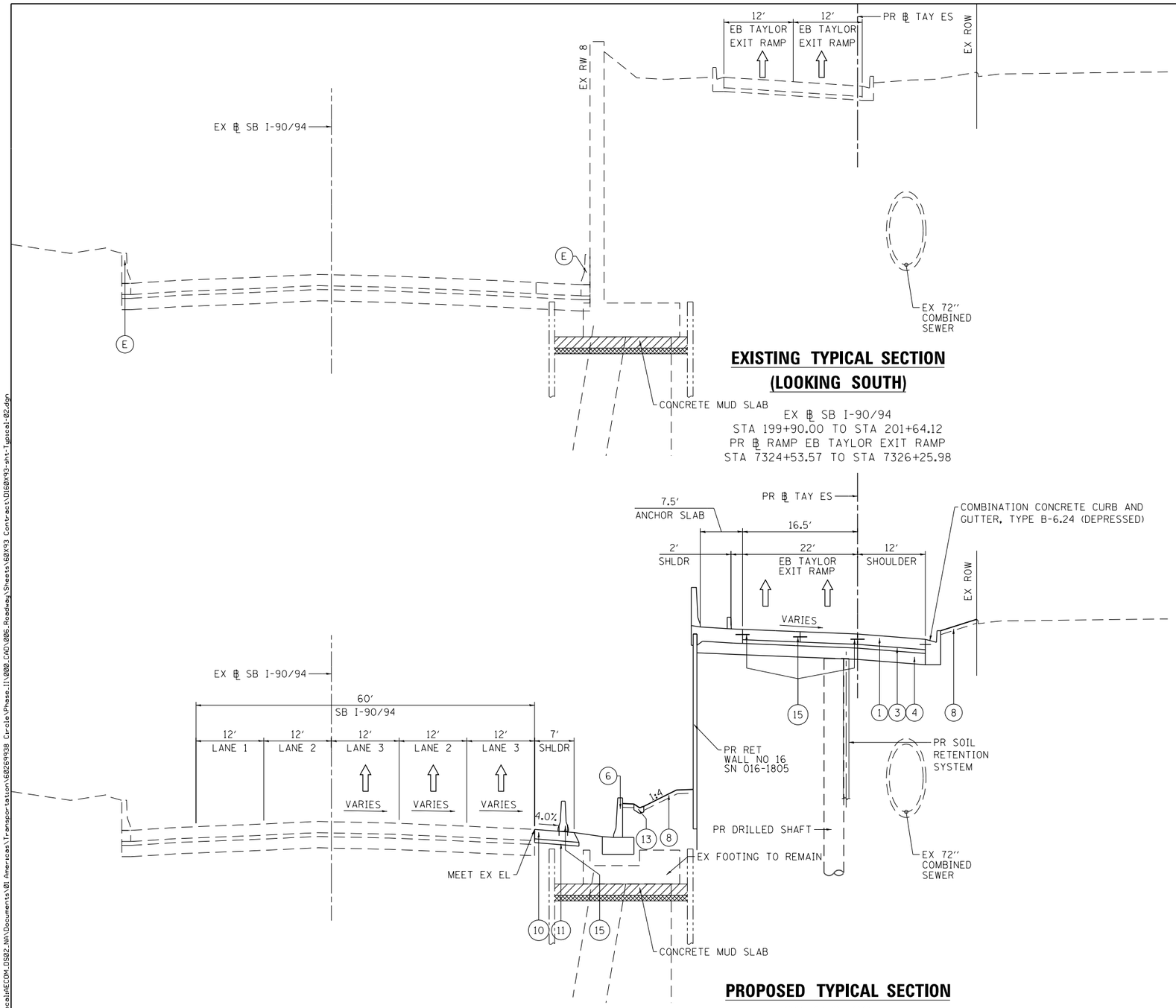
AECOM Tran Systems	D160X93-sht-Typical-02.dgn	DESIGNED - OPS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	
	USER NAME = MSBillot	DRAWN - OPS	REVISED -		
	PLOT SCALE = 20.0000 ' / in.	CHECKED - MJE	REVISED -		
	PLOT DATE = 11/10/2017	DATE - 11-10-2017	REVISED -		

SCALE: | SHEET 16 OF 17 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	409	41
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		



EXISTING TYPICAL SECTION (LOOKING SOUTH)

EX ℄ SB I-90/94
STA 199+90.00 TO STA 201+64.12
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7324+53.57 TO STA 7326+25.98

PROPOSED TYPICAL SECTION (LOOKING SOUTH)

EX ℄ SB I-90/94
STA 199+90.00 TO STA 201+64.12
PR ℄ RAMP EB TAYLOR EXIT RAMP
STA 7324+53.57 TO STA 7326+25.98

EXISTING

- (A) HOT-MIX ASPHALT PAVEMENT, 4" TO 7"
- (B) PORTLAND CEMENT CONCRETE PAVEMENT, 7" TO 10"
- (C) GRANULAR SUBBASE, 4" OR 6"
- (D) HOT MIX ASPHALT SHOULDER, 10"
- (E) CONCRETE BARRIER
- (F) TEMPORARY PAVEMENT
- (G) SUBBASE GRANULAR MATERIAL, 4"
- (H) TEMPORARY CONCRETE BARRIER
- (I) CONCRETE GUTTER, TYPE B
- (J) CONCRETE MEDIAN SURFACE, 4"
- (K) SELECT GRANULAR BACKFILL
- (L) STABILIZED SUBBASE - HOT-MIX ASPHALT, 4"
- (M) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (N) SUBBASE GRANULAR MATERIAL, 12"
- (O) POROUS GRANULAR EMBANKMENT, SPECIAL, 0" TO 30"
- (P) COMBINATION CONCRETE CURB AND GUTTER, TYPE M-6.24
- (Q) TEMPORARY PAVEMENT (TO REMAIN PERMANENTLY)
- (R) SUB-BASE GRANULAR MATERIAL, TYPE B, 8"
- (S) TOPSOIL FURNISH AND PLACE, 4"

PROPOSED

- (1) PORTLAND CEMENT CONCRETE PAVEMENT, 11" (JOINTED)
- (2) PORTLAND CEMENT CONCRETE SHOULDERS, 11"
- (3) STABILIZED SUBBASE HOT MIX ASPHALT, 4"
- (4) AGGREGATE SUBGRADE IMPROVEMENT, 12"
- (5) SUBBASE GRANULAR MATERIAL, TYPE C, 4"
- (6) CONCRETE BARRIER WALL, SINGLE FACE, 42 INCH HEIGHT
- (7) CONCRETE BARRIER BASE
- (8) TOPSOIL FURNISH AND PLACE, 4" AND SEEDING OR SODDING, (SEE EROSION CONTROL PLANS)
- (9) PIPE UNDERDRAIN TYPE 2 6"
- (10) TEMPORARY PAVEMENT (SEE TYPICAL SECTION SHEET FOR DETAILS)
- (11) SUBBASE GRANULAR MATERIAL, TYPE B 4"
- (12) TEMPORARY CONCRETE BARRIER (TO REMAIN PERMANENTLY)
- (13) CONCRETE GUTTER, TYPE B
- (14) #6 TIE BARS, 24" LONG AT 24" C-C (INCLUDED IN PRICE FOR BID FOR CURB AND GUTTER)
- (15) #6 TIE BARS, 30" LONG AT 36" C-C (INCLUDED IN PRICE FOR BID FOR PCC PAVEMENT)

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AECOM Tran Systems

D160X93-sht-Typical-02.dgn	DESIGNED - OPS	REVISED -	
USER NAME = MSBillot	DRAWN - OPS	REVISED -	
PLOT SCALE = 20.0000 ' / in.	CHECKED - MJE	REVISED -	
PLOT DATE = 11/10/2017	DATE - 11-10-2017	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCALE: | SHEET17 OF 17 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK	409	42
		CONTRACT NO. 60X93		
	ILLINOIS	FED. AID PROJECT		

APPENDIX E

APPENDIX E

BORING LOCATION PLANS AND SOIL PROFILES

ROADWAY GEOTECHNICAL REPORT

JANE BYRNE INTERCHANGE RECONSTRUCTION
60X93 AND 60X79 RAMP COMPLETION
SECTION 2014-013R&R-B
COOK COUNTY, ILLINOIS

FOR

FOR AECOM
303 EAST WACKER DRIVE
CHICAGO, IL 60601

Prepared by
WANG ENGINEERING
1145 NORTH MAIN STREET
LOMBARD, IL 60148

APRIL 02, 2018
WANG PROJECT 1100-04-01

LEGEND:

Roadway Boring

SB90-SGB-25 — Borehole Number
581.55 ft, — Elevation
1515+33.53, 22.36 RT — Station, offset

Borehole Lithology

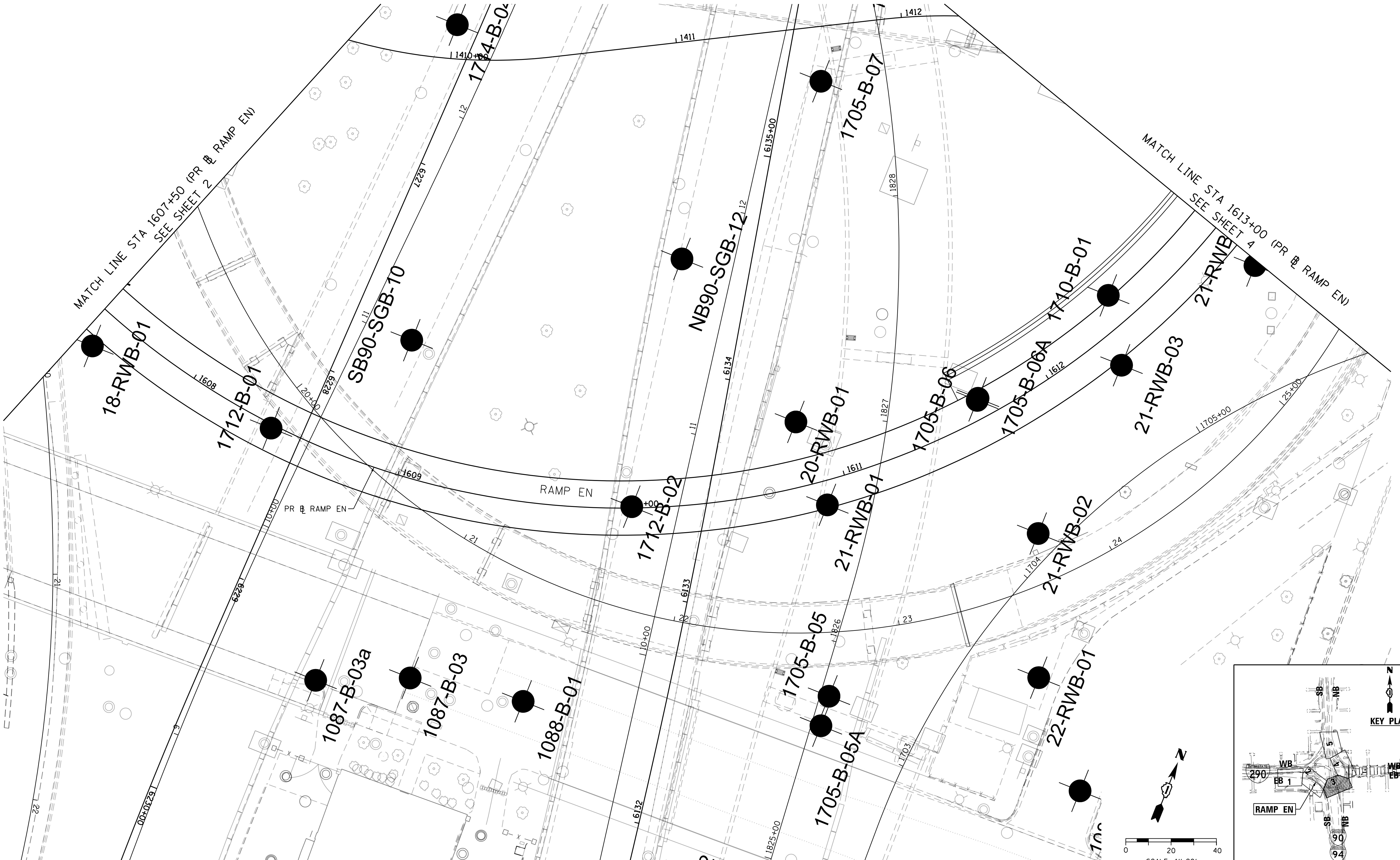
N–N-value, (blw/12 in)
Qu–UC Strength, (tsf)
MC--Moisture Content, (%)

Water Level Reading at time of drilling.

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

Lithology Graphics

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



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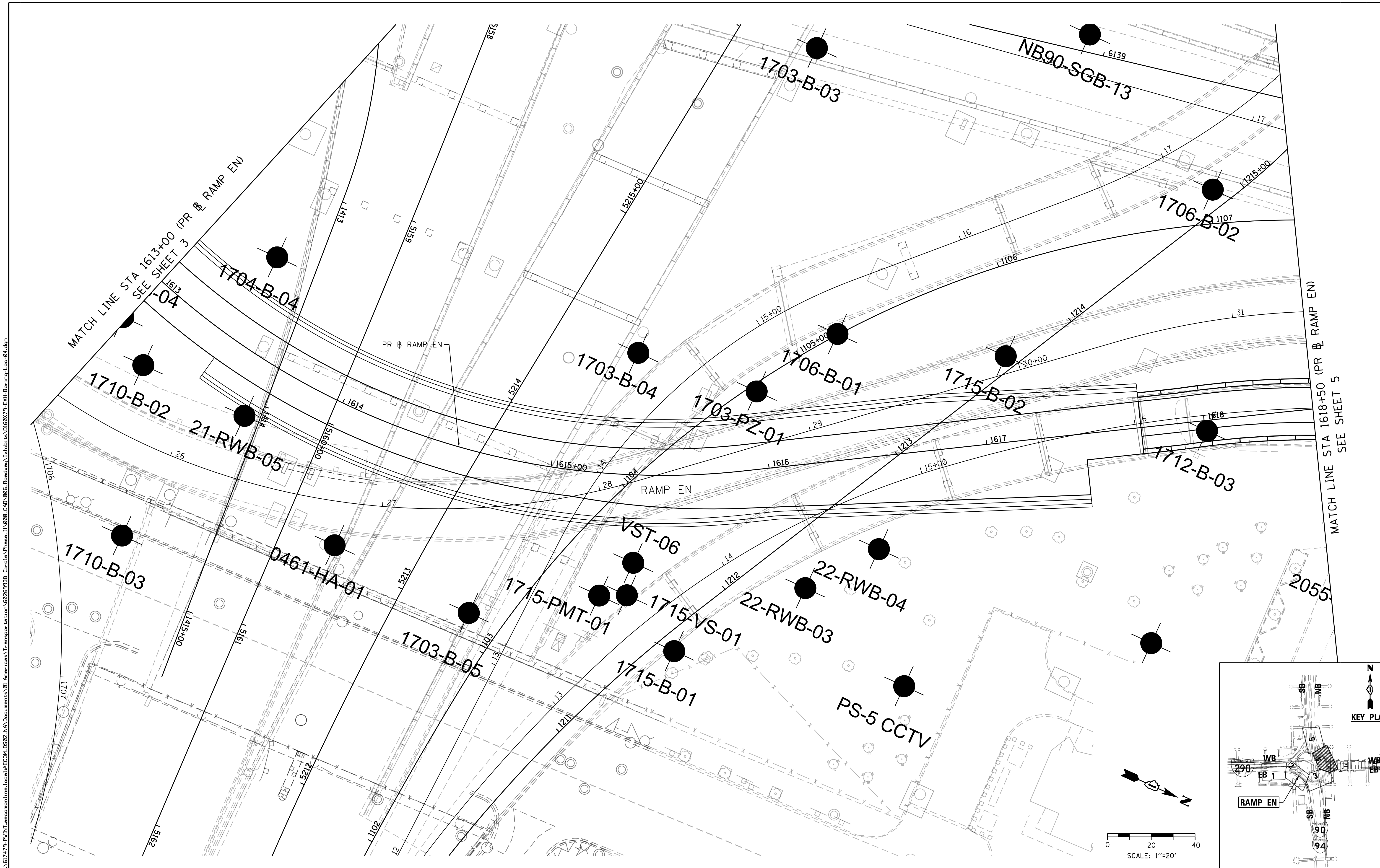
	PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -	
	PLOT DATE = 10/10/2017	DATE - $DATE	REVISED -	

EXISTING BORING LOCATIONS
RAMP EN

SCALE: 1"=20' | SHEET 3 OF 5 SHEETS | STA. 1607+50 TO STA. 1613+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK		
		CONTRACT NO. 60X79		
	ILLINOIS	FED. AID PROJECT		



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	USER NAME = MSBilliot	DRAWN -	REVISED -			90/94/290	2014-005R&B	COOK		
	PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -					CONTRACT NO. 60X79		
	PLOT DATE = 10/10/2017	DATE - $DATE	REVISED -		SCALE: 1"=20' SHEET 4 OF 5 SHEETS STA. 1613+00 TO STA. 1618+50		ILLINOIS FED. AID PROJECT			

2055-B-03

715-B-03

2055-B-04

SB90-SGB-08

38-RWB-01

1702-B-

SB90-SGB-07

2055-B-05

NB90-SGB-14

1702-B-02

I-90/94

MATCH LINE STA 1618+50 (PR ℄ RAMP EN)
SEE SHEET 4 OF 5

PR ℄ RAMP EN

23-RWB-01

23-RWB-02

23-RWB-03

23-RWB-04

23-RWB-05-HA

23-RWB-01 HA

23-RWB-02 HA

23-RWB-03 HA

23-RWB-04 HA

23-RWB-05

B-02

0 20 40
SCALE: 1"=20'

KEY PLAN

RAMP EN

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TranSystems

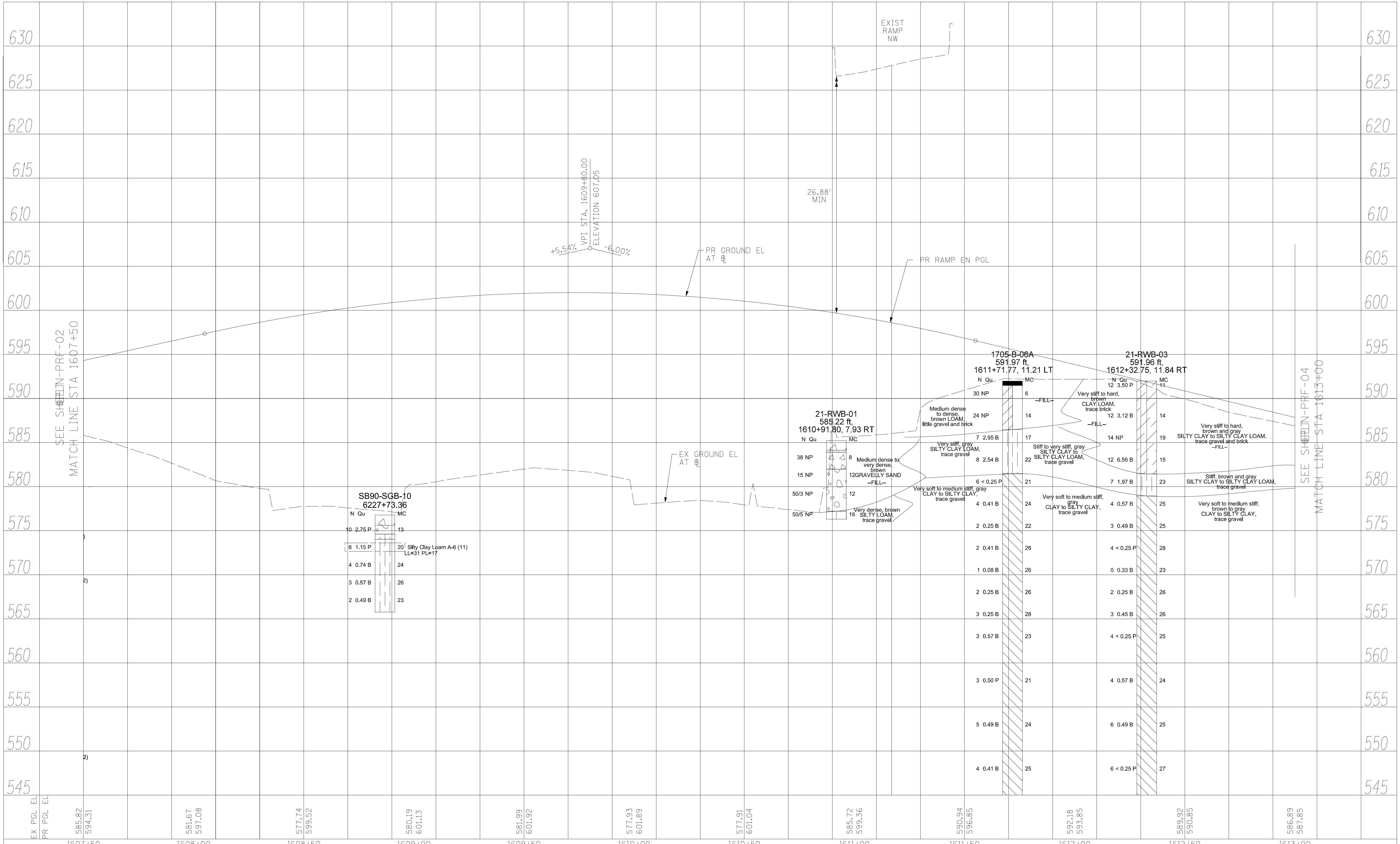
D160X79-EXH-Boring-Loc-05.dgn	DESIGNED -	REVISED -	
USER NAME = MSBilliot	DRAWN -	REVISED -	
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 10/10/2017	DATE - $DATE	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BORING LOCATIONS
RAMP EN

SCALE: 1"=20' | SHEET 5 OF 5 SHEETS | STA. 1618+50 | TO STA. 1623+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK		
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			



630
625
620
615
610
605
600
595
590
585
580
575
570
565
560
555
550
545
EXIST
RAMP
NW
26.88'
MIN
VPI STA. 1609+80.00
ELEVATION 607.05
+5.54%
-6.00%
PR GROUND EL
AT ℄
PR RAMP EN PGL
EX GROUND EL
AT ℄
SEE SHEET PLN-PRF-02
MATCH LINE STA 1607+50
SEE SHEET PLN-PRF-04
MATCH LINE STA 1613+00
SB90-SGB-10
6227+73.36
N Qu MC
10 2.75 P 13
6 1.15 P 20 Silty Clay Loam A-6 (11)
LL=31 PL=17
4 0.74 B 24
3 0.57 B 26
2 0.49 B 23
21-RWB-01
585.22 ft,
1610+91.80, 7.93 RT
N Qu MC
38 NP 8
15 NP 12
50/3 NP 12
50/5 NP 16
Medium dense to very dense, brown GRAVELLY SAND
--FILL--
Very dense, brown SILTY LOAM, trace gravel
1705-B-06A
591.97 ft,
1611+71.77, 11.21 LT
N Qu MC
30 NP 6
24 NP 14
7 2.95 B 17
8 2.54 B 22
6 < 0.25 P 21
4 0.41 B 24
2 0.25 B 22
2 0.41 B 26
1 0.08 B 26
2 0.25 B 26
3 0.25 B 28
3 0.57 B 23
3 0.50 P 21
5 0.49 B 24
4 0.41 B 25
Medium dense to dense, brown LOAM, little gravel and brick
--FILL--
Very stiff, gray SILTY CLAY LOAM, trace gravel
Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel
Very stiff to hard, brown CLAY LOAM, trace brick
--FILL--
Stiff to very stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel
Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel
21-RWB-03
591.96 ft,
1612+32.75, 11.84 RT
N Qu MC
12 3.50 P 11
12 3.12 B 14
14 NP 19
12 6.56 B 15
7 1.97 B 23
4 0.57 B 25
3 0.49 B 25
4 < 0.25 P 28
0 0.33 B 23
2 0.25 B 26
3 0.45 B 26
4 < 0.25 P 25
4 0.57 B 24
6 0.49 B 25
6 < 0.25 P 27
Very stiff to hard, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel and brick
--FILL--
Stiff, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel
Very soft to medium stiff, brown to gray CLAY to SILTY CLAY, trace gravel
EX PGL EL
PR PGL EL
585.82 594.31
581.67 597.08
577.74 599.52
580.19 601.13
581.99 601.92
577.93 601.89
577.91 601.04
585.72 599.36
590.94 596.85
592.18 593.85
589.92 590.85
586.89 587.85
1607+50
1608+00
1608+50
1609+00
1609+50
1610+00
1610+50
1611+00
1611+50
1612+00
1612+50
1613+00

PLAN: SURVEYED / PLOTTED / ALIGNMENT CHECKED / R.O.W. CHECKED / CADD FILE NAME — NOTE BOOK NO. — BY — DATE

PROFILE: SURVEYED / PLOTTED / GRADES CHECKED / B.M. NOTED / STRUCTURE NOTATIONS CHKD — NOTE BOOK NO. — BY — DATE

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PLOT DATE = $DATE$	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROADWAY PROFILE
RAMP EN

SCALE: 1"=20' | SHEET $$PLN-PRF-03 OF $PLN-TOT SHEETS | STA.1607+50 TO STA.1613+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	$TOT	PLN-PRF-02

CONTRACT NO. 60X79

ILLINOIS FED. AID PROJECT

RAMP EN
FULL DEPTH PAVEMENT

INTERIM RAMP EN
TEMP PAVEMENT

EXIST EB I-290

EXIST WB I-290

EXIST RAMP WS

EXIST RAMP WN

PR GROUND EL AT ℄

EX GROUND EL AT ℄

PR RAMP EN PGL

SEE SHEET PLN-PRF-03
MATCH LINE STA 1613+00

21-RWB-05
583.31 ft.
1613+69.09, 25.02 RT

0461-HA-01
585.66 ft.
1614+25.45, 59.82 RT

1703-B-05
5213+04.97

1703-B-04
584.722 ft.
1615+43.4925 , 56.1737 LT

22-RWB-04
586.35 ft.
1616+51.01, 42.23 RT

1745-B-02
578.97 ft.
1617+18.21, 39.13 LT

Loose to medium dense, brown, black and gray GRAVELLY LOAM to SILTY LOAM, trace brick

Medium stiff to stiff, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel

Soft to medium stiff, gray CLAY to SILTY CLAY trace gravel

Hard, gray to brown CLAY LOAM, trace gravel

Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel

Very stiff, brown and gray SILTY CLAY LOAM, trace gravel and brick

Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel

Very soft to stiff, gray CLAY to SILTY CLAY, trace gravel

Soft to stiff, gray CLAY to SILTY CLA trace gravel

Silty Clay Loam
A-6 (9)
LL=29 PL=16
%Gravel=3.8
%Sand=16.9
%Silt=54.2
%Clay=25.1

Silty Clay
A-6 (15)
LL=36 PL=18
%Gravel=1.8
%Sand=10.7

+0.37%
VPI STA. 3618+25.00
ELEVATION 577.61
-1.53%

K = 58
110.00' V.C.

END RAMP EN PROFILE
STA 1617+70.00
EL 577.41
BEGIN INTERIM RAMP EN PROFILE
STA 3617+70.00
EL 577.41

SEE SHEET PLN-PRF-05
MATCH LINE STA 1618+50

EX PGL EL
PR PGL EL

1613+00	1613+50	1614+00	1614+50	1615+00	1615+50	1616+00	1616+50	1617+00	1617+50	3618+00	3618+50
586.89 / 587.85	584.46 / 584.85	583.08 / 581.87	582.99 / 579.33	581.64 / 577.47	580.88 / 576.27	580.21 / 575.73	582.70 / 575.87	582.06 / 576.64	581.56 / 577.29	584.90 / 577.44	581.16 / 577.15

PLAN
SURVEYED
PLOTTED
CROSS CHECKED
BLM. NOTED
NOTE BOOK
NO.

PROFILE
SURVEYED
PLOTTED
CROSS CHECKED
BLM. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.

BY
DATE

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PLOT DATE = $DATE$	DATE - $DATE	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROADWAY PROFILE
RAMP EN

SCALE: 1"=20' | SHEET $$PLN-PRF-04$ OF $$PLN-TOTSHEETS$ SHEETS | STA.1613+00 | TO STA.1618+50

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	$TOTSHEETS$	$PLN-PRF-04$

CONTRACT NO. 60X79

ILLINOIS | FED. AID PROJECT

PLAN
SURVEYED
PLOTTED
CROSS CHECKED
BM. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
CROSS CHECKED
BM. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

630 625 620 615 610 605 600 595 590 585 580 575 570 565 560 555 550 545

INTERIM RAMP EN
TEMP PAVEMENT

EXIST
VAN BUREN
STREET

PR GROUND EL
AT ℄

PR RAMP EN PGL

EX GROUND EL
AT ℄

SEE SHEET PLN-PRF-04
MATCH LINE STA 1617+70

END INTERIM RAMP EN PROFILE
STA 3620+25.00
EL 576.14

RAMP EN

23-RWB-01
575.28 ft,
1619+59.56, 29.84 RT

2055-B-05
576.96 ft,
1619+98.15, 50.15 LT

N Qu MC
12 NP 6
--FILL--
6 NP 8
7 1.17 N/6 19
Soft to stiff, brown and gray SILTY CLAY LOAM, trace gravel
6 0.49 B 19
4 0.41 B 23
Soft to stiff, brown and gray CLAY to SILTY CLAY, trace gravel
4 0.49 B 26
8 0.41 B 25
5 0.25 P 27
5 0.25 B 26
4 0.25 B 23
5 0.25 B 25
5 0.41 B 25

N Qu MC
26 NP 6
--FILL--
6 0.33 B 21
VS NA
4 0.25 B 24
Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel
4 0.25 B 22
VS NA
3 0.25 B 24
Clay
A-6 (15)
LL=35 PL=15
%Gravel=3.8
%Sand=15.1
%Silt=47.7
%Clay=33.4
3 0.33 B 25
VS NA
3 0.25 B 23
3 0.16 B 25
VS NA
4 0.25 B 25
VS NA
4 0.25 B 25
VS NA
4 0.33 B 25
4 0.57 B 24

EX PGL EL
PR PGL EL
581.16
577.15
577.96
576.48
576.25
576.04
576.05
576.01
576.32
576.65

3618+50 3619+00 3619+50 3620+00 3620+50 3621+00

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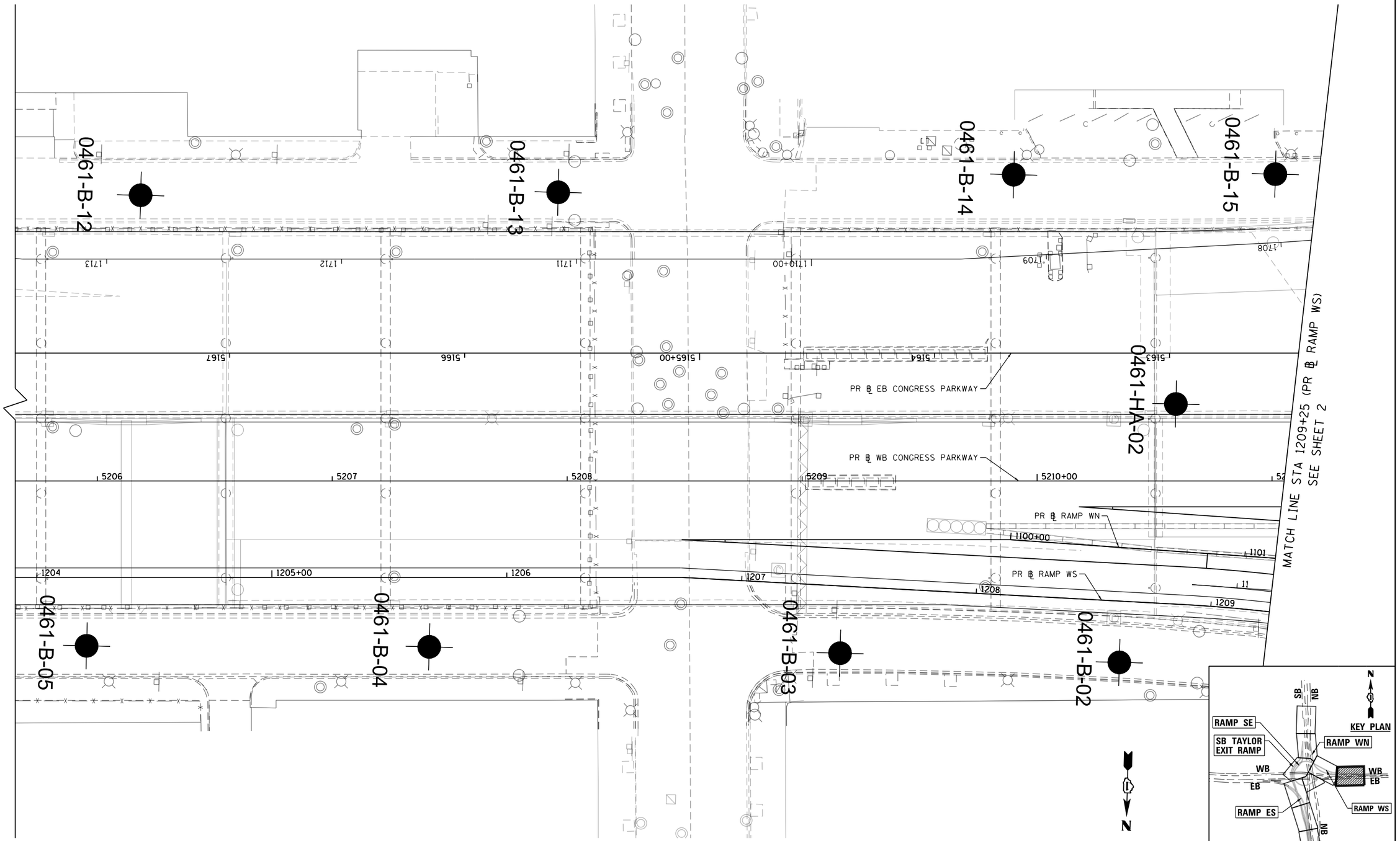
PLOT SCALE = $SCALE$	CHECKED - $PLN-PRF-05-CH	REVISED -
PLOT DATE = $DATE$	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROADWAY PROFILE
RAMP EN

SCALE: 1"=20' | SHEET $$PLN-PRF-05$$PLN-SHEETS | STA.1618+50 | TO STA.1623+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-005R&B	COOK	TOT	$PLN-PRF-05
		CONTRACT NO. 60X79		
	ILLINOIS FED. AID PROJECT			



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TranSystems

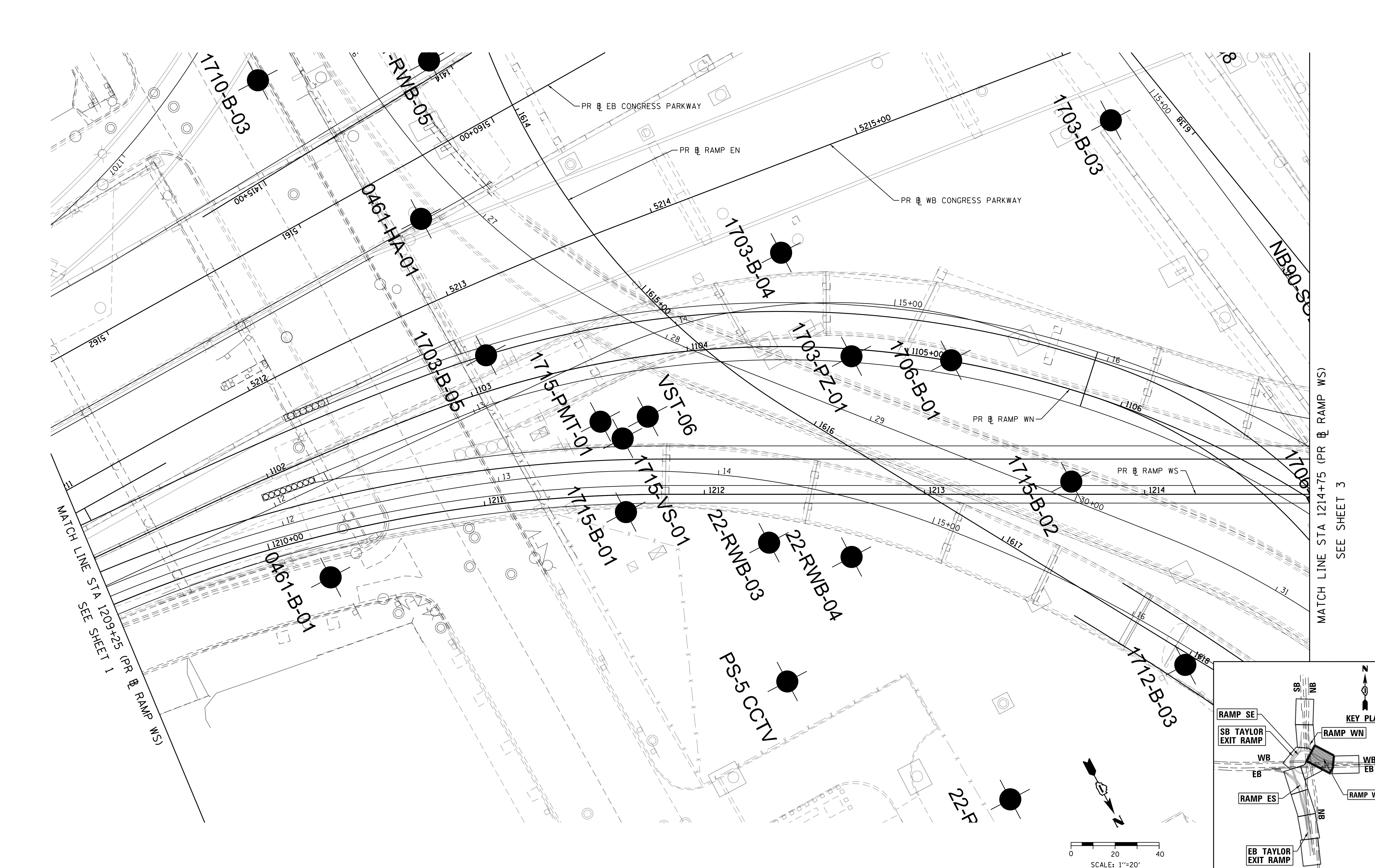
D160X93-EXH-Boring-Loc-01.dgn	DESIGNED -	REVISED -
USER NAME = MSBilliot	DRAWN -	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 10/11/2017	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BORING LOCATIONS
INTERCHANGE RAMP COMPLETIONS

SCALE: 1"=20' | SHEET 1 OF 10 SHEETS | STA. 1204+00 TO STA. 1209+25

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK		
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			



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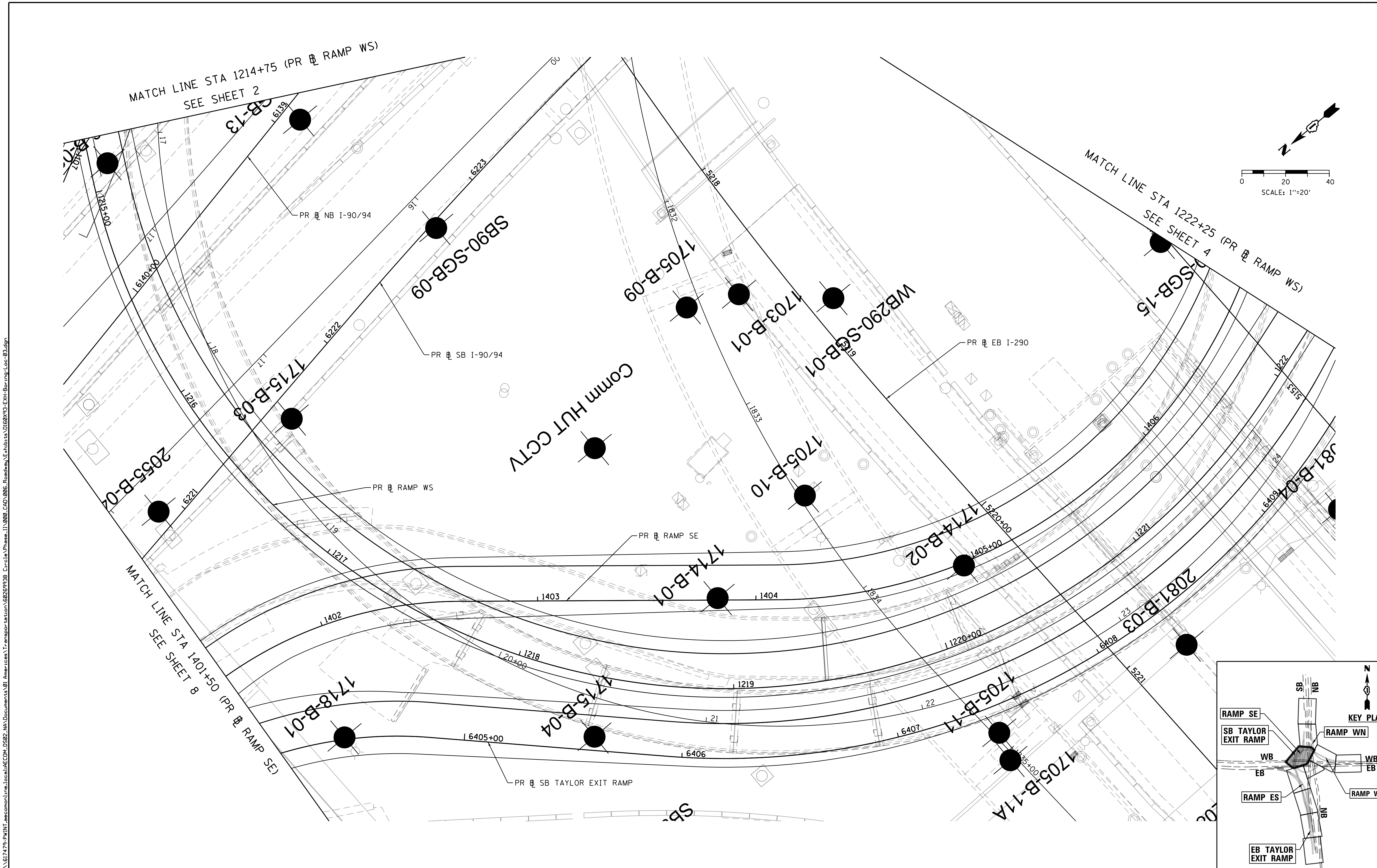
	PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -	
	PLOT DATE = 10/11/2017	DATE - $DATE	REVISED -	

EXISTING BORING LOCATIONS
INTERCHANGE RAMP COMPLETIONS

SCALE: 1"=20'	SHEET 2 OF 10 SHEETS	STA. 1209+25	TO STA. 1214+75

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK		
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		


MATCH LINE STA 1214+75 (PR ℄ RAMP WS)
SEE SHEET 2
MATCH LINE STA 1222+25 (PR ℄ RAMP WS)
SEE SHEET 4
MATCH LINE STA 1401+50 (PR ℄ RAMP SE)
SEE SHEET 8
PR ℄ NB I-90/94
PR ℄ SB I-90/94
PR ℄ EB I-290
PR ℄ RAMP WS
PR ℄ RAMP SE
PR ℄ SB TAYLOR EXIT RAMP
SB90-SGB-09
1705-B-09
1703-B-01
WB290-SGB-01
1715-B-03
Comm HUT CCTV
2055-B-04
1705-B-10
1714-B-02
1714-B-01
2081-B-03
1718-B-01
1715-B-04
1705-B-11
1705-B-11A
SCALE: 1"=20'
KEY PLAN
RAMP SE
SB TAYLOR EXIT RAMP
RAMP WN
RAMP ES
RAMP WS
EB TAYLOR EXIT RAMP
WB
EB
SB
NB

TranSystems	D160X93-EXH-Boring-Loc-03.dgn	DESIGNED -	REVISED -
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	PLOT DATE = 10/11/2017	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BORING LOCATIONS
INTERCHANGE RAMP COMPLETIONS

SCALE: 1"=20' | SHEET 3 OF 10 SHEETS | STA. 1214+75 TO STA. 1222+25

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK		
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		

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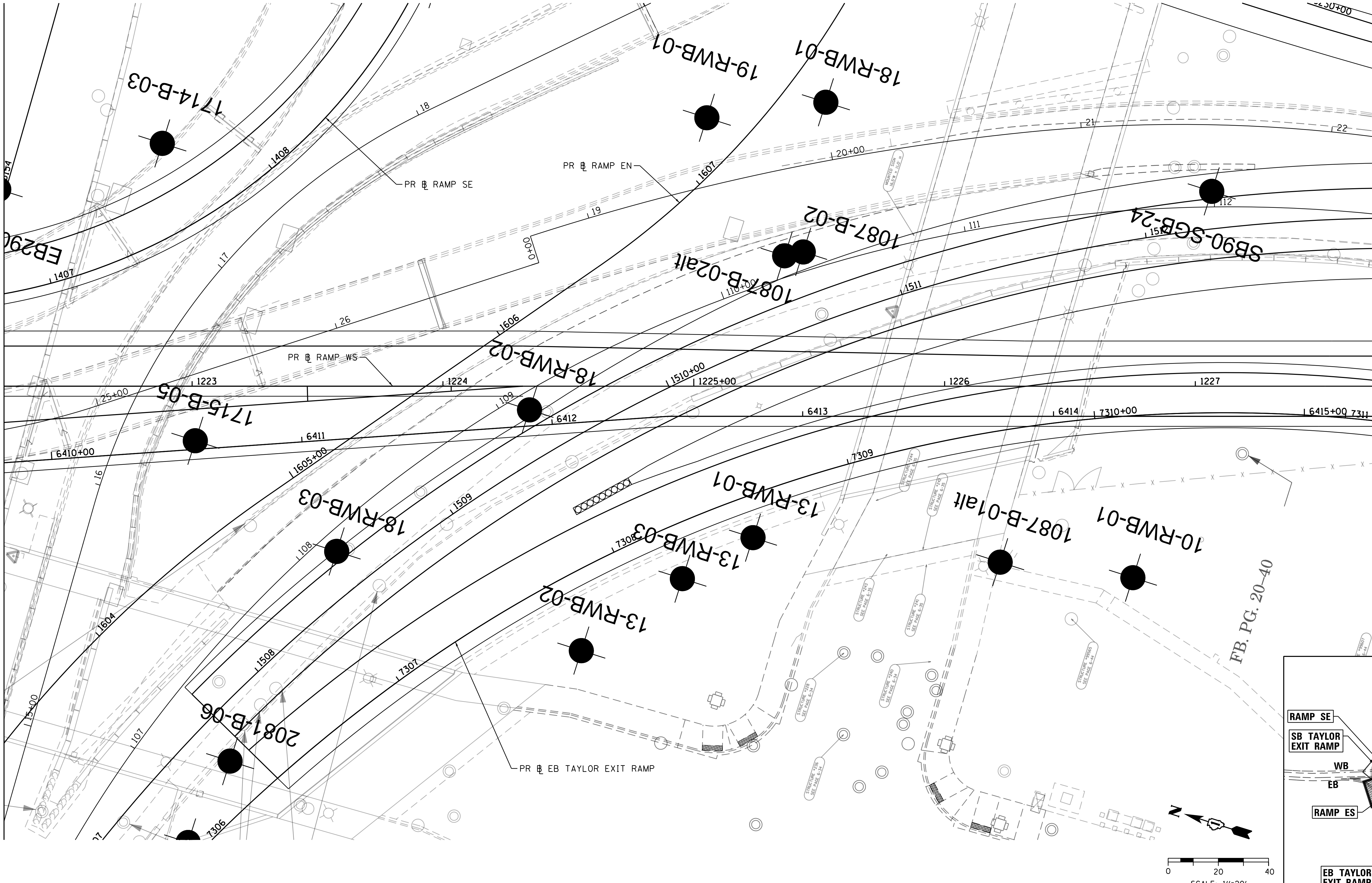

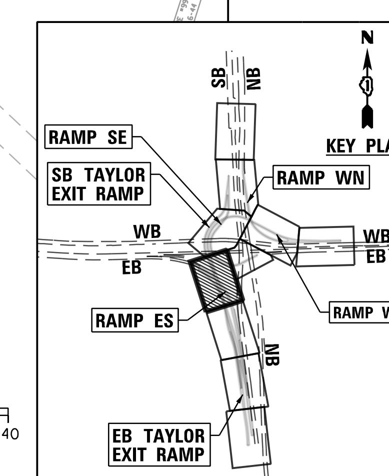

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TranSystems

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PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 10/11/2017	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BORING LOCATIONS
INTERCHANGE RAMP COMPLETIONS

SCALE: 1''=20' | SHEET 4 OF 10 SHEETS | STA. 1222+25 TO STA. 1227+75

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK		
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

N

0 20 40

SCALE: 1"=20'

MATCH LINE STA 1227+75
SEE SHEET 4

MATCH LINE STA 1233+25 (PR ℄ RAMP WS)
SEE SHEET 6

PR ℄ RAMP ES

PR ℄ RAMP WS

PR ℄ SB TAYLOR EXIT RAMP

PR ℄ EB TAYLOR EXIT RAMP

SB90-SGB-12

14-RWB-01

SB90-SGB-25

14-RWB-02

14-RWB-03

10-RWB-02

15-RWB-01

15-RWB-02

10-RWB-04

10-RWB-03

VST-01

10-PZ-01

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TranSystems

D160X93-EXH-Boring-Loc-05.dgn	DESIGNED -	REVISED -
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PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 10/11/2017	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BORING LOCATIONS
INTERCHANGE RAMP COMPLETIONS

SCALE: 1"=20' | SHEET 5 OF 10 SHEETS | STA. 1227+75 TO STA. 1233+25

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK		
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

MATCH LINE STA 1233+25 (PR ℄ RAMP WS)
SEE SHEET 5

MATCH LINE STA 1238+75 (PR ℄ RAMP WS)
SEE SHEET 7

NB90-SGB-08

SB90-SGB-13

SB90-SGB-14

16-RWB-01b

16-RWB-01a

16-RWB-02

15-RWB-03

10-RWB-05

10-RWB-06

10-RWB-07

10-RWB-08

PR ℄ RAMP ES

PR ℄ RAMP WS

PR ℄ SB TAYLOR EXIT RAMP

PR ℄ EB TAYLOR EXIT RAMP

6236 6237 6238 6239 6240+00 6241

6421 6422 6423 6424 7317 7318 7319 7320+00 7321

1519 1520+00 1521 1522 1523

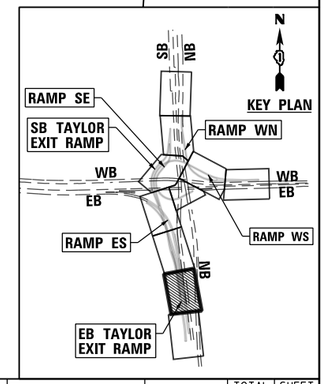
1234 1236 1237 1238

209 208 207 206 205+00

16 18 19 123 20+00

119 120+00 121 122

0 20 40
SCALE: 1"=20'



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TranSystems

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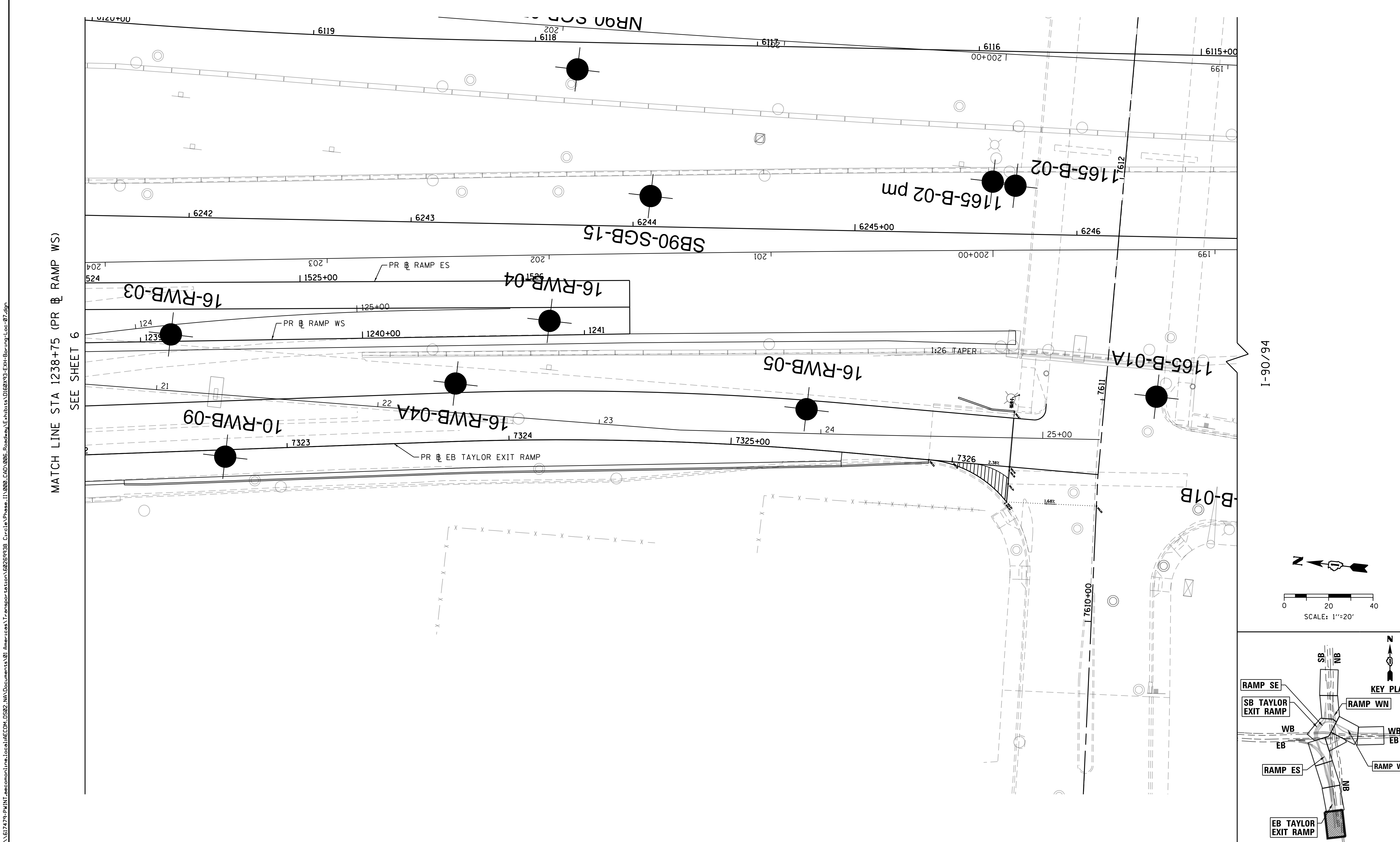
PLOT DATE = 10/11/2017	DATE - $DATE	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BORING LOCATIONS
INTERCHANGE RAMP COMPLETIONS

SCALE: 1"=20' | SHEET 6 OF 10 SHEETS | STA. 1233+25 TO STA. 1238+75

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK		
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			



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	PLOT DATE = 10/11/2017	DATE - $DATE	REVISED -	

EXISTING BORING LOCATIONS
INTERCHANGE RAMP COMPLETIONS

SCALE: 1"=20' | SHEET 7 OF 10 SHEETS | STA. 1238+75 TO STA. 6246+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK		
CONTRACT NO. 60X93				
ILLINOIS FED. AID PROJECT				

MATCH LINE STA 1401+50 (PR ℄ RAMP SE)
SEE SHEET 3

38-RWB-02
2055-B-03
38-RWB-01
1702-B-01
SB90-SGB-08
SB90-SGB-07
PR ℄ SB TAYLOR EXIT RAMP
PR ℄ RAMP SW
PR ℄ SB I-90/94
PR ℄ NB I-90/94
NB90-SGB-14
1702-B-02
PR ℄ RAMP EN
2055-B-05
23-RWB-04
23-RWB-05-HA
23-RWB-03
23-RWB-02
23-RWB-04 HA
23-RWB-01
1702-

MATCH LINE STA 23+25 (EX ℄ NB I-90/94)
SEE SHEET 9

N
0 20 40
SCALE: 1"=20'

KEY PLAN
SB
NB
RAMP SE
SB TAYLOR EXIT RAMP
RAMP WN
WB
EB
WB
EB
RAMP ES
RAMP WS
NB
EB TAYLOR EXIT RAMP

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TranSystems

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PLOT DATE = 10/11/2017	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BORING LOCATIONS
INTERCHANGE RAMP COMPLETIONS

SCALE: 1"=20' | SHEET 8 OF 10 SHEETS | STA. 1401+50 TO STA. 23+25

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK		
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

37-RWB-01

37-RWB-02

08-RWB-02

0589-B-01

PR ℄ RAMP SW

08-ST-01

08-RWB-01

08-RWB-03

1314 1313 1312 1311 1310+00

6215+00 6214 6213 6212 6211 28

27

26

25+00

24

PR ℄ SB I-90/94

I-90/94

SB90-SGB-06

PR ℄ NB I-90/94

0589-B-02

6147 6148 6149 6150+00

MATCH LINE STA 23+25 (EX ℄ NB I-90/94)

SEE SHEET 8

1625+00

24 25+00 26 27

26-RWB-01

NB90-SGB-15

25-RWB-01

25-RWB-02

24-RWB-03

24-RWB-01

24-RWB-04

24-RWB-02-HA

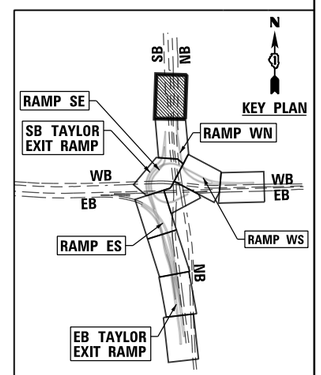
24-RWB-03-HA

24-ST-01

)3

0 20 40

SCALE: 1"=20'



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TranSystems

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PLOT DATE = 10/11/2017	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BORING LOCATIONS
INTERCHANGE RAMP COMPLETIONS

SCALE: 1"=20' | SHEET 9 OF 10 SHEETS | STA. 23+25 TO STA. 28+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK		
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

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TranSystems®

D160X93-EXH-Boring-Loc-10.dgn
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PLOT SCALE = 40.0000 ' / in.
PLOT DATE = 10/11/2017

DESIGNED -
DRAWN -
CHECKED -
DATE - $DATE

REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BORING LOCATIONS
INTERCHANGE RAMP COMPLETIONS

SCALE: 1"=20' | SHEET 10 OF 10 SHEETS | STA. 1222+25 TO STA. 1413+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-013R&B-R	COOK		

CONTRACT NO. 60X93

ILLINOIS FED. AID PROJECT

INTERIM RAMP SE
TEMP PAVEMENT

RAMP WN
FULL DEPTH PAVEMENT

EX RAMP NW

PR RAMP WS

PR VAN BUREN ST
(BY OTHERS)

EX PROFILE GRADE LINE

PR PROFILE GRADE LINE

36" WEB PLATE GIRDER
(COMPOSITE FULL LENGTH)

℄ PR BACK OF
NORTH ABUTMENT
STA 1404+80.51

WB CONGRESS
PARKWAY

BEGIN RAMP SE PROFILE
STA 1400+00.00
EL 578.48

BEGIN RAMP SE PROFILE
STA 1401+40.00
EL 580.45

150.00' V.C.

+65.00 EL. 577.59

+15.00 EL. 579.63

577.65

580.45

38-RWB-02
576.09 ft,
1400+17.07, 43.05 RT

2055-B-03
579.03 ft,
1400+74.33, 03.18 RT

1718-B-01
584.1 ft,
1401+88.40, 51.36 RT

1715-B-04
589.406 ft,
1218+40.95, 27.54 RT

1714-B-01
593.22 ft,
1403+82.48, 00.91 LT

1705-B-10
588.28 ft,
1404+26.17, 47.20 LT

1714-B-02
582.53 ft,
1404+96.30, 01.31 RT

Medium dense, brown
SILTY LOAM,
trace gravel and brick fragments

Stiff to hard, brown and gray
SILTY CLAY LOAM,
trace gravel and brick
–FILL–

Soft to medium stiff, gray
CLAY to SILTY CLAY,
trace gravel

Stiff to very stiff, brown and gray
SILTY CLAY to SILTY CLAY LOAM,
trace gravel
–FILL–

Stiff to hard, brown and gray
SILTY CLAY to CLAY LOAM,
trace gravel
–FILL–

Medium stiff to stiff, gray
SILTY CLAY LOAM,
trace gravel
–FILL–

Very stiff, brown and gray
SILTY CLAY LOAM,
trace gravel
–FILL–

Very soft to medium stiff, gray CLAY to SILTY CLAY,
trace gravel

Very soft to medium stiff, gray
CLAY to SILTY CLAY,
trace to some gravel

Medium dense, brown
LOAM to SAND,
trace gravel
–FILL–

Medium stiff to stiff, gray
SILTY CLAY LOAM,
trace gravel

Silty Loam A-4 (2)
LL=24 PL=15

Silty Clay A-6 (10)
LL=33 PL=18

Silty Clay A-6 (14)
LL=35 PL=17

Gravelly Silty Clay A-6 (8)
LL=33 PL=17

Silty Clay A-6 (11)

VERTICAL SCALE: 1"=5'
HORIZONTAL SCALE: 1"=20'

EX PGL EL PR PGL EL	577.71 577.54	577.63 577.55	577.89 577.72	577.95 578.04	578.02 578.53	578.58 579.17	579.65 579.96	580.48 580.79	581.70 581.78	582.75 583.01	584.25 584.48	585.62 586.19	589.10 588.02	588.67 589.84	590.20 591.67	591.47 593.49	592.41 595.32	592.83 597.14	589.95 598.97	586.84 600.79	584.69 602.59	582.35 604.15	582.21 605.40	583.44 606.34
	1400+00			1400+50		1401+00		1401+50		1402+00		1402+50		1403+00		1403+50		1404+00		1404+50		1405+00		1405+50

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
BM. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

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AECOM Tran Systems

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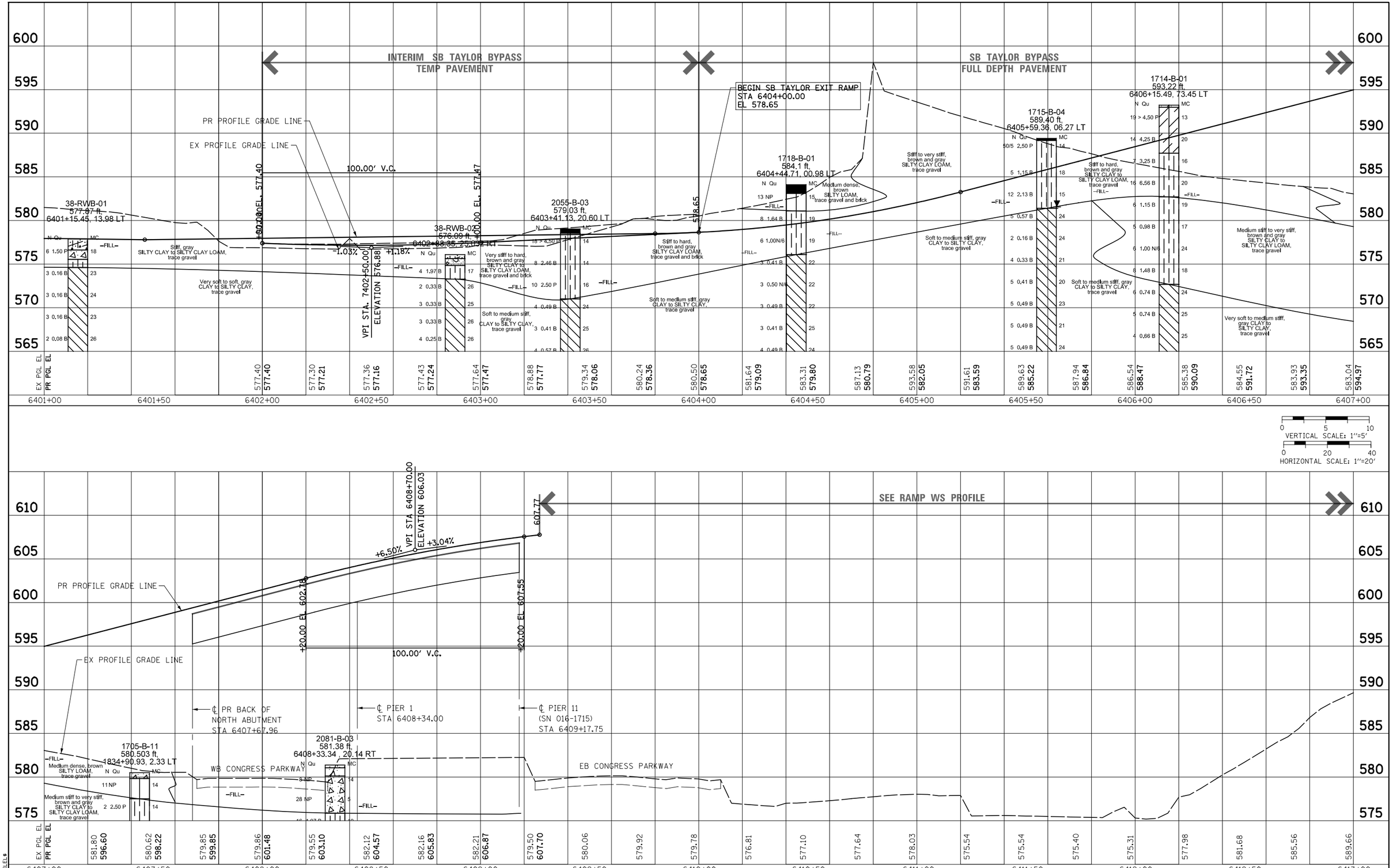
PLOT DATE = $DATE$	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROADWAY PROFILE
RAMP SE

SCALE: 1"=20' | SHEET $$PRF-1$OF $PRF-1$SHEETS | STA. 1399+50 | TO STA. 1405+50

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-002R&B	COOK	$TOTAL$	$PRF-14
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			



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	PLOT SCALE = $SCALE$	CHECKED - CH	REVISED -
	PLOT DATE = $DATE$	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROADWAY PROFILE
SB TAYLOR EXIT RAMP

SCALE: 1"=20' | SHEET $$PRF-16 OF $PRF-SHEETS | STA. 6401+00 | TO STA. 6413+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-003R&B	COOK	$TOTAL	$PRF-17
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			

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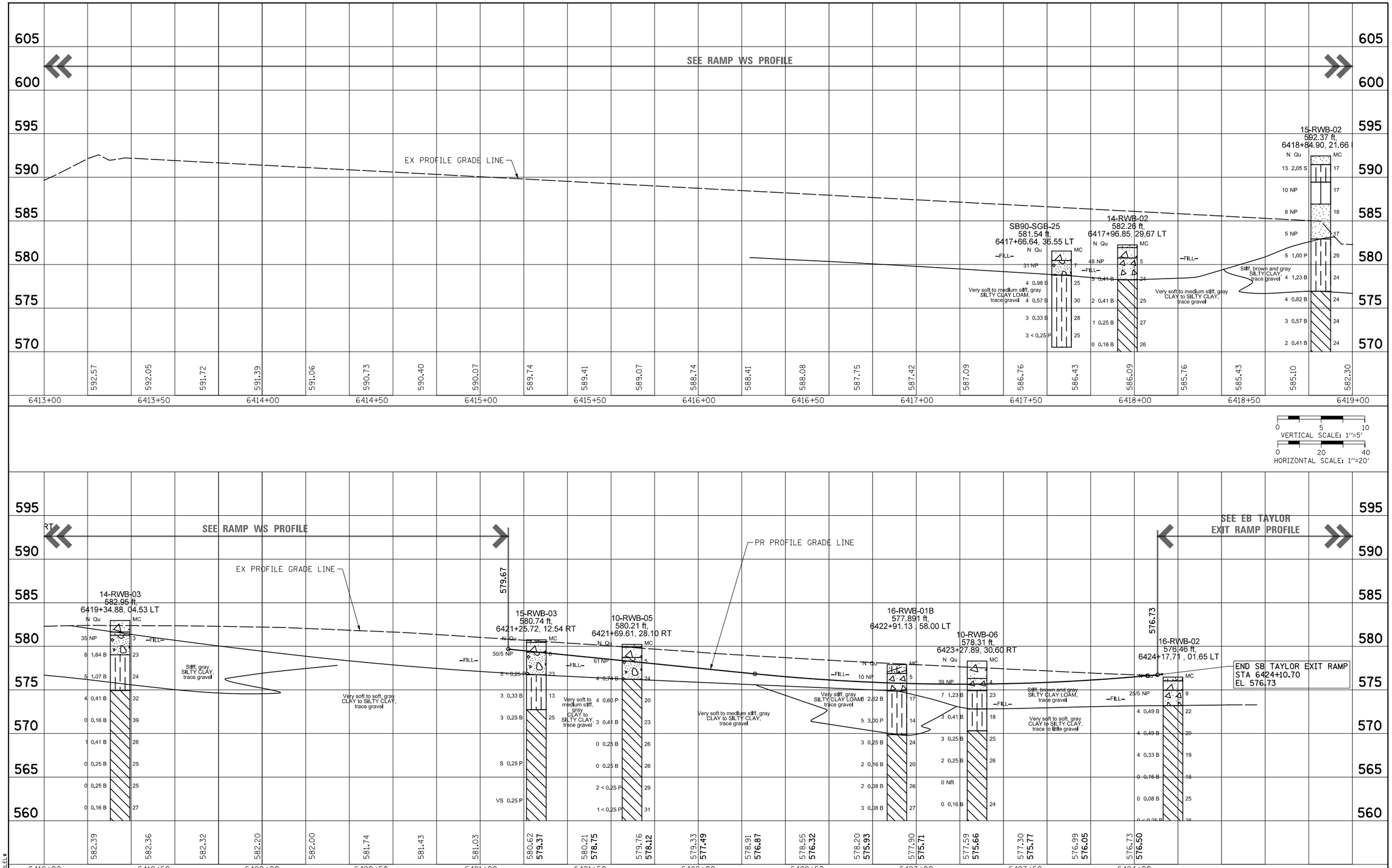

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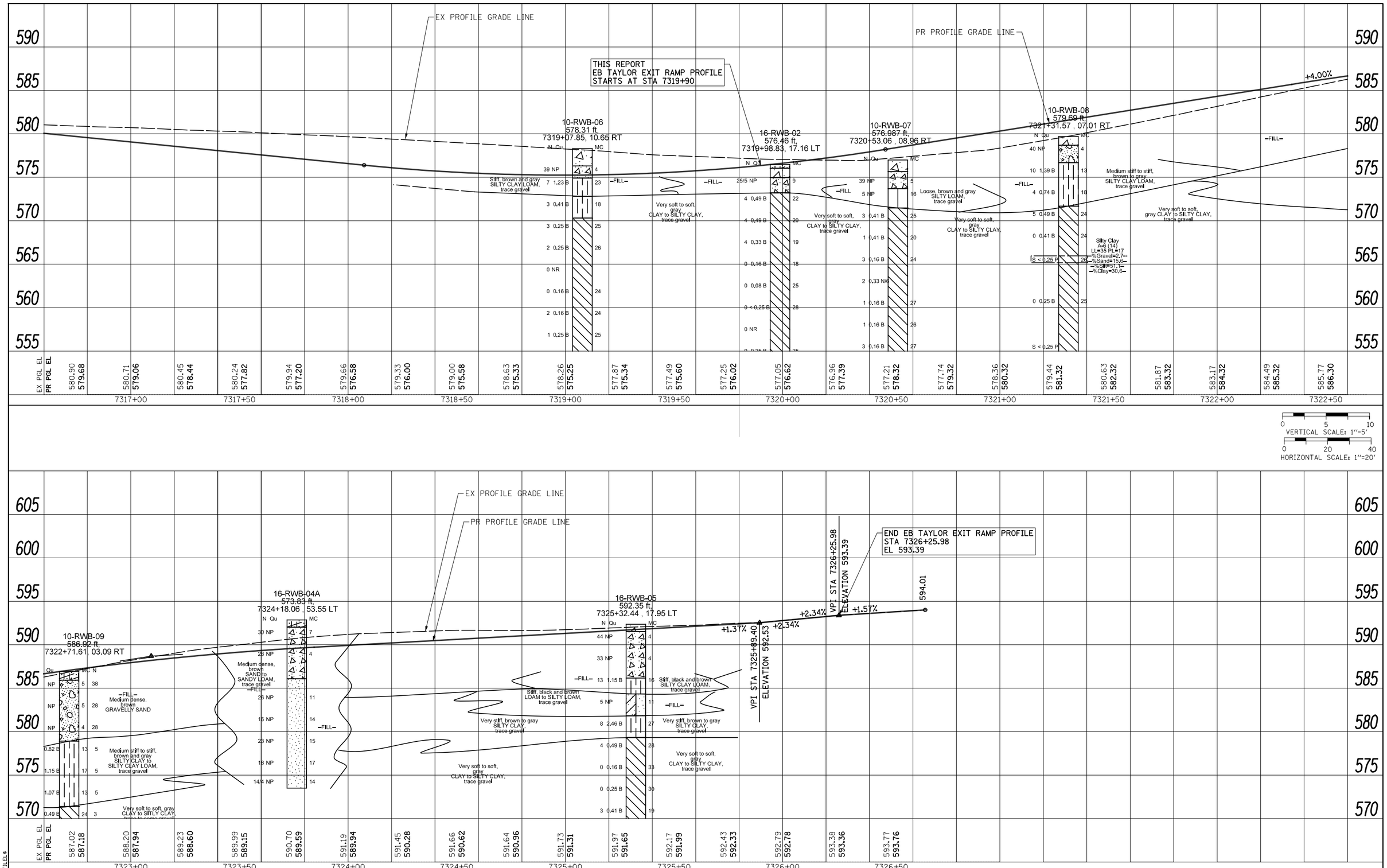
	PLOT DATE = $DATE$	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROADWAY PROFILE
SB TAYLOR EXIT RAMP

SCALE: 1″=20′ | SHEET $SPRF-1$ OF $SPRF-1$ SHEETS | STA. 6411+80 | TO STA. 6424+11

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-003R&B	COOK	$TOTAL$	$PRF-1$
		CONTRACT NO. 60X93		
	ILLINOIS FED. AID PROJECT			



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PLOT DATE = $DATE$	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROADWAY PROFILE
EB TAYLOR EXIT RAMP

SCALE: 1"=20' | SHEET $$PRF-1$ OF $PRF-SHEETS | STA. 7316+60 | TO STA. 7326+25.98

F.A.I. RTE.	SECTION	COUNTY	TOTAL	SHEET
90/94/290	2014-003R&B	COOK		
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		

RAMP ES PROFILE
CONTRACT 60X76 (BY OTHERS)
(SHOWN FOR INFORMATION ONLY)

590 585 580 575 570 565 560 555

576.88
-0.97% -0.39%
VPI STA 1503+40.00
ELEVATION 576.45
+55.00 EL 576.00
90.00' V.C.
-0.39% VPI STA 1505+00.00 ELEVATION 575.83 -1.84%
+45.00 EL 575.00
+45.00 EL 575.00
190.00' V.C.
-1.84% +1.08%
VPI STA 1506+40.00
ELEVATION 573.25
+35.00 EL 574.27
EX PROFILE GRADE LINE
PR PROFILE GRADE LINE
BEGIN RAMP ES PROFILE
STA 1507+75
EL 574.71

	1503+00	1503+50	1504+00	1504+50	1505+00	1505+50	1506+00	1506+50	1507+00	1507+50	1508+00	1508+50
EX PGL EL	576.50	576.38	576.27	576.16	576.02	575.89	575.76	575.62	575.48	575.38	575.26	575.14	575.01	574.82	574.66	574.46	574.16	573.88	573.63	573.50	573.51	574.17	573.45	577.16
PR PGL EL		576.84	576.60	576.41	576.32	576.22	576.12	576.02	575.89	575.67	575.34	574.91	574.52	574.22	574.02	573.91	573.90	573.99	574.17	574.44	574.71	574.98	575.25	575.52

0 5 10
VERTICAL SCALE: 1"=5'
0 20 40
HORIZONTAL SCALE: 1"=20'

THIS REPORT
RAMP ES PROFILE
STA 1511+39
578.65 ft

EX PROFILE GRADE LINE
PR PROFILE GRADE LINE

1087-B-02
577.83 ft,
1510+68.78, 28.76 LT

18-RWB-01
1607+57.15

SB90-SGB-24
578.24 ft
1512+28.05, 14.88 LT

SB90-SGB-11
6231+00.47

14-RWB-01
580.84 ft,
1514+49.51, 16.39 RT

+1.08% +1.51%
VPI STA 1511+40.00
ELEVATION 578.65

Soft to medium stiff, gray CLAY to SILTY CLAY LOAM, trace gravel

Silty Clay A-6 (11)
LL=32 PL=17

Clay A-6 (10)
LL=33 PL=19

Silty Clay Loam
A-6 (8)
LL=28 PL=16
%Gravel=2.8
%Sand=13.3
%Silt=64.3
%Clay=19.6

Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel

	1509+00	1509+50	1510+00	1510+50	1511+00	1511+50	1512+00	1512+50	1513+00	1513+50	1514+00	1514+50
EX PGL EL	576.69	576.78	577.34	577.63	577.75	578.56	578.88	578.85	579.37	579.48	577.29	577.33	577.35	577.50	577.70	577.88	577.98	578.21	578.59	578.97	579.37	579.79	580.28	580.77
PR PGL EL	575.79	576.06	576.33	576.60	576.87	577.14	577.41	577.68	577.95	578.22	578.52	578.84	579.19	579.55	579.93	580.31	580.69	581.06	581.44	581.82	582.18	582.48	582.71	582.86

$FILES$	DESIGNED - OPS	REVISED -	
USER NAME = $USER$	DRAWN - OPS	REVISED -	
PLOT SCALE = $SCALE$	CHECKED - MJE	REVISED -	
PLOT DATE = $DATE$	DATE - $DATE	REVISED -	

AECOM Tran Systems

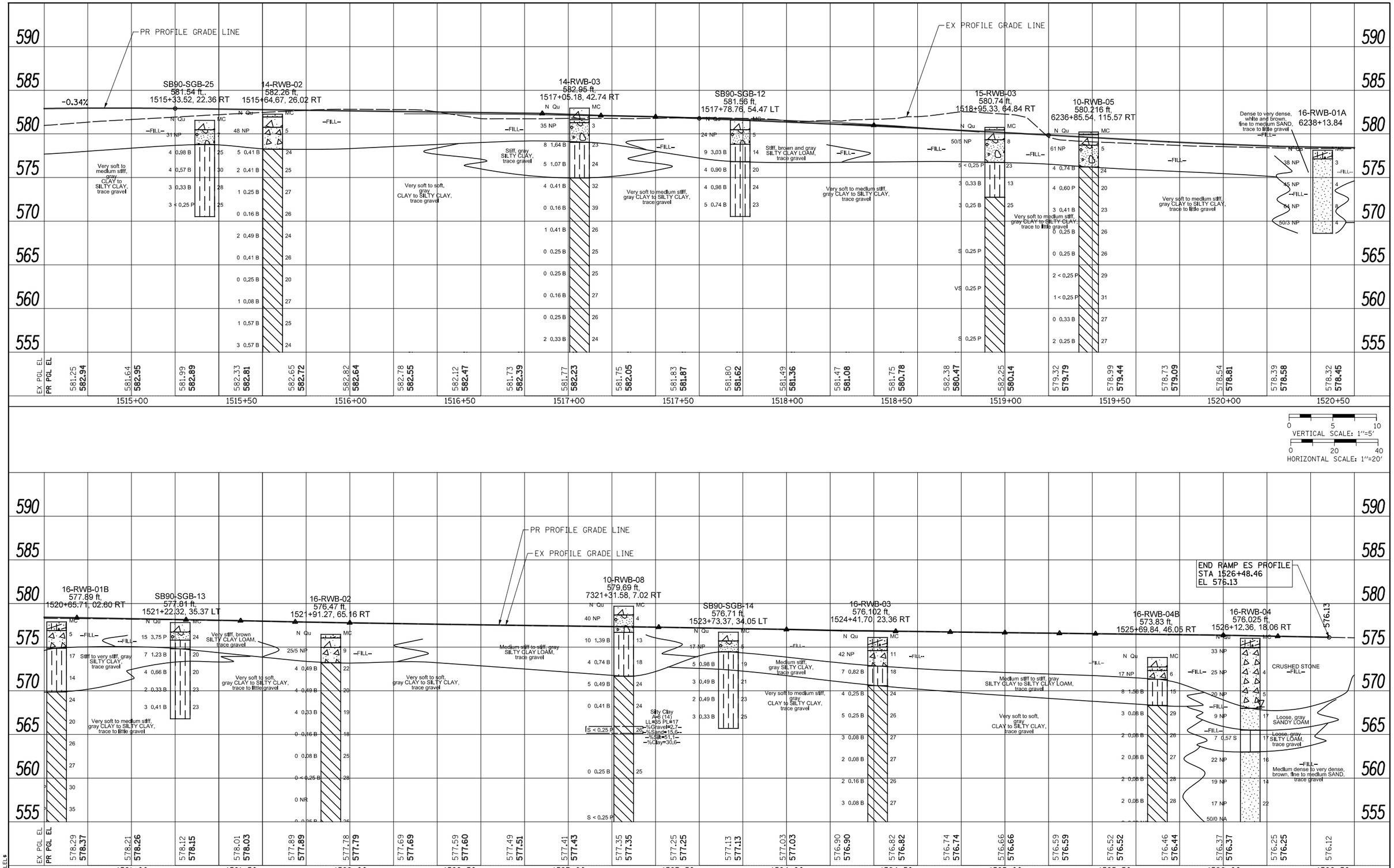
FILE PATH = $FILE$

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROADWAY PROFILE
RAMP ES

SCALE: 1"=20' | SHEET $$PRF-08$ $PRF-SHEETS | STA. 1507+75 | TO STA. 1514+60

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-003R&B	COOK	$TOTAL$	$PRF-08
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		



FILE PATH = $FILE$

AECOM Tran Systems	$FILES$	DESIGNED - OPS	REVISED -
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	PLOT SCALE = $SCALE$	CHECKED - MJE	REVISED -
	PLOT DATE = $DATE$	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROADWAY PROFILE
RAMP ES

SCALE: 1"=20' | SHEET $$PRF-03 OF $RD-TSHEETS | STA. 1514+60 | TO STA. 1526+48.45

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-003R&B	COOK	$TOTAL	$PRF-09
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		

PLAN

NOTE BOOK	SURVEYED
NO. ____	PLOTTED
	ALIGNMENT CHECKED
	R.E. OF WAY CHECKED
	CADD FILE NAME

BY DATE

PROFILE

NOTE BOOK	SURVEYED
NO. ____	PLOTTED
	GRADES CHECKED
	B.M. NOTED
	STRUCTURE NOTATIONS CHKD

BY DATE

FILE PATH = $FILEL$

AECOM TranSystems

$FILE$	DESIGNED - OPS	REVISED -
USER NAME = $USER$	DRAWN - OPS	REVISED -
PLOT SCALE = $SCALE$	CHECKED - MJE	REVISED -
PLOT DATE = $DATE$	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

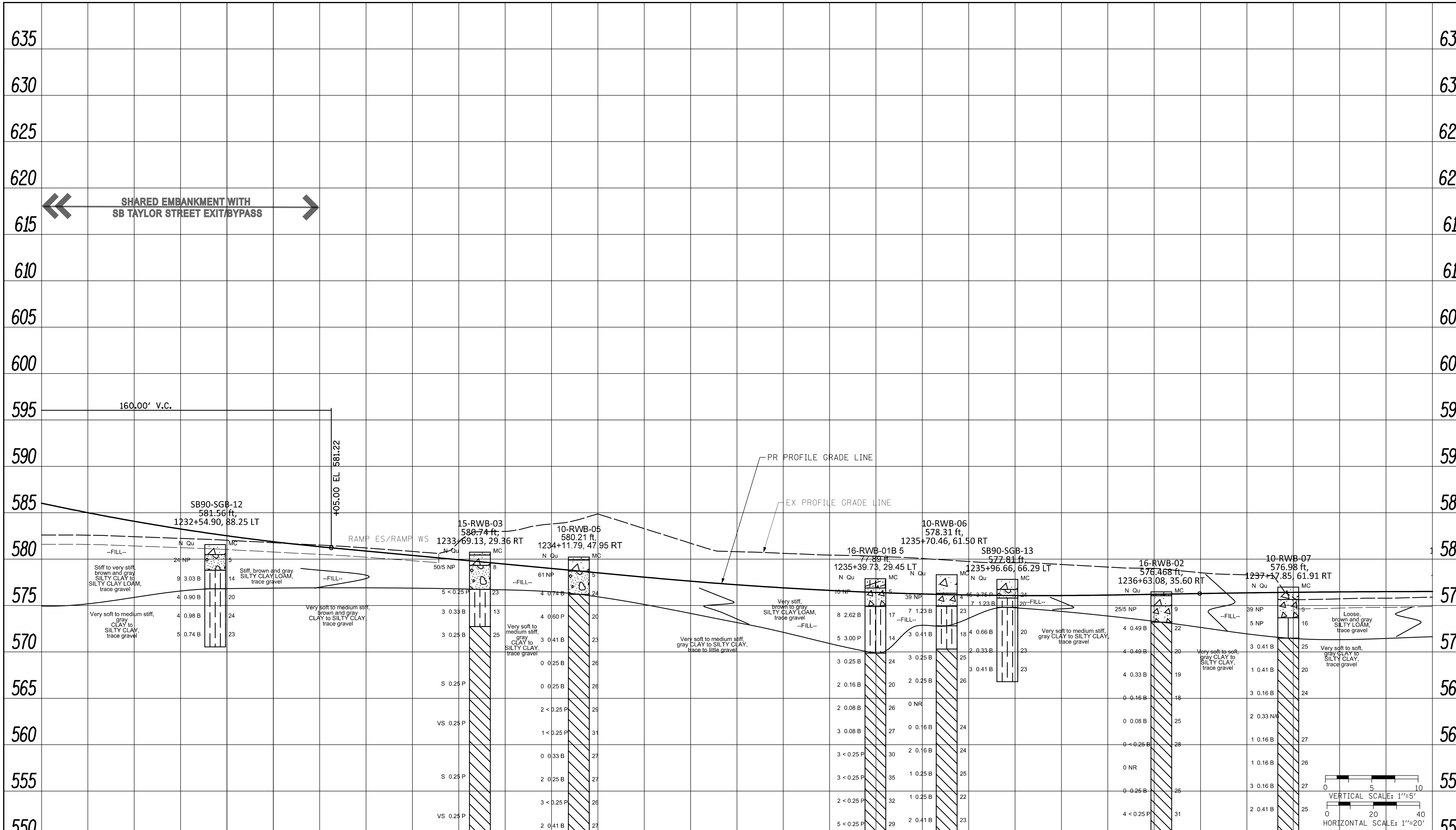
ROADWAY PROFILE
RAMP WS

SCALE: 1"=20' SHEET $$PRF-04 OF $PRF-SHEETS STA. 1225+80 TO STA. 1231+80

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-002R&B	COOK	$TOTAL	$PRF-04

CONTRACT NO. 60X93

ILLINOIS FED. AID PROJECT



SHARED EMBANKMENT WITH
SB TAYLOR STREET EXIT/BYPASS
160.00' V.C.
+05.00 EL 581.22
RAMP ES/RAMP WS
PR PROFILE GRADE LINE
EX PROFILE GRADE LINE
SB90-SGB-12
581.56 ft,
1232+54.90, 88.25 LT
15-RWB-03
580.74 ft,
1233+69.13, 29.36 RT
10-RWB-05
580.21 ft,
1234+11.79, 47.95 RT
16-RWB-01B
577.89 ft,
1235+39.73, 29.45 LT
10-RWB-06
578.31 ft,
1235+70.46, 61.50 RT
SB90-SGB-13
577.81 ft,
1235+96.66, 66.29 LT
16-RWB-02
576.468 ft,
1236+63.08, 35.60 RT
10-RWB-07
576.98 ft,
1237+17.85, 61.91 RT
--FILL--
Stiff to very stiff, brown and gray SILTY CLAY to SILTY CLAY LOAM, trace gravel
Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel
Stiff, brown and gray SILTY CLAY LOAM, trace gravel
Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel
Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel
Very soft to medium stiff, gray CLAY to SILTY CLAY, trace to little gravel
Very stiff, brown to gray SILTY CLAY LOAM, trace gravel
Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel
Very soft to soft, gray CLAY to SILTY CLAY, trace gravel
Loose, brown and gray SILTY LOAM, trace gravel
Very soft to soft, gray CLAY to SILTY CLAY, trace gravel
N Qu MC
VERTICAL SCALE: 1"=5'
HORIZONTAL SCALE: 1"=20'

Station	EX PGL EL	PR PGL EL
1232+00	582.58	585.00
	582.37	583.86
1232+50	582.15	582.87
	581.84	582.03
1233+00	581.51	581.34
	581.10	580.75
1233+50	580.63	580.17
	583.00	579.58
1234+00	583.88	579.00
	584.36	578.41
1234+50	582.50	577.83
	580.83	577.33
1235+00	580.62	576.90
	580.41	576.57
1235+50	580.20	576.32
	579.82	576.15
1236+00	579.60	576.08
	579.36	576.08
1236+50	579.04	576.17
	578.66	576.27
1237+00	578.30	576.36
	575.64	576.43
1237+50	575.78	576.48
	575.87	576.51

AECOM TranSystems

$FILES$ USER NAME = $USER$ PLOT SCALE = $SCALE$ PLOT DATE = $DATE$

DESIGNED - OPS | DRAWN - OPS | CHECKED - MJE | DATE - $DATE

REVISED - | REVISED - | REVISED - | REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

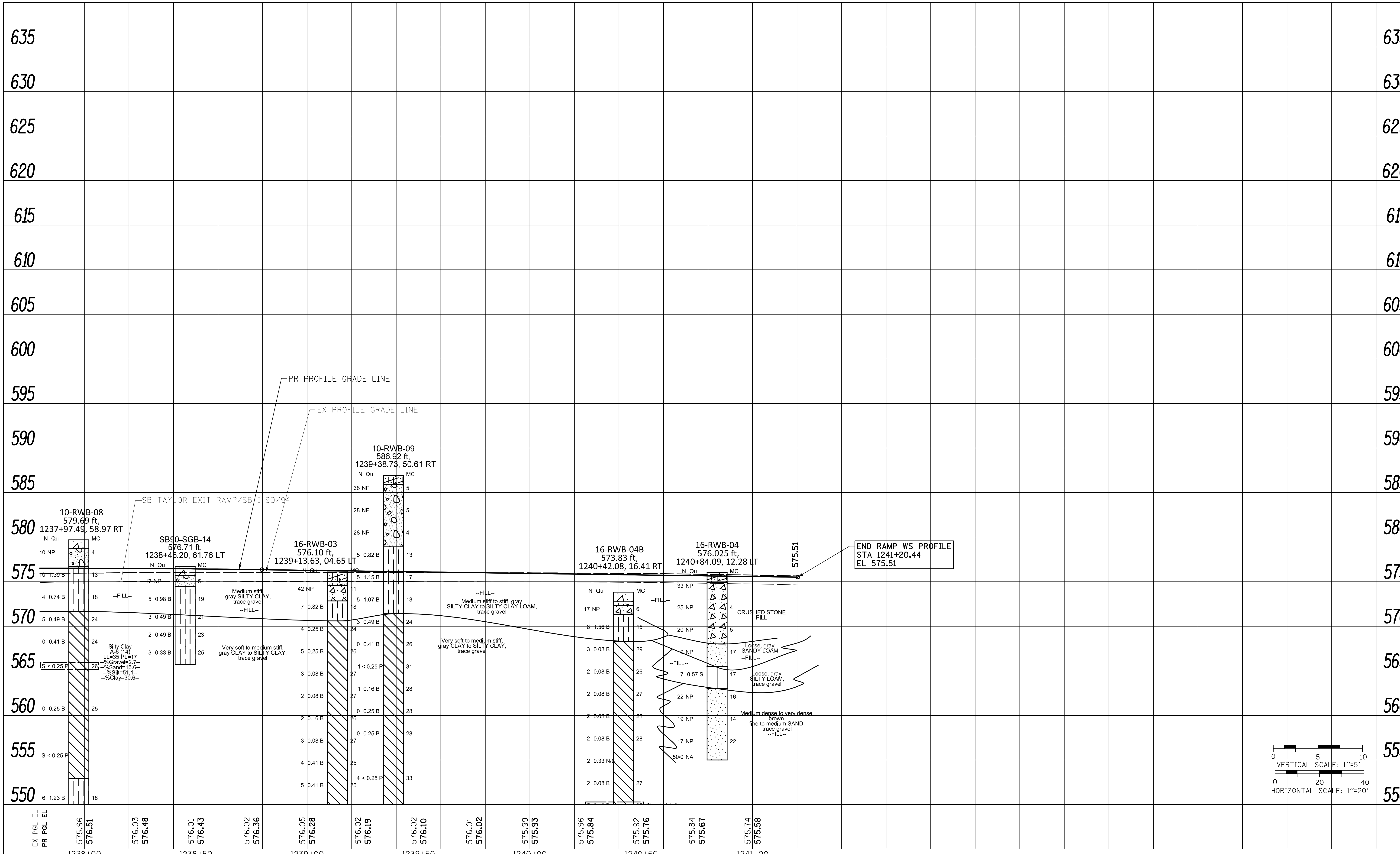
ROADWAY PROFILE
RAMP WS

SCALE: 1"=20' SHEET $$PRF-05 $PRF-SHEETS STA. 1231+80 TO STA. 1237+80

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-002R&B	COOK	$TOTAL	$PRF-05

CONTRACT NO. 60X93

ILLINOIS FED. AID PROJECT


PR PROFILE GRADE LINE
EX PROFILE GRADE LINE
SB TAYLOR EXIT RAMP/SB I-90/94
10-RWB-08
579.69 ft,
1237+97.49, 58.97 RT
SB90-SGB-14
576.71 ft,
1238+45.20, 61.76 LT
16-RWB-03
576.10 ft,
1239+13.63, 04.65 LT
10-RWB-09
586.92 ft,
1239+38.73, 50.61 RT
16-RWB-04B
573.83 ft,
1240+42.08, 16.41 RT
16-RWB-04
576.025 ft,
1240+84.09, 12.28 LT
END RAMP WS PROFILE
STA 1241+20.44
EL 575.51
--FILL--
Medium stiff,
gray SILTY CLAY,
trace gravel
Silty Clay
A-6 (14)
LL=35 PL=17
Very soft to medium stiff,
gray CLAY to SILTY CLAY,
trace gravel
Medium stiff to stiff, gray
SILTY CLAY to SILTY CLAY LOAM,
trace gravel
CRUSHED STONE
Loose, gray
SANDY LOAM
Loose, gray
SILTY LOAM,
trace gravel
Medium dense to very dense,
brown,
fine to medium SAND,
trace gravel
EX PGL EL
PR PGL EL
575.96 576.51
576.03 576.48
576.01 576.43
576.02 576.36
576.05 576.28
576.02 576.19
576.02 576.10
576.01 576.02
575.99 575.93
575.96 575.84
575.92 575.76
575.84 575.67
575.74 575.58
1238+00
1238+50
1239+00
1239+50
1240+00
1240+50
1241+00
VERTICAL SCALE: 1"=5'
HORIZONTAL SCALE: 1"=20'

AECOM TranSystems	$FILE$	DESIGNED - OPS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ROADWAY PROFILE RAMP WS
	USER NAME = $USER$	DRAWN - OPS	REVISED -		
	PLOT SCALE = $SCALE$	CHECKED - MJE	REVISED -		
	PLOT DATE = $DATE$	DATE - $DATE	REVISED -		SCALE: 1"=20' SHEET $$PRF-06 $PRF-SHEETS STA. 1237+80 TO STA. 1241+20.44

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-002R&B	COOK	$TOTAL	$PRF-06
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		

PLAN
SURVEYED
PLOTTED
DRAWN
CHECKED
R/T. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
DRAWN
CHECKED
BAR. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

FILE PATH = \\Wang-abs01\shared\Netprojects\11020401\Drawings\RGR\60X93 Contract\D160X93-SHT-Profile-12.dgn

615 615
610 610
605 605
600 600
595 595
590 590
585 585
580 580
575 575
570 570
565 565
560 560
555 555
550 550
545 545

-1.08%
611.29
VPI STA 1100+70.33
ELEVATION 611.19
-1.09%
VPI STA 1101+00.40
ELEVATION 610.86
-1.09%
VPI STA 1101+10.43
ELEVATION 610.74
VPI STA 1101+30.48
ELEVATION 610.44
VPI STA 1101+40.50
ELEVATION 610.25
VPI STA 1101+60.55
ELEVATION 609.83
VPI STA 1101+70.36
ELEVATION 609.61
VPI STA 1101+89.95
ELEVATION 609.17
-2.35%
-2.35%
VPI STA 1102+09.54
ELEVATION 608.71
-1.75%
-1.75%
VPI STA 1102+99.00
ELEVATION 607.14
-7.99%

BEGIN RAMP WN PROFILE
STA 1100+60.74
EL 611.29

PR PROFILE GRADE LINE
EX PROFILE GRADE LINE
+39.50 EL 608.19
+58.50 EL 602.38
119.00' V.C.
56" WEB PLATE GIRDER (COMPOSITE FULL LENGTH)
℄ PIER C1
STA 1103+06.73
℄ PIER 1
STA 1103+66.53
℄ PIER 2
STA 1104+62.68
END RAMP WN PROFILE
STA 1105+65.79
EL 585.83
585.83
DES PLAINES ST
EX RAMP EN
PR RAMP EN

1703-B-05
5213+04.97
N Qu MC
12 2.00 P 25
9 1.48 B 22
5 0.66 B 24
5 0.41 B 25
3 0.33 B 24
3 0.25 B 25
4 0.25 B 25
6 0.33 B 17
5 0.25 B 25
5 0.33 B 26
4 0.25 B 22
4 0.25 B 28
4 0.16 B 28
6 < 0.25 P 28

1715-B-01
1211+64.12
N Qu MC
26 2.87 B 18
8 1.00 P 25
4 0.33 B 23
3 0.41 B 23
4 0.16 B 23
5 0.49 B 22
4 0.57 B 25
4 0.41 B 25
3 0.16 B 26
3 0.33 B 24
3 0.33 B 26
3 0.33 B 27
5 0.33 B 25
8 0.33 B 25

Stiff to very stiff, brown and gray SILTY CLAY, trace gravel
1703-B-04
1104+42.63
N Qu MC
26 2.25 P 25
16 2.75 P 15
7 0.66 B 19
5 0.87 B 20
4 0.49 B 24
4 0.44 B 23
4 0.41 B 25
0 0.41 B 25
3 0.25 B 26
2 0.25 B 26
1 0.25 B 27
2 0.33 B 26
3 0.33 B 25
3 0.33 B 25
--FILL--
Silty Clay Loam
A-6 (8)
LL=29 PL=16
%Gravel=3.6
%Sand=16.9
%Silt=54.2
%Clay=25.1
Very soft to medium stiff, brown and gray CLAY to SILTY CLAY, trace gravel
Silty Clay
A-6 (15)
LL=36 PL=18
%Gravel=1.8
%Sand=10.7
%Silt=59.0
%Clay=28.5

22-RWB-04
1212+66.85
N Qu MC
10 1.10 B 21
9 2.87 B 20
6 1.56 B 22
3 0.33 B 25
6 0.57 B 17
6 0.41 B 22
3 0.41 B 26
3 0.25 B 25
4 0.49 B 26
3 0.41 B 27
5 0.41 B 25
5 0.41 B 25
4 0.16 B 25

1700-B-01
586.36-E
1105+20.14, 00.35 LT
N Qu MC
20 NP
11 NP
8 NP
5 0.57 B 22
3 0.25 B 25
5 0.74 B 19
4 0.49 B 21
5 0.41 B 25
1 0.33 B 26
3 0.25 B 25
2 0.16 B 27
3 0.16 B 26
2 0.41 B 26
Stiff to very stiff, brown and gray SILTY CLAY, trace gravel
Very soft to medium stiff, brown and gray CLAY to SILTY CLAY, trace gravel
--FILL--

938
P CIR WN
110000.000000
540
20

	610.65	610.19	609.78	609.27	610.23	594.57	586.50	586.78	586.67	586.17	585.01	582.85	580.49	580.87	582.30	583.57	588.28	586.46	582.56	580.80
EX PGL EL	611.13	610.86	610.52	610.05	609.51	608.93	608.44	607.97	607.23	606.17	604.77	603.05	601.07	599.07	597.08	595.08	593.08	591.08	589.09	587.09
PR PGL EL																				

1101+00 1101+50 1102+00 1102+50 1103+00 1103+50 1104+00 1104+50 1105+00 1105+50

VERTICAL SCALE: 1"=5'
HORIZONTAL SCALE: 1"=20'

AECOM . Tran Systems

D160X93-SHT-Profile-12.dgn	DESIGNED - $PRF-12-DE	REVISED -
USER NAME = cmarin	DRAWN - $PRF-12-DR	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED - $PRF-12-CH	REVISED -
PLOT DATE = 1/4/2018	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROADWAY PROFILE
RAMP WN

SCALE: 1"=20' | SHEET $$PRF-12 OF $PRF-SHEETS | STA. 1100+00 | TO STA. 1105+75

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-002R&B	COOK	$TOTAL	$PRF-12
		CONTRACT NO. 60X93		
		ILLINOIS FED. AID PROJECT		

PLAN
NOTE BOOK
NO. ____
SURVEYED
PLOTTED
ALIGNMENT CHECKED
R.O.W. CHECKED
CADD FILE NAME
BY
DATE

PROFILE
NOTE BOOK
NO. ____
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTAT'NS CHK'D
BY
DATE

FILE PATH = \\Wang-sbs01\shared\Netprojects\10020401\Drawings\RGR\60X93 Contract\D160X93-SHT-Profile-13.dgn

AECOM TranSystems

D160X93-SHT-Profile-13.dgn	DESIGNED - $PRF-13-DE	REVISED -
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PLOT SCALE = 40.0000 ' / in.	CHECKED - $PRF-13-CH	REVISED -
PLOT DATE = 1/4/2018	DATE - $DATE	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROADWAY PROFILE
RAMP WN

SCALE: 1"=20' | SHEET $$PRF-13OF $PRF-SHEETS | STA. 1105+75 | TO STA. 1109+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2014-002R&B	COOK	$TOTAL	$PRF-13
		CONTRACT NO. 60X93		
		ILLINOIS	FED. AID PROJECT	