ROADWAY GEOTECHNICAL REPORT
CIRCLE INTERCHANGE RECONSTRUCTION
I-290 FROM LOOMIS STREET TO I-90/94
SECTION 2013-077R, PTB 163/ITEM 001
IDOT D-91-227-13, CONTRACT 60X77
COOK COUNTY, ILLINOIS

for

AECOM

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Technical Report Documentation Page

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11. Abstract

As part of the Circle Interchange project this report addresses reconstruction, widening, and realignment of Interstate 290 mainline and ramps situated between Loomis Street and I-90/94 and between Van Buren Street and Harrison Street. The improvement limits are WB I-290 between Stations 5218+03 and 5247+80; EB I-290 between Stations 5109+43 and 5155+38; SW Ramp between Stations 1320+56 and 1332+81; EN Ramp between Stations 1600+00 and 1607+94; ES Ramp between Stations 1500+00 and 1511+39; and Taylor Street Exit Ramp between Stations 7300+00 and 7309+40. Cuts into existing slopes north and south of I-290 will be supported by retaining walls. The EN Ramp will be constructed on new embankment fill that will be supported by retaining walls as well. The recommendations pertaining to the proposed retaining walls required to accommodate the cuts into the existing embankment and placement of new embankment fill are provided in separate Structure Geotechnical Reports.

The overall existing roadway pavement section is made up of 3 to 14 inches of asphalt overlying 7 to 18 inches of concrete over aggregate base. The I-290 shoulders pavement includes 8 to 12 inches of asphalt or 18 inches of concrete over aggregate base. Immediately beneath the pavement lies about 5 feet of fill consisting of stiff to hard silty clay loam or loose to very dense gravelly sand; much of the fill will be removed during reconstruction according to design cross sections. Below the fill lies medium stiff to very stiff silty clay and/or very soft to soft clay and silty clay; the latter will require additional subgrade improvement, beyond the standard 12-inch section recommended by the IDOT Mechanistic Pavement Design, to ensure appropriate long-term pavement performance.

Since the soft clayey subgrade will not provide a stable working platform for the compaction of improved aggregate subgrade, we recommend improvement by increasing the Aggregate Subgrade Improvement thickness from 12 to 24 inches and placing stabilization fabric at the base of the aggregate. Alternatively, the subgrade could be improved by placing a biaxial or triaxial geogrid at the base of a thinner improved aggregate subgrade and designing 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.

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1.0 INTRODUCTION

This report presents the results of our geotechnical subsurface investigation, laboratory testing, and engineering analyses and evaluations for the reconstruction of Interstate 290 (I-290) between Loomis Street and Interchange 90/94 (I-90/94) including the ramps south of Van Buren Street and north of Harrison Street. A *Site Location Map* is presented as Exhibit 1.

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

- WB I-290 between Station 5218+03.24 and Station 5247+80.00;
- EB I-290 between Station 5109+43.21 and Station 5155+37.77;
- Ramp SW segment between Station 1320+56.34 and Station 1332+80.76;
- Ramp EN segment between Station 1600+00.00 and Station 1607+93.79;
- Ramp ES segment between Station 1500+00.00 and Station 1511+38.89;
- Exit Ramp to Taylor Street segment between Station 7300+00.00 and Station 7309+39.95.

The roadway design provides for an additional lane along the outside of both I-290 bounds by widening the roadway section by approximately 10 to 35 feet and realignment and/or widening of the existing ramps. Mainly, the widening will require cuts into existing embankment slopes and support by new retaining walls or relocation and replacement of existing retaining walls. The east end section of EN Ramp will require new embankment fill supported by retaining walls.

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

embankments and pavements.

2.0 SITE AND REGIONAL GEOLOGY

The project area is located within the City of Chicago, between Loomis Street and I-90/94. On the USGS *Chicago Loop 7.5 Minute Series* Quadrangle map, the mainline crosses the Sections 16 and 17, 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 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 Chicago Lake Plain Physiographic Subsection (Leighton et al. 1948). In general, the area is characterized by a flat surface and underlain largely by till that slopes gently toward the lake. At the project location, the I-290 roadway lies at elevation of 575 to 587 feet, and it was constructed within a cut. Along the I-290 the slopes are graded between 1:2 and 1:4 (V:H) The area north and south of I-290 is urban development.

2.2 Surficial Cover

The project area was shaped during the Wisconsin-age glaciation, and an approximately 90-foot thick overburden covers the bedrock. The glacigenic deposits were emplaced during pulsating advances and retreats of an icesheet lobe responsible for the formation of end moraines and associated low-relief till and lake plains (Hansel and Johnson 1996). The glacial cover is made up of clay and silt of the Equality Formation of the Mason Group and diamictons of the Wadsworth and Lemont Formations of the Wedron Group. The Equality Formation sediments consist 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 sand and stratified silt (Hansel and Johnson 1996). The diamicton of the Wadsworth Formation is underlined by the pebbly silty clay loam to silty loam diamicton of the Yorkville Member of the Lemont Formation locally known as the Chicago “hardpan” (Hansel and

Johnson 1996). 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 low plasticity, medium moisture content, soft to stiff consistency, poor permeability, and medium to low compressibility. The Yorkville Member is characterized by low plasticity, high strength, and low moisture content (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 ranging from 85 to 95 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 for the I-290 roadway was performed in October, 2014. The investigation along the ramps and within the cut sections was performed from February to November 2013 and in March, April, and August 2014. To assess the possible effects of temperature and precipitation on water table data and soil moisture, the climatic conditions for the investigation period and three months prior to the start of the investigation are summarized graphically in Figures 1 through 4. The precipitation and temperature data for the investigation period are compared against thirty-year monthly data (1981 to 2010) in box-and-whiskers format to show deviations from “normal” climate conditions during the current investigation. Local climate data were obtained from the O’Hare Station (NCDC 2014).

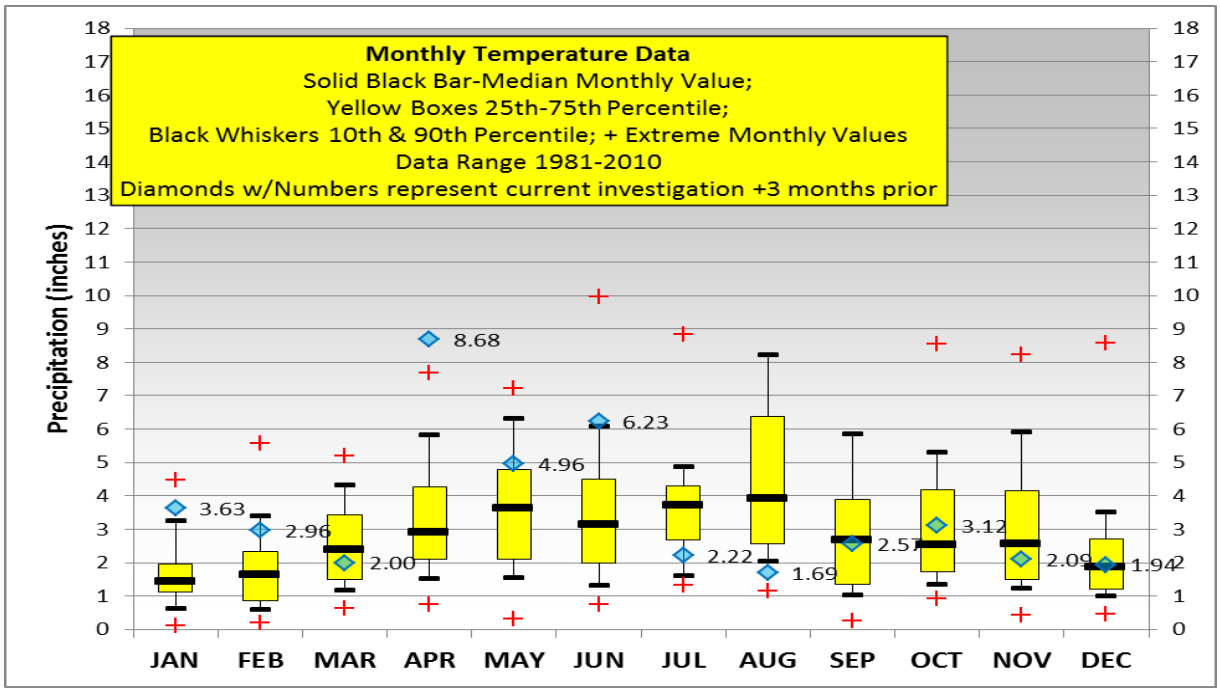


Figure 1: Monthly Precipitation Data for 2013

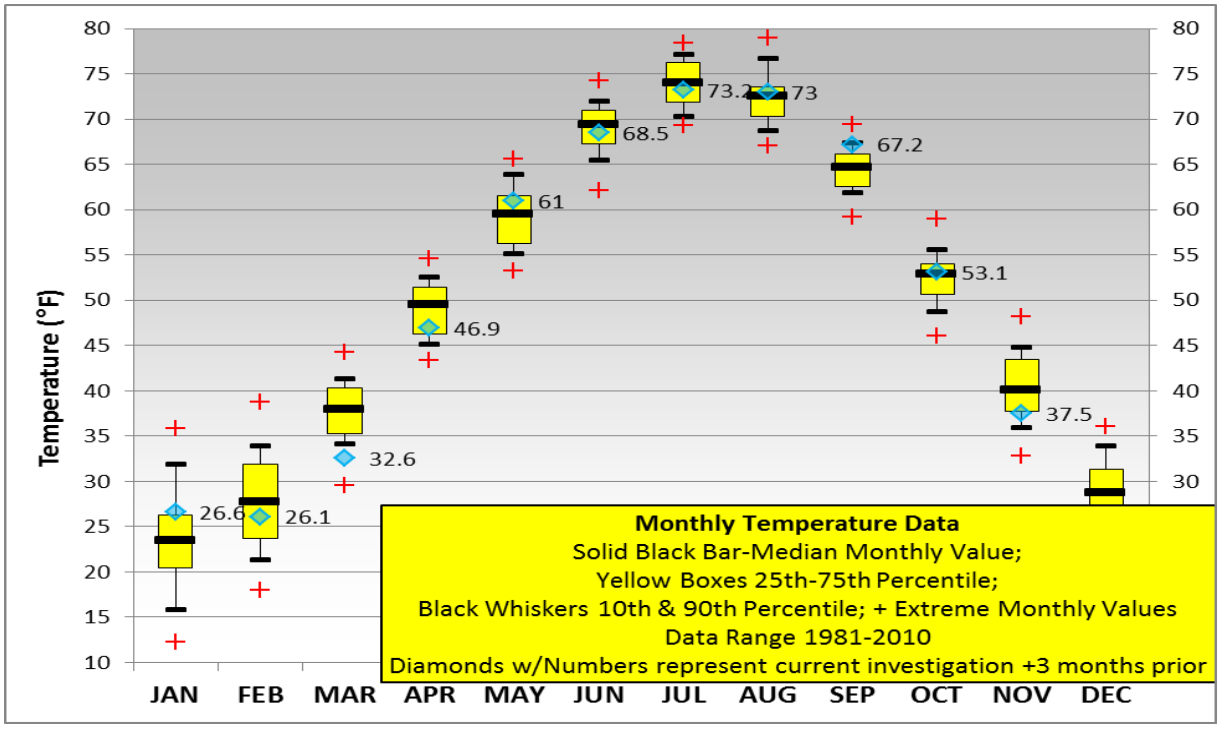


Figure 2: Monthly Temperature Data for 2013

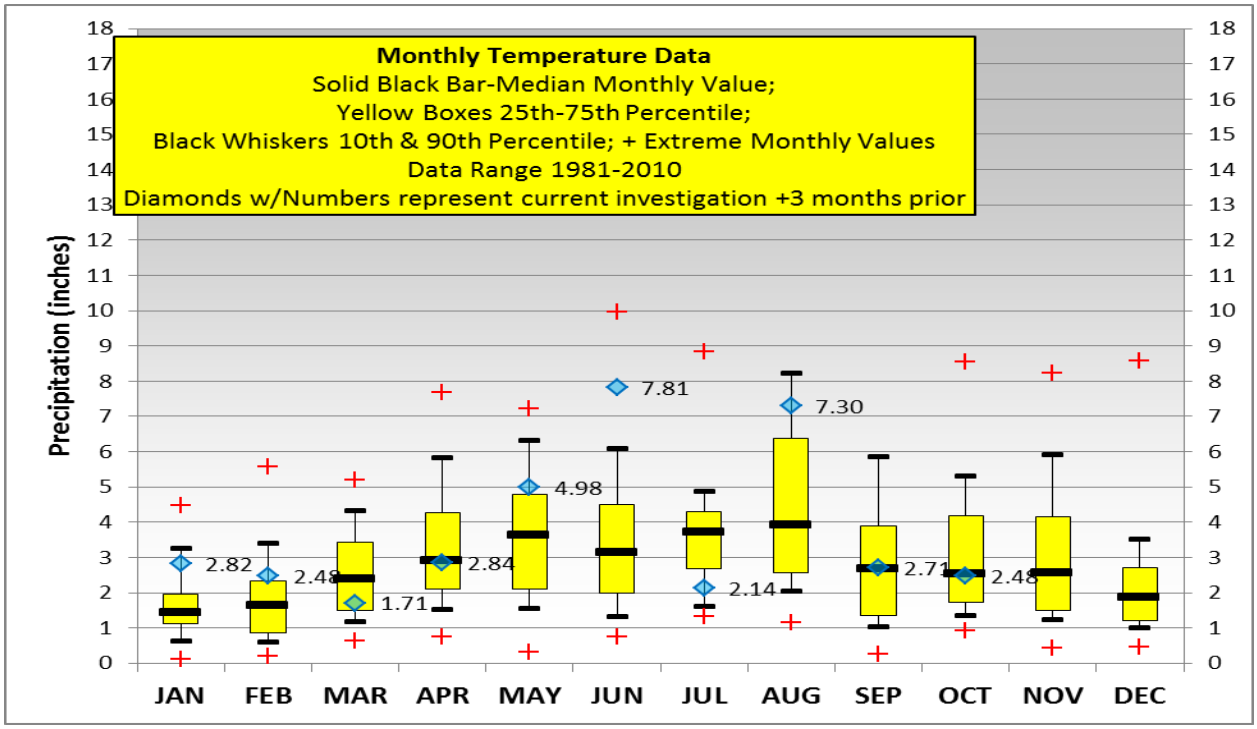


Figure 3: Monthly Precipitation Data for 2014

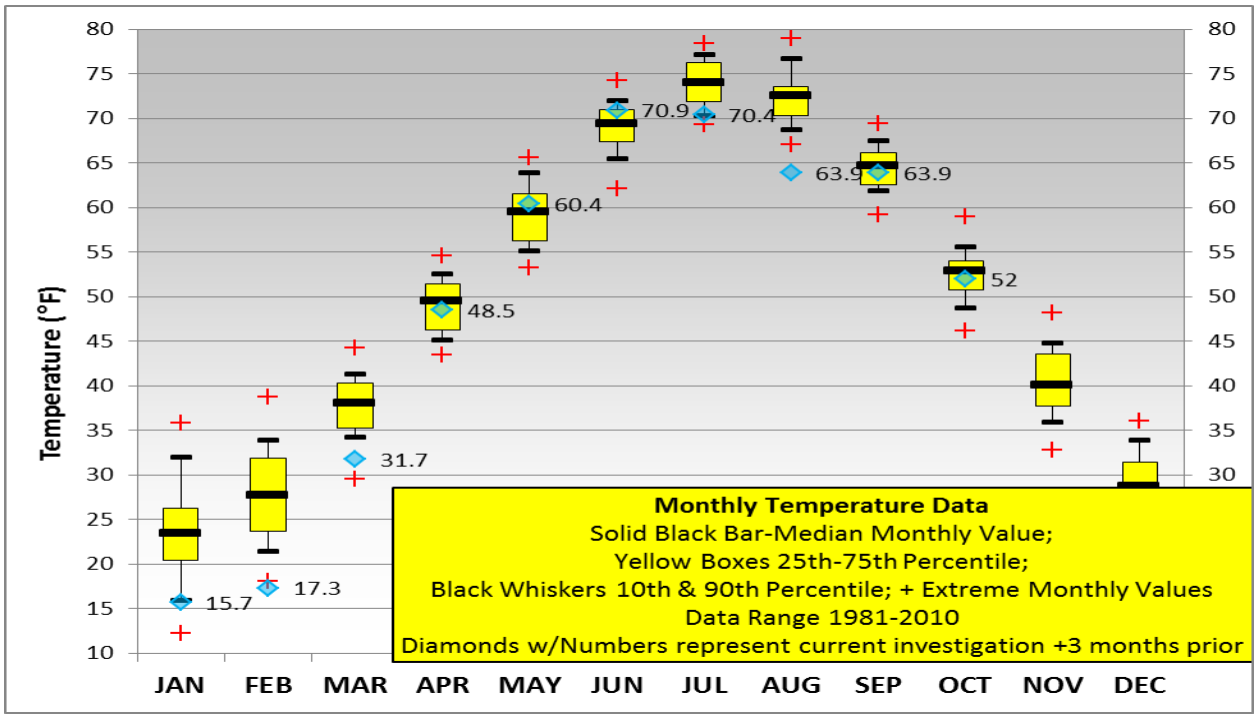


Figure 4: Monthly Temperature Data for 2014

The deviations from the historical 30-year climate average data show for 2013 a relatively wet period with average temperatures and for 2014 a relatively wet with lower than average temperatures. An excessive precipitation event of 8.68 inches was recorded in April 2013. In addition, colder than normal temperatures were recorded in March, November, and December, 2013 and January, February, March, July, and August 2014 during and/or before the investigation. Observations of perched groundwater within the granular fill may have been influenced by these climate factors.

3.0 METHODS OF INVESTIGATION

3.1 Subsurface Investigation

To characterize the soil and groundwater conditions along the I-290 roadway and associated ramps alignments, we selected 78 borings. In addition to subgrade (SGB) borings, we supplemented our investigation with borings drilled for the retaining walls (RWB) and bridges (B). A summary of roadway alignments and limits, reference borings and designations is presented in Table 1. The as-drilled boring locations and elevation were surveyed by others and provided by AECOM; stations and offsets were also provided by AECOM. The boring locations are shown in the *Boring Logs* (Appendix A) and the as-drilled locations are shown in the *Boring Location Plans and Soil Profiles* (Appendix D).

Table 1: Summary of Boring Investigation

Roadway Alignment	Limits		Reference Borings
	Start Station	End Station	
WB I-290	5218+03.24	5247+80.00	WB290-SGB-01 through WB290-SGB-10, 04-RWB-03, 04-RWB-04, 07-RWB-01 through 07-RWB-08, 1703-B-01, 1714-B-02, 2081-B-02, -03, and 2113-B-02
EB I-290	5109+43.21	5155+37.77	EB290-SGB-01 through EB290-SGB-15, 09-RWB-01, 11-RWB-01, 12-RWB-07 through 12-RWB-09, 1704-B-01, -03, 2081-B-04, -05, 2082-B-02

Roadway Alignment	Limits		Reference Borings
	Start Station	End Station	
SW Ramp	1320+56.34	1332+80.76	SB90-SGB-21, -22, WB290-SGB-02, 04-RWB-02 through 04-RWB-04, 06-VST-01, 06-VST-02, 39-RWB-01 and 39-RWB-01HA, 40-RWB-02, 1705-B-12, -13, and -14,
EN Ramp	1600+00.00	1607+93.79	EB290-SGB-14, 18-RWB-01 through 18-RWB-03, 19-RWB-01 1715-B-05, and 2081-B-05
ES Ramp	1500+00.00	1511+38.89	EB290-SGB-13, SB90-SGB-23, 12-RWB-01 through 12-RWB-09, 18-RWB-02, -03, and 1087-B-02
Taylor Street Exit Ramp	7300+00.00	7309+39.95	SB90-SGB-23, 12-RWB-01 through 12-RWB-09, 13-RWB-01 through 13-RWB-03, 2081-B-06

The subgrade borings were advanced to depths of 11 to 11.5 feet bgs and the structure borings were advanced to depths of 50 to 115 feet bgs. The subgrade borings were advanced at approximately 300-foot intervals in a staggered pattern along the proposed roadway alignments. The structure borings used for this report were selected based on their proximity to the roadway alignments. The as-drilled northings and eastings were acquired with a mapping-grade GPS unit, whereas elevations, stations, and offsets were provided by AECOM. Boring location data are included in the *Boring Logs* (Appendix A) and in the *Boring Location Plans and Soil Profiles* (Appendix D).

Truck- and ATV-mounted drilling rigs, equipped with hollow stem augers, were used to advance and maintain an open borehole. Soil sampling was performed according to AASHTO T 206, "*Penetration Test and Split Barrel Sampling of Soils*." The soil was continuously sampled to the termination depth in the subgrade borings and at 2.5-foot intervals to 30 feet bgs and then at 5.0-

foot intervals to termination depth or to top of bedrock in the structure borings. Samples collected from each interval were placed in sealed jars for further examination and laboratory testing.

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

Groundwater observations were made in each boring during and at the completion of drilling operations. The borings were backfilled with bentonite 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), on IDOT Forms BMPR 507A and BMPR 508A (Appendix B), and in the *Laboratory Test Results* (Appendix C).

4.0 RESULTS OF FIELD AND LABORATORY INVESTIGATION

Detailed descriptions of the soil conditions encountered during the subsurface investigation are presented on the attached *Boring Logs* (Appendix A) and on the *Boring Location Plans and Soil Profiles* (Appendix D). 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

Along the proposed roadway improvement, topsoil was measured in 20 borings drilled just outside the paved areas within the cut widening sections. The findings show a 1- to 15-inch thick dark brown to black clayey topsoil. The topsoil encountered within the improvement areas should be stripped. We recommend that a stripping topsoil thickness of 9 inches be considered for estimating purposes.

Pavement measurements show various existing pavement structures: asphalt over concrete along the main lanes; only asphalt along I-290 outside shoulder; or only concrete along the inner shoulders. The pavements are underlies by aggregate base. Table 2 summarizes the existing pavement thicknesses along the proposed alignments.

Table 2: Summary of Pavement Structure Measurements

Location	Measurements	Asphalt thickness (inches)	Concrete thickness (Inches)	Total Pavement average thickness (inches)
I-290 WB	22	0 to 12	0 to 18	12
I-290 EB	19	4 to 14	0 to 12	14
SW Ramp	5	4 to 6	7 to 10	13
EN Ramp	2	3 and 4	9 and 8	12
ES Ramp	4	3 to 5	7 to 15	14
Taylor Exit Ramp	1	5	7	12

The aggregate base thickness, along the existing pavement structure within the improvement limits, varies from 0 to 48 inches.

4.2 Soil Conditions

Beneath topsoil or pavement, from top to bottom, the borings encountered the following general lithologic succession: 1) man-made ground (fill); 2) medium stiff to very stiff silty clay; and 3) very soft to medium stiff clay and silty clay. Soils deeper than the soft clay to silty clay will not impact the roadway pavement design.

The following sections present the soil profile and subsurface conditions encountered along the improvement alignments for approximately five feet below the proposed subgrade.

4.2.1 I-290 Westbound

1) Man-made ground (fill)

Beneath the I-290 pavement, the borings encountered up to 5.9 feet of cohesive and granular fill. The cohesive fill is made of stiff to hard clay to silty clay loam and has unconfined compressive strength

(Q_u) values of 1.5 to 4.3 tsf and moisture content (MC) values of 15 and 19%. Laboratory index testing on selective samples showed liquid limit (L_L) values of 35 to 37% and plastic limit (P_L) values of 17%. The granular fill is made of loose to very dense gravelly loam to gravelly sand and crushed stone and has SPT N-values from 8 blows/foot to spoon refusal (due to high gravel content) and MC values of 5 to 11%. Borings WB290-SGB-03, WB290-SGB-05, and WB290-SGB-06 encountered water within the granular fill.

2) Stiff to very stiff silty clay

Beneath the fill, the borings advanced through a thin, 2- to 3-foot thick crust of stiff to very stiff silty clay along sections of the roadway characterized by Q_u values of 1.0 to 3.8 tsf and MC values of 15 to 25%.

3) Very soft to to medium stiff clay to silty clay

Below the crust or directly below the fill, at 3.0 to 8.4 feet bgs or 568.5 to 582.4 feet elevation, the borings encountered an approximately 30-foot thick very soft to medium stiff, gray clay to silty clay. The soil has Q_u values of 0.2 to 0.8 tsf and MC values of 15 to 29%. Laboratory index testing showed L_L values of 30 to 37% and P_L values of 16 to 18%. This soft soil is prone to deformation.

4.2.2 I-290 Eastbound

1) Man-made ground (fill)

Beneath the I-290 pavement, the borings encountered up to 4.0 feet of cohesive and granular fill which gets up to 14.0 feet thick within the embankment cut sections. The cohesive fill is made of stiff to hard clay to silty clay loam characterized by Q_u values of 1.5 to 5.3 tsf, and MC values of 13 and 24%. Laboratory index testing on selective samples showed L_L values of 33 to 40% and P_L values of 17 to 18%. The granular fill makes 65% of the total fill and consists of very loose to very dense silty loam with little gravel to gravelly sand and crushed stone characterized by N-values of 2 blows/foot to spoon refusal due to the high gravel content and MC values of 4 to 22%. Borings EB290-SGB-11 and 2082-B-02 encountered water within the granular fill. Based on the proposed I-290 EB cross sections, the existing fill will be largely stripped away during the excavation down to the proposed subgrade elevation, particularly at the south edges of the proposed roadway section.

2) Medium stiff to very stiff silty clay

Beneath the fill, the borings advanced through a 1.3- to 9.7-foot thick crust made up of medium stiff to very stiff silty clay encountered discontinuously along the roadway alignment. The soil is characterized

by Q_u values of 0.7 to 2.6 tsf and MC values of 17 to 27%. Laboratory index testing showed L_L value of 30% and P_L value of 15%.

3) Very soft to soft clay to silty clay

Below the crust or directly below the fill, at 2.6 to 15.5 feet bgs or 563.2 to 579.3 feet elevation, the borings encountered more than 30 feet of very soft to medium stiff, gray clay to silty clay. The soil has Q_u values of 0.2 to 0.7 tsf and MC values of 20 to 30%. Laboratory index testing showed L_L values of 32 to 33% and P_L values of 16 to 17%. This soft soil is prone to deformation.

Boring EB290-SGB-04 encountered below the fill, at 6.7 feet bgs (572.8 feet elevation), more than 4.5 feet of medium stiff, dark brown organic silty clay characterized by Q_u values of 0.5 and 0.7 tsf and MC values of 87 and 111%.

4.2.3 SW Ramp

1) Man-made ground (fill)

Below the surface, the borings encountered up to 6.5 feet of cohesive and granular fill. The cohesive fill consists of stiff to hard clay to silty clay loam and is characterized by Q_u values of 1.2 to more than 4.5 tsf and MC values of 9 to 21%. The granular fill consists of very loose to very dense loam to gravelly sand and crushed stone and is characterized by N-values of 2 blows/foot to spoon refusal (due to the high gravel content) and MC values of 5 to 12%. Borings 39-RWB-01 encountered water within the granular fill.

2) Medium stiff to very stiff silty clay

Beneath the fill, the borings advanced through a thin 1.2- to 4.0-foot thick medium stiff to very stiff silty clay to silty clay loam crust that occurs discontinuously along the roadway alignment. The soil has Q_u values of 0.9 to 3.5 tsf and MC values of 13 to 25%. Laboratory index testing showed an L_L value of 30% and a P_L value of 15%. This unit will be stripped away almost entirely to place the proposed roadway pavement section and improved subgrade.

3) Very soft to soft clay to silty clay

Below the crust or directly below the fill, at 3.0 to 10.5 feet bgs or 568.0 to 576.4 feet elevation, the borings encountered more than 30 feet of very soft to medium stiff, gray clay to silty clay. The soil has Q_u values of 0.2 to 0.8 tsf and MC values of 14to 53%. Laboratory index testing showed L_L values of 32 to 37% and P_L values of 16 to 18%. This soft soil is prone to deformation.

4.2.4 EN Ramp

1) Man-made ground (fill)

Below the surface, the borings encountered up to 5.2 feet of cohesive and granular fill. The cohesive fill consists of stiff to hard silty clay loam and is characterized by Q_u values of 1.0 to 4.6 tsf and MC values of 13 and 28%. The granular fill consists of medium stiff to dense silty loam to gravelly sand and is characterized by N-values of 11 to 45 blows/foot and MC values of 8 to 16%. Borings 18-RWB-03 encountered water within the granular fill.

2) Medium stiff to stiff silty clay

Beneath the fill, the borings advanced through a 2.5- to 9.7-foot thick medium stiff to very stiff silty clay to silty clay loam crust that occurs discontinuously along the roadway alignments. The soil has Q_u values of 0.9 to 2.3 tsf and MC values of 17 to 20%. Laboratory index testing showed an L_L value of 30% and a P_L value of 15%.

3) Very soft to medium stiff clay to silty clay

Below the crust or directly below the fill, at 4.6 to 13.0 feet bgs or 563.5 to 582.8 feet elevation, the borings encountered more than 30 feet of very soft to medium stiff, gray clay to silty clay. The soil has Q_u values of 0.1 to 0.7 tsf and MC values of 20 to 29%. Laboratory index testing showed L_L values of 31 to 33% and P_L values of 16 to 19%. This soft soil is prone to deformation.

4.2.5 ES Ramp and Taylor Street Exit Ramp

1) Man-made ground (fill)

Below the surface, the borings encountered up to 18.3 feet of cohesive and granular fill. The cohesive fill consists of 0.5- to 1.8-foot thick stiff to hard silty clay loam characterized by Q_u values of 1.5 to more than 4.5 tsf and MC values of 11 and 25%. The granular soil makes approximately 94% of the fill material and consists of loose to very dense gravelly loam, silty loam, sand to sandy gravel and crushed stone. The granular fill is characterized by N-values of 2 blows/foot to sampler refusal (due to the high gravel content) and MC values of 2 to 47% due to slag content and water saturation. Based on the proposed cross sections, the existing fill will be largely stripped away during the excavation down to the proposed subgrade elevation along both alignments. Borings 1087-B-02, 12-RWB-05, -07, -09, and 18-RWB-03 encountered water within the granular fill.

2) Medium stiff to hard silty clay to silty clay loam

Beneath the fill, the borings advanced through 2.0- to 7.5-foot thick medium stiff to hard silty clay to

silty clay loam that occurs discontinuously along the roadway alignments. The soil has Q_u values of 0.7 to 4.3 tsf and MC values of 15 to 23%. Laboratory index testing showed an L_L value of 27% and a P_L value of 15%. Based on the proposed cross sections, this unit will be largely stripped away during the excavation down to the proposed subgrade elevation along both alignments.

3) Very soft to medium stiff clay to silty clay

Below the crust or directly below the fill, at 4.5 to 25.5 feet bgs or 568.3 to 582.5 feet elevation, the borings encountered more than 30 feet of very soft to medium stiff, gray clay to silty clay. The soil has Q_u values of 0.2 to 0.8 tsf and MC values of 17 to 30%. Laboratory index testing showed L_L values of 30 to 37% and P_L values of 16 to 18%. This soft soil is prone to deformation. Most subgrade along the Taylor Street Exit Ramp and south half of ES Ramp consist of very soft to soft, gray clay to silty clay.

4.3 Groundwater Conditions

While drilling, perched groundwater was encountered as high as elevation 579 feet within the granular fill. During periods of precipitation, we anticipate that perched groundwater may accumulate within granular fill.

5.0 ENGINEERING ANALYSES AND RECOMMENDATIONS

The typical section from the plan set dated October 17, 2014 indicates the proposed I-290 pavement section will consist of 11 inches of jointed Portland Cement Concrete pavement over 4 inches of stabilized hot-mix asphalt base and 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 improvements. For estimating purposes, the average topsoil thickness to be stripped from the surface is 9 inches. According to IDOT District One policy, a shrinkage factor of 15% should be used to measure borrowed and furnished excavation quantities.

The proposed subgrade throughout the extent of the I-290 WB and EB will consist of stiff to hard silty clay loam fill, loose to very dense granular fill, medium stiff to hard silty clay to silty clay loam, or occasionally, soft clay to silty clay. The realignment and widening of the ramps will expose soft clay to silty clay subgrade. We anticipate that the soft clayey subgrade will deform excessively. Therefore, the proofrolling of this material is not recommended, and additional

subgrade treatment should be provided as discussed in the following section.

5.2 Subgrade Treatment and Recommendations

The design drawings show the proposed improved subgrade will be placed on top of either remaining fill, thin silty clay to silty clay loam, or immediately atop the unstable, very soft to medium stiff clay and silty clay (**Unit 3**). Where the stiff to hard cohesive fill, medium dense to very dense granular fill, or medium stiff to very stiff clayey crust will be exposed, no additional treatment is need. Where soft clayey will be exposed, it will not provide a stable working platform for construction or compaction of improved subgrade aggregate. We recommend further subgrade improvement by increasing the thickness of the *Aggregate Subgrade Improvement* from 12 to 24 inches and placing of fabric for ground stabilization at the base of the excavation according to Section 210 (IDOT 2012). The improved subgrade should be in accordance with the Bureau of Design and Environment special provision, *Aggregate Subgrade Improvement*. Alternatively, the additional 12 inches of subgrade improvement could be reduced or eliminated by placing a biaxial or triaxial geogrid, designed specifically for the proposed average daily traffic volume, design life of the pavement, number of proposed axels and axel loads. Our recommendations are summarized in Table 3.

Table 3: Estimated Subgrade Treatment and Soil Removal

Alignment	Stations		Recommended Treatment Depth (inches)	Recommended Treatment Extent (offset)	Comments
	from	to			
I-290 EB	5129+50	5133+00	Remove and Replace 12	0 to 28 RT/32 RT	11-RWB-01, -02, -03 Qu=0.2-0.9 tsf MC up to 29%
SW Ramp	1320+60	1321+60	Remove and Replace 12	Full pavement width	Unit3 Qu<1.0 tsf, MC<29%
ES Ramp and Taylor Street Exit Ramp	1501+50 7300+00	1511+00 7309+40	Remove and Replace 12	Full pavement width	Unit 3 Qu=0.2-0.9 tsf MC=21-29%

In the roadway sections outside of the treatment areas, the pavement will be placed on either

existing sandy and gravelly fill, stiff to hard clayey fill, or stiff to very stiff silty clay crust which will provide the stable working platform required for construction and aggregate subgrade compaction. In these areas, 12 inches of *Aggregate Subgrade Improvement* will be sufficient.

5.3 Subgrade Support Rating

Laboratory testing on the subgrade soils shows a Subgrade Support Rating (SSR) of POOR to FAIR (Exhibit 3). We recommend the pavement section should be designed for an average SSR value of POOR. The pavement could also be designed based on an IBR of 2, as per IDOT correlation to the A-7-6 soil classification encountered during the investigation (IDOT 1999).

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 soils 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 immediately below the base of the improved subgrade and treatment. IDOT Special Provisions for Pipe Underdrains, Check Sheet #19 (IDOT, 2008) should be referenced for underdrains.

5.5 Embankment Cuts and Fill

The existing embankments along EB I-290, SW Ramp, ES Ramp, and Taylor Exit Ramp will be cut and new embankment fill will be placed along EN Ramp. To support the proposed cuts and fill, several retaining walls will be constructed. Table 4 summarizes the structures along the proposed alignments.

Table 4: Summary of Structures

Alignment	Structure	Approximate Location
I-290 EB	SN 016-1800	South side, east of Racine Avenue
	SN 016-1728	South side, west of Morgan Street
SW Ramp	SN 016-1808	Northwest side, between Van Buren Street and Halsted Street
	SN 016-1722	North side, along NW Ramp west approach embankment
EN Ramp	SN 016-1807	North side of the bridge approach embankment

Alignment	Structure	Approximate Location
	SN 016-1810	South side of the bridge approach embankment
ES Ramp and Taylor Exit Ramp	SN 016-1801	South side, between Peoria Street and Halsted Street
	SN 016-1802	Southwest side, between Halsted Street and Harrison Street

Each of these retaining walls have separate Structure Geotechnical Reports and the design should be based on these submittals.

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, will not require extensive dewatering as the water table is seated deeper than the excavation depths. The Contractor should ensure proper surface grading to prevent the pooling of run-off into open excavations. Any water allowed to enter or found into excavations should immediately be removed via sump pump.

6.2 Filling and Backfilling

Pre-approved, cohesive or granular soil conforming to Section 204, *Borrow and Furnished Excavation* would be acceptable as fill (IDOT 2012). 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 in the boring logs and in Appendix D. 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 may 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.
Project Manager

REFERENCES

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

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

ILLINOIS DEPARTMENT OF TRANSPORTATION (1999) *Geotechnical Manual.* IDOT Bureau of Materials and Physical Research, Springfield, IL.

ILLINOIS DEPARTMENT OF TRANSPORTATION (2012) *Standard Specifications for Road and Bridge Construction.* IDOT Division of Highways, Springfield, IL.

LEETARU, H.E., SARGENT, M.L., and KOLATA, D.R. (2004) Geologic Atlas of Cook County for Planning Purposes, Open File Series 2004-12, Illinois State Geological Survey, p. 30.

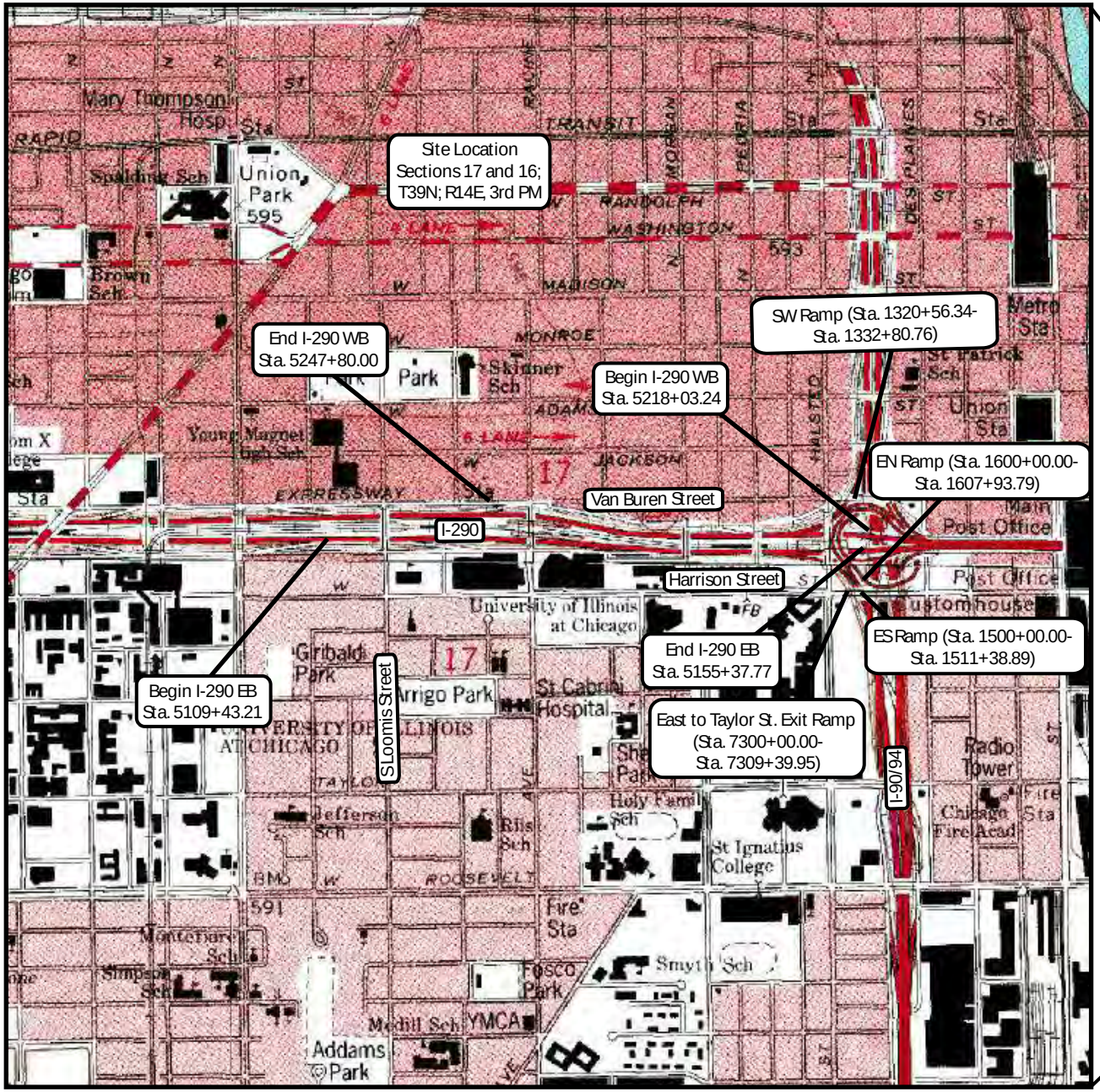
LEIGHTON, M.M., EKBLAW, G.E., and HORBERG, L. (1948) *Physiographic Divisions of Illinois.* The Journal of Geology, v. 56, p. 16-33.

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

NCDC (2014) National Climatic Data Center: Global Historical Climatological Network Data, http://www.ncdc.noaa.gov/ghcn/ghcn.SELECT.html.

PECK, R.B., and REED, W.C. (1954) Engineering Properties of Chicago Subsoils: University of Illinois Engineering Experiment Station Bulletin No. 423: Urbana, University of Illinois, 62

EXHIBITS



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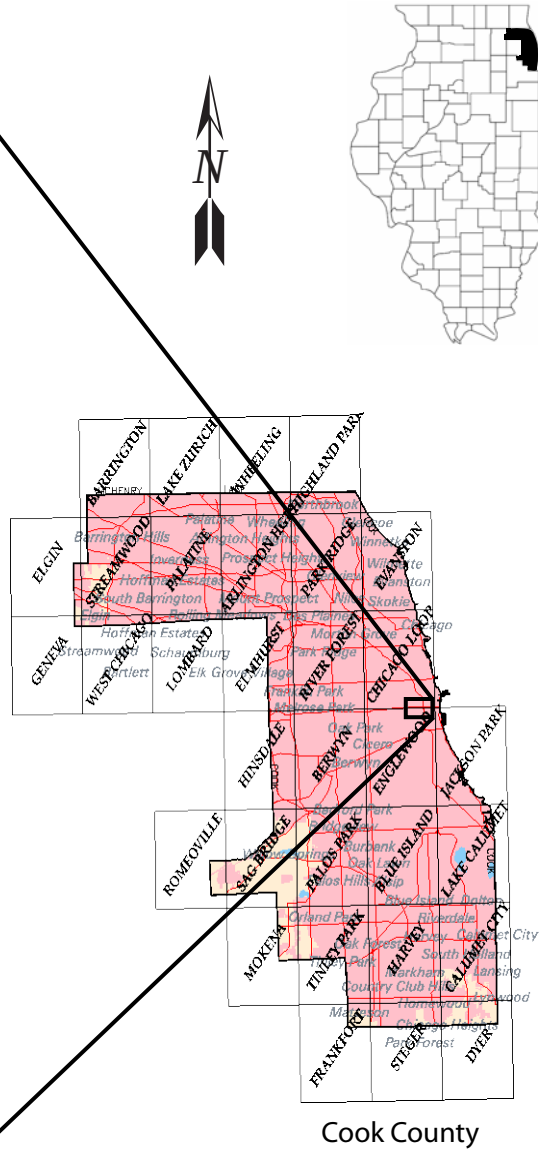

Cook County

SITE LOCATION MAP: CIRCLE INTERCHANGE RECONSTRUCTION I - 290, COOK COUNTY, ILLINOIS

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

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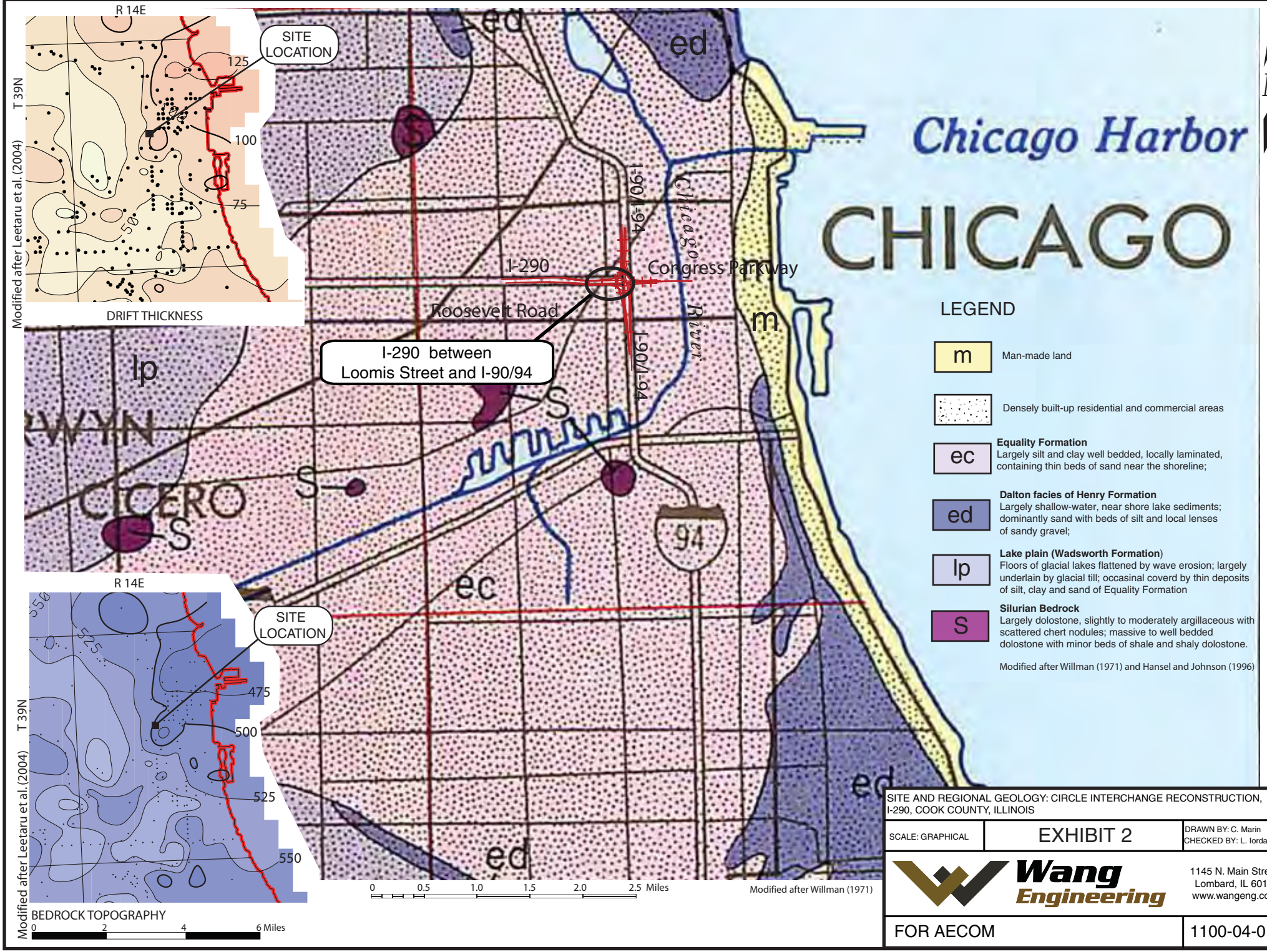

SITE AND REGIONAL GEOLOGY: CIRCLE INTERCHANGE RECONSTRUCTION, I-290, COOK COUNTY, ILLINOIS

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

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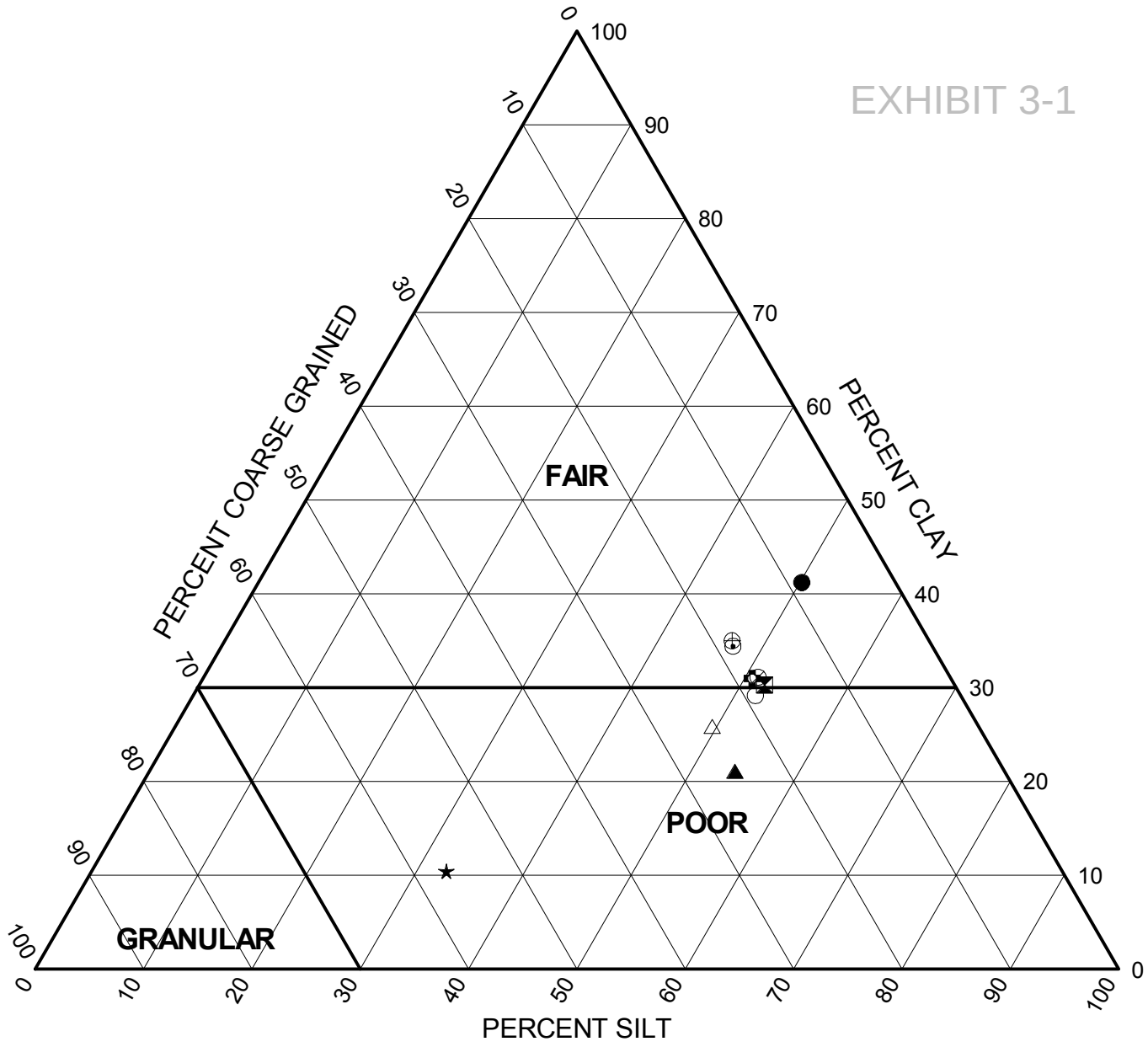
FOR AECOM	1100-04-01

EXHIBIT 3-1



	Sample	Depth (ft)	Coarse (%)	Silt (%)	Clay (%)	Classification		
						IL DOT	AASHTO	RATING
●	09-RWB-01#6	13.5	8.6	50.1	41.2	Silty Clay	A-6 (19)	FAIR
⧓	1087-B-02#5	11.0	17.5	52.2	30.3	Silty Clay	A-6 (11)	FAIR
▲	12-RWB-03#9	21.0	24.9	54.0	21.1	Silty Clay Loam	A-6 (7)	POOR
★	12-RWB-05#14	38.5	56.8	32.7	10.4	Gravelly Silty Loam	A-4 (1)	POOR
⊙	12-RWB-09#12	28.5	18.4	47.2	34.4	Clay	A-6 (12)	FAIR
✿	13-RWB-01#12	28.5	18.3	50.7	31.0	Silty Clay	A-6 (15)	FAIR
○	1703-B-01#2	3.5	18.9	51.9	29.2	Silty Clay	A-6 (11)	POOR
△	1704-B-01#6	13.5	24.6	49.6	25.9	Silty Clay Loam	A-6 (9)	POOR
⊗	1705-B-13#1	8.0	17.7	51.2	31.1	Silty Clay	A-6 (13)	FAIR
⊕	1705-B-13#2	13.0	18.2	46.8	35.0	Clay	A-6 (14)	FAIR

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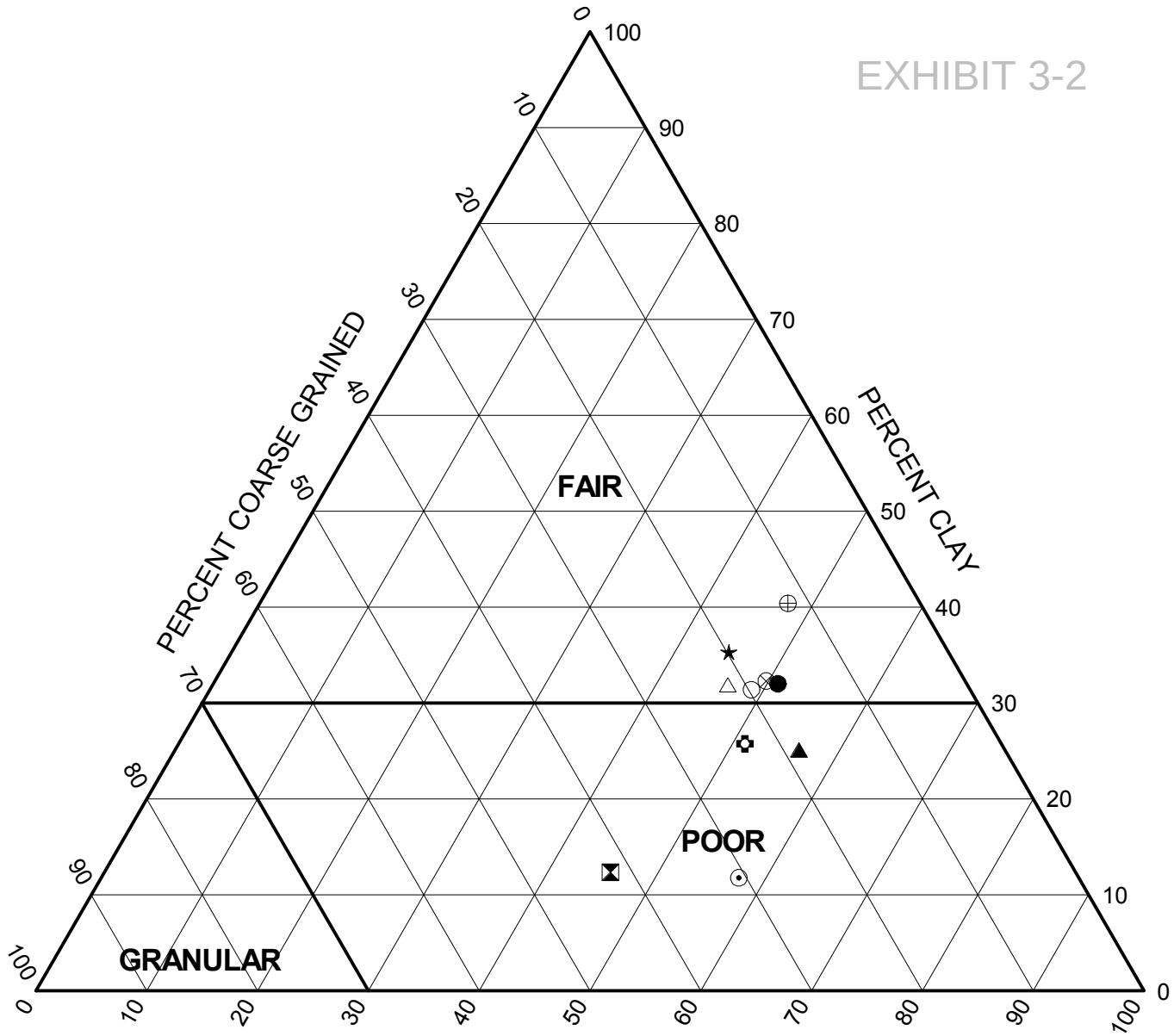
Subgrade Support Rating Chart

Project: Circle Interchange Reconstruction

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

Number: 1100-04-01

EXHIBIT 3-2



	Sample	Depth (ft)	Coarse (%)	Silt (%)	Clay (%)	Classification		
						IL DOT	AASHTO	RATING
●	1705-B-14#7	16.0	17.0	50.9	32.0	Silty Clay	A-6 (12)	FAIR
⧓	1714-B-02#3	6.0	41.9	45.7	12.4	Silty Loam	A-4 (2)	POOR
▲	18-RWB-02#3	6.0	18.6	56.3	25.2	Silty Clay Loam	A-6 (10)	POOR
★	18-RWB-03#6	13.5	19.8	44.9	35.3	Clay	A-6 (10)	FAIR
⊙	19-RWB-01#8	18.5	30.7	57.5	11.8	Silty Loam	A-4 (2)	POOR
✿	2081-B-05#3	6.0	23.1	51.1	25.8	Silty Clay Loam	A-6 (9)	POOR
○	2081-B-06#11	26.0	19.7	48.9	31.4	Silty Clay	A-6 (14)	FAIR
△	2082-B-01#11	26.0	21.6	46.5	31.9	Silty Clay	A-6 (14)	FAIR
⊗	40-RWB-02#8	18.5	17.9	49.7	32.3	Silty Clay	A-6 (12)	FAIR
⊕	EB290-SGB-01#2	3.1	11.9	47.7	40.4	Clay	A-6 (19)	FAIR

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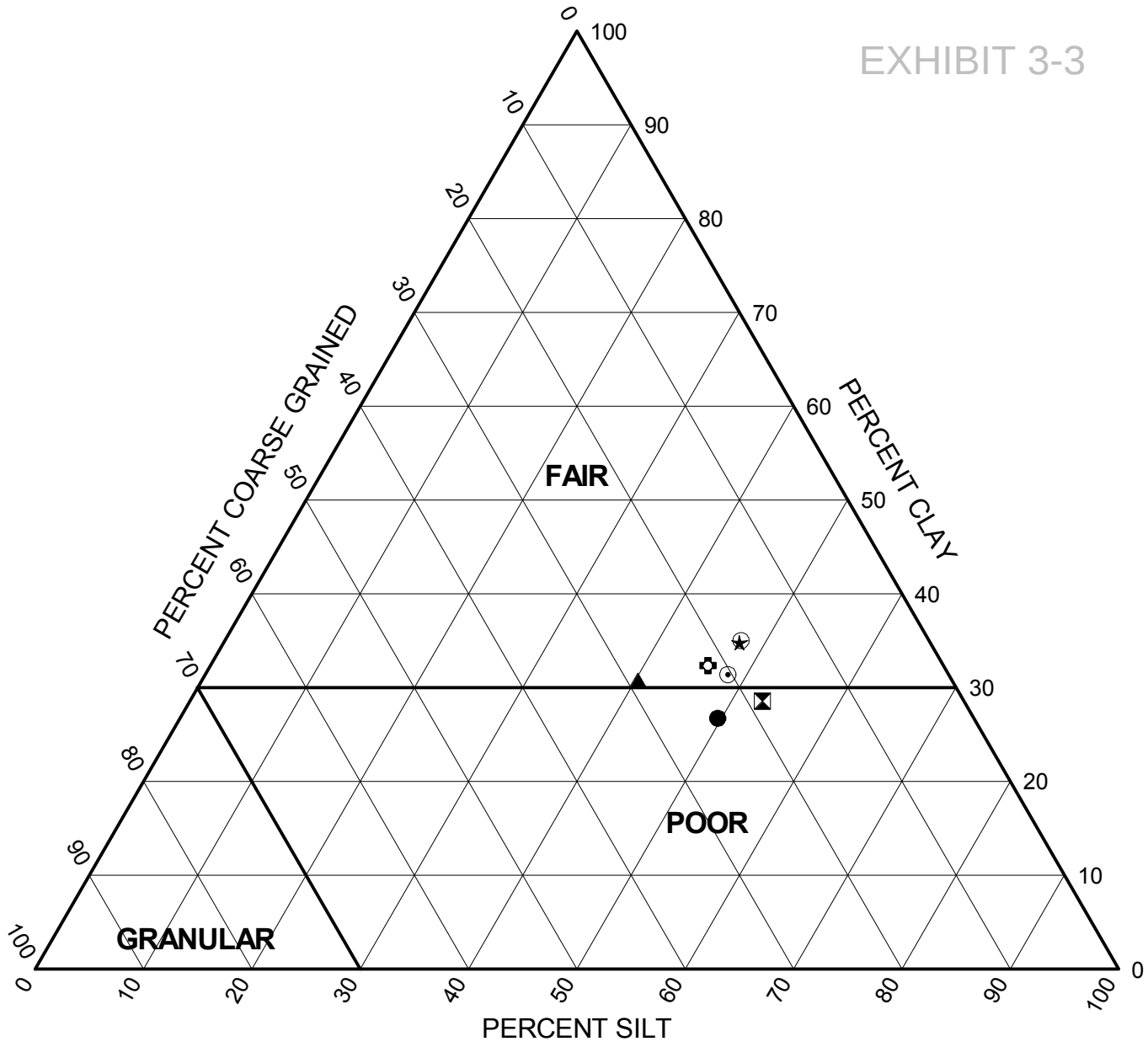
Subgrade Support Rating Chart

Project: Circle Interchange Reconstruction

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

Number: 1100-04-01

EXHIBIT 3-3



	Sample	Depth (ft)	Coarse (%)	Silt (%)	Clay (%)	Classification		
						IL DOT	AASHTO	RATING
●	WB290-SGB-06#1	1.2	23.6	49.6	26.8	Silty Clay Loam	A-6 (10)	POOR
⧗	WB290-SGB-11#3	5.0	18.6	52.8	28.6	Silty Clay Loam	A-6 (11)	POOR
▲	WB290-SGB-15#1	1.0	29.0	40.2	30.8	Clay	A-6 (14)	FAIR
★	WB290-SGB-02#1	1.1	17.6	47.6	34.8	Clay	A-6 (16)	FAIR
⊙	WB290-SGB-05#3	5.0	20.4	48.2	31.4	Silty Clay	A-6 (13)	FAIR
✿	WB290-SGB-07#1	1.0	21.7	45.9	32.3	Clay	A-6 (14)	FAIR
⊕	WB290-SGB-09#3	5.0	17.3	47.6	35.0	Clay	A-6 (14)	FAIR

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Subgrade Support Rating Chart

Project: Circle Interchange Reconstruction

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

Number: 1100-04-01

APPENDIX A

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BORING LOG 04-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: 576.56 ft
North: 1898091.84 ft
East: 1170680.70 ft
Station: 1839+86.74
Offset: 11.5192 LT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
576.1	6-inch thick, black SILTY LOAM --TOPSOIL--						
	Very stiff, brown and gray, SILTY CLAY LOAM, trace gravel, sand seams			1	4 6 5	3.50 P	13
573.6	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel			2	2 2 1	0.41 B	22
	--In-Situ Vane Shear, 5.5 feet-- --$S_{u\ undis}$ = 1320.9 psf-- --$S_{u\ remold}$ = 466.2 psf-- --Sensitivity = 2.83--	5		1			
				3	1 1 1	0.16 B	27
568.6			▽				
568.2	Saturated SAND						
	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			4	0 1 1	0.16 B	27
	--In-Situ Vane Shear, 10.5 feet-- --$S_{u\ undis}$ = 828.8 psf-- --$S_{u\ remold}$ = 388.5 psf-- --Sensitivity = 2.13--	10		2			
				5	1 1 2	0.16 B	28
				6	1 1 1	0.16 B	27
	--In-Situ Vane Shear, 15.5 feet-- --$S_{u\ undis}$ = 828.8 psf-- --$S_{u\ remold}$ = 440.3 psf-- --Sensitivity = 1.88--	15		3			
				7	1 1 2	0.33 B	26
				8	0 1 2	0.25 B	26
		20					
	--In-Situ Vane Shear, 20.5 feet-- --$S_{u\ undis}$ = 1165.5 psf-- --$S_{u\ remold}$ = 466.2 psf-- --Sensitivity = 2.5--			4			
				9	1 2 2	0.49 B	27
				10	1 1 1	0.41 B	25
	--In-Situ Vane Shear, 25.5 feet-- --$S_{u\ undis}$ = 1217.3 psf-- --$S_{u\ remold}$ = 777 psf-- --Sensitivity = 1.56--	25		5			
				11	1 2 3	0.49 B	26
				12	2 3 3	0.49 B	26
	--In-Situ Vane Shear, 30.5 feet-- --$S_{u\ undis}$ = 1243.2 psf-- --$S_{u\ remold}$ = 569.8 psf-- --Sensitivity = 2.18--	30		6			
				13	3 3 4	0.57 B	20
541.1	--In-Situ Vane Shear, 35.5 feet-- --Torque >600 lbs--	35					
	Stiff to very stiff, gray SILTY CLAY, trace gravel		▽				
				14	4 6 7	1.64 B	22
		40					

GENERAL NOTES

Begin Drilling: **09-30-2013** Complete Drilling: **10-01-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
Driller: **R&J** Logger: **F. Bozga** Checked by: **C. Marin**
Drilling Method: **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **8.00 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **24 hours**
Depth to Water ▼ **37.00 ft**

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

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BORING LOG 04-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: 576.56 ft
North: 1898091.84 ft
East: 1170680.70 ft
Station: 1839+86.74
Offset: 11.5192 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	6 5 8	1.97 B	17
			50		16	6 9 12	3.28 B	20
	524.8	Very dense, gray SILT and fine SAND interbeds						
			55		17	15 20 37	NP	20
	519.8	Hard, gray SILTY CLAY LOAM, trace gravel						
			60		18	23 27 35	6.72 B	16
			65		19	13 18 24	5.41 B	16
	509.8	Very dense, gray GRAVELLY SAND						
			70		20	46 50/5"	NP	13
	504.8	Very dense, gray SILTY LOAM, trace gravel and cobbles						
			75		21	85/6"	NP	11
			80		22	38 40 50/4"	NP	21

GENERAL NOTES

Begin Drilling **09-30-2013** Complete Drilling **10-01-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&J** Logger **F. Bozga** Checked by **C. Marin**
Drilling Method **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **8.00 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **24 hours**
Depth to Water ▼ **37.00 ft**

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BORING LOG 04-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: 576.56 ft
North: 1898091.84 ft
East: 1170680.70 ft
Station: 1839+86.74
Offset: 11.5192 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--						
					23	30 50/3"	NP	17
	492.1							
		--BEDROCK--	85					
	489.6							
		Boring terminated at 87.00 ft						
			90					
			95					
			100					

GENERAL NOTES

Begin Drilling **09-30-2013** Complete Drilling **10-01-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&J** Logger **F. Bozga** Checked by **C. Marin**
Drilling Method **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **8.00 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **24 hours**
Depth to Water ▼ **37.00 ft**

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

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BORING LOG 04-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: 576.83 ft
North: 1898088.59 ft
East: 1170615.62 ft
Station: 1840+51.89
Offset: 10.6827 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	576.0	Dark brown, SILTY CLAY --TOPSOIL--						
		Stiff, gray SILTY CLAY, trace gravel			1	2 3 2	1.25 P	19
	573.8	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel						
			5		2	1 2 2	0.33 B	24
					3	1 1 2	< 0.25 P	26
			10		1	PUSH	0.34 B	27
					2	PUSH	0.36 B	27
			15		3	PUSH	0.46 B	27
					4	PUSH	0.40 B	26
			20		4	1 1 1	0.25 B	26
			25		5	1 1 2	0.25 B	26
					6	1 1 2	0.25 B	26
					7	1 1 3	0.33 B	25
			30		8	1 2 3	0.49 B	25
	540.1	Very stiff, gray SILTY CLAY, trace gravel						
			35		9	1 2 3	0.41 B	20
			40		10	4 8 10	2.21 B	21

GENERAL NOTES

Begin Drilling: **09-18-2013** Complete Drilling: **09-26-2013**
Drilling Contractor: **K&S** Drill Rig: **D-120 TMR**
Driller: **R&E** Logger: **B. Wilson** Checked by: **C. Marin**
Drilling Method: **4.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **48.75 ft**
At Completion of Drilling: **DRY**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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BORING LOG 04-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: 576.83 ft
North: 1898088.59 ft
East: 1170615.62 ft
Station: 1840+51.89
Offset: 10.6827 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		11	4 7 9	3.36 B	14
	528.0	Medium dense, gray, coarse SAND, some gravel	50		12	6 10 14	NP	12
	525.1	Dense to very dense, gray SILTY LOAM, trace gravel	55		13	7 12 33	NP	12
			60		14	17 18 50	NP	12
	515.1	Hard, gray SILTY CLAY LOAM, trace gravel	65		15	9 18 34	9.04 B	14
	510.1	Very dense, gray SANDY LOAM, trace gravel	70		16	7 37 42	NP	14
	505.1	Very dense, gray SILTY LOAM	75		17	35 50/4"	NP	10
	500.1	Very dense, gray SILT	80		18	40 50/5"	NP	22

GENERAL NOTES

Begin Drilling **09-18-2013** Complete Drilling **09-26-2013**
Drilling Contractor **K&S** Drill Rig **D-120 TMR**
Driller **R&E** Logger **B. Wilson** Checked by **C. Marin**
Drilling Method **4.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **48.75 ft**
At Completion of Drilling ▼ **DRY**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 04-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: 576.83 ft
North: 1898088.59 ft
East: 1170615.62 ft
Station: 1840+51.89
Offset: 10.6827 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--						
			85					
		--Hard Drilling 85.5'-86.5'--						
		--Possible Bedrock--						
	490.3	Boring terminated at 86.50 ft						
			90					
			95					
			100					

GENERAL NOTES

Begin Drilling **09-18-2013** Complete Drilling **09-26-2013**
Drilling Contractor **K&S** Drill Rig **D-120 TMR**
Driller **R&E** Logger **B. Wilson** Checked by **C. Marin**
Drilling Method **4.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **48.75 ft**
At Completion of Drilling ▼ **DRY**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 04-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: 576.90 ft
North: 1898077.01 ft
East: 1170543.46 ft
Station: 1841+24.64
Offset: 17.7160 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-inch thick, ASPHALT --PAVEMENT--						
	575.7	10-inch thick CONCRETE --PAVEMENT--						
		Very dense, white SANDY GRAVEL, with crushed stone						
	573.9	--FILL--						
		Very stiff, brown SILTY CLAY, trace gravel, brick and roots --FILL--			1	30 50/1	NP	5
			5		2	14 11 7	3.20 B	19
	571.4	Soft, gray CLAY, trace gravel			3	1 2 2	0.41 B	26
			10		4	0 2 1	0.33 B	26
					5	0 0 1	0.25 B	27
			15		6	0 1 1	0.25 B	27
					7	0 1 1	NR	
			20		8	0 2 1	0.25 B	27
		--3-inch thick, gray SILT--	25		9	3 2 3	0.33 B	24
					10	1 1 2	0.33 B	24
		--Coarse sand lenses--			11	0 2 2	0.49 B	26
			30		12	2 2 2	0.66 B	27
			35		13	3 3 4	0.57 B	18
	538.0	Hard, gray SILTY CLAY, trace gravel	40		14	5 13 18	4.43 S	12

GENERAL NOTES

Begin Drilling **09-26-2013** Complete Drilling **09-26-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 04-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: 576.90 ft
North: 1898077.01 ft
East: 1170543.46 ft
Station: 1841+24.64
Offset: 17.7160 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 8 12	4.51 B	14
	530.2	Very stiff, gray CLAY, trace gravel						
			50		16	6 8 10	3.49 B	23
	525.2	Dense, gray SILTY LOAM, trace gravel						
			55		17	20 23 22	3.36 S	20
	520.2	Hard, gray SILTY CLAY LOAM, trace gravel and sand lenses						
			60		18	24 25 35	6.15 S	12
			65		19	12 17 25	6.31	15
		--HARD DRILLING-- *--Possible Cobbles--*						
	510.2	Very dense, gray GRAVELLY SANDY LOAM						
			70		20	34 36 50/5	NP	11
	505.2	Hard, gray SILTY LOAM to SILTY CLAY LOAM, trace to some gravel						
			75		21	23 80/3	10.25 S	15
		--75'-76' Boulder--						
			80		22	100/5	> 4.50 P	15
		--Rock Fragments--						

GENERAL NOTES

Begin Drilling **09-26-2013** Complete Drilling **09-26-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 04-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: 576.90 ft
North: 1898077.01 ft
East: 1170543.46 ft
Station: 1841+24.64
Offset: 17.7160 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--*						
	494.9	--WEATHERED BEDROCK--						
	493.4	Strong, light gray, good rock mass quality, thin bedded fresh DOLOSTONE, 2- to 30-inch beds, 2- to 24-inch spaced joints, horizontal and vertical joints with <0.2- to 2-inch infilling, hard joint wall, with stylolitic surfaces, and moderately vuggy, up to 1.5 inch vugs.	85			CORE		
		--Run 1 - RECOVERY=100%-- --RQD=76%--			1			
			90					
	483.4	Boring terminated at 93.50 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 **09-26-2013** Complete Drilling **09-26-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 06-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: 577.27 ft
North: 1898079.56 ft
East: 1170402.40 ft
Station: 5228+61.74
Offset: 26.95 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
576.8	6-inch thick ASPHALT --PAVEMENT--						
575.9	10-inch thick CONCRETE						
	Very dense, grayish brown SANDY GRAVEL, trace brick fragments --FILL--			1	6 42 50	NP	8
573.8							
	Stiff, gray SILTY CLAY, trace gravel			2	9 5 3 2	1.50 P	19
572.8	--FILL--						
	Very soft, gray CLAY to SILTY CLAY, trace gravel	5		3	0 1 2 2	0.16 B	23
				4	1 1 1	0.08 B	26
		10					
	--In-Situ Vane Shear, 10.5 feet-- --$S_{u\ undis}$ = 984.2 psf-- --$S_{u\ remold}$ = 699.3 psf-- --Sensitivity = 1.41--			1	VS		
		15					
	--In-Situ Vane Shear, 15.5 feet-- --$S_{u\ undis}$ = 751.1 psf-- --$S_{u\ remold}$ = 518 psf-- --Sensitivity = 1.45--			2	VS		
		20					
	--In-Situ Vane Shear, 20.5 feet-- --$S_{u\ undis}$ = 854.7 psf-- --$S_{u\ remold}$ = 466.2 psf-- --Sensitivity = 1.83--			3	VS		
		25					
	--In-Situ Vane Shear, 25.5 feet-- --$S_{u\ undis}$ = 1165.5 psf-- --$S_{u\ remold}$ = 595.7 psf-- --Sensitivity = 1.96--			4	VS		
		30					
	--In-Situ Vane Shear, 30.5 feet-- --$S_{u\ undis}$ =1113.7 psf-- --$S_{u\ remold}$ = 518 psf-- --Sensitivity = 2.15--			5	VS		
544.0							
	--In-Situ Vane Shear, 35.5 feet-- --$S_{u\ undis}$ = 1554 psf-- --$S_{u\ remold}$ = 1424.5 psf-- --Sensitivity = 1.1--	35		6	VS		
	Very stiff, gray SILTY CLAY, trace gravel						
538.3							
537.3	Medium dense, gray SILTY LOAM, trace gravel	40		5	7 8 16	3.28 B	19

GENERAL NOTES

Begin Drilling **08-18-2014** Complete Drilling **08-18-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&J** Logger **S. Woods** Checked by **C. Marin**
Drilling Method **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 06-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: 577.27 ft
North: 1898079.56 ft
East: 1170402.40 ft
Station: 5228+61.74
Offset: 26.95 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--Dry--						
		Boring terminated at 40.00 ft	45					
			50					
			55					
			60					

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

GENERAL NOTES

Begin Drilling **08-18-2014** Complete Drilling **08-18-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&J** Logger **S. Woods** Checked by **C. Marin**
Drilling Method **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 06-VST-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: 578.79 ft
North: 1898096.15 ft
East: 1170222.78 ft
Station: 5230+36.61
Offset: 49.78 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	577.9	11-inch thick ASPHALT --PAVEMENT--						
	577.3	7-inch thick CONCRETE --PAVEMENT--						
		Very dense, gray SANDY GRAVEL --FILL--			1	8 36 30	NP	7
	574.0	Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	5		2	1 2 2	0.33 B	25
		--In-Situ Vane Shear, 8.5 feet-- --$S_{u\ undis}$ = 647.5 psf-- --$S_{u\ remold}$ = 492.1 psf-- --Sensitivity = 1.32--	10		1	VS		
		--In-Situ Vane Shear, 13.5 feet-- --$S_{u\ undis}$ = 932.4 psf-- --$S_{u\ remold}$ = 492.1 psf-- --Sensitivity = 1.89--	15		2	VS		
		--In-Situ Vane Shear, 18.5 feet-- --$S_{u\ undis}$ = 1010.1 psf-- --$S_{u\ remold}$ = 440.3 psf-- --Sensitivity = 2.29--	20		3	VS		
		--In-Situ Vane Shear, 23.5 feet-- --$S_{u\ undis}$ = 1320.9 psf-- --$S_{u\ remold}$ = 751.1 psf-- --Sensitivity = 1.76--	25		4	VS		
		--In-Situ Vane Shear, 28.5 feet-- --$S_{u\ undis}$ = 1372.7 psf-- --$S_{u\ remold}$ = 777 psf-- --Sensitivity = 1.77--	30		5	VS		
			35		3	5 8 9	0.74 B	20
	542.3	Boring terminated at 36.50 ft	40					

GENERAL NOTES

Begin Drilling: **08-17-2014** Complete Drilling: **08-17-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
Driller: **R&J** Logger: **S. Woods** Checked by: **C. Marin**
Drilling Method: **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG 07-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: 577.56 ft
North: 1898072.80 ft
East: 1169733.92 ft
Station: 5235+27.24
Offset: 25.5497' 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	8-inch thick ASPHALT --PAVEMENT--						
	576.4	6-inch thick CRUSHED STONE --AGGREGATE BASE--						
		Medium dense, gray GRAVELLY SAND			1	10 9 8	NP	4
	574.6	--FILL--						
		Very soft to soft, gray CLAY to SILTY CLAY, trace gravel	5		2	2 1 2	0.25 B	25
					3	1 1 1	0.08 B	27
			10		4	1 1 1	0.16 B	26
					5	0 0 0	0.16 B	27
			15		6	0 0 0	0.16 B	26
					7	0 0 0	0.16 B	25
			20		8	0 0 0	0.08 B	26
			25		9	1 2 2	0.08 B	26
					10	0 0 0	0.25 B	26
					11	0 0 0	0.25 B	26
			30		12	1 2 2	0.25 B	25
	545.8	SAND --Saturated--						
	544.3	Medium stiff, gray CLAY, trace gravel	35		13	3 3 5	0.90 B	19
	540.8	Very stiff to hard, gray SILTY CLAY, trace gravel						
			40		14	5 8 10	3.53 B	13

GENERAL NOTES

Begin Drilling **10-28-2013** Complete Drilling **10-28-2013**
Drilling Contractor **GSG** Drill Rig **D-50 TMR**
Driller **J&J** Logger **C. Davis** Checked by **C. Marin**
Drilling Method **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **32.00 ft**
At Completion of Drilling ▼ **12.00 ft**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 07-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: 577.56 ft
North: 1898072.80 ft
East: 1169733.92 ft
Station: 5235+27.24
Offset: 25.5497' 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	5 8 9	4.51 B	14
	530.8	Stiff, gray CLAY						
			50		16	3 5 5	1.72 B	23
	525.8	Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel						
			55		17	10 20 29	8.17 N/6	13
			60		18	17 26 42	9.02 S	13
			65		19	13 16 18	5.74 S	19
		--HARD DRILLING-- *--Possible Cobbles--*						
	510.8	Very dense, gray GRAVELLY SILT --Saturated--						
					20	50/5	NP	17
		--AUGER REFUSAL--	70					
	507.5	Boring terminated at 70.10 ft			21	50/1	NP	26
			75					
			80					

GENERAL NOTES

Begin Drilling **10-28-2013** Complete Drilling **10-28-2013**
Drilling Contractor **GSG** Drill Rig **D-50 TMR**
Driller **J&J** Logger **C. Davis** Checked by **C. Marin**
Drilling Method **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **32.00 ft**
At Completion of Drilling ▼ **12.00 ft**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 07-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: 578.21 ft
North: 1898081.09 ft
East: 1169586.18 ft
Station: 5236+76.29
Offset: 25.5611' RT

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	9-inch thick ASPHALT --PAVEMENT--						
	577.0	6-inch thick CRUSHED STONE --AGGREGATE BASE--						
		Very stiff, black and gray CLAY LOAM, trace gravel						
	575.2	--FILL--						
		Stiff, gray SILTY CLAY, trace gravel --FILL--						
	572.0	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel						
			5		1	6 4 6	2.95 B	18
					2	3 4 3	1.56 B	19
			10		3	2 1 2	0.16 B	27
					4	1 1 2	0.16 B	27
					5	1 2 1	0.16 B	25
			15		6	2 1 2	0.16 B	27
					7	0 0 0	0.16 B	26
			20		8	0 0 2	< 0.25 P	27
			25		9	0 0 3	0.49 B	23
					10	2 3 3	0.41 B	25
					11	2 3 3	0.25 B	23
			30		12	3 4 6	0.82 B	27
	541.5	Very stiff, gray SILTY CLAY, trace gravel						
			35		13	2 4 3	0.41 B	20
			40		14	4 4 7	3.28 B	17

GENERAL NOTES

Begin Drilling: **10-29-2013** Complete Drilling: **10-29-2013**
Drilling Contractor: **GSG** Drill Rig: **D-50 TMR**
Driller: **J&J** Logger: **C. Davis** Checked by: **C. Marin**
Drilling Method: **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **63.00 ft**
At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG 07-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: 578.21 ft
North: 1898081.09 ft
East: 1169586.18 ft
Station: 5236+76.29
Offset: 25.5611' RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	521.5	Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel	45		15	4 6 9	2.71 B	19
			50		16	3 6 10	3.00 P	20
			55		17	4 7 14	2.30 B	12
			60		18	19 29 40	10.25 S	11
	516.5	Gray SILT --Wet--						
	514.5 514.1	Gray, coarse SAND --Saturated-- Very dense, gray SILTY LOAM, trace to some gravel	65		19	19 49 50/4	NP	12
			70		20	50/5	NP	8
			75		21	50/5	NP	9
			80		22	50/1	NP	9

GENERAL NOTES

Begin Drilling **10-29-2013** Complete Drilling **10-29-2013**
Drilling Contractor **GSG** Drill Rig **D-50 TMR**
Driller **J&J** Logger **C. Davis** Checked by **C. Marin**
Drilling Method **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **63.00 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 07-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: 578.21 ft
North: 1898081.09 ft
East: 1169586.18 ft
Station: 5236+76.29
Offset: 25.5611' RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	496.2	--AUGER REFUSAL--			23	50/0	NP	
		Boring terminated at 82.00 ft	85					
			90					
			95					
			100					

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

GENERAL NOTES

Begin Drilling **10-29-2013** Complete Drilling **10-29-2013**
Drilling Contractor **GSG** Drill Rig **D-50 TMR**
Driller **J&J** Logger **C. Davis** Checked by **C. Marin**
Drilling Method **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **63.00 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 07-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: 580.38 ft
North: 1898100.44 ft
East: 1169248.54 ft
Station: 5240+15.44
Offset: 14.7200' 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	9-inch thick ASPHALT						
	579.4	--PAVEMENT--						
		3-inch thick, brown GRAVELLY LOAM			1	7 11 18	> 4.50 P	9
		--FILL--						
	577.4	Hard, brown, gray, and black CLAY LOAM, trace gravel and slag						
		--FILL--			2	3 9 25	1.80 B	21
		Stiff, brown and gray SILTY CLAY LOAM, trace gravel and cobbles	5					
		--FILL--						
	574.3	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel			3	1 2 1	0.08 B	27
		--obstruction, offset 5 feet west--			4	50/4	< 0.25 P	23
			10		5	2 2 1	0.33 B	23
			15		6	2 3 2	0.25 P	24
					7	1 2 2	0.25 B	27
			20		8	0 1 2	0.16 B	27
			25		9	0 1 1	0.16 B	26
					10	1 1 2	0.25 B	27
					11	2 2 2	0.16 B	25
			30		12	1 2 2	0.25 B	27
	548.6	Medium dense, gray SILT --Saturated--			13	4 7 6	NP	23
	543.6	Stiff, to very stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel	35					
			40		14	5 8 11	2.95 B	18

GENERAL NOTES

Begin Drilling: **10-29-2013** Complete Drilling: **10-29-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
Driller: **R&J** Logger: **A. Tomaras** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 12.5', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **33.50 ft**
At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG 07-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: 580.38 ft
North: 1898100.44 ft
East: 1169248.54 ft
Station: 5240+15.44
Offset: 14.7200' 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	5 8 11	1.75 P	22
	533.6	Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel						
	530.4		50		16	11 19 25	4.89 S	19
		Boring terminated at 50.00 ft	55					
			60					

GENERAL NOTES

Begin Drilling **10-29-2013** Complete Drilling **10-29-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&J** Logger **A. Tomaras** Checked by **C. Marin**
Drilling Method **3.25" HSA to 12.5', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **33.50 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 07-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: 579.76 ft
North: 1898108.89 ft
East: 1169145.86 ft
Station: 5241+18.42
Offset: 10.0403' RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	579.0	8.5-inch thick ASPHALT --PAVEMENT--						
	578.3	9-inch thick brown SANDY GRAVEL --AGGREGATE BASE--			1	35 28 15	NP	13
	576.8	Dense, brown, gravelly LOAM --FILL--						
		Stiff, brown, gray, and black SILTY CLAY LOAM, trace gravel --FILL--	5		2	3 3 4	1.23 B	26
	574.3	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel			3	1 1 2	0.16 B	27
			10		4	1 2 1	0.16 B	27
					5	0 1 2	0.25 B	27
			15		6	0 1 2	0.25 B	26
		--L_L(%)=36, P_L(%)=16-- --%Gravel=2.9-- --%Sand=13.8-- --%Silt=50.5-- --%Clay=32.8-- --A-6 (16)--			7	0 1 2	0.16 B	28
			20		8	0 1 2	0.33 B	27
			25		9	1 1 2	0.41 B	26
					10	1 2 2	0.33 B	26
					11	1 2 2	0.41 B	26
			30		12	1 2 3	0.41 B	26
	542.8	Hard, gray SILTY CLAY LOAM, trace gravel	35		13	0 1 2	0.25 B	29
		--Disturbed sample--	40		14	10 13 19	5.33 N/6	16

GENERAL NOTES

Begin Drilling **03-06-2014** Complete Drilling **03-06-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&N** Logger **F. Bozga** Checked by **C. Marin**
Drilling Method **3.25" HSA to 12.5', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 07-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: 579.76 ft
North: 1898108.89 ft
East: 1169145.86 ft
Station: 5241+18.42
Offset: 10.0403' 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	13 16 19	6.15 B	17
	532.8	Dense to very dense, gray SILTY LOAM						
			50		16	24 28 32	NP	16
			55		17	18 21 28	NP	22
	524.8	Boring terminated at 55.00 ft						
			60					

GENERAL NOTES

Begin Drilling **03-06-2014** Complete Drilling **03-06-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&N** Logger **F. Bozga** Checked by **C. Marin**
Drilling Method **3.25" HSA to 12.5', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 07-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: 579.17 ft
North: 1898120.16 ft
East: 1169071.26 ft
Station: 5241+93.94
Offset: 10.8031' RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	578.4	8.5-inch thick ASPHALT --PAVEMENT--						
		Medium dense, brown SANDY GRAVEL --AGGREGATE BASE--			1	19 13 13	NP	13
	576.4	Stiff, brown and black SILTY CLAY LOAM, trace gravel --FILL--			2	3 2 3	1.66 B	21
	574.4	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel	5		3	1 1 2	0.16 B	25
			10		4	1 1 2	0.25 B	23
					5	0 1 1	0.16 B	28
			15		6	1 1 1	0.16 B	28
					7	0 0 0	0.16 B	28
			20		8	0 0 0	0.16 B	26
			25		9	0 0 2	0.25 B	27
					10	0 0 2	0.25 B	26
			30		11	0 2 3	0.41 B	26
					12	0 1 2	0.25 B	28
	542.2	Hard, gray SILTY CLAY LOAM, trace gravel	35		13	2 3 4	0.25 P	26
			40		14	7 10 15	4.84 B	18

GENERAL NOTES

Begin Drilling **03-06-2014** Complete Drilling **03-07-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&N** Logger **F. Bozga** Checked by **C. Marin**
Drilling Method **3.25" HSA to 12.5', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 07-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: 579.17 ft
North: 1898120.16 ft
East: 1169071.26 ft
Station: 5241+93.94
Offset: 10.8031' 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 18 25	5.08 B	13
	532.2	Dense, gray SILT						
			50		16	12 19 26	NP	13
		--% Gravel = 1.4%-- --% Sand = 6.5%-- --% Silt = 88.8%-- --% Clay = 3.2%-- --A-4 (0)--						
					17	19 24 24	NP	23
	524.2		55					
		Boring terminated at 55.00 ft						
			60					

GENERAL NOTES

Begin Drilling **03-06-2014** Complete Drilling **03-07-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&N** Logger **F. Bozga** Checked by **C. Marin**
Drilling Method **3.25" HSA to 12.5', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 07-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: 577.64 ft
North: 1898159.64 ft
East: 1168865.89 ft
Station: 5244+02.98
Offset: 21.4193' RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	576.6	12-inch thick ASPHALT --PAVEMENT--						
		Medium dense, brown and gray LOAM, little gravel --FILL--			1	8 7 5	NP	7
	574.6	Stiff, brown, gray, and black CLAY LOAM, trace gravel --FILL--	5		2	3 4 5	2.64 B	19
	572.1	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel			3	1 2 1	0.25 B	22
			10		4	1 1 1	0.25 B	27
		--In-Situ Vane Shear, 10.5 feet-- --$S_{u\ undis}$ = 622 psf-- --$S_{u\ remold}$ = 337 psf-- --Sensitivity = 1.9--			1			
					5	0 1 1	0.25 B	25
			15		6	0 1 2	0.33 B	23
		--In-Situ Vane Shear, 15.5 feet-- --$S_{u\ undis}$ = 570 psf-- --$S_{u\ remold}$ = 337 psf-- --Sensitivity = 1.7--			2			
					7	0 2 1	0.33 B	26
			20		8	0 1 1	0.25 B	27
		--In-Situ Vane Shear, 20.5 feet-- --$S_{u\ undis}$ = 648 psf-- --$S_{u\ remold}$ = 363 psf-- --Sensitivity = 1.8--			3			
					9	0 2 1	0.41 B	26
			25		10	0 2 2	0.49 B	27
		--In-Situ Vane Shear, 25.5 feet-- --$S_{u\ undis}$ = 777 psf-- --$S_{u\ remold}$ = 492 psf-- --Sensitivity = 1.6--			4			
					11	1 2 2	0.33 B	27
			30		12	2 3 4	0.25 B	21
	546.9	Hard, gray SILTY CLAY, trace gravel --In-Situ Vane Shear, 31.5 feet-- --Torque >600 lbs--			5			
			35		13	3 8 10	4.92 B	18
			40		14	6 18 20	6.33 N/6	

GENERAL NOTES

Begin Drilling: **11-03-2013** Complete Drilling: **11-03-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
Driller: **R&J** Logger: **A. Tomaras** Checked by: **C. Marin**
Drilling Method: **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **43.50 ft**
At Completion of Drilling: **45.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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BORING LOG 07-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: 577.64 ft
North: 1898159.64 ft
East: 1168865.89 ft
Station: 5244+02.98
Offset: 21.4193' RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	535.9							
		Gray, medium SAND						
	533.9							
		Dense to very dense, gray SILT with fine SAND lamination			15	23 25 43	NP	19
		--Saturated--	45					
					16	5 15 23	NP	29
	527.6		50					
		Boring terminated at 50.00 ft						
			55					
			60					

GENERAL NOTES

Begin Drilling **11-03-2013** Complete Drilling **11-03-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&J** Logger **A. Tomaras** Checked by **C. Marin**
Drilling Method **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **43.50 ft**
At Completion of Drilling ▼ **45.00 ft**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 07-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: 576.13 ft
North: 1898186.69 ft
East: 1168716.90 ft
Station: 5245+54.15
Offset: 26.5057' RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	575.4	9-inch thick ASPHALT --PAVEMENT--						
	574.6	9-inch thick, brown SANDY GRAVEL --AGGREGATE BASE--						
		Stiff, brown SILTY CLAY LOAM, trace gravel --FILL--			1	5 3 3	1.00 P	18
	572.1	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	5		2	2 3 3	0.41 B	23
					3	1 1 1	0.16 B	28
			10		4	0 0 2	0.16 B	26
					5	0 0 1	0.16 B	27
			15		6	0 0 0	0.16 B	27
					7	0 0 2	0.33 N/6	
			20		8	2 2 2	0.16 B	28
			25		9	0 0 2	0.41 B	27
					10	0 2 2	0.41 B	27
					11	1 1 2	0.49 B	27
	548.1	Very stiff to hard, SILTY CLAY LOAM, trace gravel	30		12	4 4 9	2.17 N/6	
			35		13	9 13 16	4.83 N/6	
	539.4	Dense to very dense, gray SILT						
			40		14	21 48 45	NP	18

GENERAL NOTES

Begin Drilling **03-07-2014** Complete Drilling **03-07-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&N** Logger **F. Bozga** Checked by **C. Marin**
Drilling Method **3.25" HSA to 12.5', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **42.00 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 07-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: 576.13 ft
North: 1898186.69 ft
East: 1168716.90 ft
Station: 5245+54.15
Offset: 26.5057' RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--Saturated--	45		15	15 22 24	NP	22
	529.4	Very dense, gray SILTY LOAM, trace gravel --Dry-- --L_L(%)=22, P_L(%)=16-- --% Gravel = 3.7%-- --% Sand = 22.8%-- --% Silt = 61.3%-- --% Clay = 12.2%-- --A-4 (2)--	50		16	20 43 36	NP	11
	521.1		55		17	24 39 43	NP	13
		Boring terminated at 55.00 ft	60					

GENERAL NOTES

Begin Drilling **03-07-2014** Complete Drilling **03-07-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&N** Logger **F. Bozga** Checked by **C. Marin**
Drilling Method **3.25" HSA to 12.5', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **42.00 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 09-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: 592.77 ft
North: 1897829.07 ft
East: 1169716.82 ft
Station: 5138+17.30
Offset: 67.7001 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	9-inch thick CONCRETE --PAVEMENT--						
	591.3	Dark brown GRAVELLY SAND --BASE COURSE--						
		Very loose to loose, brown SANDY LOAM to SAND --FILL-- --Moist--			1	7 7 9	NP	13
			5		2	2 1 2	NP	23
					3	0 2 2	NP	20
	584.8							
		Stiff to very stiff, gray SILTY CLAY, trace gravel	10		4	1 4 4	2.13 B	19
					5	2 3 3	1.00 N/6	
	579.8							
		Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel --L_L(%)=38, P_L(%)=18-- --%Gravel=1.0-- --%Sand=7.6-- --%Silt=50.1-- --%Clay=41.2-- --A-6 (19)--	15		6	0 0 0	0.08 B	35
					7	0 0 0	0.08 B	26
			20		8	0 0 1	0.16 B	29
			25		9	0 0 0	0.16 B	29
					10	0 0 0	0.16 B	26
					11	0 0 1	0.25 B	27
			30		12	0 0 0	0.25 B	28
			35		13	1 2 2	0.25 B	25
			40		14	0 2 3	0.33 B	26

GENERAL NOTES

Begin Drilling: **10-21-2013** Complete Drilling: **10-21-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR**
Driller: **P&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: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG 09-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: 592.77 ft
North: 1897829.07 ft
East: 1169716.82 ft
Station: 5138+17.30
Offset: 67.7001 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	0.49 B	28
			50		16	1 4 5	0.74 B	21
	541.0	Very stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel						
			55		17	6 11 14	7.22 B	13
			60		18	6 9 14	3.28 B	20
			65		19	5 13 21	> 4.50 P	13
	526.0	Dense, gray SILTY LOAM, trace gravel						
			70		20	13 13 18	NP	11
	521.0	Hard, gray SILTY CLAY LOAM, trace gravel						
			75		21	17 22 35	8.61 B	13
	517.8	Boring terminated at 75.00 ft						
			80					

GENERAL NOTES

Begin Drilling **10-21-2013** Complete Drilling **10-21-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **P&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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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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: 7808+76.55
Offset: 75.5906 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--						
	576.2	15-inch thick CONCRETE --PAVEMENT--						
		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
					11	1 1 2	0.41 B	25
			30		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**
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: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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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: 7808+76.55
Offset: 75.5906 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 10 18	6.47 B	13
		--%Gravel=3.5--						
		--%Sand=28.1--						
		--%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 12 20	6.72 B	20
		--%Gravel=0.4--	50					
		--%Sand=3.8--						
		--%Silt=49.8--						
		--%Clay=46.1--						
		--A-6 (24)--						
	520.8	Medium dense, gray, SANDY LOAM			17	6 6 7	2.05 S	24
		--%Gravel=0.0--	55					
		--%Sand=74.0--						
		--%Silt=25.1--						
			60		18	5 7 10	NP	23

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 20 25	10.25 B	13
		--L_L(%)=22, P_L(%)=12--	65					
		--%Gravel=4.6--						
		--%Sand=19.7--						
		--%Silt=61.8--						
		--%Clay=13.9--						
		--A-4 (5)--						
			70		20	19 30 34	5.00 S	13
			75		21	27 34 47	> 4.50 P	18
	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**
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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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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: 7808+76.55
Offset: 75.5906 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		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		24	CORE		
	478.8	Boring terminated at 99.00 ft	95 100					

GENERAL NOTES

Begin Drilling **03-06-2013** Complete Drilling **03-14-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **B-57 TMR**
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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 11-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: 593.58 ft
North: 1897883.55 ft
East: 1169168.23 ft
Station: 5132+66.55
Offset: 47.9312 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	593.3	4-inch thick, dark brown SILTY LOAM						
	592.6	--TOPSOIL--						
		Brown SILTY CLAY LOAM --FILL--			1	50/3	NP	11
		Dense to very dense, brown GRAVELLY SAND --FILL--	5		2	8 37 12	NP	18
	586.6	Stiff to very stiff, brown and gray CLAY to SILTY CLAY, trace gravel			3	5 2 2	NP	28
			10		4	2 3 5	2.21 B	24
		--L_L(%)=41, P_L(%)=17-- --%Gravel=3.0-- --%Sand=13.2-- --%Silt=48.0-- --%Clay=35.8-- --A-7-6 (20)--			5	2 2 4	1.07 B	26
	580.6	Medium stiff, gray SILTY CLAY	15		6	2 3 4	0.90 B	21
	578.1	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			7	2 2 2	0.49 B	24
			20		8	1 2 1	0.33 B	24
			25		9	0 1 1	0.16 B	28
					10	0 1 1	0.16 B	26
					11	0 1 1	0.16 B	29
			30		12	1 1 2	0.16 B	26
			35		13	1 2 2	0.25 B	25
			40		14	2 2 3	0.41 B	26

GENERAL NOTES

Begin Drilling: **10-23-2013** Complete Drilling: **10-23-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-25 ATV**
Driller: **P&N** Logger: **D.Kolpacki** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **6.00 ft**
At Completion of Drilling: **52.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG 11-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: 593.58 ft
North: 1897883.55 ft
East: 1169168.23 ft
Station: 5132+66.55
Offset: 47.9312 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	546.8	Very stiff, gray SILTY CLAY, trace gravel	45		15	2 3 7	0.41 B	19
	541.8	Very dense, gray SILT --Saturated--	50		16	5 10 23	2.62 B	21
			55		18	39 50/4	NP	17
			60		19	41 50/4	NP	19
	526.8	Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel	65		20	33 50/6	NP	21
			70		21	33 50/3	> 4.50 P	13
		--HARD DRILLING-- *--Possible Cobbles--*						
	518.6	Boring terminated at 75.00 ft	75		22	18 25 29	9.10 B	14
			80					

GENERAL NOTES

Begin Drilling **10-23-2013** Complete Drilling **10-23-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-25 ATV**
Driller **P&N** Logger **D.Kolpacki** Checked by **C. Marin**
Drilling Method **2.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **6.00 ft**
At Completion of Drilling ▼ **52.00 ft**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 11-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: 593.19 ft
North: 1897885.77 ft
East: 1169080.64 ft
Station: 5131+78.80
Offset: 51.1460 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	593.1	1.5-inch thick ASPHALT --PAVEMENT--						
	592.2	10-inch thick CONCRETE --PAVEMENT--						
	591.2	12-inch thick CRUSHED STONE --BASE COURSE--						
		Medium dense to very dense, gray and green GRAVELLY SAND, some slag --FILL--			1	3 3 9	NP	16
					2	50/5	NP	42
			5		3	16 9 8	NP	5
	585.2	Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			4	5 2 3	0.98 B	25
			10		5	2 3 2	0.83 N/6	
					6	3 3 2	0.57 B	24
			15		7	0 0 2	0.33 B	25
					8	0 0 0	0.25 B	27
			20		9	0 0 0	0.25 B	28
					10	0 0 1	0.25 B	27
			25		11	0 0 0	0.25 B	27
					12	0 0 2	0.25 B	27
			30		13	0 0 1	0.33 B	25
			35		14	0 1 2	0.57 B	27
			40					

GENERAL NOTES

Begin Drilling: **10-22-2013** Complete Drilling: **10-22-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR**
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: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG 11-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: 593.19 ft
North: 1897885.77 ft
East: 1169080.64 ft
Station: 5131+78.80
Offset: 51.1460 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 1 3	0.66 B	18
	546.4	Very stiff to hard, gray SILTY CLAY, trace gravel						
			50		16	3 7 9	2.67 N/6	
					17	8 14 22	5.41 B	20
	541.4	Very dense, gray SILT						
			55		18	38 50/5	NP	15
		--HARD DRILLING-- *--Possible Cobbles--*						
	536.2	Very dense, gray SILTY LOAM, trace gravel						
			60		19	29 50/5	NP	12
		--L_L(%)=NP, P_L(%)=NP-- --%Gravel=0.2-- --%Sand=20.9-- --%Silt=75.0-- --%Clay=3.9-- --A-4 (0)--	65		20	20 30 50/4	NP	18
			70		21	26 40 50/4	NP	10
			75		22	20 32 48	NP	13
	518.2	Boring terminated at 75.00 ft						
			80					

GENERAL NOTES

Begin Drilling **10-22-2013** Complete Drilling **10-22-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 11-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: 592.98 ft
North: 1897903.26 ft
East: 1168859.46 ft
Station: 5129+56.29
Offset: 45.1732 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	1.5-inch thick ASPHALT --PAVEMENT--						
	592.1	9.5-inch thick CONCRETE --PAVEMENT--						
		Very dense, brown, coarse SAND, little gravel and cinders			1	12 25 28	NP	9
	590.0	--FILL--						
		Very dense, brown SANDY LOAM, trace slag			2	50/5	NP	24
		--FILL--	5		3	16 50/3	NP	35
					4	19 50/5	NP	36
			10					
	582.5	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			5	2 4 4	0.74 B	21
			15		6	1 1 0	0.17 N/6	
					7	0 0 1	0.16 B	20
			20		8	0 0 1	0.16 B	29
			25		9	0 2 2	0.08 B	25
					10	0 0 1	0.16 B	21
			30		11	2 1 1	0.16 B	26
					12	4 2 1	0.25 B	26
			35		13	0 0 2	0.25 B	27
			40		14	1 2 2	0.25 B	29

GENERAL NOTES

Begin Drilling **10-23-2013** Complete Drilling **10-29-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&N** 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 ▽ **57.00 ft**
At Completion of Drilling ▼ **77.00 ft**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 11-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: 592.98 ft
North: 1897903.26 ft
East: 1168859.46 ft
Station: 5129+56.29
Offset: 45.1732 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	0.25 B	24
	546.2	Stiff to very stiff, gray SILTY CLAY, trace to little gravel						
			50		16	3 6 9	1.75 B	23
			55		17	12 12 20	3.61 B	20
	536.2	Very dense, gray SILTY LOAM, trace gravel --Saturated--						
		--HARD DRILLING-- *--Possible Cobbles--*	60		18	14 50/4	NP	20
	532.5	Dense, gray, medium to coarse SAND --Saturated--						
			65		19	10 17 19	NP	17
	526.2	Hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel						
			70		20	29 50/6	7.71 S	11
			75		21	13 19 29	9.26 B	16
	516.2	Very dense, gray SILTY LOAM, trace gravel						
			80		22	50/4	NP	12

GENERAL NOTES

Begin Drilling **10-23-2013** Complete Drilling **10-29-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&N** 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 ▽ **57.00 ft**
At Completion of Drilling ▼ **77.00 ft**
Time After Drilling **NA**
Depth to Water ▽ **NA**

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

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BORING LOG 11-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: 592.98 ft
North: 1897903.26 ft
East: 1168859.46 ft
Station: 5129+56.29
Offset: 45.1732 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--						
	511.2	*--Possible Cobbles--*						
		Very dense, gray SANDY GRAVEL, some cobbles and boulders			23	50/5	NP	
			85					
	506.0							
	505.5	--4-inch DOLOSTONE BOULDER--			24		NP	
			90		25	70/6	NP	9
			95			CORE		
	495.0	Strong, light gray, good rock mass quality, bedded fresh DOLOSTONE, up to 30-inch beds, 11-inch joint spacing,	100					
		horizontal and vertical joints with none to less than 0.2-inch greenish gray infilling, hard joint wall, with stylolitic surfaces, and moderately vuggy porosity.			1			
		--Run 1 - RECOVERY=100%-- --RQD=90%--						
		--3-inch thick, greenish gray SILTY - SHALE cavity infill	105					
	487.0							
		Boring terminated at 106.00 ft	110					
			115					
			120					

GENERAL NOTES

Begin Drilling **10-23-2013** Complete Drilling **10-29-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&N** 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 ▽ **57.00 ft**
At Completion of Drilling ▼ **77.00 ft**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 11-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: 592.84 ft
North: 1897888.22 ft
East: 1169055.64 ft
Station: 5131+53.61
Offset: 50.1661 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	592.6	3-inch thick ASPHALT --PAVEMENT--						
	591.8	9-inch thick CONCRETE --PAVEMENT--						
	591.3	6-inch thick, brown CRUSHED STONE --SUB-BASE--			1	11 41 50/5"	NP	48
		Very dense, brown, coarse SAND --FILL-- --Dry--	5		2	12 24 32	NP	
					3	14 50/5"	NP	23
	585.3	Stiff, gray SILTY CLAY, trace gravel			4	2 3 3	1.48 B	29
	582.3	Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	10		5	2 2 2	0.66 B	22
			15		6	2 1 2	0.33 B	26
		--In-Situ Vane Shear, 18.5 feet-- --$S_{u\ undis}$ = 827.2 psf-- --$S_{u\ remold}$ = 568.7 psf-- --Sensitivity = 1.45--	20		1			

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, 23.5 feet-- --$S_{u\ undis}$ = 982.3 psf-- --$S_{u\ remold}$ = 517 psf-- --Sensitivity = 1.90--	25		2			
		--In-Situ Vane Shear, 28.5 feet-- --$S_{u\ undis}$ = 827.2 psf-- --$S_{u\ remold}$ = 413.6 psf-- --Sensitivity = 2.0--	30		3			
		--In-Situ Vane Shear, 33.5 feet-- --$S_{u\ undis}$ = 3102 psf-- --$S_{u\ remold}$ = NA -- --Sensitivity = NA--	35		4			
		--In-Situ Vane Shear, 38.5 feet-- --$S_{u\ undis}$ = 982.3 psf-- --$S_{u\ remold}$ = 568.7 psf-- --Sensitivity = 1.72--	40		5			

GENERAL NOTES

Begin Drilling **10-13-2014** Complete Drilling **10-13-2014**
Drilling Contractor **Wang Testing Service** Drill Rig **CME-55 TMR**
Driller **K&K** Logger **D.Kolpacki** Checked by **CLM (-Coord)**
Drilling Method **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 11-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: 592.84 ft
North: 1897888.22 ft
East: 1169055.64 ft
Station: 5131+53.61
Offset: 50.1661 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	551.6	Stiff SILTY CLAY LOAM						
		--In-Situ Vane Shear, 43.5 feet-- --$S_{u\ undis}$ = 1292.5 psf-- --$S_{u\ remold}$ = 827.2 psf-- --Sensitivity = 1.56--	45		6			
		--In-Situ Vane Shear, 48.5 feet-- --$S_{u\ undis}$ = >3102 psf-- --$S_{u\ remold}$ = NA-- --Sensitivity = NA--			7			
	542.8	Very dense, gray, fine SAND --Dry--	50		7	25 50/5	NP	15
	540.8	Boring terminated at 52.00 ft	55					
			60					

GENERAL NOTES

Begin Drilling **10-13-2014** Complete Drilling **10-13-2014**
Drilling Contractor **Wang Testing Service** Drill Rig **CME-55 TMR**
Driller **K&K** Logger **D.Kolpacki** Checked by **CLM (-Coord)**
Drilling Method **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 12-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: 593.72 ft
North: 1897780.69 ft
East: 1171075.09 ft
Station: 7305+94.56
Offset: 5.9839 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	593.4	4-inch thick, brown SILTY LOAM --TOPSOIL--						
		Hard, brown SILTY CLAY LOAM, trace gravel			1	6 13 19	> 4.50	11
	591.7	--FILL--						
		Very loose to medium dense, brown SANDY GRAVEL --FILL--	5		2	8 13 13	NP	2
					3	3 1 2	NP	1
			10		4	2 2 1	NP	1
					5	1 1 2	NP	2
	580.7	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel						
			15		6	1 1 2	< 0.25 P	17
					7	1 1 1	0.25 B	24
			20		8	0 0 3	0.41 B	22
			25		9	3 2 2	0.33 B	24
					10	2 2 2	0.33 B	23
					11	0 0 1	0.41 B	22
			30		12	0 0 1	0.25 B	27
			35		13	0 0 1	0.16 B	26
			40		14	0 0 2	0.16 B	25

GENERAL NOTES

Begin Drilling: **07-19-2013** Complete Drilling: **07-19-2013**
Drilling Contractor: **Wang Testing Service** Drill Rig: **CME-55 TMR**
Driller: **R&J** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 8', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **82.00 ft**
At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG 12-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: 593.72 ft
North: 1897780.69 ft
East: 1171075.09 ft
Station: 7305+94.56
Offset: 5.9839 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 2	0.25 B	27
			50		16	0 0 2	0.25 B	28
	542.0	Very stiff, gray SILTY CLAY, trace gravel and sand lenses						
			55		17	4 9 21	3.94 B	19
			60		18	6 9 13	3.77 B	16
	519.7	Soft to stiff, gray CLAY to SILTY CLAY, trace gravel	65		19	13 20 26	3.03 B	20
			70		20	8 7 13	2.79 B	20
			75		21	5 7 8	1.56 B	24
		--L_L(%)=35, P_L(%)=20-- --%Gravel=0.7-- --%Sand=3.4--	80		22	2 2 3	0.41 B	36

GENERAL NOTES

Begin Drilling **07-19-2013** Complete Drilling **07-19-2013**
Drilling Contractor **Wang Testing Service** Drill Rig **CME-55 TMR**
Driller **R&J** Logger **D. Kolpacki** Checked by **C. Marin**
Drilling Method **3.25" HSA to 8', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **82.00 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 12-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: 593.72 ft
North: 1897780.69 ft
East: 1171075.09 ft
Station: 7305+94.56
Offset: 5.9839 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=60.1-- --%Clay=35.8-- --A-6 (15)--						
	512.0	Medium dense, gray SILT, trace sand lenses --Wet--						
		--%Gravel=0.5-- --%Sand=3.9-- --%Silt=91.4-- --%Clay=4.1-- --A-4 (0)--	85		23	2 3 13	NP	25
	507.0	Very dense, gray LOAM to SANDY LOAM, little gravel						
		--%Gravel=11.5-- --%Sand=43.6-- --%Silt=40.2-- --%Clay=4.6-- --A-4 (0)--	90		24	46 41 40	NP	9
	502.0	Gray SILT						
	500.0	Very dense, gray, fine SAND	95		25	46 50/5	NP	16
	497.0	Very dense, gray SILTY LOAM, some gravel						
			100		26	50/3	NP	10

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	--ROLLER-BIT REFUSAL-- Boring terminated at 103.50 ft	105		27	50/2	NR	
			110					
			115					
			120					

GENERAL NOTES

Begin Drilling **07-19-2013** Complete Drilling **07-19-2013**
Drilling Contractor **Wang Testing Service** Drill Rig **CME-55 TMR**
Driller **R&J** Logger **D. Kolpacki** Checked by **C. Marin**
Drilling Method **3.25" HSA to 8', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **82.00 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 12-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: 593.80 ft
North: 1897776.68 ft
East: 1171010.55 ft
Station: 7305+36.58
Offset: 24.3228 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	9-inch thick, brown SILTY LOAM --TOPSOIL--						
	592.5	Very dense, brown SILTY CLAY LOAM --FILL--			1	21 38 32	NP	3
		Loose to medium dense, brown SANDY GRAVEL, trace brick fragments --FILL--	5		2	17 9 5	NP	13
					3	2 2 7	NP	7
			10		4	9 6 9	NP	10
	583.3	Very stiff, gray SILTY CLAY LOAM, trace gravel			5	4 4 6	2.46 B	18
	580.8	Soft to medium stiff, gray CLAY, trace to little gravel	15		6	2 2 2	0.67 N/6	
					7	1 1 2	0.25 B	23
			20		8	0 0 0	0.25 B	24
			25		9	0 2 3	0.57 B	23
					10	1 2 2	0.57 B	22
					11	1 1 3	0.33 B	25
			30		12	1 2 2	0.25 P	24
			35		13	0 0 0	0.25 B	27
			40		14	0 0 2	0.25 P	27

GENERAL NOTES

Begin Drilling **07-05-2013** Complete Drilling **07-09-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&N** 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 ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 12-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: 593.80 ft
North: 1897776.68 ft
East: 1171010.55 ft
Station: 7305+36.58
Offset: 24.3228 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 0	0.33 B	24
			50		16	3 4 5	0.25 P	19
	542.0	Very stiff, gray SILTY CLAY, trace gravel						
			55		17	4 7 10	2.46 B	16
	537.0	Gray SILTY LOAM						
	534.3	Very stiff to hard, gray SILTY	60		18	14 15 14	NP	20
		CLAY, trace to little gravel	65		19	6 10 17	3.36 B	21
		--Sand lenses--	70		20	8 12 13	3.03 B	20
			75		21	13 15 17	5.33 N/6	
	517.0	Medium stiff, gray CLAY						
			80		22	3 6 6	0.66 B	31

GENERAL NOTES

Begin Drilling **07-05-2013** Complete Drilling **07-09-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&N** 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 ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 12-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: 593.80 ft
North: 1897776.68 ft
East: 1171010.55 ft
Station: 7305+36.58
Offset: 24.3228 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	512.0	Medium dense to very dense, gray SILT						
		--%Gravel=0.0-- --%Sand=5.1-- --%Silt=90.6-- --%Clay=4.2-- --A-4 (0)--	85		23	6 6 9	NP	23
			90		24	50/6"	NP	14
	502.0	Very dense, gray SANDY GRAVEL, trace clay pockets --Moist--			25	50/3"	NP	15
			95					
		--Possible Cobbles--	100		26	50/3"	NP	13

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	492.0	Very dense, gray SILTY LOAM, trace gravel			27	55/5"	NP	13
	489.3	--DIFFICULT DRILLING--						
	488.8	--WEATHERED BEDROCK--	105					
		Strong, light gray, very good rock mass quality, bedded fresh DOLOSTONE, up to 14-inch beds, 8-inch joint spacing, horizontal joints with none to less than 0.2-inch greenish gray infilling, hard joint wall, with stylolitic surfaces, and moderately vuggy porosity. --Run 1 - RECOVERY=100%-- --RQD=95%--	110		1	CORE		
	478.8	Boring terminated at 115.00 ft	115					
			120					

GENERAL NOTES

Begin Drilling **07-05-2013** Complete Drilling **07-09-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&N** 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 ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 12-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: 593.81 ft
North: 1897797.24 ft
East: 1170964.92 ft
Station: 7304+85.22
Offset: 20.3056 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	593.3	6-inch thick, black SILTY LOAM --TOPSOIL--						
		Dense, brown SILTY LOAM, trace gravel and roots			1	9 18 15	NP	12
	590.8	Very dense, light brown SANDY GRAVEL, trace slag --FILL--			2	7 23 50/3"	NP	11
			5		3	19 14 8	NP	6
					4	8 6 8	NP	8
			10		5	6 6 5	NP	10
	580.8	Hard, gray SILTY CLAY LOAM, trace gravel			6	5 5 5	4.26 B	16
			15					
	578.3	Medium stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel			7	0 1 2	0.57 B	18
		--In-Situ Vane Shear, 20.0 feet-- --$S_{u\ undis}$ = 2274.8 psf-- --$S_{u\ remold}$ = 1706.1 psf-- --Sensitivity = 1.33-- --L_L(%)=27, P_L(%)=15-- --%Gravel=4.4--	20		8	1 2 3	0.74 B	17

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--%Sand=20.5-- --%Silt=54.0-- --%Clay=21.1-- --A-6 (7)--			1			
					9	2 2 4	0.90 B	19
		--In-Situ Vane Shear, 22.5 feet-- --$S_{u\ undis}$ = 1499.3 psf-- --$S_{u\ remold}$ = 1137.4 psf-- --Sensitivity = 1.32--			2			
			25		10	0 2 3	0.57 B	19
	568.3	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel			11	1 2 3	0.33 B	23
			30		12	0 2 2	0.49 B	25
			35		13	0 0 2	0.25 B	19
			40		14	0 1 2	0.16 B	27

GENERAL NOTES

Begin Drilling: **07-10-2013** Complete Drilling: **07-11-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR**
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: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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BORING LOG 12-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: 593.81 ft
North: 1897797.24 ft
East: 1170964.92 ft
Station: 7304+85.22
Offset: 20.3056 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	549.3	Gray GRAVELLY SAND	45		15	1 2 2	< 0.25 P	25
	547.1	Soft, gray CLAY to SILTY CLAY, trace gravel	50		16	1 2 3	0.25 B	30
	542.1	Stiff to very stiff, gray SILTY CLAY LOAM, trace gravel	55		17	2 4 6	1.64 B	25
			60		18	7 9 15	3.28 B	15
	522.1	Stiff, gray CLAY	65		19	5 9 13	3.28 B	21
			70		20	10 10 15	3.94 B	23
	517.1	Medium dense, gray SILT --Moist--	75		21	3 3 4	1.07 B	37
			80		22	3 5 5	NP	19

GENERAL NOTES

Begin Drilling **07-10-2013** Complete Drilling **07-11-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 12-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: 593.81 ft
North: 1897797.24 ft
East: 1170964.92 ft
Station: 7304+85.22
Offset: 20.3056 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	512.1	Hard, gray SILTY CLAY LOAM, trace gravel						
					23	7 16 37	4.50 P	13
			85					
		--L_L(%)=30, P_L(%)=17-- --%Gravel=1.5-- --%Sand=3.1-- --%Silt=67.7-- --%Clay=27.6-- --A-6 (11)--			24	13 19 50	7.46 B	16
			90					
	502.1	Very dense, gray SILTY LOAM, trace gravel						
					25	60/6"	NP	14
			95					
					26	54/4"	NP	11
			100					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
					27	50/4"	NP	14
	488.8	--AUGER REFUSAL--	105					
		Boring terminated at 105.00 ft						
			110					
			115					
			120					

GENERAL NOTES

Begin Drilling **07-10-2013** Complete Drilling **07-11-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 12-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: 593.81 ft
North: 1897810.15 ft
East: 1170882.71 ft
Station: 7303+98.87
Offset: 25.7750 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	593.6	2.5-inch thick, brown SILTY CLAY --TOPSOIL-- Medium dense, brown GRAVELLY SILTY LOAM --FILL--			1	21 15 11	NP	3
	590.1	Medium dense, brown SANDY GRAVEL --FILL--	5		2	7 9 9	NP	3
	587.6	Loose to medium dense, brown and black, SANDY LOAM, little gravel --FILL--			3	9 5 19	NP	13
			10		4	4 2 3	NP	9
	583.3	Very loose to loose, brown SANDY GRAVEL --FILL--			5	3 3 4	NP	6
		--Moist--	15		6	1 1 1	NP	12
					7	3 3 2	NP	17
	575.1	Stiff, gray SILTY CLAY, trace gravel	20		8	2 3 3	1.31 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 (%)
	573.3	Soft to stiff, gray CLAY to SILTY CLAY, trace gravel			9	0 2 2	0.57 B	19
			25		10	0 1 2	0.57 B	21
					11	0 0 2	0.49 B	25
			30		12	0 0 0	0.41 B	26
			35		13	0 0 0	0.33 B	27
			40		14	0 0 2	0.66 B	25

GENERAL NOTES

Begin Drilling **07-15-2013** Complete Drilling **07-16-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&N** 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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 12-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: 593.81 ft
North: 1897810.15 ft
East: 1170882.71 ft
Station: 7303+98.87
Offset: 25.7750 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 1	0.25 B	29
	547.1	Stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace to little gravel						
			50		16	2 3 5	1.80 B	23
			55		17	3 4 4	1.72 B	23
			60		18	9 8 12	2.62 B	14
			65		19	8 15 19	5.17 S	14
	527.1	Stiff to very stiff, gray CLAY, trace gravel						
			70		20	6 7 13	3.69 B	36
		--L_L(%)=51, P_L(%)=20-- --%Gravel=2.0-- --%Sand=6.7-- --%Silt=44.8-- --%Clay=46.5-- --A-7-6 (30)--	75		21	0 2 5	1.56 B	20
	517.1	Soft, gray SILTY CLAY						
			80		22	4 4 6	0.33 B	21

GENERAL NOTES

Begin Drilling **07-15-2013** Complete Drilling **07-16-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&N** 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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 12-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: 593.81 ft
North: 1897810.15 ft
East: 1170882.71 ft
Station: 7303+98.87
Offset: 25.7750 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	512.1	Very dense, gray SILTY LOAM to SILTY CLAY LOAM, little gravel						
					23	50/3	5.66 B	11
			85					
					24	36 35 22	3.12 B	13
			90					
					25	50/2	> 4.50 B	11
			95					
		--HARD DRILLING-- *--Possible Cobbles--*						
	494.8	Strong, light gray, fair rock mass quality, bedded fresh	100			C O		

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		DOLOSTONE, up to 12-inch beds, 6-inch joint spacing, horizontal and vertical joints with none to less than 0.2-inch greenish gray infilling, hard joint wall, with stylolitic surfaces, and moderately vuggy porosity. --Run 1 - RECOVERY=89%-- --RQD=64%--			1	R E		
			105					
	487.8	Boring terminated at 106.00 ft						
			110					
			115					
			120					

GENERAL NOTES

Begin Drilling **07-15-2013** Complete Drilling **07-16-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&N** 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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 12-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: 594.38 ft
North: 1897829.78 ft
East: 1170799.89 ft
Station: 7303+12.55
Offset: 17.3004 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	593.9	6-inch thick, brown SILTY LOAM --TOPSOIL--						
		Dense, brown GRAVELLY SILTY LOAM --FILL--			1	8 17 13	NP	8
	591.4	Loose to medium dense, brown SANDY GRAVEL --FILL--	5		2	9 8 8	NP	3
					3	5 3 3	NR	
			10		4	6 8 15	NP	32
					5	6 12 11	NP	12
		--Moist--	15		6	3 3 4	NP	20
		--Moist--			7	3 4 3	NP	43
	576.4	Stiff, black to gray SILTY CLAY LOAM, trace gravel	20		8	2 4 5	1.31 S	19
			25		9	2 2 5	1.64 B	18
					10	5 6 4	1.23 B	19
	568.9	Very soft to soft, gray CLAY, trace gravel			11	0 0 0	NR	
		--In-Situ Vane Shear, 28 feet-- --$S_{u\ undis}$ = 828.8 psf-- --$S_{u\ remold}$ = 233.1 psf-- --Sensitivity = 3.55--	30		1			
					12	0 0 1	< 0.25 B	25
		--In-Situ Vane Shear, 30.5 feet-- --$S_{u\ undis}$ = 1061.9 psf-- --$S_{u\ remold}$ = 207.5 psf-- --Sensitivity = 5.13--			2			
		--In-Situ Vane Shear, 35.5 feet-- --$S_{u\ undis}$ = 1087.8 psf-- --$S_{u\ remold}$ = 725.2 psf-- --Sensitivity = 1.50--	35		13	0 2 1	0.33 B	26
					3			
	557.1	--L_L(%)=24, P_L(%)=14-- --%Gravel=42.6-- --%Sand=14.2-- --%Silt=32.7-- --%Clay=10.4-- --A-4 (1)--						
		Stiff, gray GRAVELLY SILTY	40		14	3 3 3	1.15 B	15

GENERAL NOTES

Begin Drilling: **07-15-2013** Complete Drilling: **07-15-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
Driller: **R&J** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 20', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: ▽ **18.00 ft**
At Completion of Drilling: ▼ **unable to measure**
Time After Drilling: **NA**
Depth to Water: ▼ **NA**

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BORING LOG 12-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: 594.38 ft
North: 1897829.78 ft
East: 1170799.89 ft
Station: 7303+12.55
Offset: 17.3004 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		LOAM to SILTY CLAY LOAM						
		--In-Situ Vane Shear, 40.5 feet--						
		--$S_{u\ undis}$ = 1964.6 psf--						
		--$S_{u\ remold}$ = 620.4 psf--						
		--Sensitivity = 3.16--			4			
	552.1	Soft to medium stiff, gray CLAY, trace gravel						
			45		15	0 1 2	0.49 B	25
			50		16	0 2 3	0.74 B	25
		--In-Situ Vane Shear, 50.5 feet--						
		--$S_{u\ undis}$ = 1424.5 psf--						
		--$S_{u\ remold}$ = 880.6 psf--						
		--Sensitivity = 1.61--			5			
	542.6	Stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel						
			55		17	3 4 5	1.72 B	21
			60		18	25 15 21	5.41 B	14
			65		19	6 13 16	3.94 B	16
			70		20	6 11 15	3.53 B	22
	522.6	Stiff, gray CLAY						
			75		21	2 3 4	1.39 B	30
	517.6	Medium dense, gray SILT						
		--Moist--						
		--%Gravel=0.2--						
		--%Sand=6.9--						
		--%Silt=88.1--	80		22	5 5 6	NP	28

GENERAL NOTES

Begin Drilling **07-15-2013** Complete Drilling **07-15-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&J** Logger **D. Kolpacki** Checked by **C. Marin**
Drilling Method **3.25" HSA to 20', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **18.00 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 12-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: 594.38 ft
North: 1897829.78 ft
East: 1170799.89 ft
Station: 7303+12.55
Offset: 17.3004 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--%Clay=4.7--						
		--A-4 (0)--						
	512.6							
		Hard, gray SILTY CLAY LOAM, trace gravel						
					23	12 20 25	9.10 B	15
			85					
	507.6							
		Very dense, gray SILTY LOAM, some gravel						
					24	50/2	NP	7
			90					
		--HARD DRILLING--						
		--Possible Cobbles--						
					25	50/3	NP	11
			95					
	495.7							
		--DIFFICULT DRILLING--			26	50/2	NP	14
		--WEATHERED BEDROCK--						
	494.4		100					
		Boring terminated at 100.00 ft						

GENERAL NOTES

Begin Drilling **07-15-2013** Complete Drilling **07-15-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&J** Logger **D. Kolpacki** Checked by **C. Marin**
Drilling Method **3.25" HSA to 20', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **18.00 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 12-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: 594.76 ft
North: 1897806.93 ft
East: 1170744.24 ft
Station: 7302+57.20
Offset: 44.0821 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	594.1	8-inch thick, black and brown SILTY CLAY LOAM						
	593.4	--TOPSOIL--						
		Hard, brown SILTY CLAY LOAM, trace gravel			1	7 17 22	> 4.50 P	11
		--FILL--						
		Loose to dense, brown GRAVELLY SANDY LOAM, trace roots, brick fragments & crushed stone			2	5 4 2	NP	4
		--FILL--	5					
		--Moist--			3	4 4 5	NP	19
		--Moist--			4	1 1 2	NP	21
			10					
	584.3	Stiff, gray SILTY CLAY, trace gravel			5	3 3 5	1.56 B	25
					6	1 2 4	1.31 B	20
			15					
	579.3	Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			7	0 0 2	0.49 B	20
					8	0 0 3	0.66 B	22
			20					
			25		9	1 1 2	0.74 B	21
					10	0 1 4	0.90 B	20
					11	1 2 4	0.98 B	20
			30		12	0 0 0	0.66 B	24
			35		13	0 0 0	0.25 B	24
			40		14	0 0 0	0.33 B	25

GENERAL NOTES

Begin Drilling **07-17-2013** Complete Drilling **07-18-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **B-57 TMR**
Driller **R&N** 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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 12-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: 594.76 ft
North: 1897806.93 ft
East: 1170744.24 ft
Station: 7302+57.20
Offset: 44.0821 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 1	0.33 B	25
			50		16	0 0 1	0.41 B	26
	543.0	Very stiff to hard, SILTY CLAY to SILTY CLAY LOAM, trace gravel						
			55		17	7 10 15	3.03 B	15
			60		18	10 11 15	5.00 B	11
	533.0	Gray and black, coarse SAND, little gravel						
	530.5	Very stiff, gray SILTY CLAY, trace gravel	65		19	12 14 11	NP	14
			70		20	6 9 12	2.62 B	21
	520.8	Medium dense, gray SILT to SILTY LOAM --Moist--	75		21	3 4 7	NP	29
		--%Gravel=1.4-- --%Sand=13.5-- --%Silt=76.6--	80		22	5 8 13	NP	28

GENERAL NOTES

Begin Drilling **07-17-2013** Complete Drilling **07-18-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **B-57 TMR**
Driller **R&N** 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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 12-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: 594.76 ft
North: 1897806.93 ft
East: 1170744.24 ft
Station: 7302+57.20
Offset: 44.0821 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--%Clay=8.5-- --A-4 (0)--						
	513.0	Hard, gray SILTY LOAM, little gravel						
			85		23	28 17 25	7.54 B	12
	508.0	Very stiff, gray SILTY CLAY, trace gravel						
		--L_L(%)=32, P_L(%)=17-- --%Gravel=6.4-- --%Sand=6.0-- --%Silt=54.0-- --%Clay=33.5-- --A-6 (12)--	90		24	10 9 16	2.46 B	20
	503.0	Very dense, gray SILTY LOAM, some gravel						
			95		25	50/3	NP	14
		--HARD DRILLING-- *--Possible Cobbles--*						
	497.8	Strong, light gray, very good rock mass quality, bedded fresh DOLOSTONE, up to 24-inch beds, 12.4-inch joint spacing, horizontal joints with none to less than 0.2-inch greenish gray infilling, hard joint wall, with	100			C O R E		
		stylolitic surfaces, and moderately vuggy porosity. --Run 1 - RECOVERY=98%-- --RQD=93%--	105		1			
	487.8	Boring terminated at 107.00 ft	110					
			115					
			120					

GENERAL NOTES

Begin Drilling **07-17-2013** Complete Drilling **07-18-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **B-57 TMR**
Driller **R&N** 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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 12-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: 594.92 ft
North: 1897838.64 ft
East: 1170672.30 ft
Station: 7301+82.91
Offset: 13.4685 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	594.3	8-inch thick, brown SILTY LOAM --TOPSOIL--						
	593.8	6-inch thick, brown SILTY LOAM, little gravel and brick --FILL--			1	12 30 20	NP	5
		Loose to very dense, brown SANDY GRAVEL, trace brick fragments --FILL--	5		2	8 8 9	NP	4
					3	8 8 9	NP	34
			10		4	9 15 22	NP	17
					5	16 20 33	NP	15
			15		6	32 33 35	NP	25
					7	3 5 2	NP	21
	575.9	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel	20		8	2 2 1	0.25 P	22

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, 20.5 feet-- --$S_{u\ undis}$ = 1036.0 psf-- --$S_{u\ remold}$ = 621.6 psf-- --Sensitivity = 1.66--			1			
					9	1 1 2	0.25 B	22
		--In-Situ Vane Shear, 23.0 feet-- --$S_{u\ undis}$ = 854.7 psf-- --$S_{u\ remold}$ = 753.9 psf-- --Sensitivity = 1.57--			2			
			25		10	1 1 2	0.33 B	21
		--In-Situ Vane Shear, 25.5 feet-- --$S_{u\ undis}$ = 1217.3 psf-- --$S_{u\ remold}$ = 569.8 psf-- --Sensitivity = 2.13--			3			
					11	0 2 2	0.25 B	19
		--In-Situ Vane Shear, 28.0 feet-- --$S_{u\ undis}$ = 906.5 psf-- --$S_{u\ remold}$ = 181.3 psf-- --Sensitivity = 5.00--			4			
			30		12	0 1 1	0.25 B	23
		--In-Situ Vane Shear, 30.5 feet-- --$S_{u\ undis}$ = 777.0 psf-- --$S_{u\ remold}$ = 388.5 psf-- --Sensitivity = 2.00--			5			
		--L_L(%)=34, P_L(%)=17-- --%Gravel=4.7-- --%Sand=14.6-- --%Silt=47.6-- --%Clay=33.1-- --A-6 (12)--	35		13	1 1 1	0.16 B	26
					6			
		--In-Situ Vane Shear, 35.5 feet-- --$S_{u\ undis}$ = 621.6 psf-- --$S_{u\ remold}$ = 103.6 psf-- --Sensitivity = 6.00--						
			40		14	3 6 4	0.25 B	22

GENERAL NOTES

Begin Drilling: **07-16-2013** Complete Drilling: **07-17-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
Driller: **R&J** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 20', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

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

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

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BORING LOG 12-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: 594.92 ft
North: 1897838.64 ft
East: 1170672.30 ft
Station: 7301+82.91
Offset: 13.4685 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--						
		--$S_{u\ undis}$ = 1087.8 psf--						
		--$S_{u\ remold}$ = 621.6 psf--						
		--Sensitivity = 1.75--			7			
			45		15	1 2 2	0.41 B	25
	548.2							
		Very stiff, gray SILTY CLAY, trace gravel						
			50		16	5 8 7	3.03 B	13
	543.2							
		Dense, gray LOAM, trace gravel						
		--Sand lenses--	55		17	36 21 20	NP	9
	538.2							
		Very dense, gray SILTY LOAM, little gravel						
		--%Gravel=11.3--						
		--%Sand=20.4--						
		--%Silt=59.9--	60		18	19 25 30	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 (%)
		--%Clay=8.4--						
		--A-4 (0)--						
	533.2							
		Very stiff, gray SILTY CLAY, trace gravel						
			65		19	9 10 13	3.85 B	15
			70		20	9 12 17	3.12 B	21
	523.2							
		Stiff, gray CLAY						
			75		21	3 5 7	1.07 B	33
	518.2							
		Dense, gray LOAM, little gravel						
			80		22	14 18 19	NP	12

GENERAL NOTES

Begin Drilling **07-16-2013** Complete Drilling **07-17-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&J** Logger **D. Kolpacki** Checked by **C. Marin**
Drilling Method **3.25" HSA to 20', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **16.00 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 12-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: 594.92 ft
North: 1897838.64 ft
East: 1170672.30 ft
Station: 7301+82.91
Offset: 13.4685 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	513.2							
		Hard, gray SILTY CLAY LOAM, trace gravel						
					23	20 28 34	5.08 S	14
			85					
	508.2							
		Very dense, gray, fine SAND, trace gravel						
					24	50/5	NP	12
			90					
	503.7							
		Very dense, gray SILTY LOAM, trace gravel						
					25	50/3	NP	13
			95					
					26	50/6	NP	11
		--AUGER REFUSAL--						
	494.9		100					
		Boring terminated at 100.00 ft						

GENERAL NOTES

Begin Drilling **07-16-2013** Complete Drilling **07-17-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&J** Logger **D. Kolpacki** Checked by **C. Marin**
Drilling Method **3.25" HSA to 20', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **16.00 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 12-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: 594.47 ft
North: 1897818.60 ft
East: 1170591.87 ft
Station: 7301+04.22
Offset: 36.2597 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		8-inch thick, black SILTY LOAM --TOPSOIL--						
	593.2							
	592.7	5-inch thick, dense, black, and brown LOAM, little red brick and slag --FILL--			1	10 18 18	NP	11
	591.5	CRUSHED STONE, and brick --FILL--						
	590.8	Black LOAM, trace gavel and roots --BURIED TOPSOIL--	5		2	5 5 3	NP	8
		Loose to medium dense, brown and gray, medium SAND --Moist--			3	5 7 6	NP	17
	585.6	Very stiff, gray SILTY CLAY, trace gravel	10		4	2 5 6	2.54 B	23
					5	2 3 5	2.79 B	20
	581.5	Very soft to medium stiff, gray CLAY, trace gravel	15		6	0 0 2	0.66 B	21
					7	0 0 0	0.16 B	22
			20		8	0 0 3	0.57 B	20
			25		9	0 0 0	0.33 B	24
					10	0 0 0	0.33 B	25
			30		11	0 0 0	0.41 B	25
					12	0 0 0	0.25 B	26
			35		13	0 0 0	< 0.25 P	30
			40		14	0 0 0	NR	

GENERAL NOTES

Begin Drilling **07-18-2013** Complete Drilling **07-19-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **B-57 TMR**
Driller **R&N** 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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 12-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: 594.47 ft
North: 1897818.60 ft
East: 1170591.87 ft
Station: 7301+04.22
Offset: 36.2597 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	25
	547.7	Stiff to very stiff, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel						
			50		16	2 4 5	1.23 B	20
			55		17	4 7 12	2.62 B	13
			60		18	5 8 15	1.75 P	18
			65		19	6 9 15	2.46 B	21
	527.8	Medium stiff to very stiff, gray CLAY, trace gravel						
		--L_L(%)=43, P_L(%)=20-- --%Gravel=0.1-- --%Sand=2.0-- --%Silt=47.6-- --%Clay=50.3-- --A-7-6 (24)--	70		20	7 9 11	3.12 B	26
	520.3	Stiff (1.5P), gray SILTY CLAY, trace gravel	75		21	5 5 5	0.57 B	28
	517.7	Very stiff to hard, gray SILTY LOAM to SILTY CLAY LOAM, trace gravel						
			80		22	15 20 26	5.74 S	12

GENERAL NOTES

Begin Drilling **07-18-2013** Complete Drilling **07-19-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **B-57 TMR**
Driller **R&N** 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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 12-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: 594.47 ft
North: 1897818.60 ft
East: 1170591.87 ft
Station: 7301+04.22
Offset: 36.2597 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--			23	50/5	2.54 S	11
			85					
	505.0					17		
		Very dense, gray GRAVELLY SAND			24	35	2.54 S	16
			90			37		
					25		NR	
						50/1		
	499.5		95					
		Strong, light gray, good rock mass quality, bedded fresh DOLOSTONE, up to 42-inch beds, 13-inch joint spacing, horizontal and vertical joints with none to less than 0.2-inch greenish gray infilling, hard joint wall, with stylolitic surfaces, and moderately vuggy porosity.				C O R E		
		--Run 1 - RECOVERY=88%--						
		--RQD=78%-100						

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
					1			
	489.5		105					
		Boring terminated at 105.00 ft						
			110					
			115					
			120					

GENERAL NOTES

Begin Drilling **07-18-2013** Complete Drilling **07-19-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **B-57 TMR**
Driller **R&N** 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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 12-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: 594.05 ft
North: 1897848.66 ft
East: 1170552.39 ft
Station: 7300+63.47
Offset: 7.9476 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	593.4	8-inch thick, SILTY LOAM --TOPSOIL--						
		Dense, brown SILTY LOAM, little gravel and brick fragments --FILL--			1	5 12 19	NP	11
	591.1	Dense to medium dense, brown SANDY GRAVEL to GRAVELLY SAND --FILL--	5		2	3 5 17	NP	22
					3	22 16 13	NP	15
			10		4	22 21 14	NP	17
					5	15 21 23	NP	14
					6	11 14 10	NP	47
			15	▽	7	1 1 2	NP	32
	576.1	Stiff, brown and gray, SILTY CLAY LOAM, trace gravel			8	15 4 2	1.25 P	17
			20					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	573.6	Very soft to soft, gray CLAY, trace gravel			9	3 1 1	< 0.25 P	23
		--In-Situ Vane Shear, 23.0 feet-- --$S_{u\ undis}$ = 932.4 psf-- --$S_{u\ remold}$ = 310.8 psf-- --Sensitivity = 3.00--			1			
			25		10	0 0 1	0.41 B	25
		--In-Situ Vane Shear, 25.5 feet-- --$S_{u\ undis}$ = 1295.0 psf-- --$S_{u\ remold}$ = 259.0 psf-- --Sensitivity = 5.00--			2			
					11	0 1 1	0.41 B	25
		--In-Situ Vane Shear, 28 feet-- --$S_{u\ undis}$ = 854.7 psf-- --$S_{u\ remold}$ = 155.4 psf-- --Sensitivity = 5.50-- --L_L(%)=33, P_L(%)=17-- --%Gravel=4.1-- --%Sand=14.3-- --%Silt=47.2-- --%Clay=34.4-- --A-6 (12)--			3			
			30		12	0 1 2	0.41 B	27
					4			
		--In-Situ Vane Shear, 30.5 feet-- --$S_{u\ undis}$ = 1087.8 psf-- --$S_{u\ remold}$ = 414.4 psf-- --Sensitivity = 2.62--			13	0 0 1	0.16 B	25
			35		5			
		--In-Situ Vane Shear, 35.5 feet-- --$S_{u\ undis}$ = 569.8 psf-- --$S_{u\ remold}$ = 233.1 psf-- --Sensitivity = 2.44--						
			40		14	0 0 1	0.25 B	25

GENERAL NOTES

Begin Drilling: **07-17-2013** Complete Drilling: **07-18-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
Driller: **R&J** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **3.25" HSA to 20', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **15.50 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 12-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: 594.05 ft
North: 1897848.66 ft
East: 1170552.39 ft
Station: 7300+63.47
Offset: 7.9476 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--						
		--$S_{u\ undis}$ = 725.2 psf--						
		--$S_{u\ remold}$ = 207.2 psf--						
		--Sensitivity = 3.5--			6			
					15	0 2 2	0.41 B	26
		--In-Situ Vane Shear, 45.5 feet--	45					
		--$S_{u\ undis}$ = 1476.3 psf--						
		--$S_{u\ remold}$ = 828.8 psf--						
		--Sensitivity = 1.78--			7			
	547.3	Stiff to hard, gray CLAY LOAM to SILTY CLAY LOAM, trace gravel						
		--L_L(%)=31, P_L(%)=17--						
		--%Gravel=5.9--						
		--%Sand=21.8--						
		--%Silt=45.3--	50		16	4 4 4	1.23 B	25
		--%Clay=26.9--						
		--A-6 (8)--						
					17	3 4 9	1.39 B	18
	537.3	Hard, gray SILTY LOAM to SILTY CLAY LOAM, trace gravel	55					
			60		18	12 23 18	4.26 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 (%)
	532.3	Very stiff, gray CLAY to SILTY CLAY, trace gravel						
			65		19	7 10 18	3.44 B	21
			70		20	6 9 13	2.87 B	22
	522.3	Stiff to hard, gray SILTY CLAY LOAM, trace gravel and thinly bedded silt and clay layers						
			75		21	3 5 7	1.50 P	17
			80		22	18 34 35	> 4.50 P	12

GENERAL NOTES

Begin Drilling **07-17-2013** Complete Drilling **07-18-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&J** Logger **D. Kolpacki** Checked by **C. Marin**
Drilling Method **3.25" HSA to 20', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **15.50 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 12-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: 594.05 ft
North: 1897848.66 ft
East: 1170552.39 ft
Station: 7300+63.47
Offset: 7.9476 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	512.3							
		Very dense, gray SILTY LOAM						
	509.6				23	30 46 29	NP	21
		Hard, gray SILTY CLAY, trace gravel	85					
					24	16 23 35	5.66 B	18
			90					
	502.3							
		Very dense, gray, fine SAND, trace gravel						
		--Moist--						
					25	50/6	NP	12
			95					
		--ROLLER BIT REFUSAL--						
	497.6							
		Boring terminated at 96.50 ft						
			100					

GENERAL NOTES

Begin Drilling **07-17-2013** Complete Drilling **07-18-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&J** Logger **D. Kolpacki** Checked by **C. Marin**
Drilling Method **3.25" HSA to 20', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **15.50 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 13-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: 593.57 ft
North: 1897602.80 ft
East: 1171259.06 ft
Station: 7308+54.07
Offset: 16.3167 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	593.3	4-inch thick, black SILTY CLAY LOAM, trace gravel, trace wood fragments --TOPSOIL--						
		Loose to medium dense, gray and black SILTY LOAM, trace gravel, brick fragments, slag, and roots --FILL--			1	8 5 5	NP	16
			5		2	8 3 3	NP	40
	588.1	Loose, brown fine to medium SAND, trace gravel --FILL--			3	5 4 4	NP	18
	585.6	Stiff to very stiff, gray SILTY CLAY	10		4	4 6 7	3.20 B	25
					5	3 3 3	1.48 B	17
	580.6	Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel	15		6	3 3 3	0.66 B	17
					7	1 2 3	0.57 B	21
			20		8	1 1 2	0.41 B	20
			25		9	1 2 2	0.57 B	21
					10	1 1 3	0.33 B	23
					11	1 1 2	0.49 B	24
		--L_L(%)=35, P_L(%)=15-- --%Gravel=2.2-- --%Sand=16.1-- --%Silt=50.7-- --%Clay=31.0-- --A-6 (15)--	30		12	1 1 2	0.57 B	24
			35		13	0 1 1	0.49 B	26
			40		14	0 2 1	0.33 B	26

GENERAL NOTES

Begin Drilling: **06-28-2013** Complete Drilling: **07-01-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-25 ATV**
Driller: **P&N** Logger: **A. Tomaras** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG 13-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: 593.57 ft
North: 1897602.80 ft
East: 1171259.06 ft
Station: 7308+54.07
Offset: 16.3167 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 2	0.33 B	28
			50		16	0 2 1	0.33 B	26
	541.8	Stiff, gray SILTY CLAY LOAM, trace seams of sand and silt	55		17	4 8 11	1.56 B	14
	536.8	Stiff, gray SILTY CLAY LOAM, trace gravel	60		18	11 17 22	1.48 S	13
	533.8							

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Gray, medium SAND						
	531.8	Stiff to very stiff, gray SILTY CLAY LOAM, trace gravel	65		19	8 13 19	3.69 B	19
			70		20	6 8 9	2.95 B	25
	519.4	--2-inch, gray SILT, moist-- Hard, gray SILTY LOAM to SILTY CLAY LOAM, trace gravel	75		21	5 6 8	1.48 B	13
		--L_L(%)=29, P_L(%)=14-- --%Gravel=2.2-- --%Sand=11.8--	80		22	15 18 30	5.66 B	13

GENERAL NOTES

Begin Drilling **06-28-2013** Complete Drilling **07-01-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-25 ATV**
Driller **P&N** Logger **A. Tomaras** Checked by **C. Marin**
Drilling Method **2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 13-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: 593.57 ft
North: 1897602.80 ft
East: 1171259.06 ft
Station: 7308+54.07
Offset: 16.3167 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=61.8--						
		--%Clay=24.2--						
		--A-6 (11)--						
			85		23	20 33 30	7.30 S	10
			90		24	50/5	7.05 S	12
	499.7				25	50/5	NR	
		Boring terminated at 93.90 ft	95					
			100					

GENERAL NOTES

Begin Drilling **06-28-2013** Complete Drilling **07-01-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-25 ATV**
Driller **P&N** Logger **A. Tomaras** Checked by **C. Marin**
Drilling Method **2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 13-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: 593.02 ft
North: 1897654.41 ft
East: 1171195.41 ft
Station: 7307+69.61
Offset: 28.9060 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, brown SILTY CLAY LOAM						
	591.8	--TOPSOIL--						
		Medium dense, gray and pink, fine SAND, little gravel			1	2 5 5	NP	15
		--FILL--						
	590.0							
		Stiff (1.5P), black and brown, SILTY CLAY LOAM, trace roots						
	589.0	--FILL--			2	6 3 4	2.54 B	16
		Very stiff, brown and gray SILTY CLAY, trace gravel	5					
					3	2 7 2	2.25 B	16
					4	4 5 9	2.87 S	23
			10					
	582.5							
		Soft to medium stiff, gray CLAY, trace gravel			5	3 2 3	0.79 B	26
					6	1 2 4	0.57 B	27
			15					
					7	2 3 2	0.41 B	18
					8	1 1 1	0.33 B	24
			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 1 2	0.41 B	26
			25		10	1 1 2	0.49 B	25
					11	1 1 2	0.49 B	24
			30		12	1 1 2	0.41 B	26
			35		13	2 1 3	0.49 B	25
			40		14	0 2 3	0.33 B	26

GENERAL NOTES

Begin Drilling **06-26-2013** Complete Drilling **04-16-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-25 ATV**
Driller **P&N** Logger **A. Tomaras** Checked by **C. Marin**
Drilling Method **2.25" HSA to 16', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 13-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: 593.02 ft
North: 1897654.41 ft
East: 1171195.41 ft
Station: 7307+69.61
Offset: 28.9060 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 2	0.57 B	17
		--L_L(%)=34, P_L(%)=15-- --%Gravel=3.5-- --%Sand=17.5-- --%Silt=47.5-- --%Clay=31.5-- --A-6 (13)--	50		16	2 7 4	0.33 B	27
	541.3	Stiff, gray SILTY CLAY LOAM, some gravel	55		17	5 12 13	NA	18
			60		18	15 13 15	1.72 B	17
	531.3	Medium stiff to stiff, gray CLAY, trace gravel	65		19	11 15 22	1.31 B	22
		--L_L(%)=42, P_L(%)=15-- --%Gravel=0.1-- --%Sand=1.6-- --%Silt=47.4-- --%Clay=50.9-- --A-7-6 (27)--	70		20	7 7 8	1.15 B	26
	518.8	Gray SILT to SILTY LOAM	75		21	5 7 8	0.74 B	20
	516.3	Dense to very dense, gray GRAVELLY SANDY LOAM						
		--%Gravel=35.1-- --%Sand=43.1-- --%Silt=18.4--	80		22	15 19 23	NP	12

GENERAL NOTES

Begin Drilling **06-26-2013** Complete Drilling **04-16-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-25 ATV**
Driller **P&N** Logger **A. Tomaras** Checked by **C. Marin**
Drilling Method **2.25" HSA to 16', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 13-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: 593.02 ft
North: 1897654.41 ft
East: 1171195.41 ft
Station: 7307+69.61
Offset: 28.9060 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--%Clay=3.4-- --A-4 (0)--						
					23	30 50/5	NP	10
			85					
	506.3	Very dense, gray SILTY LOAM, some gravel						
					24	50/5	NP	10
			90					
					25	50/5	NP	10
			95					
	495.0	Boring terminated at 98.00 ft						
			100					

GENERAL NOTES

Begin Drilling **06-26-2013** Complete Drilling **04-16-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-25 ATV**
Driller **P&N** Logger **A. Tomaras** Checked by **C. Marin**
Drilling Method **2.25" HSA to 16', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 13-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: 593.23 ft
North: 1897624.69 ft
East: 1171234.97 ft
Station: 7308+20.74
Offset: 20.9635 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		Drilled without sampling						
		--In-Situ Vane Shear, 15.0 feet--	15		1	VS		
		--$S_{u\ undis}$ = 1036.0 psf--						
		--$S_{u\ remold}$ = 543.9 psf--						
		--Sensitivity = 1.90--						
		--In-Situ Vane Shear, 19.5 feet--	20		2			
		--$S_{u\ undis}$ = 1113.7 psf--				VS		
		--$S_{u\ remold}$ = 777 psf--						
		--Sensitivity = 1.43--						
		--In-Situ Vane Shear, 24.5 feet--	25		3	VS		
		--$S_{u\ undis}$ = 880.6 psf--						
		--$S_{u\ remold}$ = 647.5 psf--						
		--Sensitivity = 1.36--						
		--In-Situ Vane Shear, 29.5 feet--	30		4	VS		
		--$S_{u\ undis}$ = 802.9 psf--						
		--$S_{u\ remold}$ = 440.3 psf--						
		--Sensitivity = 1.82--						
		--In-Situ Vane Shear, 34.5 feet--	35		5	VS		
		--$S_{u\ undis}$ = 802.9 psf--						
		--$S_{u\ remold}$ = 466.2 psf--						
		--Sensitivity = 1.72--						
		--In-Situ Vane Shear, 39.5 feet--	40		6			

GENERAL NOTES

Begin Drilling **07-02-2013** Complete Drilling **07-03-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&J** Logger **D. Kolpacki** Checked by **C. Marin**
Drilling Method **2.25" HSA to 13', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 13-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: 593.23 ft
North: 1897624.69 ft
East: 1171234.97 ft
Station: 7308+20.74
Offset: 20.9635 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--$S_{u\ undis}$ = 647.5 psf--				VS		
		--$S_{u\ remold}$ = 440.3 psf--						
		--Sensitivity = 1.47--						
		--In-Situ Vane Shear, 44.5 feet--	45		7	VS		
		--$S_{u\ undis}$ = 1292.5 psf--						
		--$S_{u\ remold}$ = 620.4 psf--						
		--Sensitivity = 2.08--						
		--In-Situ Vane Shear, 49.5 feet--	50		8	VS		
		--$S_{u\ undis}$ = 1344.2 psf--						
		--$S_{u\ remold}$ = 620.4 psf--						
		--Sensitivity = 2.16--						
		--In-Situ Vane Shear, 54.5 feet--	55		9	VS		
		--$S_{u\ undis}$ = 7600 psf--						
		--$S_{u\ remold}$ = NA psf--						
		--Sensitivity = 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 (%)
			65					
			70					
			75					
			80					

GENERAL NOTES

Begin Drilling **07-02-2013** Complete Drilling **07-03-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&J** Logger **D. Kolpacki** Checked by **C. Marin**
Drilling Method **2.25" HSA to 13', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 13-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: 593.23 ft
North: 1897624.69 ft
East: 1171234.97 ft
Station: 7308+20.74
Offset: 20.9635 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	489.2	Strong, light gray, fair rock mass quality, bedded fresh DOLOSTONE, up to 18-inch beds, 7-inch joint spacing, horizontal and vertical joints with none to less than 0.2-inch greenish gray infilling, hard joint wall, with stylolitic surfaces, and moderately vuggy porosity.	105		1	CORE		
		--Run 1 RECOVERY=100%-- --RQD=66%--						
		Qu = 13,410 psi	110					
		Qu = 10,600 psi						
	479.2	Boring terminated at 114.00 ft	115					
			120					

GENERAL NOTES

Begin Drilling **07-02-2013** Complete Drilling **07-03-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&J** Logger **D. Kolpacki** Checked by **C. Marin**
Drilling Method **2.25" HSA to 13', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 1703-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: 588.78 ft
North: 1898095.24 ft
East: 1171405.63 ft
Station: 5218+54.94
Offset: 21.1399 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	588.5	4-inch thick ASPHALT --PAVEMENT--						
	587.8	8-inch thick CONCRETE --PAVEMENT--						
		Very stiff, brown and gray CLAY LOAM, trace gravel			1	3 6 7	3.50 P	19
	585.8	--FILL--						
		Very stiff, gray SILTY CLAY, trace gravel --L_L(%)=33, P_L(%)=18-- --%Gravel=2.7--	5		2	3 5 4	3.28 B	18
	583.3	--%Sand=16.3-- --%Silt=51.9-- --%Clay=29.2-- --A-6 (11)--						
		Soft to medium stiff, gray CLAY to SILTY CLAY LOAM, trace gravel			3	2 2 2	0.66 B	22
		--L_L(%)=30, P_L(%)=17-- --%Gravel=6.1-- --%Sand=20.0-- --%Silt=51.7-- --%Clay=22.3-- --A-6 (8)--	10		4	0 0 0	0.41 B	23
					5	0 2 1	0.41 B	25
			15		6	0 0 2	< 0.25 P	24
					7	0 0 0	0.25 B	22
			20		8	0 2 2	0.25 B	26
			25		9	0 2 2	0.33 B	24
					10	0 0 1	0.25 B	22
					11	0 2 2	0.49 B	24
		--L_L(%)=30, P_L(%)=17-- --%Gravel=2.7-- --%Sand=16.4-- --%Silt=46.9-- --%Clay=34.0-- --A-6 (9)--	30		12	0 0 0	0.33 B	26
			35		13	0 2 2	0.25 B	26
			40		14	0 0 2	0.41 B	25

GENERAL NOTES

Begin Drilling **10-07-2013** Complete Drilling **10-07-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&R** Logger **D. Kolpacki** Checked by **CLM**
Drilling Method **3.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

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

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

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BORING LOG 1703-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: 588.78 ft
North: 1898095.24 ft
East: 1171405.63 ft
Station: 5218+54.94
Offset: 21.1399 RT

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(%)=18--						
		--%Gravel=4.4--						
		--%Sand=15.5--						
		--%Silt=48.6--	45		15	1 2 3	0.49 B	26
		--%Clay=31.5--						
		--A-6 (11)--						
			50		16	3 1 3	NA	
	537.0	Very stiff, gray SILTY CLAY, trace gravel						
			55		17	5 9 11	2.13 B	17
	532.0	Very stiff, gray CLAY, trace gravel						
		L_L(%)=37, P_L(%)=18--						
		--%Gravel=2.9--						
		--%Sand=13.6--	60		18	8 12 17	2.81 B	17
		--%Silt=47.2--						
		--%Clay=36.3--						
		--A-6 (15)--						
		L_L(%)=34, P_L(%)=18--						
		--%Gravel=2.2--						
		--%Sand=7.0--						
		--%Silt=47.0--	65		19	4 6 9	2.21 B	25
		--%Clay=43.8--						
		--A-6(14)--						
	522.0	Gray SILTY LOAM						
	519.4	Hard, gray SILTY CLAY LOAM, trace gravel	70		20	12 10 9	NP	12
			75		21	10 18 24	7.13 B	16
	512.0	Hard, gray SILTY LOAM, trace gravel						
		L_L(%)=22, P_L(%)=14--						
		--%Gravel=9.7--						
		--%Sand=28.7--	80		22	12 25 28	6.23 B	12

GENERAL NOTES

Begin Drilling: **10-07-2013** Complete Drilling: **10-07-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR**
Driller: **R&R** Logger: **D. Kolpacki** Checked by: **CLM**
Drilling Method: **3.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

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

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

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BORING LOG 1703-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: 588.78 ft
North: 1898095.24 ft
East: 1171405.63 ft
Station: 5218+54.94
Offset: 21.1399 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=49.7-- --%Clay=11.9-- --A-4(2)-- --HARD DRILLING--						
					23	26 50/4	NP	15
			85					
		--HARD DRILLING-- *--Possible Cobbles--*						
		--L_L(%)=20, P_L(%)=14-- --%Gravel=12.3-- --%Sand=21.1-- --%Silt=56.3-- --%Clay=10.3-- --A-4(1)--			24	46 50/5	NP	11
			90					
					25	44 50/3	NP	10
			95					
	492.0	Hard, gray SILTY CLAY LOAM						
		--L_L(%)=28, P_L(%)=17-- --%Gravel=0.1-- --%Sand=2.2--			26	18 24 34	5.41 B	21
			100					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--%Silt=75.1-- --%Clay=22.6-- --A-6(10)--						
					27	70/3	NA	
		--ROLLER BIT REFUSAL--						
	483.8		105					
		Boring terminated at 105.00 ft						
			110					
			115					
			120					

GENERAL NOTES

Begin Drilling: **10-07-2013** Complete Drilling: **10-07-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR**
Driller: **R&R** Logger: **D. Kolpacki** Checked by: **CLM**
Drilling Method: **3.25" HSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

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

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BORING LOG 1704-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: 588.98 ft
North: 1897934.28 ft
East: 1170082.13 ft
Station: 5155+31.36
Offset: 19.5036 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	588.0	4-inch thick ASPHALT over 8-inch thick CONCRETE --PAVEMENT--						
	587.5	6-inch thick CRUSHED STONE --BASE COURSE--						
		Very stiff to hard, gray SILTY CLAY LOAM, trace to little gravel, glass, cinders and brick --FILL--						
					1	3 6 9	> 4.50 P	
			5		2	8 7 5	2.87 B	15
					3	4 7 9	6.64 B	16
			10		4	3 4 4	3.12 B	18
	578.5	Very soft to soft, gray CLAY to SILTY CLAY LOAM, trace gravel --2" coarse SAND--->			5	2 1 1	0.25 B	27
		--L_L(%)=31, P_L(%)=17-- --%Gravel=4.1-- --%Sand=20.5-- --%Silt=49.6-- --%Clay=25.9-- --A-6(9)--	15		6	0 0 0	0.16 B	25
					7	0 0 0	0.16 B	23
			20		8	2 2 2	0.49 B	18
			25		9	0 0 0	0.33 B	26
					10	0 0 0	0.16 B	27
			30		11	0 1 1	0.08 B	27
					12	0 0 0	0.16 B	26
		--L_L(%)=31, P_L(%)=18-- --%Gravel=4.1-- --%Sand=15.7-- --%Silt=52.9-- --%Clay=27.3-- --A-6(9)--	35		13	0 0 1	0.25 B	27
			40		14	0 0 2	0.25 B	24

GENERAL NOTES

Begin Drilling **10-09-2013** Complete Drilling **10-09-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
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 ▽ **11.50 ft**
At Completion of Drilling ▼ **96.75 ft**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 1704-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: 588.98 ft
North: 1897934.28 ft
East: 1170082.13 ft
Station: 5155+31.36
Offset: 19.5036 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	0.25 B	29
	542.2	Very stiff, gray SILTY CLAY, trace gravel						
			50		16	2 4 8	2.00 N/6	
			55		17	10 14 18	3.61 B	14
	532.2	Very stiff, gray CLAY to SILTY CLAY, trace gravel						
			60		18	5 9 15	3.69 B	22
		--HARD DRILLING-- *--Possible Cobbles--*						
		--L_L(%)=34, P_L(%)=19-- --%Gravel=1.4-- --%Sand=5.0-- --%Silt=50.7-- --%Clay=42.9-- --A-6(14)--	65		19	6 7 10	2.21 B	25
	520.0	Medium dense, gray SILTY LOAM, trace gravel	70		20	5 5 5	2.75 P	17
	517.2	Hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel						
		--1" SILT--	75		21	4 9 16	7.05 B	15
		--L_L(%)=25, P_L(%)=16-- --%Gravel=1.9-- --%Sand=9.9--	80		22	12 19 25	6.07 S	16

GENERAL NOTES

Begin Drilling **10-09-2013** Complete Drilling **10-09-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
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 ▽ **11.50 ft**
At Completion of Drilling ▼ **96.75 ft**
Time After Drilling **NA**
Depth to Water ▽ **NA**

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

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BORING LOG 1704-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: 588.98 ft
North: 1897934.28 ft
East: 1170082.13 ft
Station: 5155+31.36
Offset: 19.5036 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=66.6-- --%Clay=21.6-- --A-4(6)-- --HARD DRILLING-- *--Possible Cobbles--*						
	504.7	Dense, gray SILTY LOAM, trace gravel	85		23	16 18 21	5.08 B	20
	502.2	--HARD DRILLING-- Hard, gray SILTY CLAY LOAM, trace gravel						
			90		24	19 50/6"	6.23 S	11
	497.2	Very dense, gray SILTY LOAM, trace gravel						
			95		25	35 50/3"	NP	15
	492.2	Very dense, gray SILT, trace CLAY lamination --Saturated-- --%Gravel=0.0-- --%Sand=0.7-- --%Silt=87.7--	100		26	23 33 47	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 (%)
		--%Clay=11.5-- --A-4(0)--						
	488.0	--ROLLER BIT REFUSAL-- --Possible BEDROCK-- Boring terminated at 101.00 ft	105					
			110					
			115					
			120					

GENERAL NOTES

Begin Drilling: **10-09-2013** Complete Drilling: **10-09-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR**
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: **11.50 ft**
At Completion of Drilling: **96.75 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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BORING LOG 1705-B-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: 574.38 ft
North: 1898167.88 ft
East: 1171080.64 ft
Station: 1835+82.82
Offset: 39.2974 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	573.9	6-inch thick ASPHALT --PAVEMENT--						
	573.1	9-inch thick CONCRETE --PAVEMENT--						
		Medium dense, light brown CRUSHED STONE --FILL--			1	15 8 3	NP	5
	571.1	Stiff, brown and gray SILTY CLAY, trace gravel	5		2	2 3 4	1.80 B	16
	568.9	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			3	1 1 3	0.41 B	24
			10		4	1 2 3	0.41 B	21
					5	0 0 2	0.41 B	26
		--In-Situ Vane Shear, 13.0 feet-- --$S_{u\ undis}$ = 568.7 psf-- --$S_{u\ remold}$ = 465.3 psf-- --Sensitivity = 1.22--			1			
			15		6	0 0 0	0.25 B	26
		--In-Situ Vane Shear, 15.5 feet-- --$S_{u\ undis}$ = 1240.8 psf-- --$S_{u\ remold}$ = 517.0 psf-- --Sensitivity = 2.40--			2			
					7	0 0 1	0.16 B	27
		--In-Situ Vane Shear, 18 feet-- --$S_{u\ undis}$ = 930.6 psf-- --$S_{u\ remold}$ = 465.3 psf-- --Sensitivity = 2.00--			3			
			20		8	0 0 0	0.16 B	25

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, 20.5 feet-- --$S_{u\ undis}$ = 1137.4 psf-- --$S_{u\ remold}$ = 568.7 psf-- --Sensitivity = 2.00--			4			
					9	0 0 0	0.16 B	25
		--In-Situ Vane Shear, 23 feet-- --$S_{u\ undis}$ = 1654.4 psf-- --$S_{u\ remold}$ = 568.7 psf-- --Sensitivity = 2.91--			5			
			25		10	0 1 2	0.33 S	26
		--In-Situ Vane Shear, 25.5 feet-- --$S_{u\ undis}$ = 1602.7 psf-- --$S_{u\ remold}$ = 517.0 psf-- --Sensitivity = 3.1-- --L_L(%)=37, P_L(%)=18-- --%Gravel=2.1-- --%Sand=10.4-- --%Silt=47.9-- --%Clay=39.6-- --A-6 (16)--			6			
					11	1 1 2	0.74 B	53
					7			
					12	1 1 2	0.57 B	29
		--In-Situ Vane Shear, 28.0 feet-- --$S_{u\ undis}$ = 1551.0 psf-- --$S_{u\ remold}$ = 517.0 psf-- --Sensitivity = 3.00--	30		8			
		--In-Situ Vane Shear, 30.5 feet-- --$S_{u\ undis}$ = 1706.1 psf-- --$S_{u\ remold}$ = 1085.7 psf-- --Sensitivity = 1.57--						
	542.6	Stiff to hard, gray SILTY CLAY LOAM, trace gravel						
			35		13	4 6 7	1.89 B	18
			40		14	5 10 13	4.02 B	14

GENERAL NOTES

Begin Drilling: **07-31-2013** Complete Drilling: **08-05-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR**
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: **DRY**
At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG 1705-B-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: 574.38 ft
North: 1898167.88 ft
East: 1171080.64 ft
Station: 1835+82.82
Offset: 39.2974 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	527.6	Dense, gray SANDY LOAM, with pockets of silt	45		15	4 8 12	2.87 B	20
	524.6	Very stiff to hard, gray SILTY CLAY LOAM, trace gravel	50		16	9 14 17	NP	13
			55		17	14 31 42	4.92 S	12
			60		18	18 28 39	7.46 B	15
	507.6	--L_L(%)=25, P_L(%)=14-- --%Gravel=3.5-- --%Sand=11.2-- --%Silt=63.3-- --%Clay=22.0-- --A-6 (7)-- Very dense, gray LOAM, trace gravel and lenses of sand	65		19	17 25 31	2.00 P	17
			70		20	19 29 27	NP	17
	502.6	Hard, gray SILTY CLAY, trace gravel						
	499.7	Very dense, gray SILTY LOAM, trace gravel	75		21	12 22 50/5	4.67 B	20
			80		22	28 46 50/3	NP	19

GENERAL NOTES

Begin Drilling **07-31-2013** Complete Drilling **08-05-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
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 ▽ **DRY**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 1705-B-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: 574.38 ft
North: 1898167.88 ft
East: 1171080.64 ft
Station: 1835+82.82
Offset: 39.2974 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	492.6							
		Very dense, gray GRAVELLY SANDY LOAM to SAND, with rock fragments			23	50/3	NP	14
			85					
		--HARD DRILLING-- *--Possible Cobbles--*						
					24	50/1	NP	10
	484.9							
		Strong, good rock quality, light gray, fresh, mainly horizontal joints, joint breaks with little to no infill, horizontal stylolites, slightly vuggy, trace small cavities, horizontally bedded DOLOSTONE --Run 1 - RECOVERY=98%-- --RQD (top 5ft)=85%-- --RQD (10ft)=80%--	90			CORE		
			95		1			
	474.9							
		Boring terminated at 99.50 ft	100					

GENERAL NOTES

Begin Drilling **07-31-2013** Complete Drilling **08-05-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
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 ▽ **DRY**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 1705-B-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: 574.89 ft
North: 1898122.44 ft
East: 1170947.70 ft
Station: 1837+18.34
Offset: 2.2762 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, brown LOAM --TOPSOIL--						
	573.9							
		Hard, gray and brown, SILTY CLAY LOAM, trace gravel			1	6 6 4	4.50 P	14
	571.9							
		Very soft to stiff, gray CLAY to SILTY CLAY, trace gravel			2	2 2 2	0.49 B	21
			5		3	0 2 2	0.41 B	24
		--L_L(%)=34, P_L(%)=16-- --%Gravel=3.9-- --%Sand=13.9-- --%Silt=51.2-- --%Clay=31.1-- --A-6 (13)--			1	PUSH	0.61 B	23
			10		4	0 0 0	0.25 B	25
		--L_L(%)=35, P_L(%)=17-- --%Gravel=3.7-- --%Sand=14.5-- --%Silt=46.8-- --%Clay=35.0-- --A-6 (14)--			2	PUSH	0.65 B	25
			15		5	0 0 0	0.16 B	26
		--L_L(%)=34, P_L(%)=18-- --%Gravel=2.3-- --%Sand=14.1-- --%Silt=50.8--			3	PUSH	0.39 B	24
			20					
		--%Clay=32.9-- --A-6 (12)--			6	0 0 0	0.25 B	26
		--L_L(%)=32, P_L(%)=16-- --%Gravel=3.7-- --%Sand=13.8-- --%Silt=48.6-- --%Clay=33.9-- --A-6 (12)--			4	PUSH	0.34 B	25
			25		7	0 0 0	0.41 B	25
		--L_L(%)=36, P_L(%)=18-- --%Gravel=2.3-- --%Sand=10.7-- --%Silt=48.2-- --%Clay=38.8-- --A-6 (15)--			5	PUSH	0.86 S	26
			30					
			35		8	0 3 3	1.07 B	22
	538.1							
		Very stiff, gray SILTY CLAY LOAM, trace gravel						
		--L_L(%)=26, P_L(%)=15-- --%Gravel=5.5-- --%Sand=23.5--			9	5 9 14	3.61 B	15
			40					

GENERAL NOTES

Begin Drilling: **08-06-2013** Complete Drilling: **08-11-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR**
Driller: **R&N** 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: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG 1705-B-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: 574.89 ft
North: 1898122.44 ft
East: 1170947.70 ft
Station: 1837+18.34
Offset: 2.2762 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=50.1-- --%Clay=20.9-- --A-6 (5)--						
	533.1	Very stiff,gray CLAY, trace gravel						
			45		10	9 8 13	3.28 B	21
			50		11	5 8 14	4.10 B	21
	523.1	Very stiff, gray SILTY CLAY LOAM, trace gravel						
	520.4	Very soft (<0.25P), gray CLAY	55		12	7 10 14	3.99 S	13
	518.1	Stiff to hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel						
			60		13	14 23 32	10.25 S	14
			65		14	14 24 29	8.30 S	14
	507.1	Very dense, gray SILTY LOAM, trace to some gravel --%Gravel=6.5-- --%Sand=19.7-- --%Silt=68.5-- --%Clay=5.3-- --A-4 (0)--						
			70		15	35 40 25/3"	1.53 S	13
			75		16	50/4"	NP	17
			80		17	50/3"	NP	16

GENERAL NOTES

Begin Drilling **08-06-2013** Complete Drilling **08-11-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&N** 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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 1705-B-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: 574.89 ft
North: 1898122.44 ft
East: 1170947.70 ft
Station: 1837+18.34
Offset: 2.2762 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	--HARD DRILLING--						
		Very dense, SANDY GRAVEL, some boulders and cobbles			18	50/0"	NR	
			85					
		--HARD DRILLING-- *--Possible Cobbles--*			19	75/0"	NR	
	485.4	DOLOSTONE	90					
	484.4	--BEDROCK--						
		Boring terminated at 90.50 ft						
			95					
			100					

GENERAL NOTES

Begin Drilling **08-06-2013** Complete Drilling **08-11-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&N** 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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 1705-B-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: 575.72 ft
North: 1898104.31 ft
East: 1170838.29 ft
Station: 1838+28.67
Offset: 8.9579 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	575.6	1-inch thick brown SILTY LOAM --TOPSOIL--						
		Very loose to loose, brown and gray to gray LOAM, trace gravel --FILL--			1	4 4 3	NP	9
					2	2 1 1	NP	10
			5					
	570.2	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel			3	1 1 1	< 0.25 P	16
					4	1 1 2	0.41 B	25
			10					
		--In-Situ Vane Shear, 10.5 feet-- --$S_{u\ undis}$ = 673.4 psf-- --$S_{u\ remold}$ = 466.2 psf-- --Sensitivity = 1.44--			1			
					5	0 2 2	0.49 B	25
					6	1 1 2	0.49 B	23
		--In-Situ Vane Shear, 15.5 feet-- --$S_{u\ undis}$ = 621.6 psf-- --$S_{u\ remold}$ = 336.7 psf-- --Sensitivity = 1.849-- --L_L(%)=32, P_L(%)=16-- --%Gravel=4.1-- --%Sand=12.9-- --%Silt=50.9-- --%Clay=32.1-- --A-6 (12)--	15		2			
					7	0 1 2	0.16 B	27
					8	0 1 1	0.25 B	26
			20					
		--In-Situ Vane Shear, 20.5 feet-- --$S_{u\ undis}$ = 802.9 psf-- --$S_{u\ remold}$ = 414.4 psf-- --Sensitivity = 1.938--			3			
					9	1 2 3	0.41 B	23
					10	2 2 2	0.49 B	25
			25					
		--In-Situ Vane Shear, 25.5 feet-- --$S_{u\ undis}$ = 1243.2 psf-- --$S_{u\ remold}$ = 725.2 psf-- --Sensitivity = 1.714--			4			
					11	1 2 3	0.57 B	25
		--L_L(%)=35, P_L(%)=17-- --%Gravel=2.6-- --%Sand=9.8-- --%Silt=46.6-- --%Clay=41.0-- --A-6 (15)--			12	2 2 2	0.25 B	27
			30					
		--In-Situ Vane Shear, 30.5 feet-- --$S_{u\ undis}$ = 2481.6 psf-- --$S_{u\ remold}$ = 1085.7 psf-- --Sensitivity = 2.29--			5			
					13	2 3 2	0.33 B	21
			35					
		--In-Situ Vane Shear, 35.5 feet-- --$S_{u\ undis}$ = 1964.6 psf-- --$S_{u\ remold}$ = 1344.2 psf-- --Sensitivity = 1.46--			6			
	538.5	Stiff to very stiff, gray SILTY CLAY, trace gravel						
					14	4 5 5	1.56 B	23
			40					

GENERAL NOTES

Begin Drilling: **08-13-2013** Complete Drilling: **08-15-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
Driller: **R&J** Logger: **A. Tomaras** Checked by: **C. Marin**
Drilling Method: **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **73.50 ft**
At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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BORING LOG 1705-B-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: 575.72 ft
North: 1898104.31 ft
East: 1170838.29 ft
Station: 1838+28.67
Offset: 8.9579 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	6 6 13	2.54 B	18
	529.0	Very stiff, gray CLAY, trace gravel						
		--L_L(%)=37, P_L(%)=18-- --%Gravel=0.6-- --%Sand=3.6-- --%Silt=49.4-- --%Clay=46.4-- --A-6 (19)--	50		16	5 7 11	2.62 B	22
	524.0	Very dense, gray SILTY LOAM, trace gravel						
			55		17	29 36 36	NP	11
	519.0	Hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel						
		--L_L(%)=29, P_L(%)=16-- --%Gravel=1.9-- --%Sand=11.1--	60		18	27 30 37	7.80 S	13
		--%Silt=56.4-- --%Clay=30.6-- --A-6 (10)--						
			65		19	13 20 28	7.79 S	13
	509.0	Very dense, gray SILTY LOAM, trace to some gravel						
		--L_L(%)=19, P_L(%)=13-- --%Gravel=8.7-- --%Sand=28.7-- --%Silt=51.8-- --%Clay=10.7-- --A-4 (1)--	70		20	36 46 27	2.38 S	10
			75		21	55/6	NP	14
			80		22	54/6	NP	18

GENERAL NOTES

Begin Drilling: **08-13-2013** Complete Drilling: **08-15-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
Driller: **R&J** Logger: **A. Tomaras** Checked by: **C. Marin**
Drilling Method: **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **73.50 ft**
At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG 1705-B-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: 575.72 ft
North: 1898104.31 ft
East: 1170838.29 ft
Station: 1838+28.67
Offset: 8.9579 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	492.2							
		--WEATHERED BEDROCK--			23	75/0	NR	
			85					
	490.2							
		Strong, good rock quality, light gray, fresh, mainly horizontal joints, joint breaks with little to no infill, horizontal stylolites, slightly vuggy, trace small cavities, horizontally bedded DOLOSTONE				CORE		
		--Run 1-RECOVERY=82%--			1			
		--RQD =73%--						
			90					
		--Run 2-RECOVERY=95%--				CORE		
		--RQD =80%--			2			
			95					
	480.2							
		Boring terminated at 95.50 ft						
			100					

GENERAL NOTES

Begin Drilling **08-13-2013** Complete Drilling **08-15-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&J** Logger **A. Tomaras** Checked by **C. Marin**
Drilling Method **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **73.50 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 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: 1404+96.98
Offset: 1.3189 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	582.2	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--		18 / 14	1	6 5 6	3.77 B	16
			5	18 / 14	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--		18 / 14	3	2 3 4	1.64 B	18
			10	18 / 14	4	3 4 4	0.98 B	19
	572.0	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace to some gravel		18 / 14	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	18 / 14	6	1 1 2	0.25 B	22
				18 / 14	7	1 1 2	< 0.25 P	23
			20	18 / 14	8	1 1 2	0.49 B	25
				18 / 14	9	0 0 1	0.33 B	25
			25	18 / 14	10	0 0 0	0.16 B	24
				18 / 14	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	18 / 14	12	0 1 2	0.08 B	26
			35	18 / 14	13	0 0 2	0.25 B	25
			40	18 / 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**
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: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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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: 1404+96.98
Offset: 1.3189 RT

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**
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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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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: 1404+96.98
Offset: 1.3189 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	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**
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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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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: 6405+59.41
Offset: 6.1885' LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	589.2	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**
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 ▼ **unable to measure**
Time After Drilling **24 hours**
Depth to Water ▼ **8.00 ft**

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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: 6405+59.41
Offset: 6.1885' 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 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**
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: **unable to measure**
Time After Drilling: **24 hours**
Depth to Water: **8.00 ft**

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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: 6405+59.41
Offset: 6.1885' LT

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**
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: **unable to measure**
Time After Drilling: **24 hours**
Depth to Water: **8.00 ft**

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BORING LOG 1715-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: 577.87 ft
North: 1898025.66 ft
East: 1169923.98 ft
Station: 1223+01.26
Offset: 21.8060 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	Dark brown SILTY LOAM, trace gravel						
		--TOPSOIL--						
		Stiff to hard, brown and gray SILTY CLAY LOAM, trace gravel and roots			1	6 8 7	4.50 P	14
		--FILL--			2	1 3 2	1.00 P	28
	572.4		5					
		Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			3	1 2 3	0.25 B	20
					4	1 2 2	0.25 B	25
			10					
					5	1 1 2	0.25 B	28
					6	1 2 1	0.16 B	28
			15					
					7	1 2 2	0.25 B	27
					8	1 2 2	0.16 B	27
			20					
			25		9	1 2 3	0.25 B	27
					10	2 2 3	0.33 B	26
					11	3 3 4	0.49 B	26
			30		12	2 2 3	0.57 B	27
	546.1	Stiff to hard, gray SILTY CLAY LOAM, trace gravel						
			35		13	4 5 8	2.17 N/6	21
			40		14	4 5 10	1.75 P	24

GENERAL NOTES

Begin Drilling: **04-14-2014** Complete Drilling: **04-17-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-25 ATV**
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: **Rotary wash**
At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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BORING LOG 1715-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: 577.87 ft
North: 1898025.66 ft
East: 1169923.98 ft
Station: 1223+01.26
Offset: 21.8060 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	521.1	Medium stiff, gray CLAY, trace gravel						
			45		15	8 10 14	4.10 B	15
			50		16	10 12 16	4.67 B	14
			55		17	8 9 14	2.95 B	21
			60		18	4 3 5	0.66 B	38
	516.1	Loose, gray SILT						
			65		19	4 4 4	NP	29
	511.1	Hard, gray SILTY CLAY LOAM, trace gravel						
			70		20	10 16 22	6.07 B	20
	506.1	Very dense, gray SILTY LOAM, some gravel						
			75		21	7 36 50/5	NA	
		--HARD DRILLING-- *--Possible Cobbles--*						
			80		22	50/5	NP	13

GENERAL NOTES

Begin Drilling **04-14-2014** Complete Drilling **04-17-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **D-25 ATV**
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 ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 1715-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: 577.87 ft
North: 1898025.66 ft
East: 1169923.98 ft
Station: 1223+01.26
Offset: 21.8060 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--			23	50/0		
		--Possible Cobbles--	85					
	491.1	--DIFFICULT DRILLING--						
		--WEATHERED BEDROCK--						
	489.9	Strong, light gray, fair rock quality, bedded DOLOSTONE, beds up to 10 inch, 6 inch joint spacing, joints with more than 0.2 inch or no infilling, vuggy, and with stylolitic surfaces.	90			C O R E		
		--Run 1 -RECOVERY= 91%-- --RQD= 66%--			1			
			95					
	479.9	Boring terminated at 98.00 ft						
			100					

GENERAL NOTES

Begin Drilling **04-14-2014** Complete Drilling **04-17-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **D-25 ATV**
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 ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 18-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: 585.35 ft
North: 1897627.64 ft
East: 1171433.33 ft
Station: 1607+57.15
Offset: 14.1384 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	585.0	4-inch thick, black SILTY LOAM --TOPSOIL--						
		Very stiff to hard, brown and gray SILTY CLAY LOAM, trace gravel --FILL--			1	13 11 12	> 4.50 P	17
			5		2	6 6 8	3.44 B	17
	579.8	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			3	2 2 3	0.41 B	20
			10		4	2 2 3	0.49 B	20
					5	0 1 2	0.25 B	25
			15		6	2 3 4	0.66 B	21
					7	2 3 4	0.57 B	22
			20		8	1 3 3	0.49 B	25
			25		9	1 2 3	0.41 B	24
					10	1 2 2	0.33 B	26
			30		11	1 1 2	0.25 B	27
					12	1 1 2	0.16 B	25
			35		13	2 2 4	0.66 B	24
			40		14	2 3 4	0.49 B	26

GENERAL NOTES

Begin Drilling **10-16-2013** Complete Drilling **10-17-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-25 ATV**
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 ▽ **52.00 ft**
At Completion of Drilling **unable to measure (CAVE at 70 ft)**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 18-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: 585.35 ft
North: 1897627.64 ft
East: 1171433.33 ft
Station: 1607+57.15
Offset: 14.1384 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	543.6							
		Very stiff to hard, gray SILTY CLAY LOAM, trace gravel						
			45		15	5 6 14	3.12 B	14
			50		16	9 14 18	4.76 B	14
	533.6							
		Gray, medium to coarse SAND, trace gravel --Wet--						
	531.3							
		Very stiff to hard, gray SILTY CLAY, trace gravel						
			55		17	13 22 32	5.00 B	18
			60		18	11 11 23	3.85 B	22

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	523.6							
		Dense to very dense, gray GRAVELLY SAND --Wet--						
			65		19	17 19 17	NP	13
			70		20	26 26 21	NP	12
		--HARD DRILLING-- *--Possible Cobbles--*						
					21	22 50/3	NR	
	510.3		75					
		Boring terminated at 75.00 ft						
			80					

GENERAL NOTES

Begin Drilling: **10-16-2013** Complete Drilling: **10-17-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-25 ATV**
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: ▽ **52.00 ft**
At Completion of Drilling: **unable to measure (CAVE at 70 ft)**
Time After Drilling: **NA**
Depth to Water: ▼ **NA**

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BORING LOG 18-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: 575.58 ft
North: 1897703.15 ft
East: 1171280.67 ft
Station: 1605+93.00
Offset: 30.6655 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	575.3	3-inch thick ASPHALT --PAVEMENT--						
	574.8	9-inch thick CONCRETE --PAVEMENT--						
		Medium dense, brown SANDY GRAVEL			1	11 10 6	NP	14
	572.6	--FILL--						
		Soft to medium stiff, gray SILTY CLAY LOAM, trace gravel			2	2 2 3	0.83 N/6	
		--L_L(%)=30, P_L(%)=14-- --%Gravel=3.5-- --%Sand=15.1-- --%Silt=56.3-- --%Clay=25.2-- --A-6 (10)--	5		3	1 1 2	0.25 B	23
	567.6	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			4	1 1 2	0.25 B	26
			10		5	0 0 2	0.03 B	28
					6	0 1 1	0.25 B	26
			15		7	0 1 2	0.25 B	26
					8	0 0 0	0.16 B	27
			20					
					9	0 0 0	0.16 B	27
			25		10	0 0 2	0.33 B	25
					11	0 2 2	0.33 B	25
		--L_L(%)=37, P_L(%)=18-- --%Gravel=3.2-- --%Sand=10.5-- --%Silt=47.4-- --%Clay=38.9-- --A-6 (16)--	30		12	0 0 1	0.33 B	27
			35		13	1 2 3	0.49 B	19
	538.8	Very stiff, gray SILTY CLAY, trace gravel			14	4 9 10	3.12 B	17
			40					

GENERAL NOTES

Begin Drilling **10-14-2013** Complete Drilling **10-14-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&N** Logger **D. Kolpacki** Checked by **C. Marin**
Drilling Method **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 18-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: 575.58 ft
North: 1897703.15 ft
East: 1171280.67 ft
Station: 1605+93.00
Offset: 30.6655 RT

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(%)=35, P_L(%)=17--						
		--%Gravel=2.2--						
		--%Sand=9.4--						
		--%Silt=51.7--	45		15	4 8 10	2.95 B	19
		--%Clay=36.7--						
		--A-6 (15)-						
	525.6		50		16	6 17 14	3.20 B	17
		Boring terminated at 50.00 ft						
			55					
			60					

GENERAL NOTES

Begin Drilling **10-14-2013** Complete Drilling **10-14-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&N** Logger **D. Kolpacki** Checked by **C. Marin**
Drilling Method **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 18-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: 573.93 ft
North: 1897759.34 ft
East: 1171203.61 ft
Station: 1604+97.68
Offset: 33.9208 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	573.6	4-inch thick ASPHALT --PAVEMENT--						
	572.9	8-inch thick CONCRETE --PAVEMENT--						
		Medium dense, brown SANDY GRAVEL and CRUSHED STONE --FILL--			1	12 14 12	NP	7
			5		2	4 5 6	NP	11
	568.4	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel			3	2 1 1	0.25 B	22
			10		4	0 1 1	0.33 B	26
					5	0 0 0	0.16 B	27
		--L_L(%)=33, P_L(%)=19-- --%Gravel=2.2-- --%Sand=9.4-- --%Silt=51.7-- --%Clay=36.7-- --A-6 (10)--	15		6	0 0 0	0.16 B	27
					7	0 0 0	0.16 B	24
			20		8	0 1 1	0.25 B	27
			25		9	0 0 2	0.25 B	26
					10	0 1 2	0.33 B	25
			30		11	0 1 2	0.33 B	25
					12	0 0 0	0.25 B	29
	542.2	Stiff to hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel						
			35		13	3 5 10	3.85 B	15
		--L_L(%)=24, P_L(%)=15-- --%Gravel=8.4-- --%Sand=24.5--	40		14	8 12 14	4.35 B	14

GENERAL NOTES

Begin Drilling: **10-14-2013** Complete Drilling: **10-14-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR**
Driller: **R&N** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **3.50 ft**
At Completion of Drilling: **40.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG 18-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: 573.93 ft
North: 1897759.34 ft
East: 1171203.61 ft
Station: 1604+97.68
Offset: 33.9208 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=49.1--						
		--%Clay=18.1--						
		--A-4 (3)--						
			45		15	5 8 12	3.03 B	22
	523.9		50		16	5 8 10	1.97 B	23
		Boring terminated at 50.00 ft						
			55					
			60					

GENERAL NOTES

Begin Drilling **10-14-2013** Complete Drilling **10-14-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&N** Logger **D. Kolpacki** Checked by **C. Marin**
Drilling Method **3.25" HSA, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **3.50 ft**
At Completion of Drilling ▼ **40.00 ft**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 19-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: 588.28 ft
North: 1897670.99 ft
East: 1171413.08 ft
Station: 1607+21.55
Offset: 18.1192 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	588.0	4-inch thick, dark brown SILTY LOAM --TOPSOIL--						
		Dense, dark brown SILTY LOAM, trace gravel --FILL--			1	6 23 22	NP	16
	585.3	Stiff, brown and gray SILTY CLAY LOAM, trace gravel			2	3 6 7	1.97 B	17
	582.8	Very soft to stiff, gray CLAY to SILTY CLAY, trace gravel --L_L(%)=31, P_L(%)=17-- --%Gravel=2.2-- --%Sand=18.3-- --%Silt=47.1-- --%Clay=32.3-- --A-6 (10)--	5		3	3 3 4	1.15 B	21
			10		4	1 2 3	0.33 B	24
					5	1 1 1	0.08 B	25
		--L_L(%)=31, P_L(%)=18-- --%Gravel=4.1-- --%Sand=13.3-- --%Silt=51.6-- --%Clay=31.0-- --A-6 (9)--	15		6	1 1 2	0.25 B	29
	571.5	Soft, gray SILTY LOAM, trace gravel			7	1 4 10	NA	
		--L_L(%)=23, P_L(%)=16-- --%Gravel=6.9-- --%Sand=23.7--	20		8	4 3 4	0.49 B	17
		--%Silt=57.5-- --%Clay=11.8-- --A-4 (2)--						
	566.5	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			9	4 6 5	NA	
			25		10	1 1 2	0.16 B	27
					11	1 1 2	0.25 B	27
			30		12	1 1 2	0.33 B	27
			35		13	0 2 2	0.25 B	27
		--L_L(%)=34, P_L(%)=18-- --%Gravel=2.9-- --%Sand=13.1--	40		14	2 2 3	0.66 B	26

GENERAL NOTES

Begin Drilling: **10-14-2013** Complete Drilling: **10-16-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-25 ATV**
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: ▽ **67.00 ft**
At Completion of Drilling: ▼ **unable to measure**
Time After Drilling: **48 hours**
Depth to Water: ▼ **15.00 ft**

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BORING LOG 19-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: 588.28 ft
North: 1897670.99 ft
East: 1171413.08 ft
Station: 1607+21.55
Offset: 18.1192 LT

Depth (ft)	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--%Silt=49.6-- --%Clay=34.3-- --A-6 (12)--					
45				15	2 2 5	0.41 B	21
	541.5	Stiff to hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel					
50				16	3 5 8	1.48 B	23
		--L_L(%)=25, P_L(%)=16-- --%Gravel=6.5-- --%Sand=26.5-- --%Silt=49.4-- --%Clay=17.6-- --A-4 (3)--					
55				17	6 11 19	4.84 B	14
60				18	14 23 31	5.41 B	18
	526.5	Very stiff, gray CLAY, trace gravel					
65		--L_L(%)=44, P_L(%)=20-- --%Gravel=1.2-- --%Sand=5.0-- --%Silt=39.6-- --%Clay=54.2-- --A-7-6 (24)--		19	5 6 7	2.13 B	30
	521.5	Dense, gray, medium SAND --Saturated--					
70				20	11 13 17	NP	19
		--Change in drilling conditions at 73 ft--					
	515.3	Hard, gray SILTY CLAY LOAM, trace gravel --L_L(%)=29, P_L(%)=16-- --%Gravel=3.6-- --%Sand=13.5-- --%Silt=56.0-- --%Clay=26.9-- --A-6 (9)--					
75				21	17 32 50/4	7.71 B	15
	511.5	Very dense, gray SILTY LOAM, trace gravel					
80				22	37 50/5	NP	10

GENERAL NOTES

Begin Drilling **10-14-2013** Complete Drilling **10-16-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-25 ATV**
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 ▽ **67.00 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **48 hours**
Depth to Water ▼ **15.00 ft**

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

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BORING LOG 19-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: 588.28 ft
North: 1897670.99 ft
East: 1171413.08 ft
Station: 1607+21.55
Offset: 18.1192 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--*						
					23	29 34 40	NP	11
			85					
	501.5	Very dense, gray SILT						
					24	15 50/5	NP	18
			90					
	494.6	DOLOSTONE fragments			25	50/4	NP	17
		--DIFFICULT DRILLING--						
	493.3	--WEATHERED BEDROCK--	95					
		Boring terminated at 95.00 ft						
			100					

GENERAL NOTES

Begin Drilling **10-14-2013** Complete Drilling **10-16-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-25 ATV**
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 ▽ **67.00 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **48 hours**
Depth to Water ▼ **15.00 ft**

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

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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	5		2	2 3 4	0.98 B	19
					3	2 4 5	0.66 B	20
			10		4	2 2 2	0.57 B	23
					5	1 1 1	0.49 B	24
			15		6	1 1 2	0.41 B	25
					7	0 1 1	0.25 B	25
			20		8	0 2 2	0.25 B	25
			25		9	1 1 1	0.25 B	27
					10	0 1 2	0.41 B	26
					11	1 1 2	0.41 B	26
	548.1	Medium stiff to stiff, gray SILTY CLAY, trace gravel	30		12	1 2 2	0.91 B	25
			35		13	2 3 5	1.72 B	21
	536.8	Very stiff, gray SILTY LOAM,	40		14	4 9 12	3.61 B	17

GENERAL NOTES

Begin Drilling **04-01-2013** Complete Drilling **04-01-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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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**
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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 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**
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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 2081-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: 581.38 ft
North: 1898040.36 ft
East: 1171151.03 ft
Station: 3835+97.75
Offset: 30.8278 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	581.1	4-inch thick ASPHALT --PAVEMENT--						
	580.1	11-inch thick CONCRETE --PAVEMENT--						
		Loose to medium dense, gray CRUSHED STONE --FILL--			1	2 3 5	NP	14
			5		2	7 16 12	NP	5
	575.9	Medium stiff to stiff, gray SILTY CLAY, trace gravel			3	5 8 8	1.97 B	19
			10		4	2 2 3	1.15 B	19
					5	2 3 3	0.82 B	23
	568.4	Soft to medium stiff, gray CLAY			6	2 3 3	0.57 B	25
			15		7	0 2 2	0.57 B	20
			20		8	0 2 3	0.57 B	26
			25		9	0 0 1	0.33 B	25
					10	0 1 2	0.33 B	27
					11	0 0 0	0.25 B	24
			30		12	0 1 2	0.49 B	26
	544.6	Stiff to hard, gray SILTY CLAY, trace gravel			13	0 1 2	0.41 B	29
			35					
			40		14	1 4 4	1.23 B	23

GENERAL NOTES

Begin Drilling **03-28-2013** Complete Drilling **03-29-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **B-57 TMR**
Driller **P&N** Logger **D. Wind** Checked by **C. Marin**
Drilling Method **3.25" HSA to 8.5', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 2081-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: 581.38 ft
North: 1898040.36 ft
East: 1171151.03 ft
Station: 3835+97.75
Offset: 30.8278 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	524.6	Medium dense, gray SILT	45		15	7 8 12	5.99 B	13
			50		16	5 5 10	3.28 B	21
			55		17	4 9 13	4.51 B	18
			60		18	4 7 9	NP	17
	519.6	Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel	65		19	18 24 32	7.95 S	12
			70		20	16 32 50	9.84 S	12
	504.6	Very dense, gray GRAVELLY SANDY LOAM	75		21	35 50/6	6.23 S	10
			80		22	50/6	NP	12

GENERAL NOTES

Begin Drilling **03-28-2013** Complete Drilling **03-29-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **B-57 TMR**
Driller **P&N** Logger **D. Wind** Checked by **C. Marin**
Drilling Method **3.25" HSA to 8.5', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 2081-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: 581.38 ft
North: 1898040.36 ft
East: 1171151.03 ft
Station: 3835+97.75
Offset: 30.8278 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	499.6	Very dense, gray SILT --MOIST--						
			85		23	39 49 50	NP	20
	494.6	Very dense, gray GRAVELLY SANDY LOAM						
			90		24	50/6	NP	11
	489.4	Strong, very poor rock quality 92'-94', light gray, highly fractured, slightly vuggy DOLOSTONE				CORE		
		Run 1 = 92' to 102' --RECOVERY=100% --RQD=72%	95					
		-Strong, good rock quality 94'-102' , light gray, fresh, slightly fractured, joint breaks with little to no infill, slightly vuggy DOLOSTONE			1			
		ROCK MASS RATING: Strength of rock material = 12 Drill core quality RQD = 13 Spacing of joints = 10 Condition of joints =12	100					
		Groundwater condition =10						
	479.4	Boring terminated at 102.00 ft						
			105					
			110					
			115					
			120					

GENERAL NOTES

Begin Drilling **03-28-2013** Complete Drilling **03-29-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **B-57 TMR**
Driller **P&N** Logger **D. Wind** Checked by **C. Marin**
Drilling Method **3.25" HSA to 8.5', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 2081-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: 578.68 ft
North: 1897947.00 ft
East: 1171154.08 ft
Station: 3835+04.34
Offset: 31.0033 RT

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	14-inch thick ASPHALT --PAVEMENT--						
	577.2	4-inch thick CRUSHED STONE --BASE COURSE--						
		Very stiff, brown and gray SILTY CLAY LOAM, trace gravel --FILL--			1	4 5 6	3.85 B	18
	574.9	Medium dense CRUSHED STONE --FILL--	5		2	11 16 14	NP	4
					3	10 12 9	NP	5
	570.7	Loose, light brown GRAVELLY SAND --FILL--	10		4	6 5 4	NP	6
					5	10 5 4	NP	
			15		6	8 4 4	NP	9
	563.2	Very soft to medium stiff, gray CLAY, trace gravel			7	0 1 2	0.25 B	26
			20		8	0 0 1	0.16 B	24
			25		9	1 2 1	0.16 B	24
					10	0 0 2	0.25 B	27
					11	0 0 2	0.33 B	26
			30		12	0 1 2	0.33 B	24
			35		13	1 1 3	0.57 B	27
			40		14	2 4 4	0.98 B	19

GENERAL NOTES

Begin Drilling **04-01-2013** Complete Drilling **04-01-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&N** 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 ▽ **DRY**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 2081-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: 578.68 ft
North: 1897947.00 ft
East: 1171154.08 ft
Station: 3835+04.34
Offset: 31.0033 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	536.9							
		Stiff to hard, gray SILTY CLAY LOAM, trace gravel						
			45		15	7 8 11	1.97 B	16
			50		16	9 13 13	5.58 B	13
			55		17	8 9 11	2.05 S	14
	521.9							
		Medium stiff, gray SILTY LOAM, trace silt and sand seams						
			60		18	4 4 5	0.98 B	29
	516.9							
		Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel						
			65		19	15 30 32	10.00 S	12
			70		20	14 23 31	10.25 B	15
			75		21	11 19 40	6.97 B	22
			80		22	14 20 31	10.25 B	23

GENERAL NOTES

Begin Drilling **04-01-2013** Complete Drilling **04-01-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&N** 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 ▽ **DRY**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 2081-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: 578.68 ft
North: 1897947.00 ft
East: 1171154.08 ft
Station: 3835+04.34
Offset: 31.0033 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	493.7	Boring terminated at 85.00 ft	85		23	23 49 47	3.94 S	20
			90					
			95					
			100					

GENERAL NOTES

Begin Drilling **04-01-2013** Complete Drilling **04-01-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&N** 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 ▽ **DRY**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 2081-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: 576.47 ft
North: 1897894.07 ft
East: 1171080.41 ft
Station: 3834+53.70
Offset: 44.2596 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	576.0	6-inch thick, ASPHALT --PAVEMENT--						
	575.1	10-inch thick, CONCRETE --PAVEMENT--						
	574.7	5-inch thick, CRUSHED STONE --BASE COURSE--						
	573.2	Hard, brown SILTY CLAY LOAM, trace gravel --FILL--						
		Medium stiff to very stiff, gray SILTY CLAY LOAM, trace gravel	5		1	9 5 5	4.00 P	19
					2	3 4 4	2.30 B	18
		--L_L(%)=30, P_L(%)=15-- --%Gravel=5.9-- --%Sand=17.2-- --%Silt=51.1-- --%Clay=25.8-- --A-6 (9)--			3	2 2 4	0.90 B	20
			10		4	2 3 4	0.90 B	19
					5	3 3 5	1.89 B	18
	563.5	Soft to medium stiff, gray CLAY, trace gravel						
			15		6	2 3 3	0.74 B	20
					7	2 2 2	0.66 B	23
		--L_L(%)=33, P_L(%)=16-- --%Gravel=3.8-- --%Sand=13.4--	20		8	1 1 2	0.25 B	26
		--%Silt=43.5-- --%Clay=39.3-- --A-6 (13)--			9	0 1 1	0.25 B	26
			25		10	0 0 2	0.25 B	25
					11	0 2 3	0.49 B	26
	548.5	Medium dense, gray SANDY LOAM, some gravel	30		12	4 5 5	NP	14
	544.7	Soft, gray SILTY CLAY LOAM, trace gravel and silt layers						
		--L_L(%)=28, P_L(%)=14-- --%Gravel=4.9-- --%Sand=18.9-- --%Silt=54.4-- --%Clay=21.9-- --A-6(8)--	35		13	3 3 4	0.25 B	20
	539.7	Very stiff to hard, gray SILTY CLAY, trace gravel						
		--L_L(%)=36, P_L(%)=16-- --%Gravel=2.7-- --%Sand=8.6--	40		14	4 5 12	2.95 B	21

GENERAL NOTES

Begin Drilling: **03-26-2013** Complete Drilling: **03-26-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR**
Driller: **R&T** 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: **Rotary wash**
At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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BORING LOG 2081-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: 576.47 ft
North: 1897894.07 ft
East: 1171080.41 ft
Station: 3834+53.70
Offset: 44.2596 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=49.7-- --%Clay=39.0-- --A-6 (17)--	45		15	5 8 11	3.94 B	14
			50		16	6 8 14	4.54 B	19
	524.7	Very stiff, gray CLAY, some SILT layers	55		17	3 4 5	2.05 B	28
	519.7	Very stiff to hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel	60		18	6 9 18	3.44 B	17
	499.7	Very dense, gray SILTY LOAM, trace gravel	65		19	11 18 30	9.85 B	15
			70		20	19 24 24	3.44 S	20
			75		21	14 25 37	9.84 S	21
			80		22	38 50/4"	NP	20

GENERAL NOTES

Begin Drilling **03-26-2013** Complete Drilling **03-26-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&T** 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 ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 2081-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: 576.47 ft
North: 1897894.07 ft
East: 1171080.41 ft
Station: 3834+53.70
Offset: 44.2596 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
					23	50/5"	NP	13
			85					
		--AUGER REFUSAL--						
	490.5							
		Strong, good rock quality, light gray, fresh, slightly fractured, vertical and horizontal breaks, joint breaks with little to no infill, slightly vuggy DOLOSTONE				CORE		
		Run 1 = 86' to 91'			1			
		--RECOVERY=100%						
		--RQD=77%						
			90					
		Run 2 = 91' to 96'				CORE		
		--RECOVERY=100%						
		--RQD=84%			2			
			95					
	480.5							
		Boring terminated at 96.00 ft						
			100					

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

GENERAL NOTES

Begin Drilling **03-26-2013** Complete Drilling **03-26-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&T** 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 ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 2081-B-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: 593.23 ft
North: 1897774.57 ft
East: 1171111.06 ft
Station: 3833+33.31
Offset: 17.2963 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	592.3	11-inch thick, ASPHALT --PAVEMENT--						
	591.5	10-inch thick, CONCRETE --PAVEMENT--						
	591.2	4-inch thick, VOID						
		Loose to medium dense, gray CRUSHED CONCRETE and STONE --FILL--			1	4 4 3	NP	7
			5		2	1 1 4	NP	10
					3	4 2 2	NP	5
			10		4	3 5 5	NP	5
					5	2 2 3	NP	16
	580.2	Very soft to medium stiff, brown to gray CLAY to SILTY CLAY, trace gravel			6	3 2 2	< 0.25 P	18
			15		7	0 0 2	0.41 B	26
			20		8	0 1 2	0.49 B	26
			25		9	0 2 3	0.74 B	25
					10	1 2 3	0.49 B	18
		--L_L(%)=35, P_L(%)=16-- --%Gravel=6.3-- --%Sand=13.5-- --%Silt=48.9-- --%Clay=31.4-- --A-6 (14)--			11	0 2 2	0.49 B	24
			30		12	0 0 2	0.41 B	28
			35		13	0 2 2	0.41 B	28
			40		14	0 0 1	0.41 B	27

GENERAL NOTES

Begin Drilling: **03-16-2013** Complete Drilling: **03-16-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-50 TMR**
Driller: **R&T** Logger: **A. Mohammed** 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: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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BORING LOG 2081-B-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: 593.23 ft
North: 1897774.57 ft
East: 1171111.06 ft
Station: 3833+33.31
Offset: 17.2963 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 3	0.83 N/6	
			50	⊠	16	2 2 3	< 0.25 P	29
	541.5	Very stiff, gray SILTY CLAY LOAM, trace gravel	55	○	17	6 6 8	2.33 N/6	
		--L_L(%)=28, P_L(%)=18-- --%Gravel=0.6-- --%Sand=4.2--	60	⊠	18	12 13 12	3.03 S	21
		--%Silt=72.7-- --%Clay=22.6-- --A-4(8)--	65	⊠	19	5 7 13	3.28 B	22
			70	⊠	20	4 7 8	2.46 B	24
	521.5	Soft to stiff, gray CLAY, trace gravel --L_L(%)=42, P_L(%)=18-- --%Gravel=2.4-- --%Sand=3.3-- --%Silt=44.8-- --%Clay=49.5-- --A-7-6 (23)--	75	⊠	21	4 4 5	1.31 B	29
			80	⊠	22	4 5 4	0.25 P	37

GENERAL NOTES

Begin Drilling **03-16-2013** Complete Drilling **03-16-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&T** Logger **A. Mohammed** 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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 2081-B-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: 593.23 ft
North: 1897774.57 ft
East: 1171111.06 ft
Station: 3833+33.31
Offset: 17.2963 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	511.5	Very dense, gray GRAVELLY SAND						
					23	25 50/5	NP	11
			85					
					24	50/5	NP	15
			90					
	501.7	Very dense, gray SILT LOAM, little gravel						
		--%Gravel=12.4-- --%Sand=29.7-- --%Silt=54.4-- --%Clay=3.4-- --A-4 (0)--			25	50/6	NP	15
			95					
					26	50/3	NP	11
	493.2		100					
		Boring terminated at 100.00 ft						

GENERAL NOTES

Begin Drilling **03-16-2013** Complete Drilling **03-16-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
Driller **R&T** Logger **A. Mohammed** 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 ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 2082-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: 577.41 ft
North: 1897924.64 ft
East: 1170439.46 ft
Station: 3703+36.04
Offset: 48.8656 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	577.1	4-inch thick, ASPHALT --PAVEMENT--						
	576.1	12-inch thick, CONCRETE --PAVEMENT--						
		Very loose to loose, gray CRUSHED STONE --FILL--			1	8 5 3	NP	7
			5		2	1 1 1	NP	18
					3	1 1 1	NP	21
	570.4	Very soft to soft, gray CLAY to SILTY CLAY, trace gravel						
			10		4	1 2 3	< 0.25 P	20
					5	1 1 2	< 0.25 P	28
			15		6	0 1 3	0.16 B	28
					7	0 0 0	0.25 B	27
			20		8	1 1 2	< 0.25 P	30
			25		9	0 1 1	0.25 B	26
					10	0 1 2	0.25 B	27
					11	2 3 2	0.33 B	26
			30		12	1 2 2	0.57 B	27
	540.4	Very stiff to hard, gray SILTY CLAY to SILTY CLAY LOAM, trace gravel						
			35		13	1 2 3	< 0.25 B	18
			40		14	5 11 15	4.02 B	16

GENERAL NOTES

Begin Drilling: **03-17-2013** Complete Drilling: **03-21-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
Driller: **R&J** Logger: **D. Wind** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **2.80 ft**
At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG 2082-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: 577.41 ft
North: 1897924.64 ft
East: 1170439.46 ft
Station: 3703+36.04
Offset: 48.8656 LT

Depth (ft)	Elevation (ft)	Profile	SOIL AND ROCK DESCRIPTION	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
45					15	4 8 11	3.17 N/6	
	530.4		Dense to very dense, gray SILTY LOAM, trace to little gravel					
50					16	45 53 53/5	1.31 S	10
55			--%Gravel=1.5-- --%Sand=14.9-- --%Silt=78.0-- --%Clay=5.6-- --A-4 (0)--		17	15 24 25	3.12 S	17
60					18	14 16 28	4.26 S	11
65					19	16 50/2	3.69 B	18
70					20	37 50/3	2.13 S	8
	505.4		Hard, gray SILTY CLAY LOAM, trace gravel					
75					21	12 15 22	7.30 B	22
	500.9		Very dense, gray GRAVELLY SANDY LOAM, some dolostone fragments					
80					22	50/3	NP	3

GENERAL NOTES

Begin Drilling: **03-17-2013** Complete Drilling: **03-21-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
Driller: **R&J** Logger: **D. Wind** Checked by: **C. Marin**
Drilling Method: **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **2.80 ft**
At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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BORING LOG 2082-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: 577.41 ft
North: 1897924.64 ft
East: 1170439.46 ft
Station: 3703+36.04
Offset: 48.8656 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	495.4							
		Strong, excellent rock quality, light gray, fresh, slightly fractured, joint breaks with little to no infill, slightly vuggy DOLOSTONE Run#1 : 82 to 92 feet --RECOVERY=99% --RQD=93%	85		1	CORE		
		ROCK MASS RATING: Strength of rock material = 12 Drill core quality RQD = 20 Spacing of joints = 20 Condition of joints =20 Groundwater condition =10 Qu = 9,380 psi Qu = 11,050 psi	90					
	485.4	Boring terminated at 92.00 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 **03-17-2013** Complete Drilling **03-21-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller **R&J** Logger **D. Wind** Checked by **C. Marin**
Drilling Method **2.25" SSA to 10', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **2.80 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 2113-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: 577.90 ft
North: 1898016.29 ft
East: 1169807.29 ft
Station: 3605+02.91
Offset: 40.6495 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	577.3	7-inch thick ASPHALT --PAVEMENT--						
		12-inch thick CONCRETE --PAVEMENT--						
	576.3	Very dense, brown GRAVELLY SAND --FILL--			1	36 50/3	NP	6
			5		2	3 5 5	NP	13
	572.4	Very soft, gray CLAY to SILTY CLAY, trace gravel			3	1 1 1	0.33 B	22
			10		4	0 0 0	0.16 B	28
					5	0 0 1	0.16 B	27
			15		6	0 0 0	0.16 B	28
					7	0 0 0	NA	
			20		8	0 0 1	0.08 B	27
			25		9	0 0 1	0.16 B	28
					10	1 1 1	0.33 B	23
			30		11	0 0 3	0.16 B	27
					12	0 2 2	0.41 B	27
	545.9	Medium stiff, gray SILTY CLAY	35		13	2 3 5	0.70 B	22
	540.9	Hard, gray SILTY CLAY LOAM, trace gravel						
			40		14	5 7 11	> 4.50 P	15

GENERAL NOTES

Begin Drilling: **02-25-2013** Complete Drilling: **02-25-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **B-57 TMR**
Driller: **R&J** 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: **5.00 ft**
At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG 2113-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: 577.90 ft
North: 1898016.29 ft
East: 1169807.29 ft
Station: 3605+02.91
Offset: 40.6495 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	535.9							
		Medium dense, gray SILTY LOAM, trace gravel						
			45		15	5 7 12	NP	15
		--Sand seams--	50		16	5 10 15	NP	15
	525.9							
		Medium dense to dense, gray SILTY LOAM, trace gravel						
			55		17	6 7 11	NP	12
		--L_L(%)=24, P_L(%)=15-- --%Gravel=1.5-- --%Sand=29.1--	60		18	13 21 25	NP	12

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--%Silt=53.4-- --%Clay=16.0-- --A-4 (4)--						
	515.9							
		Hard, gray SILTY CLAY LOAM, trace gravel						
		--L_L(%)=27, P_L(%)=14-- --%Gravel=0.4-- --%Sand=5.9-- --%Silt=69.6-- --%Clay=24.1-- --A-6 (10)--	65		19	11 17 21	> 4.50 P	13
	510.9							
		Very dense, gray SILTY LOAM, trace gravel						
		--%Gravel=2.1-- --%Sand=41.8-- --%Silt=53.6-- --%Clay=2.6-- --A-4 (0)--	70		20	25 47 53	NP	14
	505.9							
		Very dense, gray, fine SAND						
			75		21	23 43 53	NP	23
	500.9							
		Very dense, gray GRAVELLY SAND, little dolostone fragments						
			80		22	50/4	NP	11

GENERAL NOTES

Begin Drilling **02-25-2013** Complete Drilling **02-25-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **B-57 TMR**
Driller **R&J** 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 ▽ **5.00 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 2113-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: 577.90 ft
North: 1898016.29 ft
East: 1169807.29 ft
Station: 3605+02.91
Offset: 40.6495 LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	495.9							
		Strong, excellent rock quality, light gray, fresh, slightly fractured, joint breaks with little to no infill, slightly vuggy DOLOSTONE Run#1 : 82 to 92 feet --RECOVERY=98% --RQD=96%	85		1	CORE		
		ROCK MASS RATING: Strength of rock material = 12 Drill core quality RQD = 20 Spacing of joints = 20 Condition of joints =20 Groundwater condition =10	90					
	485.9	Boring terminated at 92.00 ft	95					
			100					

GENERAL NOTES

Begin Drilling **02-25-2013** Complete Drilling **02-25-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **B-57 TMR**
Driller **R&J** 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 ▽ **5.00 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 39-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: 581.87 ft
North: 1898358.83 ft
East: 1171247.64 ft
Station: 1320+04.07
Offset: 27.4619 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	581.6	3-inch thick, ASPHALT --PAVEMENT--						
	580.7	11-inch thick, CONCRETE --PAVEMENT--						
		Loose, gray SANDY LOAM, trace gravel and brick fragments			1	2 4 3	NP	12
	578.9	--FILL--						
		Stiff, gray SILTY CLAY, trace gravel	5		2	1 3 4	1.15 B	21
	576.4	Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			3	0 0 2	0.33 B	26
			10		4	0 1 1	0.49 B	25
					5	0 0 1	0.08 B	28
			15		6	0 0 0	0.25 B	27
					7	0 0 1	0.16 B	25
			20		8	0 0 0	0.16 B	26
			25		9	1 1 1	0.16 B	28
					10	1 1 2	< 0.25 P	29
			30		11	0 1 2	0.49 B	25
					12	0 2 3	0.82 B	25
			35		13	3 3 5	0.82 B	18
			40		14	4 7 17	0.70 P	29

GENERAL NOTES

Begin Drilling **08-07-2014** Complete Drilling **08-07-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
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 ▽ **2.50 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 39-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: 581.87 ft
North: 1898358.83 ft
East: 1171247.64 ft
Station: 1320+04.07
Offset: 27.4619 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	540.1							
		Hard, gray SILTY CLAY LOAM to SILTY LOAM, trace gravel --DRY--						
			45		15	5 8 13	4.51 B	15
			50		16	12 20 21	5.58 S	11
	530.1							
		Gray, fine SAND, trace gravel --DRY--						
	527.6				17	8 11 13	NP	17
		Very dense, gray SILTY LOAM, trace gravel --DRY--	55					
					18	13 50/6	NP	14
	521.9		60					
		Boring terminated at 60.00 ft						

GENERAL NOTES

Begin Drilling **08-07-2014** Complete Drilling **08-07-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **D-50 TMR**
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 ▽ **2.50 ft**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG 39-RWB-01HA

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: 1898317.61 ft
East: 1171210.29 ft
Station: 1320+62.52
Offset: 33.3936' RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	580.0	6-inch thick, brown CLAY LOAM, trace roots						
		--TOPSOIL--			1	PUSH	3.00 P	17
	578.7	Very stiff, gray SILTY CLAY LOAM, trace gravel						
		Gray, fine to coarse SAND			2	PUSH	NP	4
			5		3	PUSH	NP	11
					4	PUSH	NP	6
	571.0	--Wet--			5	PUSH	NP	16
		Boring terminated at 9.50 ft	10					
			15					
			20					

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 **10-28-2014** Complete Drilling **10-28-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **Geoprobe HA**
Driller **P&P** Logger **F. Bozga** Checked by **M. Seyhun**
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**

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BORING LOG 40-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: 578.54 ft
North: 1898156.86 ft
East: 1170994.43 ft
Station: 1323+51.23
Offset: 32.4455 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	578.4	1-inch thick, brown SILTY CLAY LOAM, trace gravel						
		--FILL--						
		Hard, brown SILTY CLAY LOAM, trace gravel			1	11 17 17	> 4.50 P	9
		--FILL--						
			5		2	8 12 14	> 4.50 P	13
	572.0							
		Very stiff, gray SILTY CLAY, trace gravel			3	8 7 9	3.12 S	19
			10		4	5 3 4	NA	19
	568.0							
		Very soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			5	1 2 3	0.57 B	23
			15		6	2 3 3	0.57 B	23
		--In-Situ Vane Shear, 15.5 feet--			1	VS		
		--$S_{u\ undis}$ = 1240.8 psf--				2 2 2	0.33 B	25
		--$S_{u\ remold}$ = 672.1 psf--			7			
		--Sensitivity = 1.85--						
		--In-Situ Vane Shear, 18.0 feet--						
		--$S_{u\ undis}$ = 673.4 psf--			2	VS		
		--$S_{u\ remold}$ = 362.6 psf--				1 2 2	0.25 B	27
		--Sensitivity = 1.86--			8			
		--L_L(%)=34, P_L(%)=18--						
		--%Gravel=3.9--	20					

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
		--%Sand=14.1--						
		--%Silt=49.7--			3	VS		
		--%Clay=32.3--				1 2 2	0.16 B	26
		--A-6 (12)--			9			
		--In-Situ Vane Shear, 20.5 feet--						
		--$S_{u\ undis}$ = 751.1 psf--						
		--$S_{u\ remold}$ = 388.5 psf--			4	VS		
		--Sensitivity = 1.93--						
		--In-Situ Vane Shear, 23.0 feet--				2 2 3	0.41 B	24
		--$S_{u\ undis}$ = 647.5 psf--			10			
		--$S_{u\ remold}$ = 388.5 psf--						
		--Sensitivity = 1.67--	25					
		--In-Situ Vane Shear, 25.5 feet--						
		--$S_{u\ undis}$ = 984.2 psf--			5	VS		
		--$S_{u\ remold}$ = 440.3 psf--				2 2 3	0.25 B	14
		--Sensitivity = 2.24--			11			
		--In-Situ Vane Shear, 28.0 feet--						
		--$S_{u\ undis}$ = 1346.8 psf--			6	VS		
		--$S_{u\ remold}$ = 51.8 psf--				2 2 3	0.41 B	26
		--Sensitivity = 26.0--			12			
		--L_L(%)=34, P_L(%)=18--						
		--%Gravel=2.5--	30					
		--%Sand=13.6--						
		--%Silt=51.3--			7	VS		
		--%Clay=32.6--						
		--A-6 (12)--						
		--In-Situ Vane Shear, 30.5 feet--						
		--$S_{u\ undis}$ = 802.9 psf--						
		--$S_{u\ remold}$ = 492.1 psf--						
		--Sensitivity = 1.63--						
			35		13	2 3 3	0.16 B	20
	543.3							
		Very stiff to hard, gray SILTY CLAY LOAM, trace gravel			8	VS		
		--In-Situ Vane Shear, 35.5 feet--						
		--Maxed out wrench before shear--						
			40		14	4 9 19	2.00 P	19

GENERAL NOTES

Begin Drilling: **08-16-2013** Complete Drilling: **08-29-2013**
Drilling Contractor: **Wang Testing Services** Drill Rig: **D-25 ATV**
Driller: **P&N** Logger: **D. Kolpacki** Checked by: **C. Marin**
Drilling Method: **2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling: **Rotary wash**
At Completion of Drilling: **unable to measure**
Time After Drilling: **NA**
Depth to Water: **NA**

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

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BORING LOG 40-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: 578.54 ft
North: 1898156.86 ft
East: 1170994.43 ft
Station: 1323+51.23
Offset: 32.4455 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	8 14 17	2.95 B	15
			50		16	11 14 23	4.59 B	12
	526.8	Medium dense, gray SILTY LOAM, trace gravel	55		17	11 13 15	NP	19
	521.8	Hard, gray SILTY CLAY LOAM, trace gravel	60		18	34 50/5"	> 4.50 P	11
		--L_L(%)=29, P_L(%)=17-- --%Gravel=3.7-- --%Sand=10.5-- --%Silt=63.0-- --%Clay=22.8-- --A-6 (9)--	65		19	18 28 42	10.17 S	15
			70		20	22 31 40	5.00 B	20
	506.8	Very dense, gray SILT to SILTY LOAM, trace gravel	75		21	40 50/5"	NP	12
		--HARD DRILLING-- *--Possible Cobbles--*	80		22	48 50/5"	NP	15

GENERAL NOTES

Begin Drilling **08-16-2013** Complete Drilling **08-29-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-25 ATV**
Driller **P&N** Logger **D. Kolpacki** Checked by **C. Marin**
Drilling Method **2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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

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BORING LOG 40-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: 578.54 ft
North: 1898156.86 ft
East: 1170994.43 ft
Station: 1323+51.23
Offset: 32.4455 RT

Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
496.8	Very dense, GRAVEL, some cobbles and dolostone fragments			23	50/1"		
	--HARD DRILLING-- --Cobbles--	85					
491.5	Strong, fair rock quality, light gray, moderately fractured, joint breaks with little to no infill, slightly vuggy DOLOSTONE				CORE		
	--Run 1 - RECOVERY=78%-- --RQD=52%--	90		1			
	--Run 2 - RECOVERY=100%-- --RQD=65%--	95		2	CORE		
	--Run 3 - RECOVERY=100%-- --RQD=68%--	100		3	CORE		
477.5	Boring terminated at 101.00 ft	105					
		110					
		115					
		120					

GENERAL NOTES

Begin Drilling **08-16-2013** Complete Drilling **08-29-2013**
Drilling Contractor **Wang Testing Services** Drill Rig **D-25 ATV**
Driller **P&N** Logger **D. Kolpacki** Checked by **C. Marin**
Drilling Method **2.25" HSA to 15', mud rotary thereafter, boring backfilled upon completion**

WATER LEVEL DATA

While Drilling ▽ **Rotary wash**
At Completion of Drilling ▼ **unable to measure**
Time After Drilling **NA**
Depth to Water ▼ **NA**

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BORING LOG EB290-SGB-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: 579.77 ft
North: 1897976.11 ft
East: 1166894.61 ft
Station: 5109+89.14
Offset: 17.5855' LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	579.3	5.5-inch thick, ASPHALT --PAVEMENT--						
	578.7	8-inch thick, CONCRETE --PAVEMENT--						
		Loose, gray CRUSHED STONE			1	7 4 3 5	NP	5
	577.3	--BASE COURSE--						
		Very stiff, gray CLAY to SILTY CLAY, trace gravel --FILL--			2	3 4 6 8	2.00 P	16
	575.5	Medium stiff, gray SILTY CLAY LOAM, trace gravel	5					
		--L_L(%)=39, P_L(%)=17-- --%Gravel=2.1-- --%Sand=9.8-- --%Silt=47.7-- --%Clay=40.4-- --A-6 (19)--			3	2 3 3 4	0.66 B	22
	573.0	Very soft, gray CLAY to SILTY CLAY			4	0 1 1 1	0.16 B	28
			10		5	0 1 1 2	0.16 B	29
	568.7	Boring terminated at 11.10 ft						
			15					
			20					

GENERAL NOTES

Begin Drilling: **10-13-2014** Complete Drilling: **10-13-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
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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BORING LOG EB290-SGB-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: 578.21 ft
North: 1897950.29 ft
East: 1167336.44 ft
Station: 5114+29.99
Offset: 21.5419' RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	577.8	5-inch thick, ASPHALT --PAVEMENT--						
	577.1	8-inch thick, CONCRETE --PAVEMENT--						
	576.5	7-inch thick, CRUSHED STONE --BASE COURSE--						
	575.6	Very stiff, brown SILTY CLAY LOAM, trace gravel --FILL--						
		Soft, gray CLAY to SILTY CLAY, trace gravel	5		1	9 5 5 6	2.75 P	15
					2	5 4 4 5	0.25 P	22
					3	1 3 3 3	0.49 B	26
					4	1 1 2 1	0.25 B	28
			10		5	1 2 2 2	0.25 B	27
	567.2	Boring terminated at 11.10 ft						
			15					
			20					

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 **10-14-2014** Complete Drilling **10-14-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
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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BORING LOG EB290-SGB-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: 579.66 ft
North: 1897999.27 ft
East: 1167635.76 ft
Station: 5117+30.29
Offset: 20.3365' LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	579.1	7-inch thick, ASPHALT --PAVEMENT--						
	578.3	9-inch thick, CONCRETE --PAVEMENT--						
	577.7	7-inch thick, gray CRUSHED STONE --BASE COURSE--						
		Very stiff, brown and gray SILTY CLAY LOAM, trace gravel --FILL--			1	3 4 5 7	2.21 B	18
					2	3 4 5 7	2.46 B	21
	574.5		5					
		Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			3	2 2 3 3	0.74 B	22
					4	1 2 1 1	0.25 B	27
			10		5	1 1 2 2	0.25 B	28
	568.2							
		Boring terminated at 11.50 ft						
			15					
			20					

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 **10-13-2014** Complete Drilling **10-13-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
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**

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

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BORING LOG EB290-SGB-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: 579.58 ft
North: 1897960.51 ft
East: 1167906.41 ft
Station: 5120+00.90
Offset: 18.6673' RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	579.1	6-inch thick, ASPHALT --PAVEMENT--						
	578.4	8-inch thick, CONCRETE --PAVEMENT--						
		Dense, gray CRUSHED STONE --BASE COURSE--			1	16 20 20 16	NP	3
	576.8	Medium dense, brown SANDY GRAVEL --FILL--			2	4 12 10 6	NP	6
	574.9	Medium dense, dark brown, fine SAND --FILL-- --Moist--	5		3	4 6 4 3	NP	19
	572.8	Medium stiff, dark brown ORGANIC SILTY CLAY			4	1 2 2 3	0.50 P	87
			10		5	1 2 2 2	0.74 B	111
	568.4	Boring terminated at 11.20 ft	15					
			20					

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 **10-14-2014** Complete Drilling **10-14-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
Driller 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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BORING LOG EB290-SGB-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: 578.28 ft
North: 1897997.21 ft
East: 1168204.68 ft
Station: 5122+98.19
Offset: 24.8178' LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	577.9	5-inch thick, ASPHALT --PAVEMENT--						
	577.2	8-inch thick, CONCRETE --PAVEMENT--						
	576.4	10-inch thick, gray CRUSHED STONE --BASE COURSE--			1	8 8 5 6	3.00 P	20
		Very stiff, brown SILTY CLAY LOAM, trace gravel --FILL--			2	3 4 5 6	1.50 N/6	
	573.2		5					
		Soft to edium stiff, gray CLAY to SILTY CLAY, trace gravel			3	1 2 3 3	0.74 B	22
					4	1 2 2 2	0.41 B	26
			10		5	1 1 2 2	0.33 B	26
	567.3	Boring terminated at 11.10 ft						
			15					
			20					

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 **10-13-2014** Complete Drilling **10-13-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
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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BORING LOG EB290-SGB-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: 576.78 ft
North: 1897951.44 ft
East: 1168503.99 ft
Station: 5125+98.92
Offset: 10.2769' RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	576.4	5-inch thick, ASPHALT --PAVEMENT--						
	575.6	9-inch thick, CONCRETE --PAVEMENT--						
	575.0	7-inch thick, gray CRUSHED STONE --BASE COURSE--			1	4 4 7 20	5.33 B	15
		Hard, brown SILTY CLAY LOAM, trace gravel				6 17 23 19	> 4.50 P	16
	572.3	--FILL-- --L_L(%)=33, P_L(%)=17-- --%Gravel=4.0-- --%Sand=19.6-- --%Silt=49.6-- --%Clay=26.8-- --A-6 (10)--	5		2			
		Soft, gray CLAy to SILTY CLAY			3	3 3 3 3	0.33 B	25
					4	1 2 1 2	0.25 B	25
	565.8		10		5	2 1 2 2	0.25 B	27
		Boring terminated at 11.20 ft	15					
			20					

GENERAL NOTES

Begin Drilling **10-14-2014** Complete Drilling **10-14-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
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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BORING LOG EB290-SGB-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: 577.32 ft
North: 1897976.45 ft
East: 1168806.29 ft
Station: 5129+00.01
Offset: 25.6786' 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	7-inch thick, ASPHALT --PAVEMENT--						
	576.0	9-inch thick, CONCRETE --PAVEMENT--						
	575.4	7-inch thick, gray CRUSHED STONE --BASE COURSE--			1	7 5 6 25	4.59 B	16
	574.1	Stiff to hard, brown and gray SILTY CLAY LOAM, trace gravel --FILL--			2	22 44 17 14	NP	12
	572.3	Very dense CRUSHED CONCRETE and ASPHALT *--construction debris--*	5					
	570.8	Stiff, brown and gray SILTY CLAY LOAM, trace gravel			3	2 4 4 3	1.39 B	22
		Soft gray CLAY to SILTY CLAY			4	1 1 2 2	0.25 B	26
			10		5	1 1 2 2	0.25 B	27
	565.8	Boring terminated at 11.50 ft						
			15					
			20					

GENERAL NOTES

Begin Drilling: **10-13-2014** Complete Drilling: **10-13-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
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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BORING LOG EB290-SGB-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: 580.17 ft
North: 1897926.57 ft
East: 1169102.08 ft
Station: 5131+97.79
Offset: 9.1298' 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	7-inch thick, ASPHALT --PAVEMENT--						
	578.8	9-inch thick, CONCRETE --PAVEMENT--						
	578.1	9-inch thick, CRUSHED STONE --BASE COURSE--						
		Very stiff to hard, brown SILTY CLAY LOAM, trace gravel --FILL--			1	9 5 7 8	5.00 P	14
			5		2	4 5 6 7	3.85 B	19
	574.2	Stiff, gray SILTY CLAY LOAM, trace gravel			3	2 4 4 5	1.48 B	21
	572.9	Soft, gray CLAY to SILTY CLAY			4	1 2 1 2	0.25 B	26
			10		5	1 1 2 2	0.33 B	27
	568.7	Boring terminated at 11.50 ft						
			15					
			20					

GENERAL NOTES

Begin Drilling **10-14-2014** Complete Drilling **10-14-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
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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BORING LOG EB290-SGB-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: 580.16 ft
North: 1897947.46 ft
East: 1169374.78 ft
Station: 5134+68.65
Offset: 28.8856' LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	579.7	5-inch thick, ASPHALT --PAVEMENT--						
	579.0	9-inch thick, CONCRETE --PAVEMENT--						
		Medium dense, gray CRUSHED			1	5 7 6 8	NR	10
	577.5	STONE --BASE COURSE--						
		Very stiff, brown SILTY CLAY LOAM, trace gravel --FILL--			2	5 6 6 8	2.13 B	24
	575.4		5					
		Very stiff, gray SILTY CLAY LOAM, trace gravel			3	2 5 5 5	2.57 B	17
	573.3							
		Soft, gray CLAY to SILTY CLAY			4	2 1 2 2	0.25 B	27
			10		5	0 1 2 2	0.33 B	27
	569.0							
		Boring terminated at 11.20 ft						
			15					
			20					

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 **10-13-2014** Complete Drilling **10-13-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
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**

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

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BORING LOG EB290-SGB-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: 577.94 ft
North: 1897896.22 ft
East: 1169698.51 ft
Station: 5137+94.97
Offset: 1.8184' RT

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	5-inch thick, ASPHALT --PAVEMENT--						
	576.9	7-inch thick, CONCRETE --PAVEMENT--						
	576.3	8-inch thick, CRUSHED STONE --BASE COURSE--			1	5 5 7 9	4.43 B	12
		Very stiff to hard, brown SILTY CLAY LOAM, trace gravel --FILL--			2	4 4 5 7	2.13 B	21
	573.4	Stiff (1.5P), gray SILTY CLAY LOAM, trace gravel	5		3	2 2 3 3	0.38 B	27
	571.9	Soft, gray CLAY to SILTY CLAY, trace gravel			4	1 1 1 2	0.41 B	28
			10		5	1 1 2 2	0.33 B	27
	566.9	Boring terminated at 11.00 ft	15					
			20					

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: **10-14-2014** Complete Drilling: **10-14-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
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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BORING LOG EB290-SGB-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: 577.59 ft
North: 1897919.37 ft
East: 1169998.54 ft
Station: 5140+94.75
Offset: 32.7579' LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	577.2	5-inch thick, ASPHALT --PAVEMENT--						
	576.4	9-inch thick, CONCRETE --PAVEMENT--						
		Very dense, brown SANDY GRAVEL --FILL--			1	13 50/3"	NR	8
	574.1							
		Very stiff, brown SILTY CLAY LOAM, trace gravel --FILL--			2	19 9 5 5	3.50 P	15
	573.1		5					
		Soft, gray SILTY CLAY to SILTY CLAY LOAM --L_L(%)=32, P_L(%)=17-- --%Gravel=3.6-- --%Sand=15.0-- --%Silt=52.8-- --%Clay=28.6-- --A-6 (11)--			3	1 1 2 1	0.25 B	27
					4	0 1 2 2	0.25 B	22
			10		5	0 0 1 1	0.25 B	28
	566.6	Boring terminated at 11.00 ft						
			15					
			20					

GENERAL NOTES

Begin Drilling: **10-13-2014** Complete Drilling: **10-13-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
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: **3.50 ft**
At Completion of Drilling: **7.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG EB290-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: 577.72 ft
North: 1897888.36 ft
East: 1170305.10 ft
Station: 5144+01.69
Offset: 2.1794' RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	577.3	5-inch thick, ASPHALT --PAVEMENT--						
	576.6	8-inch thick, CONCRETE --PAVEMENT--						
		Very dense, gray CRUSHED			1	17 50/3"	NP	4
	575.1	STONE --BASE COURSE--						
		Very dense, brown SANDY GRAVEL --FILL--			2	20 42 14 9	NP	13
	573.0		5					
		Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			3	4 3 4 4	0.50 P	25
					4	0 1 1 1	0.25 B	28
			10		5	1 1 2 1	0.33 B	27
	566.7	Boring terminated at 11.00 ft						
			15					
			20					

GENERAL NOTES

Begin Drilling: **10-14-2014** Complete Drilling: **10-14-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
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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BORING LOG EB290-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: 576.98 ft
North: 1897930.03 ft
East: 1170593.14 ft
Station: 5146+90.72
Offset: 31.9168' LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	576.5	5.5-inch thick ASPHALT --PAVEMENT--						
	575.9	8-inch thick CONCRETE --PAVEMENT--						
		Very dense, gray CRUSHED STONE			1	23 43 50/4"	NP	8
	574.2	--SUB-BASE--						
		Medium dense, brown SANDY GRAVEL				21		
	573.1	--FILL-- --Moist--			2	15 7 7	NP	19
		Very stiff, brown to gray SILTY CLAY LOAM, trace gravel and brick fragments	5		3	3 4 4 5	2.46 B	15
	570.7	--FILL-- Soft, gray CLAY to SILTY CLAY			4	1 1 2 1	0.33 B	24
			10		5	1 1 2 2	0.33 B	27
	566.0	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**
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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BORING LOG EB290-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: 575.90 ft
North: 1897922.35 ft
East: 1170896.98 ft
Station: 5149+94.26
Offset: 4.2653' LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	575.5	4.5-inch thick ASPHALT --PAVEMENT--						
	574.9	7.5-inch thick CONCRETE --PAVEMENT--						
		Medium dense, gray SANDY GRAVEL, crushed stone			1	11 6 5 5	NP	8
	573.4	--SUB-BASE--						
		Hard, gray SILTY CLAY LOAM, trace gravel --FILL--			2	4 7 8 8	4.59 B	13
	571.3							
		Medium stiff, gray CLAY to SILTY CLAY, trace gravel	5		3	1 3 3 5	0.90 B	24
					4	2 2 2 3	0.66 B	25
			10		5	2 2 2 3	0.66 B	25
	564.9							
		Boring terminated at 11.00 ft						
			15					
			20					

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 **10-15-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
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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BORING LOG EB290-SGB-15

WEI Job No.: 1100-04-01

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

Datum: NAVD 88
Elevation: 584.09 ft
North: 1897931.45 ft
East: 1171300.45 ft
Station: 5153+97.83
Offset: 2.7734' LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	583.84	4-inch thick, ASPHALT --PAVEMENT--						
	583.1	8-inch thick, CONCRETE --PAVEMENT--						
	582.5	7-inch thick, gray CRUSHED STONE --BASE COURSE--			1	6 5 3 5	2.30 B	16
		Very stiff, black and brown CLAY to SILTY CLAY, trace gravel and brick fragments			2	4 5 11 14	2.87 S	19
	579.3	--FILL-- --L_L(%)=40, P_L(%)=18-- --%Gravel=11.0-- --%Sand=18.0-- --%Silt=40.2-- --%Clay=30.8-- --A-6 (14)--	5		3	3 5 3 5	0.90 B	22
		Very soft to medium stiff, gray SILTY CLAY, trace gravel			4	1 2 2 2	< 0.25 P	24
			10		5	1 1 2 2	0.25 B	21
	573.1	Boring terminated at 11.00 ft	15					
			20					

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 **10-13-2014** Complete Drilling **10-13-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
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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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**
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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BORING LOG SB90-SGB-22

WEI Job No.: 1100-04-01

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

Datum: NAVD 88
Elevation: 574.14 ft
North: 1898126.08 ft
East: 1170995.81 ft
Station: 1323+61.53
Offset: 3.2919 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	573.7	5-inch thick ASPHALT --PAVEMENT--						
	573.1	7-inch thick CONCRETE --PAVEMENT--						
	572.6	7-inch thick, gray CRUSHED STONE --AGGREGATE BASE--			1	4 2 2 3	1.50 P	19
	570.6	Stiff, brown and gray SILTY CLAY LOAM, trace gravel --FILL--			2	3 4 3 4	1.15 B	21
		Soft to stiff, gray CLAY to SILTY CLAY, trace gravel	5		3	2 2 3 3	0.83 N/6	
					4	2 2 3 4	0.25 P	24
			10		5	3 4 3 4	0.82 B	20
	563.1	Boring terminated at 11.00 ft	15					
			20					

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 **10-15-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
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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BORING LOG SB90-SGB-23

WEI Job No.: 1100-04-01

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

Datum: NAVD 88
Elevation: 575.83 ft
North: 1897869.25 ft
East: 1170735.41 ft
Station: 1503+71.26
Offset: 6.1938 RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	575.4	5-inch thick, ASPHALT --PAVEMENT--						
	574.8	7-inch thick, CONCRETE --PAVEMENT--						
	574.1	Medium dense, brown SANDY GRAVEL, crushed stone --BASE COURSE--			1	9 8 3 3	2.00 P	18
	573.2	Very stiff, brown SILTY CLAY LOAM, trace gravel, brick fragments --FILL--			2	2 3 3 5	1.72 B	20
	571.3	Stiff, gray SILTY CLAY LOAM, trace gravel	5		3	1 2 2 3	0.57 B	25
		Soft, gray CLAY to SILTY CLAY, trace gravel			4	1 2 2 2	0.49 B	25
			10		5	1 1 2 2	0.41 B	25
	564.8	Boring terminated at 11.00 ft						
			15					
			20					

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

GENERAL NOTES

Begin Drilling **10-26-2014** Complete Drilling **10-26-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **B-57 TMR**
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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BORING LOG WB290-SGB-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: 587.40 ft
North: 1898063.12 ft
East: 1171376.59 ft
Station: 5218+83.43
Offset: 11.3981' LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	587.0	5-inch thick ASPHALT --PAVEMENT--						
	586.2	9-inch thick CONCRETE --PAVEMENT--						
	585.6	8-inch thick, gray CRUSHED STONE --AGGREGATE BASE--			1	4 4 12 12	4.43 B	10
	584.5	Hard, brown SILTY CLAY LOAM, trace gravel, brick fragments --FILL--			2	6 7 7 7	2.95 B	18
	582.4	Very stiff, gray SILTY CLAY LOAM, trace gravel	5		3	3 4 3 4	0.82 B	21
		Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			4	1 2 2 3	0.41 B	21
			10		5	1 2 2 2	0.25 B	23
	576.2	Boring terminated at 11.20 ft						
			15					
			20					

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 **10-12-2014** Complete Drilling **10-12-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
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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BORING LOG WB290-SGB-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: 575.42 ft
North: 1898041.18 ft
East: 1170911.42 ft
Station: 5223+49.54
Offset: 18.8015' 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	4.5-inch thick ASPHALT --PAVEMENT--						
	574.3	8.5-inch thick CONCRETE --PAVEMENT--						
	573.8	6-inch thick, gray CRUSHED STONE --SUB-BASE--			1	8 7 5 4	3.75 P	16
		Very stiff, brown to gray CLAY to SILTY CLAY, trace gravel --FILL--			2	3 4 5 5	2.21 B	15
	570.6	--L_L(%)=37, P_L(%)=17-- --%Gravel=3.1-- --%Sand=14.5-- --%Silt=47.6-- --%Clay=34.8-- --A-6 (16)--	5		3	2 3 4 5	2.38 B	18
	568.5	Very stiff, gray SILTY CLAY, trace gravel			4	1 2 2 3	0.41 B	26
		Soft, gray CLAY to SILTY CLAY, trace gravel	10		5	2 2 2 3	0.41 B	26
	564.3	Boring terminated at 11.10 ft	15					
			20					

GENERAL NOTES

Begin Drilling **10-12-2014** Complete Drilling **10-12-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
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**

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

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BORING LOG WB290-SGB-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: 577.18 ft
North: 1898035.23 ft
East: 1170611.91 ft
Station: 5226+49.09
Offset: 25.5564' 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	6-inch ASPHALT --PAVEMENT--						
	575.9	10-inch thick CONCRETE --PAVEMENT--						
		Very dense, gray CRUSHED STONE --FILL--			1	12 50/3"	NP	5
		concrete fragments construction debris			2	50/3"	NP	7
	571.7	Stiff, gray SILTY CLAY LOAM, trace gravel	5		3	2 3 3 4	1.00 N/6	25
	569.7	Very soft, gray CLAY to CLAY CLAY			4	0 0 2 1	0.16 B	29
	565.7	Boring terminated at 11.50 ft	10		5	1 1 1 2	0.16 B	25
			15					
			20					

GENERAL NOTES

Begin Drilling: **10-12-2014** Complete Drilling: **10-12-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
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: **5.50 ft**
At Completion of Drilling: **6.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG WB290-SGB-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: 578.37 ft
North: 1898027.03 ft
East: 1170308.89 ft
Station: 5229+52.21
Offset: 23.4511' LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	577.8	7-inch thick ASPHALT --PAVEMENT--						
	577.0	9-inch thick CONCRETE --PAVEMENT--			1	50/4"	NP	6
		Very dense, gray CRUSHED STONE --FILL--						
		concrete fragments construction debris			2	50/3"	NP	6
	573.7	Stiff, brown SILTY CLAY LOAM, trace gravel --FILL--	5		3	3 3 3 4	1.89 B	24
	571.1	Soft, gray CLAY to SILTY CLAY, trace gravel			4	1 1 2 1	0.33 B	26
			10		5	1 2 1 2	0.25 B	27
	566.9	Boring terminated at 11.50 ft	15					
			20					

GENERAL NOTES

Begin Drilling: **10-12-2014** Complete Drilling: **10-12-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
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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BORING LOG WB290-SGB-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: 578.89 ft
North: 1898055.01 ft
East: 1170027.38 ft
Station: 5232+32.93
Offset: 12.0144' RT

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	5-inch thick ASPHALT --PAVEMENT--						
	577.9	7-inch thick CONCRETE --PAVEMENT--			1	20 50/4"	NP	5
	576.5	Very dense, brown CRUSHED STONE -- AGGREGATE BASE--						
		Medium dense, brown SANDY GRAVEL --FILL-- --Moist--			2	20 17 6 3	NP	19
	574.4	Soft, gray CLAY to SILTY CLAY, trace gravel --L_L(%)=35, P_L(%)=17-- --%Gravel=4.8-- --%Sand=15.6-- --%Silt=48.2-- --%Clay=31.4-- --A-6 (13)--	5		3	2 1 2 2	0.41 B	25
					4	0 1 1 1	0.25 B	22
			10		5	1 1 1 2	0.33 B	25
	567.9	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**
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: **4.00 ft**
At Completion of Drilling: **10.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG WB290-SGB-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: 578.02 ft
North: 1898033.09 ft
East: 1169712.26 ft
Station: 5235+47.58
Offset: 15.3441' 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	6-inch thick ASPHALT --PAVEMENT--						
	576.7	10-inch thick CONCRETE --PAVEMENT--						
		Very dense, gray CRUSHED STONE			1	25 50/3"	NP	5
	575.2	--AGGREGATE BASE--						
		Dense, brown SANDY GRAVEL, concrete fragments --FILL-- --Wet--			2	30 17 21 8	NP	11
	572.7		5					
		Very stiff, gray SITY CLAY LOAM, trace gravel			3	4 5 5 6	3.77 B	18
	571.2	Soft, gray CLAY to SILTY CLAY, trace gravel			4	0 1 2 1	0.41 B	25
			10		5	1 2 3 3	0.33 B	15
	566.5	Boring terminated at 11.50 ft						
			15					
			20					

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: **10-12-2014** Complete Drilling: **10-12-2014**
Drilling Contractor: **Wang Testing Services** Drill Rig: **CME-55 TMR**
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: **4.00 ft**
At Completion of Drilling: **8.00 ft**
Time After Drilling: **NA**
Depth to Water: **NA**

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BORING LOG WB290-SGB-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: 579.79 ft
North: 1898079.03 ft
East: 1169423.71 ft
Station: 5238+38.47
Offset: 11.4508' RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	579.4	5-inch thick ASPHALT --PAVEMENT--						
	578.8							
	578.5	7-inch thick CONCRETE --PAVEMENT--						
		4-inch thick, gray CRUSHED STONE --SUB-BASE--			1	6 4 4 6	2.13 B	19
		Stiff to very stiff, brown CLAY to SILTY CLAY, trace gravel --FILL-- --L_L(%)=37, P_L(%)=18--			2	4 5 5 6	1.50 N/6	
	574.8	--%Gravel=3.1-- --%Sand=18.6-- --%Silt=45.9-- --%Clay=32.3-- --A-6 (14)--	5		3	2 2 2 2	0.49 B	26
		Soft to medium stiff, gray SILTY CLAY, trace gravel			4	0 1 1 1	0.33 B	27
			10		5	2 1 2 3	0.57 B	26
	568.8	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**
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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BORING LOG WB290-SGB-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: 581.22 ft
North: 1898059.77 ft
East: 1169116.09 ft
Station: 5241+41.17
Offset: 42.6765' LT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	580.8	5-inch thick ASPHALT --PAVEMENT--						
	580.1	8-inch thick CONCRETE --PAVEMENT--						
	579.5	8-inch thick gray CRUSHED STONE -- AGGREGATE BASE--			1	5 6 6 6	3.75 P	15
		Very stiff, brown SILTY CLAY LOAM, trace gravel --FILL--			2	3 5 5 6	3.61 B	15
	576.7	Stiff, gray SILTY CLAY, trace gravel	5		3	2 2 4 4	1.07 B	15
	574.7	Soft, gray CLAY to SILTY CLAY, trace gravel			4	0 1 2 2	0.25 B	28
			10		5	0 2 1 2	0.25 B	28
	570.1	Boring terminated at 11.10 ft						
			15					
			20					

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 **10-12-2014** Complete Drilling **10-12-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
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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BORING LOG WB290-SGB-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: 577.69 ft
North: 1898154.27 ft
East: 1168822.26 ft
Station: 5244+45.26
Offset: 9.3219' RT

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type / recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	577.3	4.5-inch thick ASPHALT --PAVEMENT--						
	576.7	7.5-inch thick CONCRETE --PAVEMENT--						
		Medium dense, gray CRUSHED STONE --FILL--			1	8 6 4 5	NP	7
					2	4 4 4 4	NA	
	572.7		5					
		Soft, gray CLAY to SILTY CLAY, trace gravel --L_L(%)=35, P_L(%)=17-- --%Gravel=3.3-- --%Sand=14.1-- --%Silt=47.6-- --%Clay=35.0-- --A-6 (14)--			3	2 2 3 3	0.41 B	27
					4	1 2 1 2	0.33 B	28
			10		5	1 1 2 1	0.33 B	27
	566.7							
		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**
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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BORING LOG WB290-SGB-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: 575.08 ft
North: 1898165.44 ft
East: 1168524.46 ft
Station: 5247+42.18
Offset: 21.2131' LT

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	6-inch thick ASPHALT --PAVEMENT--						
	573.9	8-inch thick CONCRETE --PAVEMENT--						
	572.8	14-inch thick, gray CRUSHED STONE --AGGREGATE BASE--						
		Very stiff to hard, brown SILTY CLAY LOAM, trace gravel --FILL--			1	20 46 24 14	2.75 P	20
	570.2		5		2	7 11 11 11	4.76 B	16
		Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel			3	2 3 3 3	0.57 B	25
					4	2 1 2 2	0.33 B	27
			10		5	1 2 2 3	0.33 B	25
	563.9							
		Boring terminated at 11.20 ft						
			15					
			20					

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 **10-12-2014** Complete Drilling **10-12-2014**
Drilling Contractor **Wang Testing Services** Drill Rig **CME-55 TMR**
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**

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-91-227-12 Project: Circle Interchange Reconstruction Route: I-290 & I-90/94

Section: 2013-077R City or County: Cook Date: 05/26/2015

ADT: NA Year: NA Design Period: NA Class Highway: NA

Passenger Cars Per Day: NA Trucks S.U. Per Day: NA Trucks M.U. Per Day: NA

Pavement Structure: Jointed PCC pavement over HMA stabilized base and aggregate improved subgrade

Type Surface Course: PCC Thickness: 11 inches

Type Base Course: HMA Thickness: 4 inches

Type Subbase Material: NA Thickness:

Sta. to Sta.	5155+56.96 to 5109+43.21	5218+04.96 to 5250+87.94	7300+00.00 to 7309+39.95	1500+00.00 to 1511+38.89
*Sta. of Test	5140+94.75	5218+54.94	7304+85.22	1509+47.4
*Drainage Class	Poor	Poor	Poor	Poor
*Ave. Frost Penetration	42	42	42	42
Illinois Textural Classification	Silty Clay Loam	Silty Clay Loam	Silty Clay Loam	Silty Clay Loam
Classification and Group Index (AASHTO M 145)	A-6 (11)	A-6 (8)	A-6 (7)	A-6 (10)
*Percent Silt (AASHTO T 88)	52.8	51.7	54.0	56.3
*Illinois Bearing Ratio (%)	3	3	3	3
Std. Dry Density (IL Mod. AASHTO T 99)				
Optimum Moisture (IL Mod AASHTO T 99)				

* Indicates worst condition within the above station limits.

Remarks: See RGR section 5.5 (Roadway Pavement Structure) for more information regarding pavement structure

Illinois Department of Transportation

Summary Report on Pavement, Base and Subbase Design

State Job Number: D-91-227-12 Project: Circle Interchange Reconstruction Route: I-290 & I-90/94

Section: 2013-077R City or County: Cook Date: 05/26/2015

ADT: NA Year: NA Design Period: NA Class Highway: NA

Passenger Cars Per Day: NA Trucks S.U. Per Day: NA Trucks M.U. Per Day: NA

Pavement Structure: Jointed PCC pavement over HMA stabilized base and aggregate improve subgrade

Type Surface Course: PCC Thickness: 11 inches

Type Base Course: HMA Thickness: 4 inches

Type Subbase Material: NA Thickness:

Sta. to Sta.	1315+80.36 to1332+80.76	1600+00.00 to 1607+93.79		
*Sta. of Test	1324+09.10	1607+21.55		
*Drainage Class	Poor	Poor		
*Ave. Frost Penetration	42	42		
Illinois Textural Classification	Silty Clay	Silty Loam		
Classification and Group Index (AASHTO M 145)	A-6 (13)	A-4 (2)		
*Percent Silt (AASHTO T 88)	51.2	57.5		
*Illinois Bearing Ratio (%)	3	3		
Std. Dry Density (IL Mod. AASHTO T 99)				
Optimum Moisture (IL Mod AASHTO T 99)				

* Indicates worst condition within the above station limits.

Remarks: See RGR section 5.5 (Roadway Pavement Structure) for more information regarding pavement structure

SOIL TEST DATA

ROUTE
I-290 & I-90/94

PROJECT
1100-04-01
Circle Interchange Reconstruction

SECTION
I-290 WB (Sta. 5218+04.96 to Sta. 5250+87.94)

COUNTY
Cook

Lab. No.	1703-B-01 No.4	WB290-SGB-02 No.1	2082-B-01 No.11	WB290-SGB-05 No.3	WB290-SGB-07 No.1
Station ft)	5218+54.94	5223+49.54	5228+94.39	5232+32.93	5238+38.47
Offset (ft)	21.1399 RT	18.8015' LT	38.29 RT	12.0144' RT	11.4508' RT
Depth (ft)	8.5	1.1	26.0	5.0	1.0
AASHTO M 145 Classification and Group Index	A-6 (8)	A-6 (16)	A-6 (14)	A-6 (13)	A-6 (14)
Illinois Textural Classification (Illinois Method)	Silty Clay Loam	Clay	Silty Clay	Silty Clay	Clay
Gradation--Passing 1" Sieve %					
--"-- 3/4" Sieve %	100		100.0		
--"-- 1/2" Sieve %	97.3	100.0	96.7	100.0	100.0
--"-- No.4 Sieve %	96.1	99.5	95.0	98.9	99.3
--"-- No.10 Sieve %	93.9	96.9	92.6	95.2	96.9
--"-- No.4 0 Sieve %	86.2	91.4	86.3	87.9	91.2
--"-- No.100 Sieve %	78.5	85.9	81.2	82.7	82.5
--"-- No.200 Sieve %	73.9	82.4	78.4	79.6	78.3
Sand % (AASHTO T 88)	20.0	14.5	14.3	15.6	18.6
Silt % (AASHTO T 88)	51.7	47.6	46.5	48.2	45.9
Clay % (AASHTO T 88)	22.3	34.8	31.9	31.4	32.3
Liquid limit % (AASHTO T 89)	30.0	37.0	36	35	37
Plasticity index % (AASHTO T 90)	13.0	19.0	20	17	19
IBR % (Illinois Method)					
Standard Dry Density % (AASHTO T 99)					
Optimum Moisture % (AASHTO T 99)					
Subgrade Support Rating	POOR	FAIR	FAIR	FAIR	FAIR
Insitu Moisture % (AASHTO T 99)	23	16	28	25	19

SOIL TEST DATA

SECTION
I-290 WB (Sta. 5218+04.96 to Sta. 5250+87.94)

Lab. No.	07-RWB-05 No.7	WB290-SGB-09 No.3
Station ft)	5241+18.42	5244+45.26
Offset (ft)	10.0403' RT	9.3219' RT
Depth (ft)	16	5.0
AASHTO M 145 Classification and Group Index	A-6 (16)	A-6 (14)
Illinois Textural Classification (Illinois Method)	Silty Clay	Clay
Gradation--Passing 1" Sieve %		
--"-- 3/4" Sieve %		
--"-- 1/2" Sieve %	100.0	100.0
--"-- No.4 Sieve %	99.2	99.6
--"-- No.10 Sieve %	97.1	96.7
--"-- No.4 0 Sieve %	91.4	90.7
--"-- No.100 Sieve %	86.4	85.6
--"-- No.200 Sieve %	83.3	82.7
Sand % (AASHTO T 88)	13.8	14.1
Silt % (AASHTO T 88)	50.5	47.6
Clay % (AASHTO T 88)	32.8	35.0
Liquid limit % (AASHTO T 89)	36.0	35
Plasticity index % (AASHTO T 90)	20.0	18
IBR % (Illinois Method)		
Standard Dry Density % (AASHTO T 99)		
Optimum Moisture % (AASHTO T 99)		
Subgrade Support Rating	FAIR	FAIR
Insitu Moisture % (AASHTO T 99)	28	27

SOIL TEST DATA

ROUTE
I-290 & I-90/94

PROJECT
1100-04-01
Circle Interchange Reconstruction

SECTION
I-290 EB (Sta. 5109+43.21 to Sta. 5155+56.96)

COUNTY
Cook

Lab. No.	EB290-SGB-01 No.2	EB290-SGB-06 No.1	09-RWB-01 No.6	EB290-SGB-11 No.3	EB290-SGB-15 No.1
Station ft)	5109+89.14	5125+98.92	5138+17.30	5140+94.75	5153+97.83
Offset (ft)	17.5855' LT	10.2769' RT	67.7001' RT	32.7579' LT	2.7734' LT
Depth (ft)	3.1	1.2	13.5	5.0	1.0
AASHTO M 145 Classification and Group Index	A-6 (19)	A-6 (10)	A-6 (19)	A-6 (11)	A-6 (14)
Illinois Textural Classification (Illinois Method)	Clay	Silty Clay Loam	Silty Clay	Silty Clay Loam	Clay
Gradation--Passing 1" Sieve %					
--"-- 3/4" Sieve %					100.0
--"-- 1/2" Sieve %	100.0	100.0	100.0	100.0	96.3
--"-- No.4 Sieve %	99.7	98.6	99.8	99.0	93.3
--"-- No.10 Sieve %	97.9	96.0	99.0	96.4	89.0
--"-- No.4 0 Sieve %	94.2	88.4	96.2	90.8	81.4
--"-- No.100 Sieve %	90.4	80.7	93.3	85.0	74.5
--"-- No.200 Sieve %	88.1	76.4	91.4	81.4	71.0
Sand % (AASHTO T 88)	9.8	19.6	7.6	15.0	18.0
Silt % (AASHTO T 88)	47.7	49.6	50.1	52.8	40.2
Clay % (AASHTO T 88)	40.4	26.8	41.2	28.6	30.8
Liquid limit % (AASHTO T 89)	39.0	33.0	38	32	40
Plasticity index % (AASHTO T 90)	22.0	16.0	20	15	22
IBR % (Illinois Method)					
Standard Dry Density % (AASHTO T 99)					
Optimum Moisture % (AASHTO T 99)					
Subgrade Support Rating	FAIR	POOR	FAIR	POOR	FAIR
Insitu Moisture % (AASHTO T 99)	16	15	35	27	16

SOIL TEST DATA

SECTION
I-290 EB (Sta. 5109+43.21 to Sta. 5155+56.96)

Lab. No.	1704-B-01 No.6	2081-B-05 No.3
Station ft)	5155+31.36	5151+76.87
Offset (ft)	19.5036' RT	28.81' RT
Depth (ft)	13.5	6.0
AASHTO M 145 Classification and Group Index	A-6 (9)	A-6 (9)
Illinois Textural Classification (Illinois Method)	Silty Clay Loam	Silty Clay Loam
Gradation--Passing 1" Sieve %		
--"-- 3/4" Sieve %		100.0
--"-- 1/2" Sieve %	100.0	98.6
--"-- No.4 Sieve %	99.3	97.4
--"-- No.10 Sieve %	95.9	94.1
--"-- No.4 0 Sieve %	88.1	87.0
--"-- No.100 Sieve %	80.3	80.7
--"-- No.200 Sieve %	75.4	76.9
Sand % (AASHTO T 88)	20.5	17.2
Silt % (AASHTO T 88)	49.6	51.1
Clay % (AASHTO T 88)	25.9	25.8
Liquid limit % (AASHTO T 89)	31.0	30
Plasticity index % (AASHTO T 90)	14.0	16
IBR % (Illinois Method)		
Standard Dry Density % (AASHTO T 99)		
Optimum Moisture % (AASHTO T 99)		
Subgrade Support Rating	POOR	POOR
Insitu Moisture % (AASHTO T 99)	25	20

SOIL TEST DATA

ROUTE
I-290 & I-90/94

PROJECT
1100-04-01
Circle Interchange Reconstruction

SECTION
SW Ramp (Sta.1315+80.36 to Sta. 1332+80.76)

COUNTY
Cook

Lab. No.	1705-B-13 No.1	1705-B-14 No.7	WB290-SGB-02 No.1
Station ft)	1324+09.10	1325+23.4	1324+ 61.50
Offset (ft)	15.15 RT	8.54 RT	55.45 LT
Depth (ft)	8	16	1.1
AASHTO M 145 Classification and Group Index	A-6 (13)	A-6 (12)	A-6 (16)
Illinois Textural Classification (Illinois Method)	Silty Clay	Silty Clay	Clay
Gradation--Passing 1" Sieve %			
--"-- 3/4" Sieve %			
--"-- 1/2" Sieve %	100.0	100.0	100.0
--"-- No.4 Sieve %	98.8	99.2	99.5
--"-- No.10 Sieve %	96.1	95.9	96.9
--"-- No.4 0 Sieve %	90.4	90.2	91.4
--"-- No.100 Sieve %	85.3	85.6	85.9
--"-- No.200 Sieve %	82.3	83.0	82.4
Sand % (AASHTO T 88)	13.9	12.9	14.5
Silt % (AASHTO T 88)	51.2	50.9	47.6
Clay % (AASHTO T 88)	31.1	32.0	34.8
Liquid limit % (AASHTO T 89)	34.0	32.0	37
Plasticity index % (AASHTO T 90)	18.0	16.0	19
IBR % (Illinois Method)			
Standard Dry Density % (AASHTO T 99)			
Optimum Moisture % (AASHTO T 99)			
Subgrade Support Rating	FAIR	FAIR	FAIR
Insitu Moisture % (AASHTO T 99)	23	27	16

SOIL TEST DATA

ROUTE
I-290 & I-90/94

PROJECT
1100-04-01
Circle Interchange Reconstruction

SECTION
EN Ramp (Sta. 1600+00.00 to Sta 1607+93.79)

COUNTY
Cook

Lab. No.	18-RWB-02 No.3	19-RWB-01 No.6	19-RWB-01 No.8	2081-B-05 No.3
Station ft)	1605+93.00	1607+21.55	1607+21.55	1603+23.13
Offset (ft)	30.6655 RT	18.1192 LT	18.1192 LT	26.20 LT
Depth (ft)	6	13.5	18.5	6.0
AASHTO M 145 Classification and Group Index	A-6 (10)	A-6 (9)	A-4 (2)	A-6 (9)
Illinois Textural Classification (Illinois Method)	Silty Clay Loam	Silty Clay	Silty Loam	Silty Clay Loam
Gradation--Passing 1" Sieve %				
--"-- 3/4" Sieve %				100.0
--"-- 1/2" Sieve %	100.0	100.0	100.0	98.6
--"-- No.4 Sieve %	98.9	99.2	98.3	97.4
--"-- No.10 Sieve %	96.5	95.9	93.1	94.1
--"-- No.4 0 Sieve %	90.7	90.5	81.7	87.0
--"-- No.100 Sieve %	85.1	85.8	74.2	80.7
--"-- No.200 Sieve %	81.4	82.6	69.3	76.9
Sand % (AASHTO T 88)	15.1	13.3	23.7	17.2
Silt % (AASHTO T 88)	56.3	51.6	57.5	51.1
Clay % (AASHTO T 88)	25.2	31.0	11.8	25.8
Liquid limit % (AASHTO T 89)	30.0	31.0	23	30
Plasticity index % (AASHTO T 90)	13.0	13.0	8	16
IBR % (Illinois Method)				
Standard Dry Density % (AASHTO T 99)				
Optimum Moisture % (AASHTO T 99)				
Subgrade Support Rating	POOR	FAIR	POOR	POOR
Insitu Moisture % (AASHTO T 99)	23	29	17	20

SOIL TEST DATA

ROUTE
I-290 & I-90/94

PROJECT
1100-04-01
Circle Interchange Reconstruction

SECTION
ES Ramp (Sta. 1500+00.00 to Sta 1511+38.89)

COUNTY
Cook

Lab. No.	18-RWB-02 No.3	2081-B-06 No.11	12-RWB-03 No.9	1087-B-02 No.5
Station ft)	1509+47.40	1507+66.30	1506+14.4	1510+68.70
Offset (ft)	18.52 LT	17.45 RT	45.48 RT	28.76 LT
Depth (ft)	6	26	21.0	11.0
AASHTO M 145 Classification and Group Index	A-6 (10)	A-6 (14)	A-6 (7)	A-6 (11)
Illinois Textural Classification (Illinois Method)	Silty Clay Loam	Silty Clay	Silty Clay Loam	Silty Clay
Gradation--Passing 1" Sieve %				
--"-- 3/4" Sieve %				
--"-- 1/2" Sieve %	100.0	100.0	100.0	100.0
--"-- No.4 Sieve %	98.9	97.2	98.8	99.5
--"-- No.10 Sieve %	96.5	93.7	95.6	98.1
--"-- No.4 0 Sieve %	90.7	88.8	87.7	91.3
--"-- No.100 Sieve %	85.1	83.3	79.8	85.6
--"-- No.200 Sieve %	81.4	80.3	75.1	82.5
Sand % (AASHTO T 88)	15.1	13.5	20.5	15.6
Silt % (AASHTO T 88)	56.3	48.9	54.0	52.2
Clay % (AASHTO T 88)	25.2	31.4	21.1	30.3
Liquid limit % (AASHTO T 89)	30.0	35.0	27	32
Plasticity index % (AASHTO T 90)	13.0	19.0	12	16
IBR % (Illinois Method)				
Standard Dry Density % (AASHTO T 99)				
Optimum Moisture % (AASHTO T 99)				
Subgrade Support Rating	POOR	FAIR	POOR	FAIR
Insitu Moisture % (AASHTO T 99)	23	24	19	24

SOIL TEST DATA

ROUTE
I-290 & I-90/94

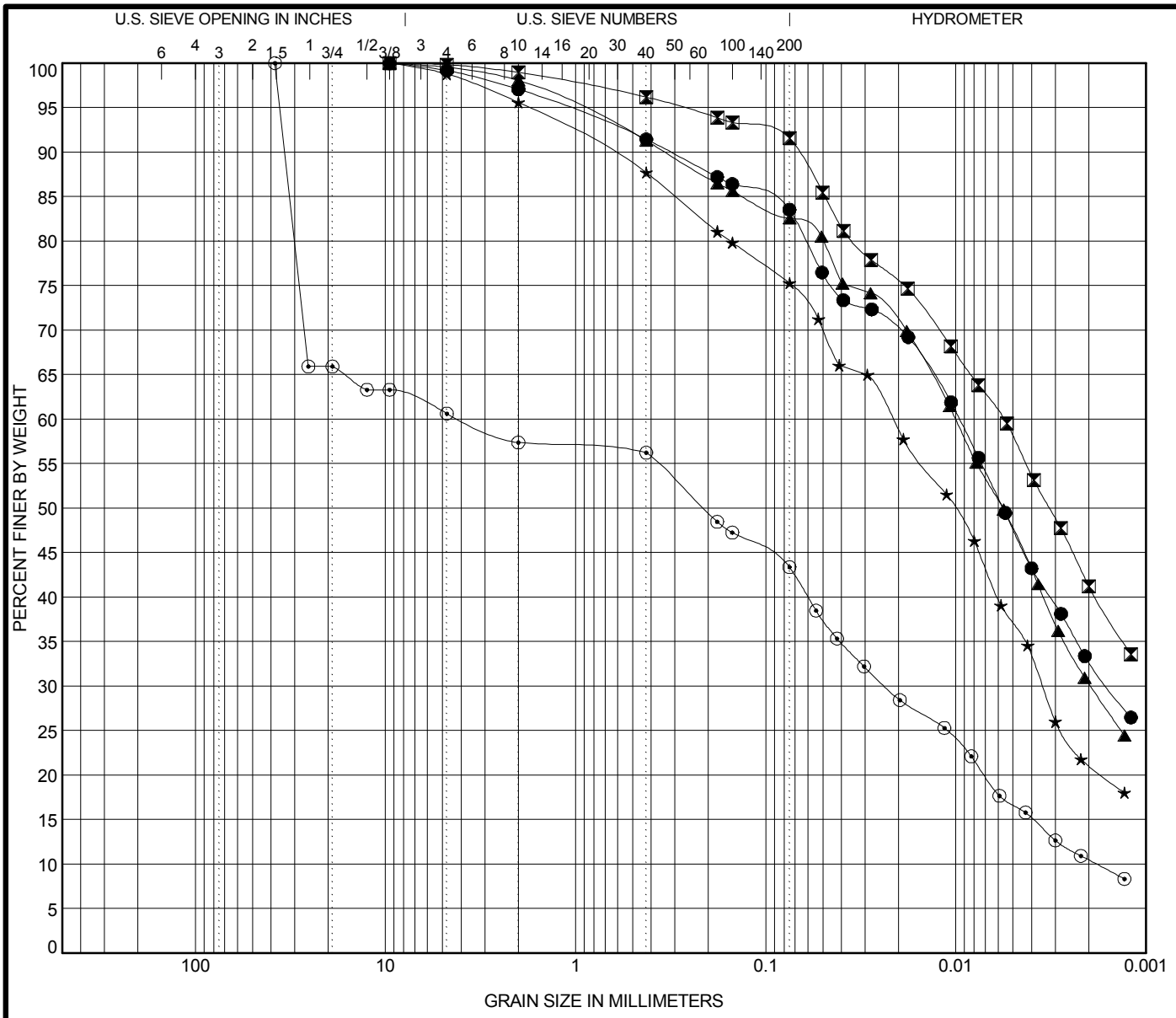
PROJECT
1100-04-01
Circle Interchange Reconstruction

SECTION
I-290 EB to Tyler St.(Exit Ramp) (Sta. 7300+00.00 to Sta. 7309+39.95)

COUNTY
Cook

Lab. No.	12-RWB-09 No.12	12-RWB-03 No.9	13-RWB-01 No.12	2081-B-06 No.11
Station ft)	7300+63.47	7304+85.22	7308+54.07	7306+28.48
Offset (ft)	7.9476 RT	20.3056 RT	16.3167 RT	17.75 LT
Depth (ft)	28.5	21	28.5	26.0
AASHTO M 145 Classification and Group Index	A-6 (12)	A-6 (7)	A-6 (15)	A-6 (14)
Illinois Textural Classification (Illinois Method)	Clay	Silty Clay Loam	Silty Clay	Silty Clay
Gradation--Passing 1" Sieve %				
--"-- 3/4" Sieve %				
--"-- 1/2" Sieve %	100.0	100.0	100.0	100.0
--"-- No.4 Sieve %	98.6	98.8	99.5	97.2
--"-- No.10 Sieve %	95.9	95.6	97.8	93.7
--"-- No.4 0 Sieve %	89.9	87.7	89.9	88.8
--"-- No.100 Sieve %	84.7	79.8	84.8	83.3
--"-- No.200 Sieve %	81.6	75.1	81.7	80.3
Sand % (AASHTO T 88)	14.3	20.5	16.1	13.5
Silt % (AASHTO T 88)	47.2	54.0	50.7	48.9
Clay % (AASHTO T 88)	34.4	21.1	31.0	31.4
Liquid limit % (AASHTO T 89)	33.0	27.0	35	35
Plasticity index % (AASHTO T 90)	16.0	12.0	20	19
IBR % (Illinois Method)				
Standard Dry Density % (AASHTO T 99)				
Optimum Moisture % (AASHTO T 99)				
Subgrade Support Rating	FAIR	POOR	FAIR	FAIR
Insitu Moisture % (AASHTO T 99)	27	19	24	24

APPENDIX C



COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
● 07-RWB-05#7	16.0 ft	**Silty Clay**	**36**	**16**	**20**		
⊠ 09-RWB-01#6	13.5 ft	**Silty Clay**	**38**	**18**	**20**		
▲ 1087-B-02#5	11.0 ft	**Silty Clay**	**32**	**17**	**15**		
★ 12-RWB-03#9	21.0 ft	**Silty Clay Loam**	**27**	**15**	**12**		
⊙ 12-RWB-05#14	38.5 ft	**Gravelly Silty Loam**	**24**	**14**	**10**	**0.08**	**2205.6**

Specimen Identification		D95	D90	D84	D50	%Gravel	%Sand	%Silt	%Clay
● 07-RWB-05#7	16.0 ft	**1.132**	**0.317**	**0.084**	**0.006**	**2.9**	**13.8**	**50.5**	**32.8**
⊠ 09-RWB-01#6	13.5 ft	**0.274**	**0.068**	**0.046**	**0.003**	**1.0**	**7.6**	**50.1**	**41.2**
▲ 1087-B-02#5	11.0 ft	**0.991**	**0.337**	**0.104**	**0.006**	**1.9**	**15.6**	**52.2**	**30.3**
★ 12-RWB-03#9	21.0 ft	**1.778**	**0.665**	**0.263**	**0.01**	**4.4**	**20.5**	**54.0**	**21.1**
⊙ 12-RWB-05#14	38.5 ft	**35.9**	**33.828**	**31.498**	**0.213**	**42.6**	**14.2**	**32.7**	**10.4**

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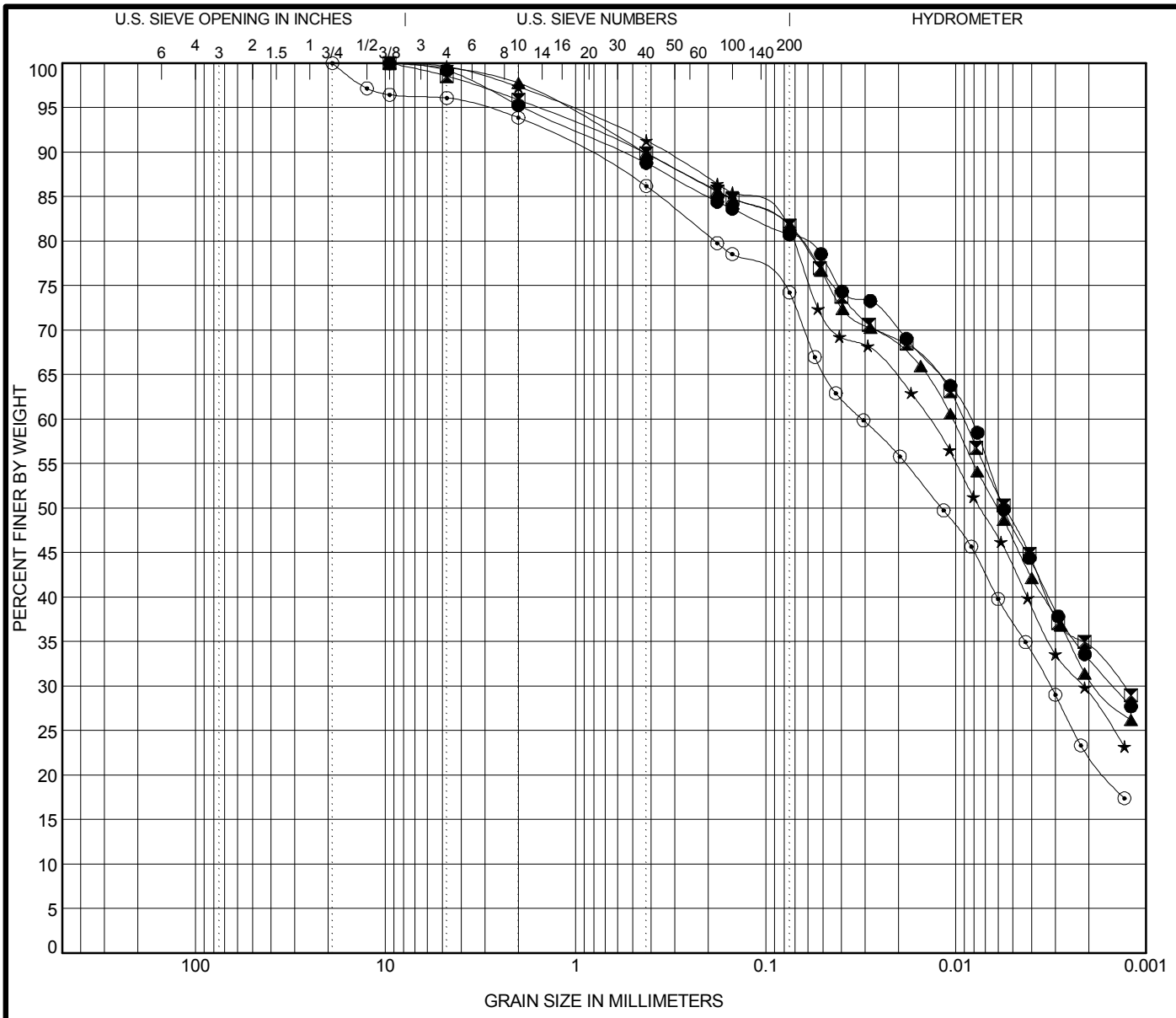
GRAIN SIZE DISTRIBUTION

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
● 12-RWB-07#13	33.5 ft	**Clay**	**34**	**17**	**17**		
⊠ 12-RWB-09#12	28.5 ft	**Clay**	**33**	**17**	**16**		
▲ 13-RWB-01#12	28.5 ft	**Silty Clay**	**35**	**15**	**20**		
★ 1703-B-01#2	3.5 ft	**Silty Clay**	**33**	**18**	**15**		
⊙ 1703-B-01#4	8.5 ft	**Silty Clay Loam**	**30**	**17**	**13**		

Specimen Identification		D95	D90	D84	D50	%Gravel	%Sand	%Silt	%Clay
● 12-RWB-07#13	33.5 ft	**1.873**	**0.568**	**0.163**	**0.006**	**4.7**	**14.6**	**47.6**	**33.1**
⊠ 12-RWB-09#12	28.5 ft	**1.595**	**0.439**	**0.126**	**0.006**	**4.1**	**14.3**	**47.2**	**34.4**
▲ 13-RWB-01#12	28.5 ft	**1.159**	**0.435**	**0.124**	**0.006**	**2.2**	**16.1**	**50.7**	**31.0**
★ 1703-B-01#2	3.5 ft	**1.096**	**0.337**	**0.117**	**0.007**	**2.7**	**16.3**	**51.9**	**29.2**
⊙ 1703-B-01#4	8.5 ft	**3.102**	**0.915**	**0.317**	**0.012**	**6.1**	**20.0**	**51.7**	**22.3**

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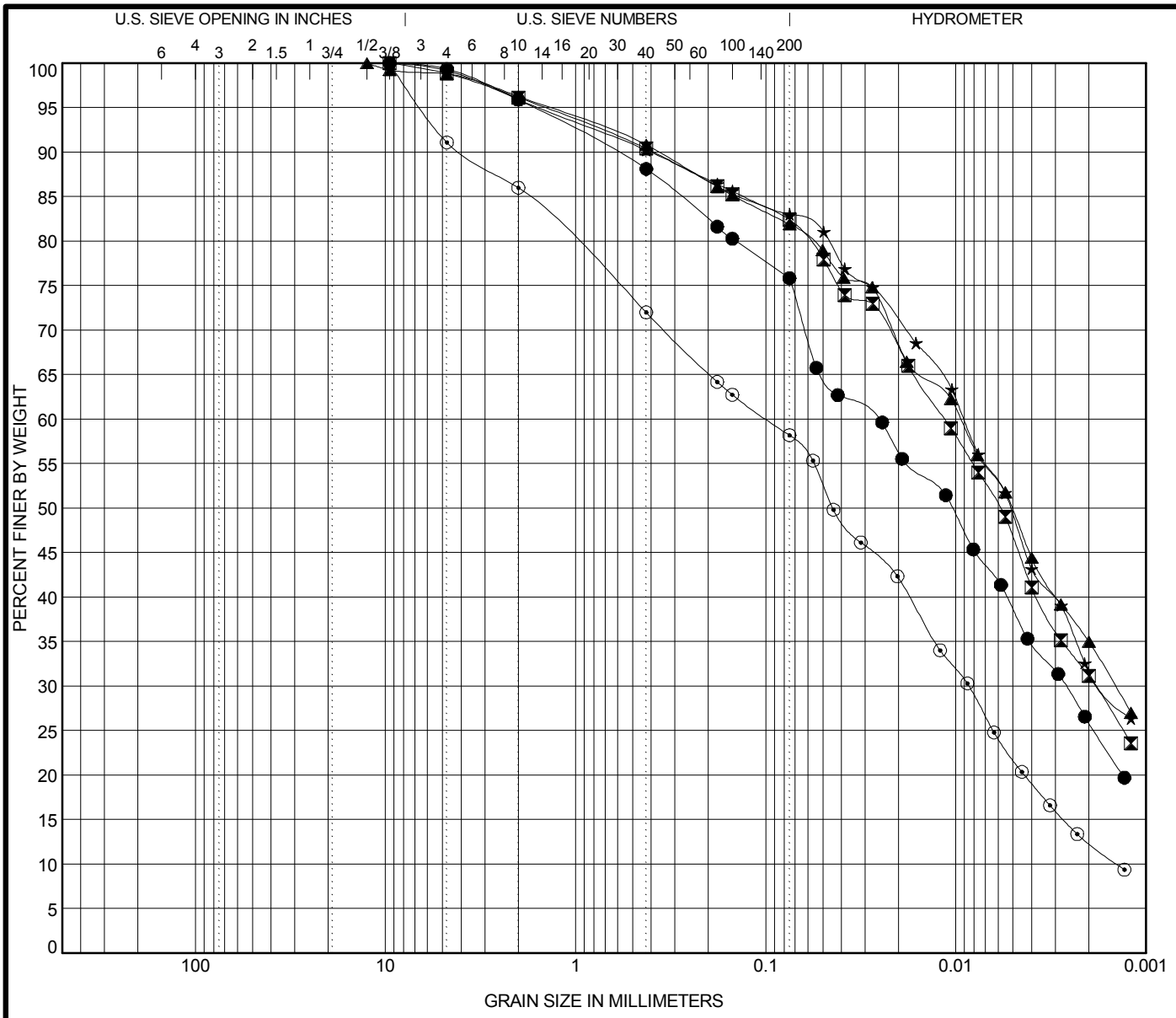

COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

	Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
●	1704-B-01#6	13.5 ft	**Silty Clay Loam**	**31**	**17**	**14**		
⊠	1705-B-13#1	8.0 ft	**Silty Clay**	**34**	**16**	**18**		
▲	1705-B-13#2	13.0 ft	**Clay**	**35**	**17**	**18**		
★	1705-B-14#7	16.0 ft	**Silty Clay**	**32**	**16**	**16**		
⊙	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
●	1704-B-01#6	13.5 ft	**1.67**	**0.617**	**0.246**	**0.01**	**4.1**	**20.5**	**49.6**	**25.9**
⊠	1705-B-13#1	8.0 ft	**1.472**	**0.392**	**0.11**	**0.006**	**3.9**	**13.9**	**51.2**	**31.1**
▲	1705-B-13#2	13.0 ft	**1.395**	**0.366**	**0.117**	**0.005**	**3.7**	**14.5**	**46.8**	**35.0**
★	1705-B-14#7	16.0 ft	**1.565**	**0.403**	**0.097**	**0.005**	**4.1**	**12.9**	**50.9**	**32.0**
⊙	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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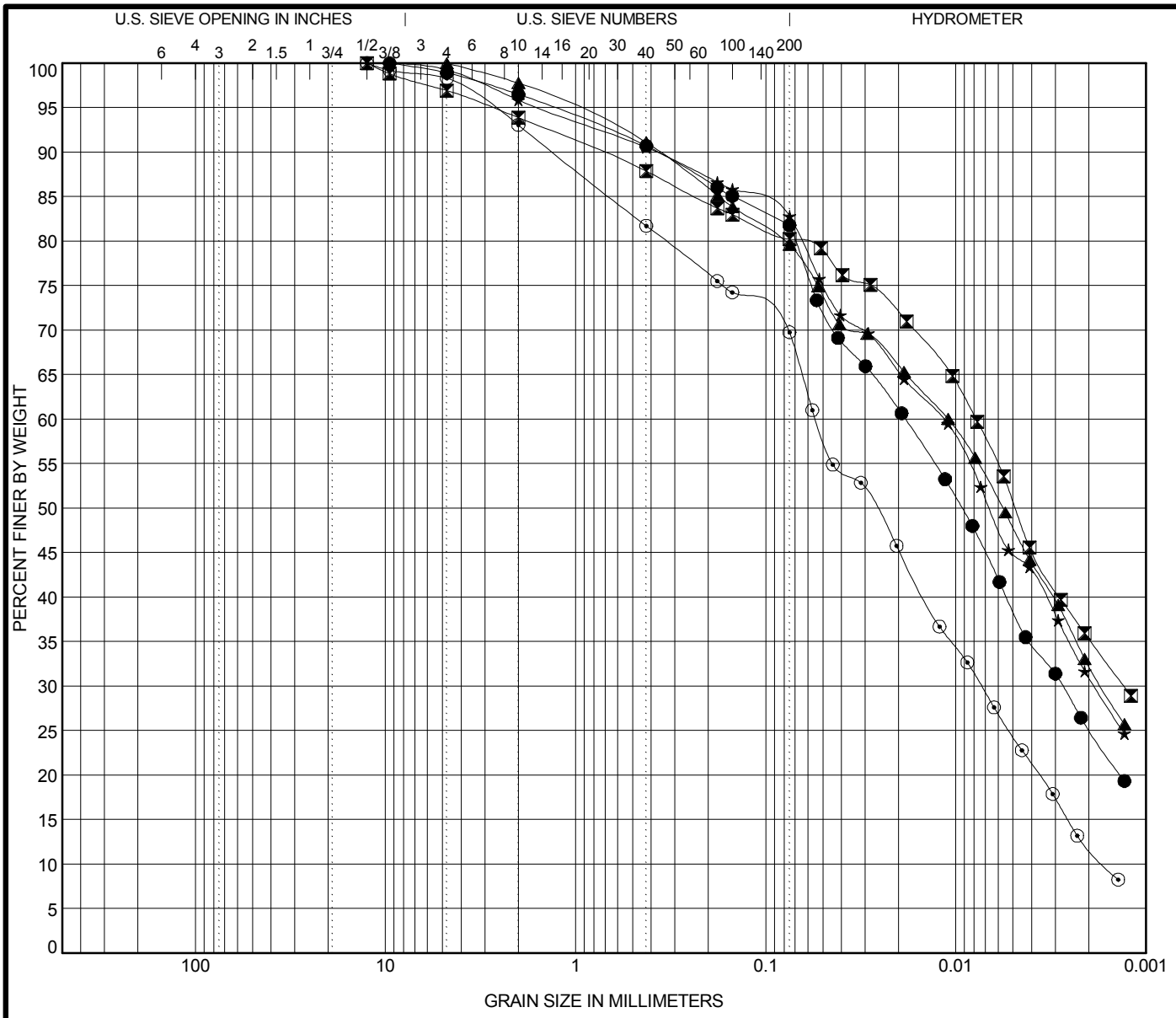

COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

	Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
●	18-RWB-02#3	6.0 ft	**Silty Clay Loam**	**30**	**16**	**14**		
⊠	18-RWB-03#6	13.5 ft	**Clay**	**33**	**19**	**14**		
▲	19-RWB-01#3	6.0 ft	**Clay**	**31**	**17**	**14**		
★	19-RWB-01#6	13.5 ft	**Silty Clay**	**31**	**18**	**13**		
⊙	19-RWB-01#8	18.5 ft	**Silty Loam**	**23**	**16**	**7**	**0.59**	**32.74**

	Specimen Identification		D95	D90	D84	D50	%Gravel	%Sand	%Silt	%Clay
●	18-RWB-02#3	6.0 ft	**1.339**	**0.373**	**0.119**	**0.009**	**3.5**	**15.1**	**56.3**	**25.2**
⊠	18-RWB-03#6	13.5 ft	**2.751**	**0.735**	**0.191**	**0.005**	**6.1**	**13.7**	**44.9**	**35.3**
▲	19-RWB-01#3	6.0 ft	**1.052**	**0.362**	**0.153**	**0.006**	**2.2**	**18.3**	**47.1**	**32.3**
★	19-RWB-01#6	13.5 ft	**1.562**	**0.378**	**0.098**	**0.007**	**4.1**	**13.3**	**51.6**	**31.0**
⊙	19-RWB-01#8	18.5 ft	**2.755**	**1.318**	**0.58**	**0.027**	**6.9**	**23.7**	**57.5**	**11.8**

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

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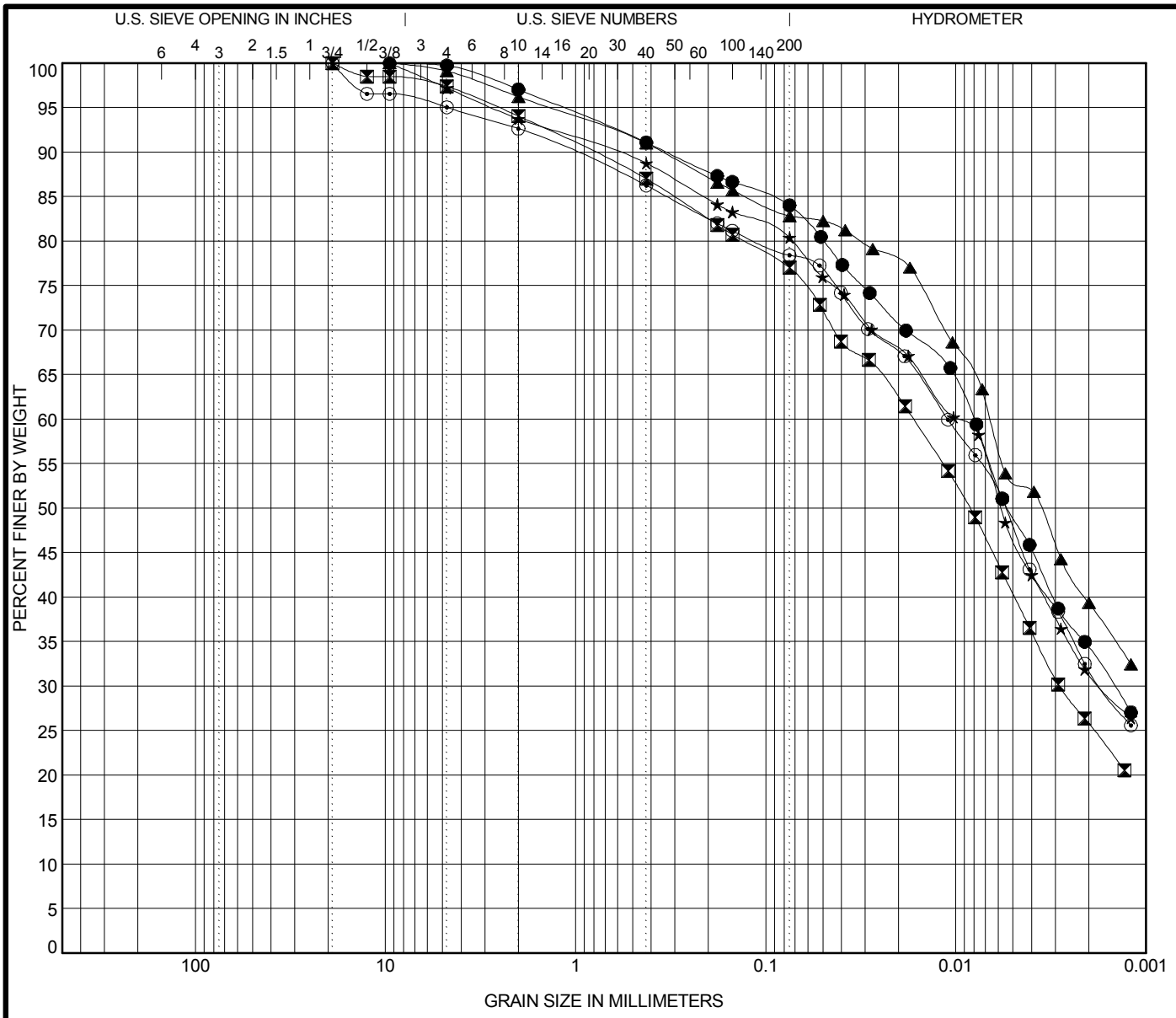

COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

	Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
●	19-RWB-01#14	38.5 ft	**Silty Clay**	**34**	**18**	**16**		
⊠	2081-B-05#3	6.0 ft	**Silty Clay Loam**	**30**	**15**	**15**		
▲	2081-B-05#8	18.5 ft	**Clay**	**33**	**16**	**17**		
★	2081-B-06#11	26.0 ft	**Silty Clay**	**35**	**16**	**19**		
⊙	2082-B-01#11	26.0 ft	**Silty Clay**	**36**	**16**	**20**		

	Specimen Identification		D95	D90	D84	D50	%Gravel	%Sand	%Silt	%Clay
●	19-RWB-01#14	38.5 ft	**1.173**	**0.331**	**0.075**	**0.005**	**2.9**	**13.1**	**49.6**	**34.3**
⊠	2081-B-05#3	6.0 ft	**2.555**	**0.821**	**0.258**	**0.008**	**5.9**	**17.2**	**51.1**	**25.8**
▲	2081-B-05#8	18.5 ft	**1.392**	**0.35**	**0.099**	**0.004**	**3.8**	**13.4**	**43.5**	**39.3**
★	2081-B-06#11	26.0 ft	**2.734**	**0.625**	**0.175**	**0.006**	**6.3**	**13.5**	**48.9**	**31.4**
⊙	2082-B-01#11	26.0 ft	**4.685**	**1.053**	**0.27**	**0.005**	**7.4**	**14.3**	**46.5**	**31.9**

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

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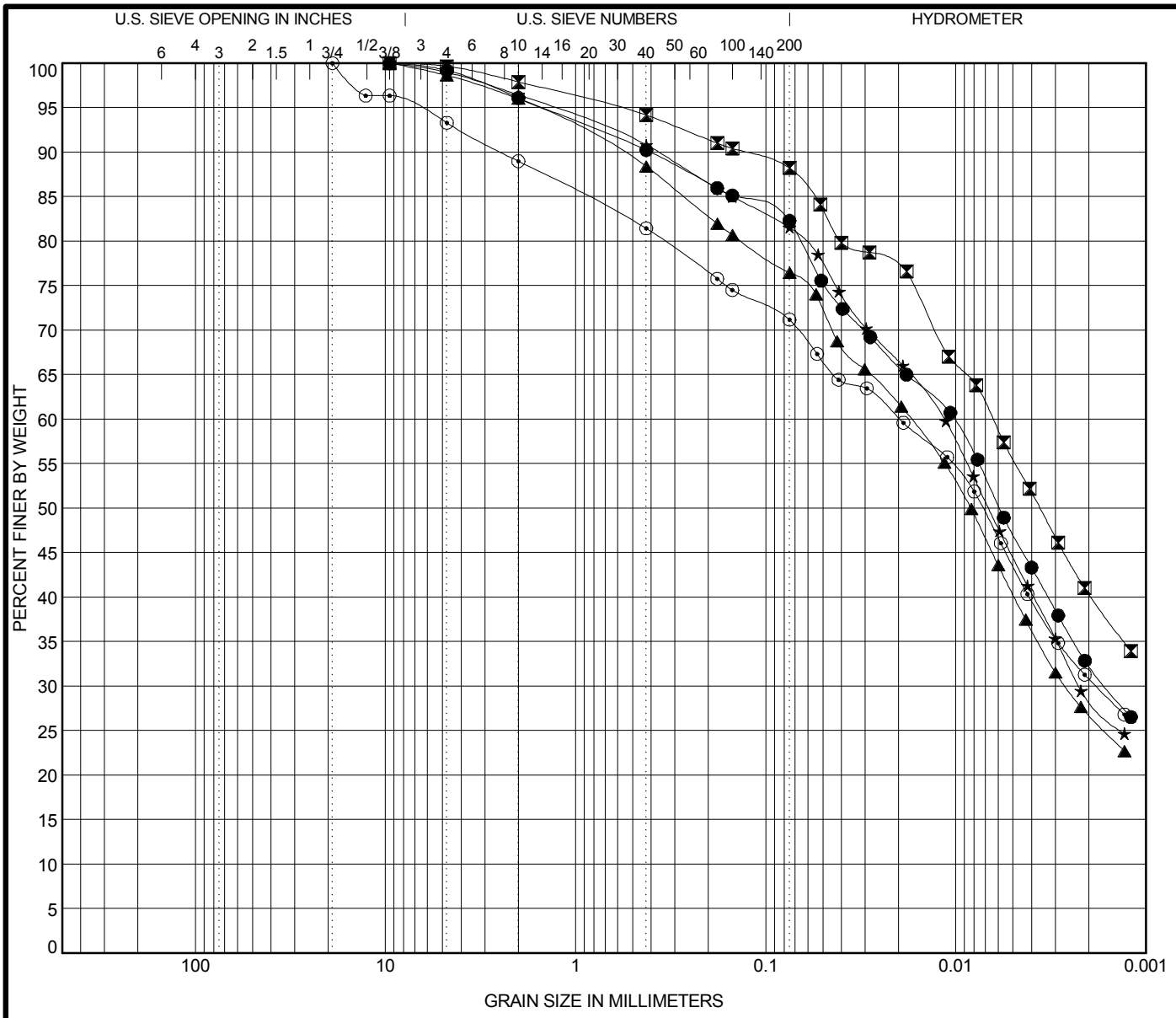

COBBLES	GRAVEL	SAND		SILT AND CLAY
		coarse	fine	

Specimen Identification		IDH Classification	LL	PL	PI	Cc	Cu
● 40-RWB-02#8	18.5 ft	**Silty Clay**	**34**	**18**	**16**		
⊠ EB290-SGB-01#2	3.1 ft	**Clay**	**39**	**17**	**22**		
▲ EB290-SGB-06#1	1.2 ft	**Silty Clay Loam**	**33**	**17**	**16**		
★ EB290-SGB-11#3	5.0 ft	**Silty Clay Loam**	**32**	**17**	**15**		
⊙ EB290-SGB-15#1	1.0 ft	**Clay**	**40**	**18**	**22**		

Specimen Identification		D95	D90	D84	D50	%Gravel	%Sand	%Silt	%Clay
● 40-RWB-02#8	18.5 ft	**1.495**	**0.406**	**0.114**	**0.006**	**3.9**	**14.1**	**49.7**	**32.3**
⊠ EB290-SGB-01#2	3.1 ft	**0.602**	**0.131**	**0.051**	**0.004**	**2.1**	**9.8**	**47.7**	**40.4**
▲ EB290-SGB-06#1	1.2 ft	**1.63**	**0.589**	**0.236**	**0.008**	**4.0**	**19.6**	**49.6**	**26.8**
★ EB290-SGB-11#3	5.0 ft	**1.349**	**0.368**	**0.123**	**0.007**	**3.6**	**15.0**	**52.8**	**28.6**
⊙ EB290-SGB-15#1	1.0 ft	**6.995**	**2.452**	**0.72**	**0.007**	**11.0**	**18.0**	**40.2**	**30.8**

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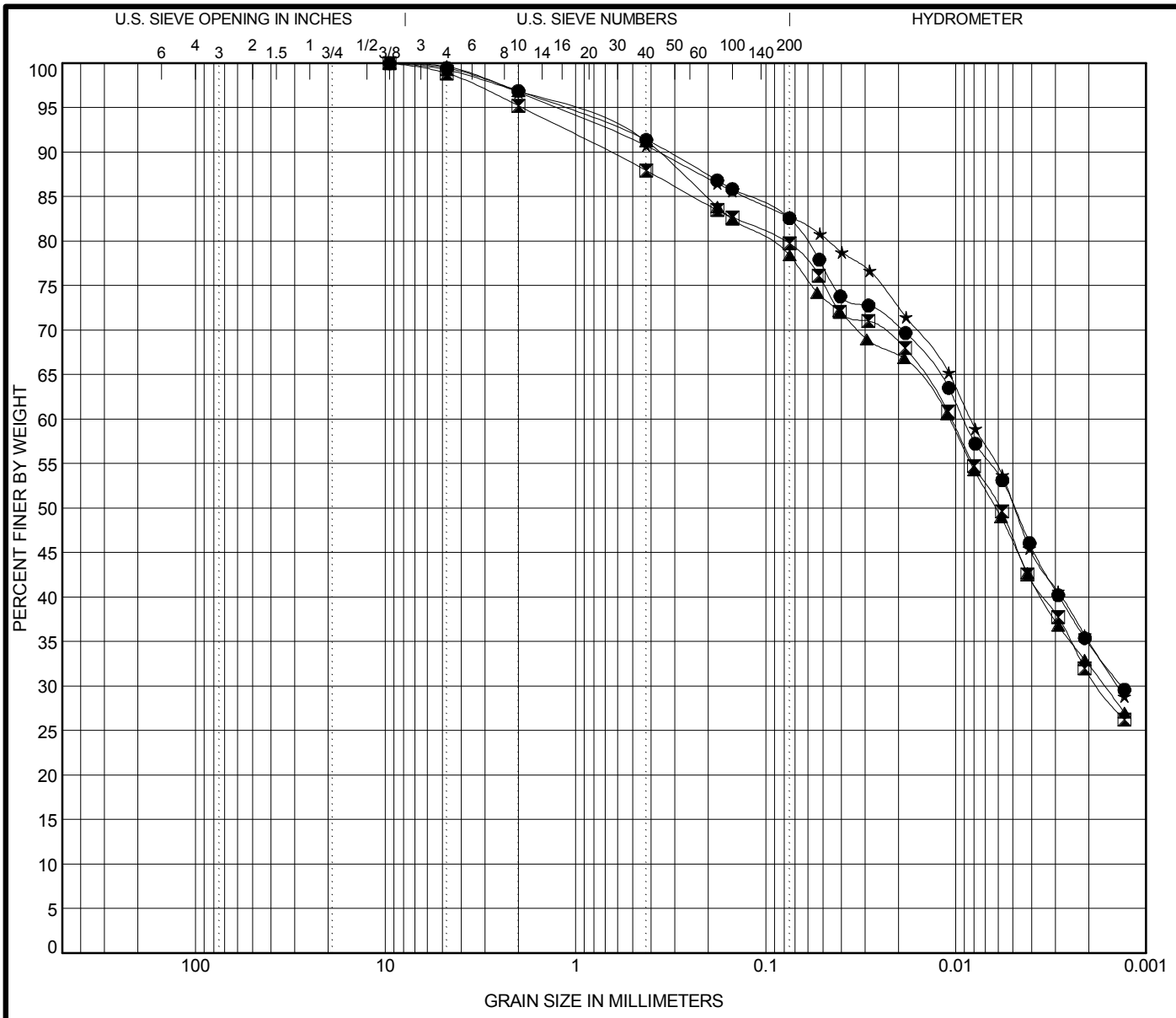
GRAIN SIZE DISTRIBUTION

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
●	WB290-SGB-02#1	1.1 ft	**Clay**	**37**	**17**	**20**		
⊠	WB290-SGB-05#3	5.0 ft	**Silty Clay**	**35**	**17**	**18**		
▲	WB290-SGB-07#1	1.0 ft	**Clay**	**37**	**18**	**19**		
★	WB290-SGB-09#3	5.0 ft	**Clay**	**35**	**17**	**18**		

	Specimen Identification		D95	D90	D84	D50	%Gravel	%Sand	%Silt	%Clay
●	WB290-SGB-02#1	1.1 ft	**1.176**	**0.328**	**0.101**	**0.005**	**3.1**	**14.5**	**47.6**	**34.8**
⊠	WB290-SGB-05#3	5.0 ft	**1.911**	**0.658**	**0.198**	**0.006**	**4.8**	**15.6**	**48.2**	**31.4**
▲	WB290-SGB-07#1	1.0 ft	**1.2**	**0.368**	**0.183**	**0.006**	**3.1**	**18.6**	**45.9**	**32.3**
★	WB290-SGB-09#3	5.0 ft	**1.278**	**0.368**	**0.101**	**0.005**	**3.3**	**14.1**	**47.6**	**35.0**

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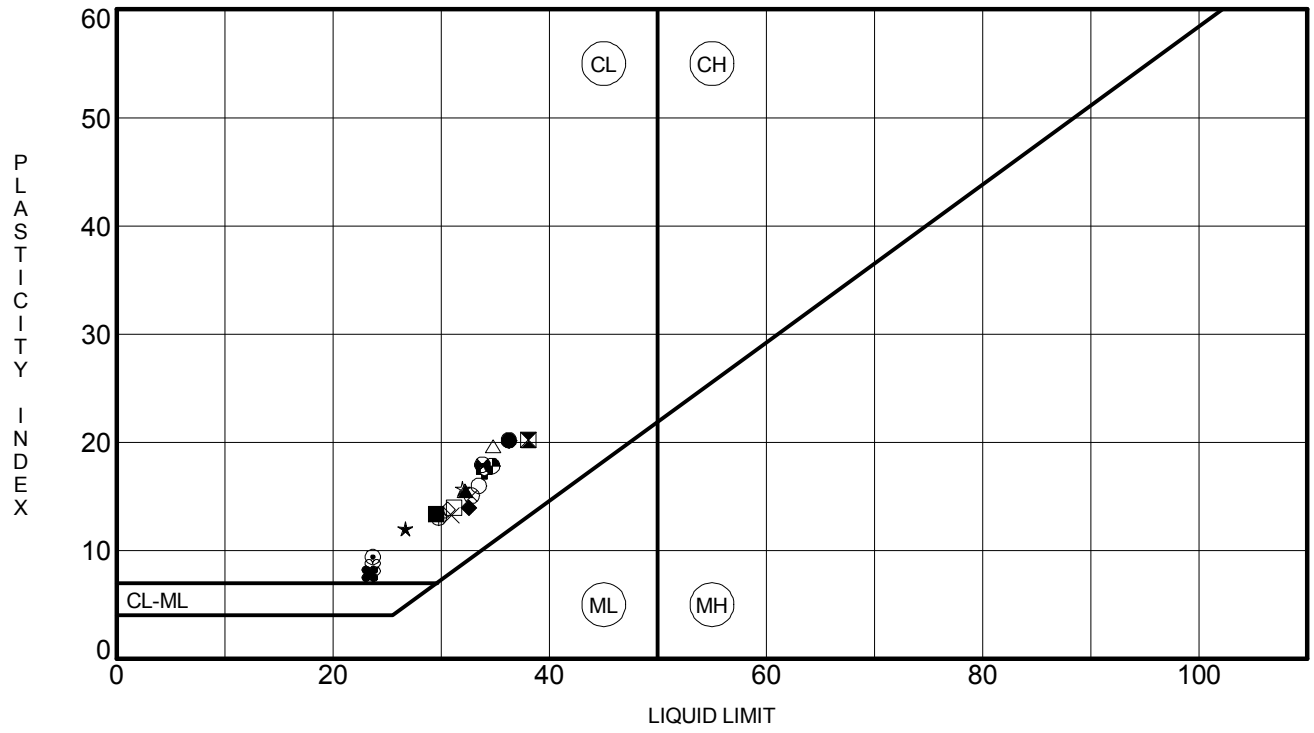
Fax: 630 953-9938

GRAIN SIZE DISTRIBUTION

Project: Circle Interchange Reconstruction

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

Number: 1100-04-01



Specimen Identification			LL	PL	PI	Fines	IDH Classification
●	07-RWB-05#7	16.0 ft	36	16	20	84	Silty Clay
⧓	09-RWB-01#6	13.5 ft	38	18	20	92	Silty Clay
▲	1087-B-02#5	11.0 ft	32	17	15	83	Silty Clay
★	12-RWB-03#9	21.0 ft	27	15	12	75	Silty Clay Loam
⊙	12-RWB-05#14	38.5 ft	24	14	10	43	Gravelly Silty Loam
✿	12-RWB-07#13	33.5 ft	34	17	17	81	Clay
○	12-RWB-09#12	28.5 ft	33	17	16	82	Clay
△	13-RWB-01#12	28.5 ft	35	15	20	82	Silty Clay
⊗	1703-B-01#2	3.5 ft	33	18	15	81	Silty Clay
⊕	1703-B-01#4	8.5 ft	30	17	13	74	Silty Clay Loam
□	1704-B-01#6	13.5 ft	31	17	14	76	Silty Clay Loam
⊛	1705-B-13#1	8.0 ft	34	16	18	82	Silty Clay
◔	1705-B-13#2	13.0 ft	35	17	18	82	Clay
☆	1705-B-14#7	16.0 ft	32	16	16	83	Silty Clay
⊠	1714-B-02#3	6.0 ft	24	15	9	58	Silty Loam
■	18-RWB-02#3	6.0 ft	30	16	14	82	Silty Clay Loam
◆	18-RWB-03#6	13.5 ft	33	19	14	80	Clay
◇	19-RWB-01#3	6.0 ft	31	17	14	80	Clay
╳	19-RWB-01#6	13.5 ft	31	18	13	83	Silty Clay
✖	19-RWB-01#8	18.5 ft	23	16	7	70	Silty Loam

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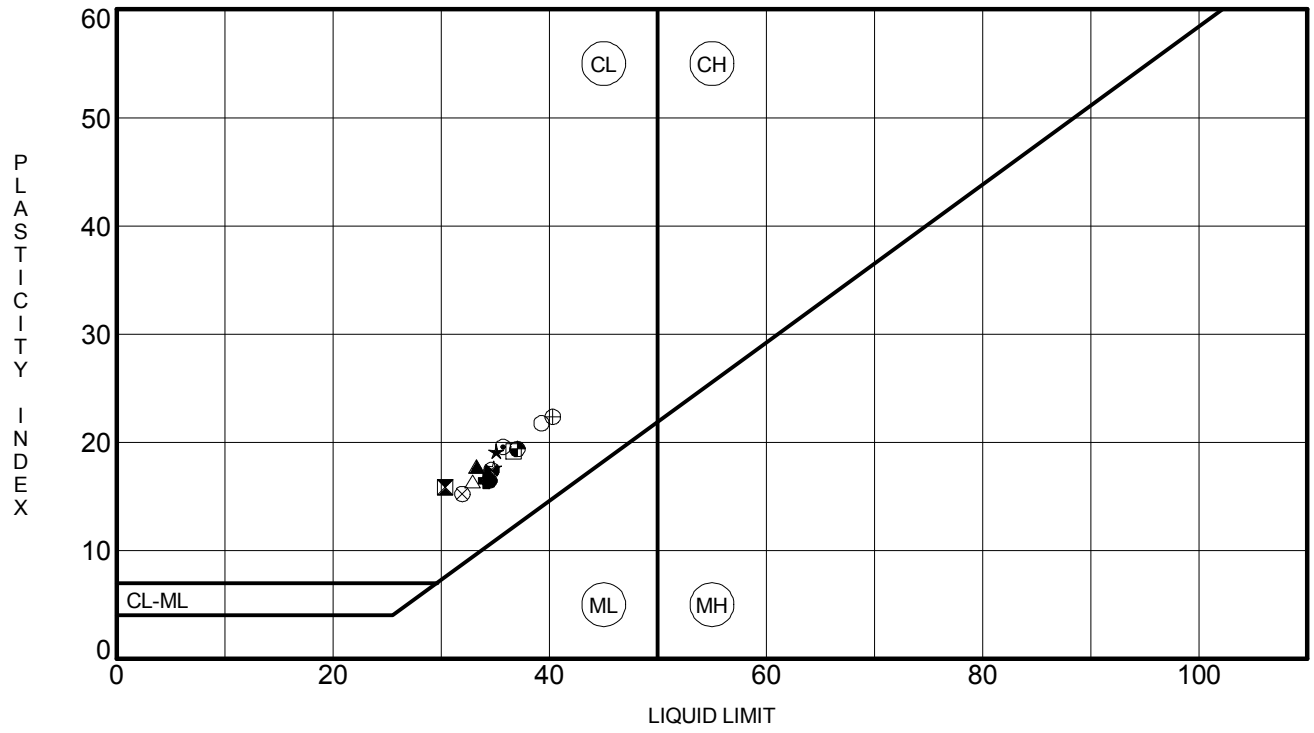
ATTERBERG LIMITS' RESULTS

Project: Circle Interchange Reconstruction

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

Number: 1100-04-01



	Specimen Identification		LL	PL	PI	Fines	IDH Classification
●	19-RWB-01#14	38.5 ft	34	18	16	84	Silty Clay
⧓	2081-B-05#3	6.0 ft	30	15	15	77	Silty Clay Loam
▲	2081-B-05#8	18.5 ft	33	16	17	83	Clay
★	2081-B-06#11	26.0 ft	35	16	19	80	Silty Clay
⊙	2082-B-01#11	26.0 ft	36	16	20	78	Silty Clay
✿	40-RWB-02#8	18.5 ft	34	18	16	82	Silty Clay
○	EB290-SGB-01#2	3.1 ft	39	17	22	88	Clay
△	EB290-SGB-06#1	1.2 ft	33	17	16	76	Silty Clay Loam
⊗	EB290-SGB-11#3	5.0 ft	32	17	15	82	Silty Clay Loam
⊕	EB290-SGB-15#1	1.0 ft	40	18	22	71	Clay
□	WB290-SGB-02#1	1.1 ft	37	17	20	83	Clay
⊛	WB290-SGB-05#3	5.0 ft	35	17	18	80	Silty Clay
◔	WB290-SGB-07#1	1.0 ft	37	18	19	78	Clay
☆	WB290-SGB-09#3	5.0 ft	35	17	18	83	Clay

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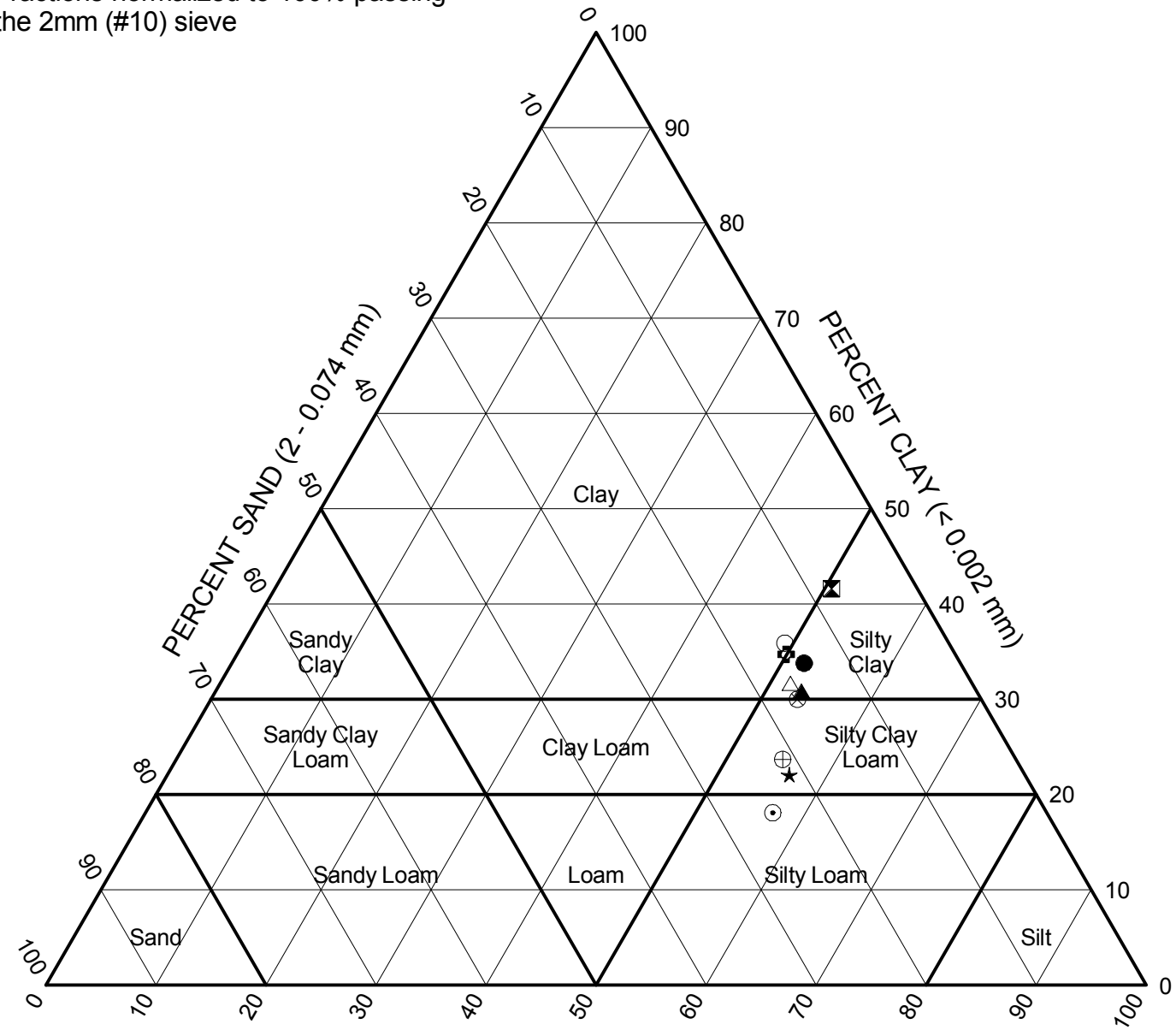
ATTERBERG LIMITS' RESULTS

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
●	07-RWB-05#7	16.0	14.2	52.0	33.8	Silty Clay	A-6 (16)	CL
⧗	09-RWB-01#6	13.5	7.7	50.6	41.6	Silty Clay	A-6 (19)	CL
▲	1087-B-02#5	11.0	15.9	53.2	30.9	Silty Clay	A-6 (11)	CL
★	12-RWB-03#9	21.0	21.4	56.5	22.1	Silty Clay Loam	A-6 (7)	CL
⊙	12-RWB-05#14	38.5	24.7	57.0	18.1	Gravelly Silty Loam	A-4 (1)	GC
✿	12-RWB-07#13	33.5	15.3	49.9	34.7	Clay	A-6 (12)	CL
○	12-RWB-09#12	28.5	14.9	49.2	35.9	Clay	A-6 (12)	CL
△	13-RWB-01#12	28.5	16.5	51.8	31.7	Silty Clay	A-6 (15)	CL
⊗	1703-B-01#2	3.5	16.8	53.3	30.0	Silty Clay	A-6 (11)	CL
⊕	1703-B-01#4	8.5	21.3	55.1	23.7	Silty Clay Loam	A-6 (8)	CL

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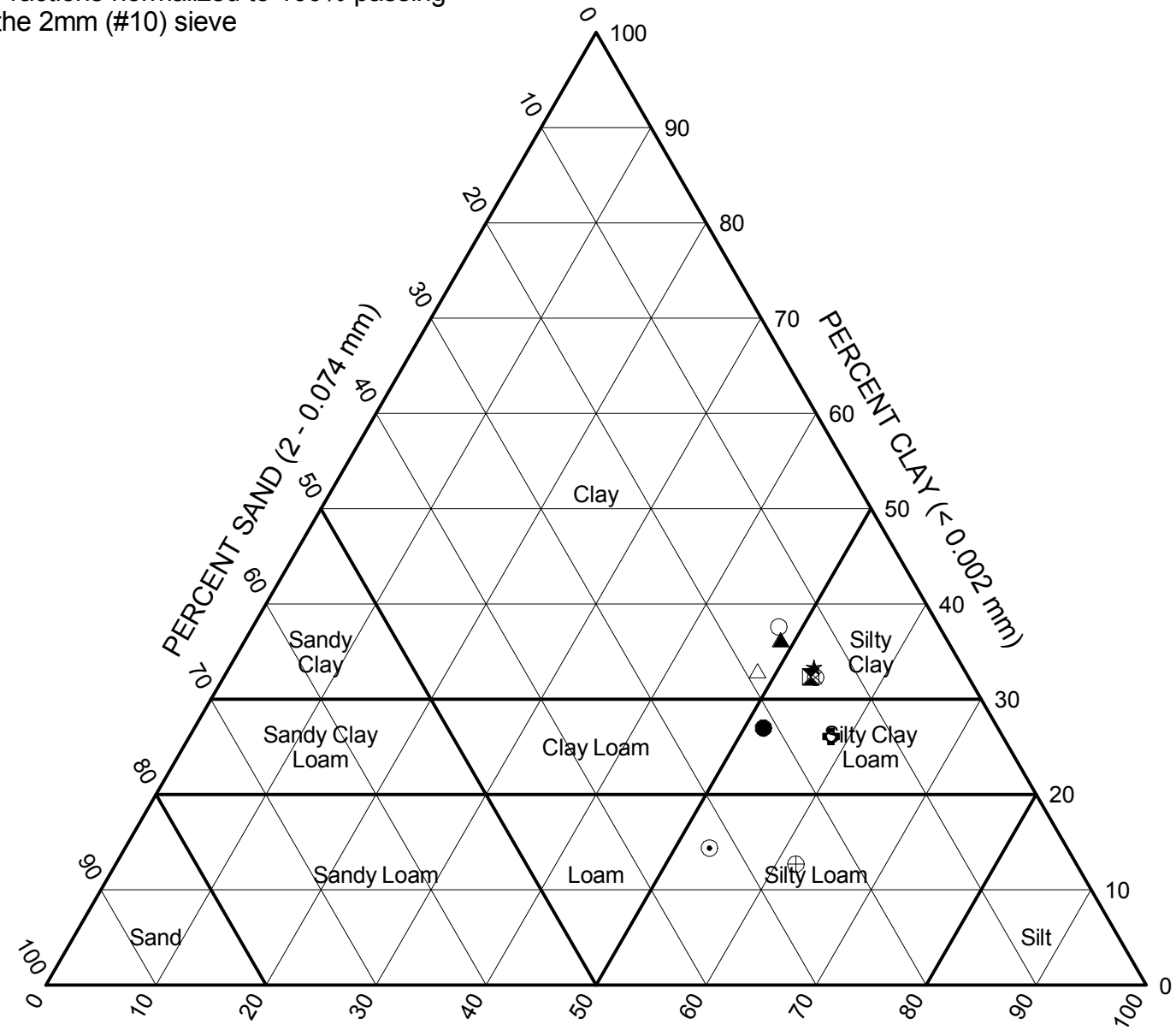
IDH Textural Classification Chart

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
●	1704-B-01#6	13.5	21.4	51.7	27.0	**Silty Clay Loam**	**A-6 (9)**	**CL**
⊠	1705-B-13#1	8.0	14.5	53.3	32.4	**Silty Clay**	**A-6 (13)**	**CL**
▲	1705-B-13#2	13.0	15.1	48.6	36.3	**Clay**	**A-6 (14)**	**CL**
★	1705-B-14#7	16.0	13.5	53.1	33.4	**Silty Clay**	**A-6 (12)**	**CL**
⊙	1714-B-02#3	6.0	32.6	53.1	14.4	**Silty Loam**	**A-4 (2)**	**CL**
✿	18-RWB-02#3	6.0	15.6	58.3	26.1	**Silty Clay Loam**	**A-6 (10)**	**CL**
○	18-RWB-03#6	13.5	14.6	47.8	37.6	**Clay**	**A-6 (10)**	**CL**
△	19-RWB-01#3	6.0	18.7	48.2	33.0	**Clay**	**A-6 (10)**	**CL**
⊗	19-RWB-01#6	13.5	13.9	53.8	32.3	**Silty Clay**	**A-6 (9)**	**CL**
⊕	19-RWB-01#8	18.5	25.5	61.8	12.7	**Silty Loam**	**A-4 (2)**	**CL-ML**

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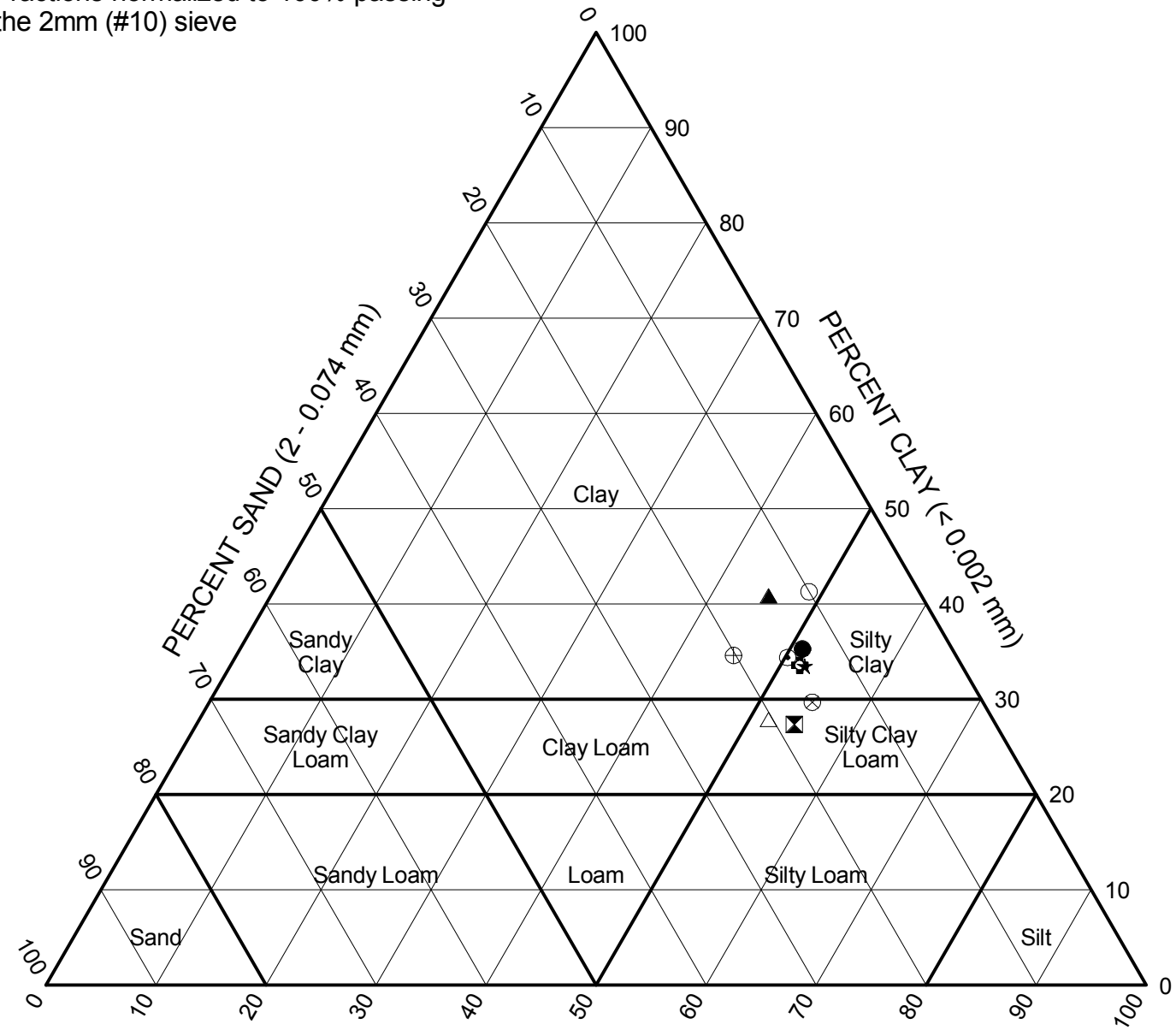
IDH Textural Classification Chart

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
●	19-RWB-01#14	38.5	**13.5**	**51.1**	**35.3**	**Silty Clay**	**A-6 (12)**	**CL**
⧓	2081-B-05#3	6.0	**18.3**	**54.3**	**27.4**	**Silty Clay Loam**	**A-6 (9)**	**CL**
▲	2081-B-05#8	18.5	**13.9**	**45.2**	**40.9**	**Clay**	**A-6 (13)**	**CL**
★	2081-B-06#11	26.0	**14.4**	**52.2**	**33.5**	**Silty Clay**	**A-6 (14)**	**CL**
⊙	2082-B-01#11	26.0	**15.4**	**50.2**	**34.4**	**Silty Clay**	**A-6 (14)**	**CL**
✿	40-RWB-02#8	18.5	**14.7**	**51.7**	**33.6**	**Silty Clay**	**A-6 (12)**	**CL**
⊕	EB290-SGB-01#2	3.1	**10.0**	**48.7**	**41.3**	**Clay**	**A-6 (19)**	**CL**
△	EB290-SGB-06#1	1.2	**20.4**	**51.7**	**27.9**	**Silty Clay Loam**	**A-6 (10)**	**CL**
⊗	EB290-SGB-11#3	5.0	**15.6**	**54.8**	**29.7**	**Silty Clay Loam**	**A-6 (11)**	**CL**
⊕	EB290-SGB-15#1	1.0	**20.2**	**45.2**	**34.6**	**Clay**	**A-6 (14)**	**CL**

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IDH Textural Classification Chart

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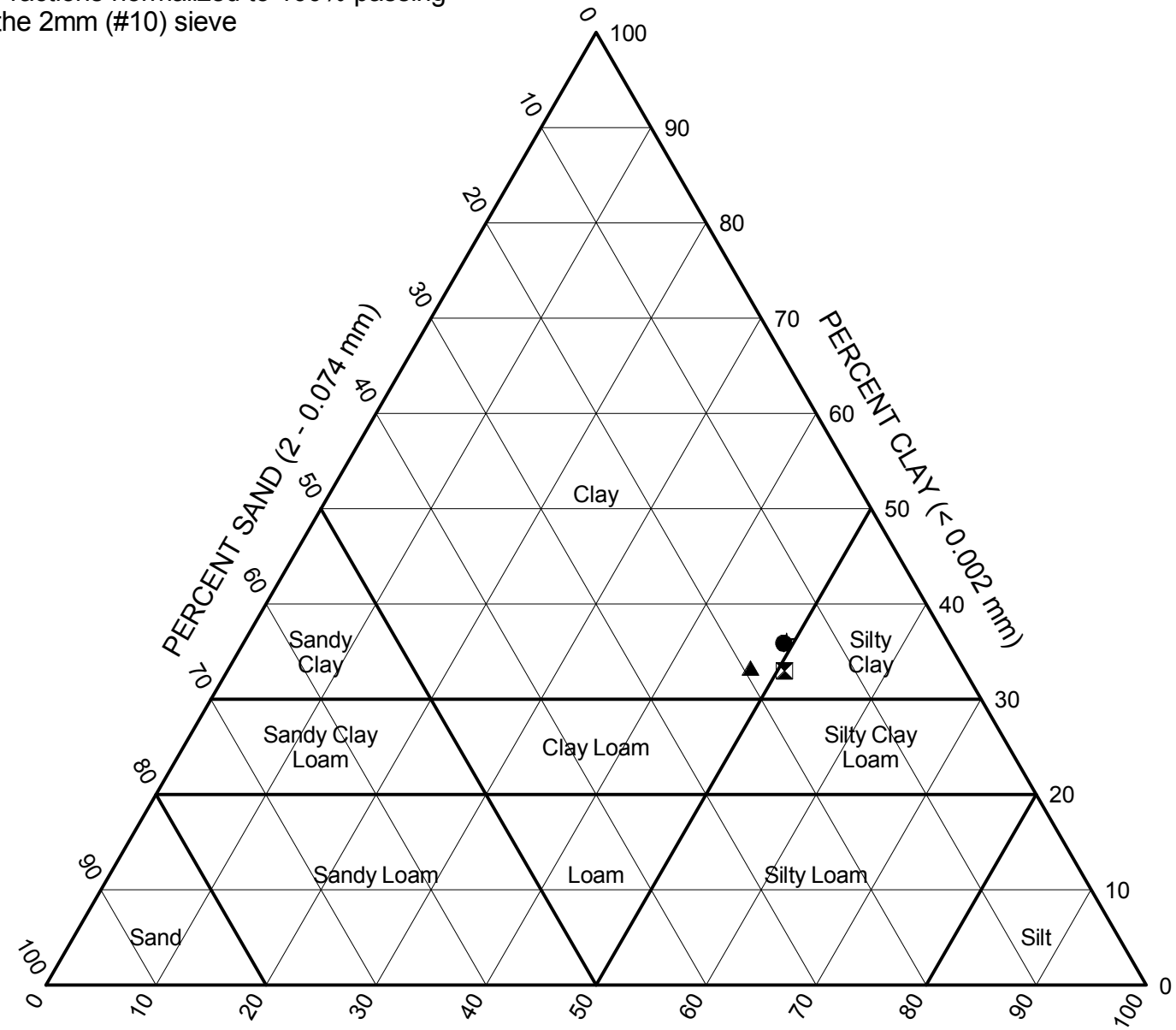
Location: Section 17, T39N, R14E of 3rd PM

Number: 1100-04-01

Fractions normalized to 100% passing the 2mm (#10) sieve



	Sample	Depth (ft)	Sand (%)	Silt (%)	Clay (%)	Classification		
						IL DOT	AASHTO	ASTM
●	WB290-SGB-02#1	1.1	**15.0**	**49.1**	**35.9**	**Clay**	**A-6 (16)**	**CL**
⊠	WB290-SGB-05#3	5.0	**16.4**	**50.6**	**33.0**	**Silty Clay**	**A-6 (13)**	**CL**
▲	WB290-SGB-07#1	1.0	**19.2**	**47.4**	**33.3**	**Clay**	**A-6 (14)**	**CL**
▼	WB290-SGB-09#3	5.0	**14.6**	**49.2**	**36.2**	**Clay**	**A-6 (14)**	**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

APPENDIX D

APPENDIX D

BORING LOCATION PLANS AND SOIL PROFILES

ROADWAY GEOTECHNICAL REPORT

CIRCLE INTERCHANGE RECONSTRUCTION
I-290 FROM LOOMIS STREET TO I-90/94
SECTION 2013-077R, PTB 163/ITEM 001
IDOT D-91-227-13, CONTRACT 60X77
COOK COUNTY, ILLINOIS

FOR

FOR AECOM
303 EAST WACKER DRIVE
CHICAGO, IL 60601

Prepared by
WANG ENGINEERING
1145 NORTH MAIN STREET
LOMBARD, IL 60148

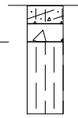
JULY 06, 2015
WANG PROJECT 1100-04-01

LEGEND:

Roadway Boring

WB290-SGB-01 — Borehole Number
587.39 ft, — Elevation
5218+83.43, 11.39 LT — Station, offset

Borehole Lithology



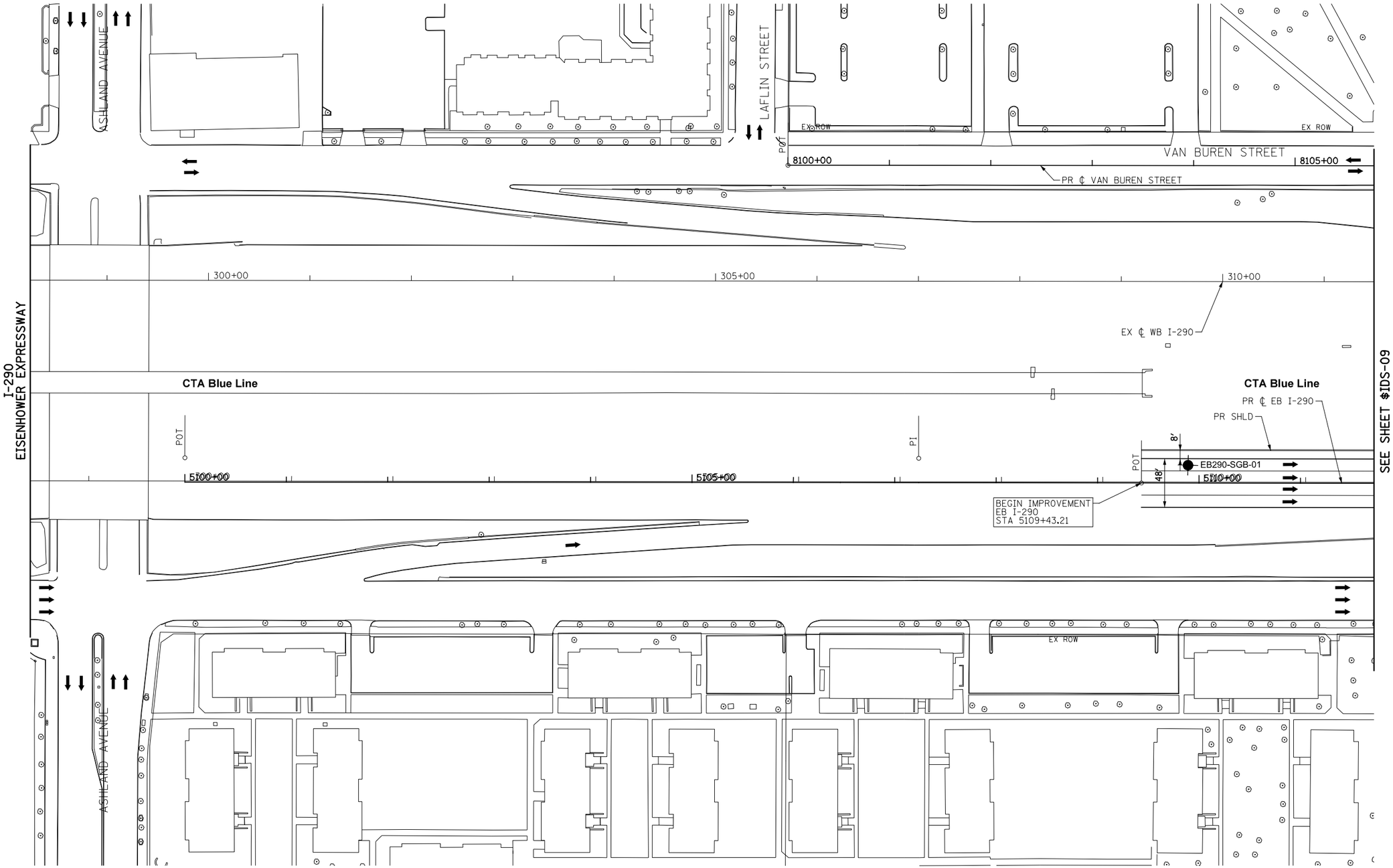
N–N-value, (blw/12 in)
Qu–UC Strength, (tsf)
MC--Moisture Content, (%)

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
- USCS High Plasticity Organic silt or clay
- IDH Clay
- IDH Silty Clay, Silty Clay Loam
- IDH Clay Loam
- IDH Silt, Silty Loam
- IDH Loam
- IDH Sand, Sandy Loam
- Coarse sand
- Gravelly sand, sandy gravel
- Weathered bedrock
- Dolomite or Dolomitic Limestone



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PLOT SCALE = $SCALE$	CHECKED -	REVISED -
PLOT DATE = $DATE$	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

. SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		COOK	11	1
		CONTRACT NO.		
	ILLINOIS	FED. AID PROJECT	$IDS-08	

N

EX ROW

LOOMIS STREET

EX ROW

EX ROW

EX ROW

THROOP STREET

EX ROW

EX ROW

8110+00

8115+00

VAN BUREN STREET

PR ℄ VAN BUREN STREET

PR CURVE P-IKE-WB-4

PR ℄ WB I-290

END IMPROVEMENT
WB I-290
STA 5250+87.94

315+00

320+00

5250+00

PI

SEE SHEET $IDS-08

SEE SHEET $IDS-10

CTA Blue Line

9335+00

9100+00

9105+00

9330+00

CTA Blue Line

PR CONC BARRIER

9110+00

PR ℄ EB I-290

PR SHLD

PC

5115+00

EB290-SGB-03

5120+00

EB290-SGB-05

EB290-SGB-02

EB290-SGB-04

PR SHLD

PR CURVE P-IKE-EB-1

CONGRESS PARKWAY

EX ROW

EX ROW

LOOMIS STREET

Student Services Building

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Circle INTERCHANGE

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PLOT DATE = $DATE$	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

. SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		COOK	11	2
		CONTRACT NO.		
	ILLINOIS	FED. AID PROJECT	$IDS-09	

N

EX ROW
EX ROW
EX ROW
EX ROW
EX ROW
VAN BUREN STREET
8120+00
8125+00
PI
8130+00
PR CURVE P-IKE-WB-4
PR ℄ VAN BUREN STREET
5248+02.39
CCTV-ITS-07
EX ROW
EX ROW
EX ROW
EX ROW
Strictly By Hand
Chicago Auto Care Center
ABERDEEN STREET
Blue Plate Catering
Civitas Schools
07-RWB-09
325+00
WB290-SGB-10
PC
07-RWB-08
5245+00
WB290-SGB-09
07-RWB-07
330+00
07-RWB-06
PT
07-RWB-05
07-RWB-04
07-RWB-03
3000+00
PR ℄ WB I-290
TILDEN STREET
5240+00
WB290-SGB-08
WB290-SGB-07
335+00
07-RWB-02
WB290-SGB-06
9325+00
9115+00
9320+00
CTA Blue Line
SEE SHEET $IDS-09
SEE SHEET $IDS-11
325+00
5125+00
EB290-SGB-06
EB290-SGB-07
PC
330+00
5130+00
EB290-SGB-08
PT
9120+00
9315+00
CTA Blue Line
EB290-SGB-09
335+00
5135+00
EB290-SGB-10
PC
CONGRESS PARKWAY
11-RWB-03
PR CURVE P-IKE-EB-2
11-PMT-01
11-VST-01
11-RWB-02
5132+60.18
11-RWB-01
RACINE AVENUE
EX ROW
09-RWB-02
PC
09-RWB-01
PT
3300+00
3305+00
09-VST-01
CONGRESS PARKWAY
EX ROW
EX ROW
PR CURVE P-IKE-EB-3
Education, Performing Arts, and Social Work
UIC Pavilion
UIC Parking Structure
Lot - UIC
UIC Theater

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

- | SHEET OF SHEETS | STA. | TO STA.

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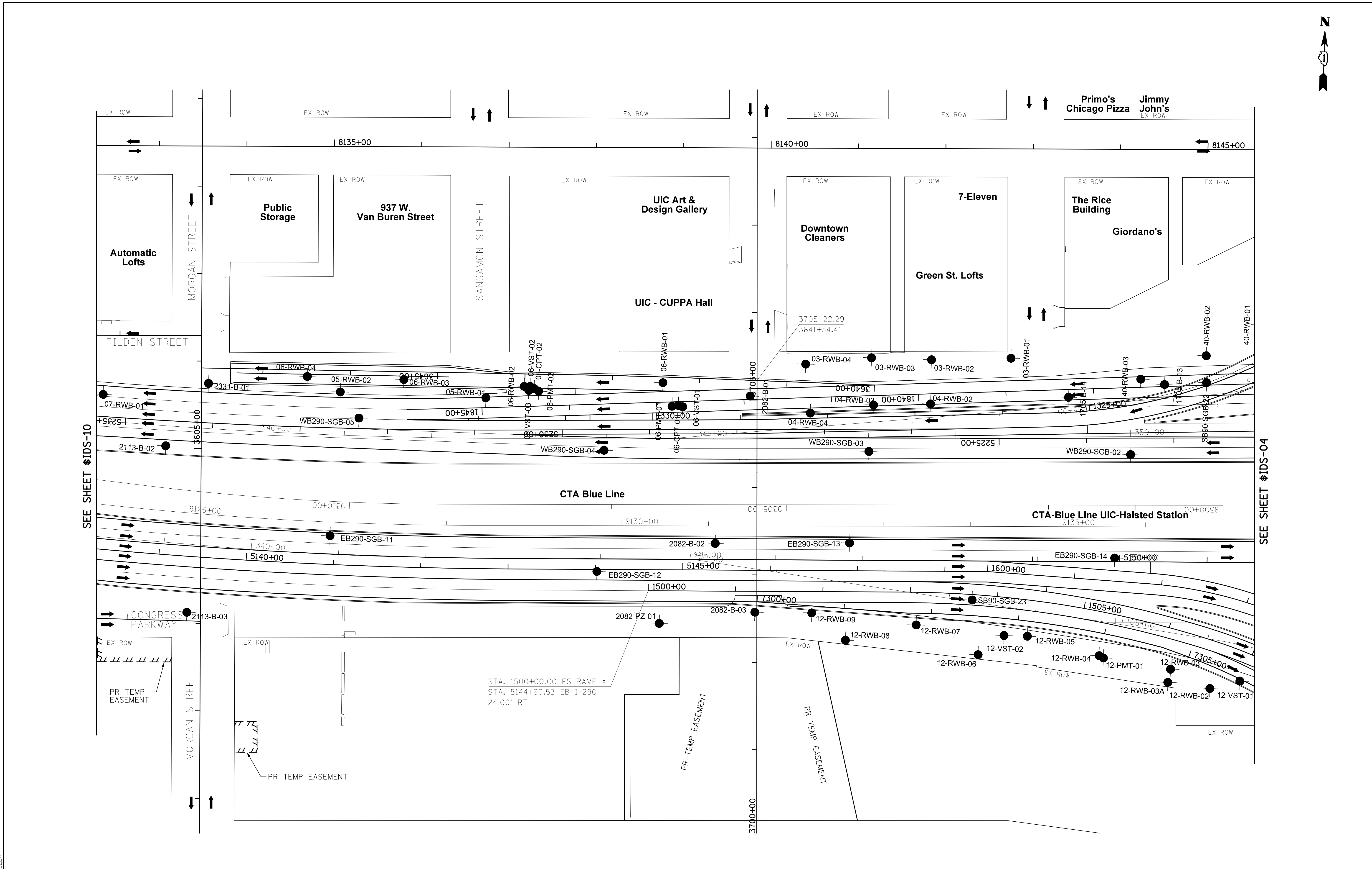

N
EX ROW
8135+00
8140+00
8145+00
Primo's Chicago Pizza
Jimmy John's
Automatic Lofts
Public Storage
937 W. Van Buren Street
UIC Art & Design Gallery
UIC - CUPPA Hall
Downtown Cleaners
Green St. Lofts
7-Eleven
The Rice Building
Giordano's
MORGAN STREET
SANGAMON STREET
TILDEN STREET
3705+22.29
3641+34.41
06-RWB-04
05-RWB-02
06-RWB-03
05-RWB-01
06-RWB-02
06-VST-02
06-CPT-02
06-PMT-02
06-RWB-01
06-VST-01
06-PMT-01
06-CPT-01
06-VST-03
03-RWB-04
03-RWB-03
03-RWB-02
03-RWB-01
04-RWB-03
04-RWB-02
04-RWB-04
40-RWB-02
40-RWB-01
40-RWB-03
1705-B-14
1705-B-13
SB90-SGB-22
2331-B-01
07-RWB-01
2113-B-02
2082-B-01
WB290-SGB-05
WB290-SGB-04
WB290-SGB-03
WB290-SGB-02
3645+00
3640+00
1845+00
1840+00
1325+00
5235+00
5230+00
5225+00
1330+00
340+00
345+00
350+00
3605+00
3705+00
SEE SHEET $IDS-10
SEE SHEET $IDS-04
CTA Blue Line
CTA-Blue Line UIC-Halsted Station
9125+00
9310+00
9130+00
9305+00
9135+00
9300+00
EB290-SGB-11
EB290-SGB-12
EB290-SGB-13
EB290-SGB-14
2082-B-02
5140+00
5145+00
5150+00
1600+00
1500+00
1505+00
105+00
7300+00
7305+00
SB90-SGB-23
CONGRESS PARKWAY
2113-B-03
2082-PZ-01
2082-B-03
12-RWB-09
12-RWB-08
12-RWB-07
12-RWB-06
12-RWB-05
12-RWB-04
12-RWB-03
12-RWB-03A
12-RWB-02
12-VST-02
12-VST-01
12-PMT-01
PR TEMP EASEMENT
STA. 1500+00.00 ES RAMP =
STA. 5144+60.53 EB I-290
24.00' RT
3700+00

Circle INTERCHANGE	$FILES$	DESIGNED -	REVISED -	**STATE OF ILLINOIS**	
	USER NAME = $USER$	DRAWN -	REVISED -	**DEPARTMENT OF TRANSPORTATION**	
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -		
	PLOT DATE = $DATE$	DATE -	REVISED -		SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		COOK	11	4
		CONTRACT NO.		
	ILLINOIS FED. AID PROJECT		$IDS-11	

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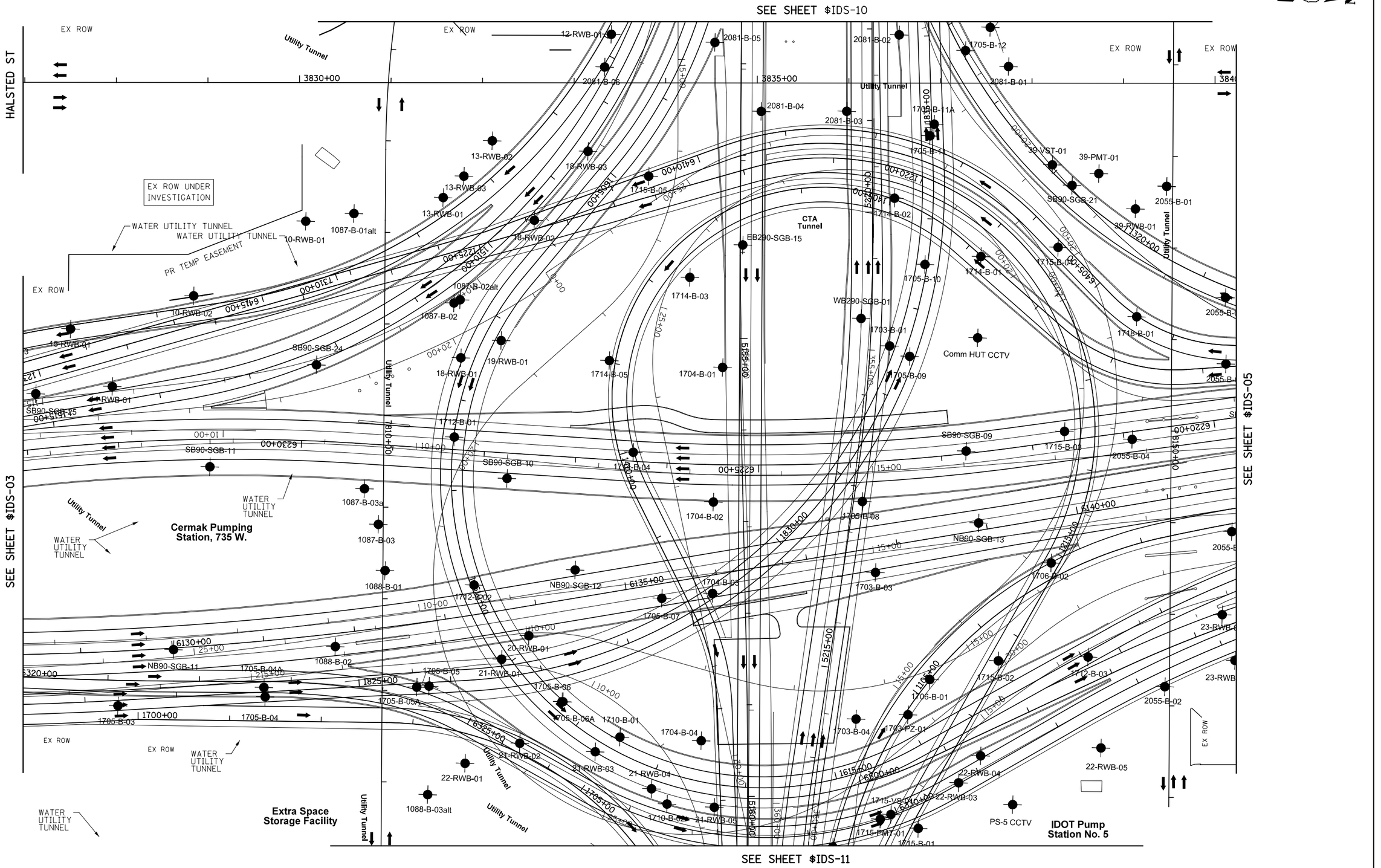

Circle INTERCHANGE	$FILES$	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	USER NAME = $USER$	DRAWN -	REVISED -					COOK	11	5
	PLOT SCALE = $SCALE$	CHECKED -	REVISED -					CONTRACT NO.		
	PLOT DATE = $DATE$	DATE -	REVISED -		· SHEET OF SHEETS STA. TO STA.		ILLINOIS	FED. AID PROJECT	$IDS-04	

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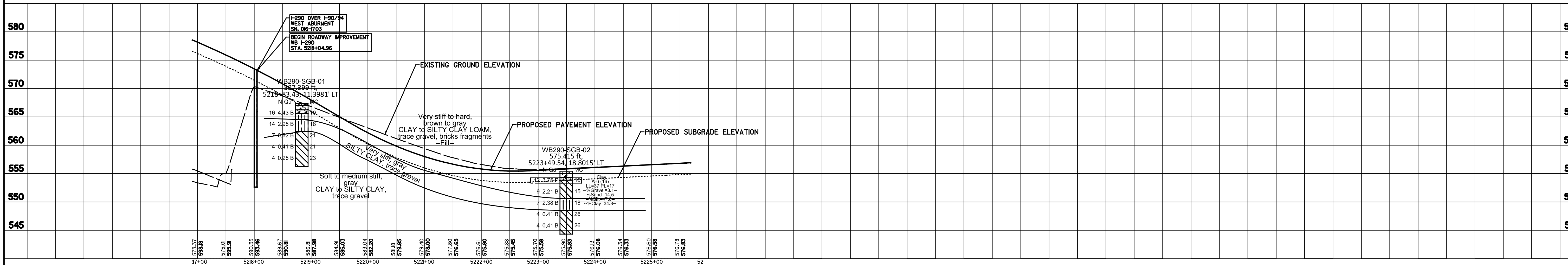
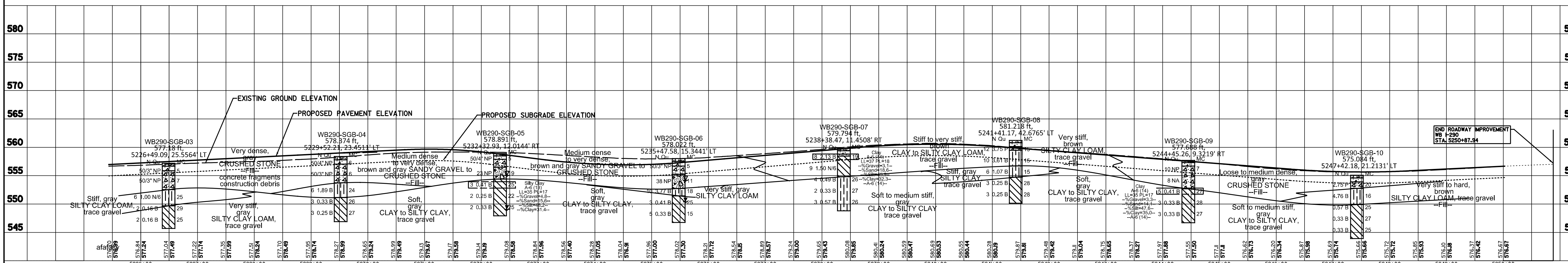




PLAN
NOTE BOOK NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
R. OF WAY CHECKED
CADD FILE NAME
BY
DATE

PROFILE
NOTE BOOK NO.
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
BY
DATE

FILE PATH = $FILEL$

Circle Interchange

$FILE$	DESIGNED -	REVISED -
USER NAME = $USER$	DRAWN -	REVISED -
PLOT SCALE = $SCALE$	CHECKED -	REVISED -
PLOT DATE = $DATE$	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WB I-290 PROFILE

SHEET 1 OF 1 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		COOK	11	6
		CONTRACT NO.		

ILLINOIS FED. AID PROJECT

PLAN
SURVEYED
PLOTTED
GRADES CHECKED
ALIGNMENTS CHKD
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
ALIGNMENTS CHKD
STRUCTURE NO(S)
NOTE BOOK
NO.
BY
DATE

FILE PATH = $FILE$

BEGIN ROADWAY IMPROVEMENT
EB I-290
STA. 5109+43.21

EB290-SGB-01
579.771 ft,
5109+89.14, 17.5855 LT

EB290-SGB-02
578.208 ft,
5114+29.99, 21.5419 RT

EB290-SGB-03
579.664 ft,
5117+30.29, 20.3365 LT

EB290-SGB-04
579.583 ft,
5120+00.90, 18.6673 RT

EB290-SGB-05
578.276 ft,
5122+98.19, 24.8178 LT

PROPOSED SUBGRADE ELEVATION
PROPOSED PAVEMENT ELEVATION
EXISTING GROUND ELEVATION

Medium Stiff, gray SILTY CLAY LOAM, trace gravel
Very stiff, brown and gray CLAY to SILTY CLAY LOAM, trace gravel --Fill--
Very soft, gray CLAY to SILTY CLAY, trace gravel
Very stiff, brown and gray SILTY CLAY LOAM, trace gravel --Fill--
Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel
Very stiff, brown and gray SILTY CLAY LOAM, trace gravel --Fill--
Medium dense, brown SANDY GRAVEL --Fill--
Medium dense, dark brown, fine SAND --Fill--
Medium stiff, dark brown ORGANIC SILTY CLAY
Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel

11-RWB-03
592.979 ft,
5129+56.29, 45.1732 RT

11-RWB-01
593.582 ft,
5132+66.55, 47.9312 RT

EB290-SGB-09
580.161 ft,
5134+69.65, 28.8856 LT

EB290-SGB-10
577.984 ft,
5137+94.97, 1.8184 RT

EB290-SGB-11
577.592 ft,
5140+94.75, 32.7579 LT

EB290-SGB-12
577.722 ft,
5144+01.69, 2.1794 RT

EB290-SGB-13
576.975 ft,
5146+90.73, 21.8168 LT

EB290-SGB-14
575.895 ft,
5149+94.26, 4.2653 LT

EB290-SGB-06
576.775 ft,
5125+98.92, 10.2769 RT

Hard brown SILTY CLAY LOAM, trace gravel --Fill--
Very soft to soft, gray CLAY to SILTY CLAY, trace gravel
Medium stiff very stiff, gray SILTY CLAY to 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
Very stiff to hard, brown SILTY CLAY LOAM, trace gravel --Fill--
Soft to very stiff, gray CLAY to SILTY CLAY, trace gravel
Soft, gray CLAY to SILTY CLAY LOAM, trace gravel
Very stiff, brown SILTY CLAY LOAM, trace gravel --Fill--
Very dense, brown SANDY GRAVEL --Fill--
Soft to medium stiff, gray CLAY to SILTY CLAY LOAM, trace gravel
Medium dense to very dense, brown SANDY GRAVEL --Fill--
Soft to medium stiff, gray CLAY to SILTY CLAY LOAM, trace gravel
Very stiff, hard, brown and gray SILTY CLAY LOAM, trace gravel and bricks fragments --Fill--
Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel

I-290 OVER I-90/94
WEST ABUTMENT
SN. 016-1704

END ROADWAY IMPROVEMENT
EB I-290
STA. 5155+56.96

1704-B-01
588.981 ft,
5155+11.36, 19.50 RT

1704-B-03
575.518 ft,
5157+77.59, 35.57 RT

1704-B-04
584.722 ft,
5159+38.86, 50.40RT

2081-B-05
576.4668 ft,
5151+76.82, 19.92 RT

Hard brown and gray SILTY CLAY LOAM, trace gravel --Fill--
Medium stiff, gray CLAY to SILTY CLAY, trace gravel
Very soft to medium stiff, gray CLAY to SILTY CLAY LOAM, trace gravel
Very soft to medium, brown and gray CLAY to SILTY CLAY LOAM, trace gravel
Very soft to medium stiff, gray CLAY to SILTY CLAY LOAM, trace gravel

Circle INTERCHANGE

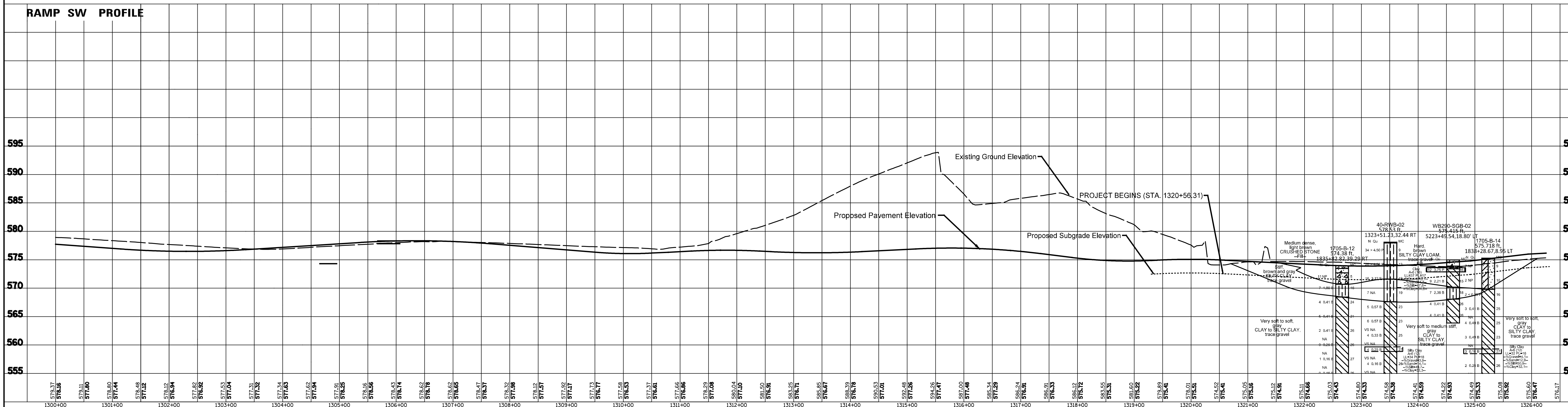
$FILE$	DESIGNED -	REVISED -
USER NAME = $USER$	DRAWN -	REVISED -
PLOT SCALE = $SCALE$	CHECKED -	REVISED -
PLOT DATE = $DATE$	DATE -	REVISED -

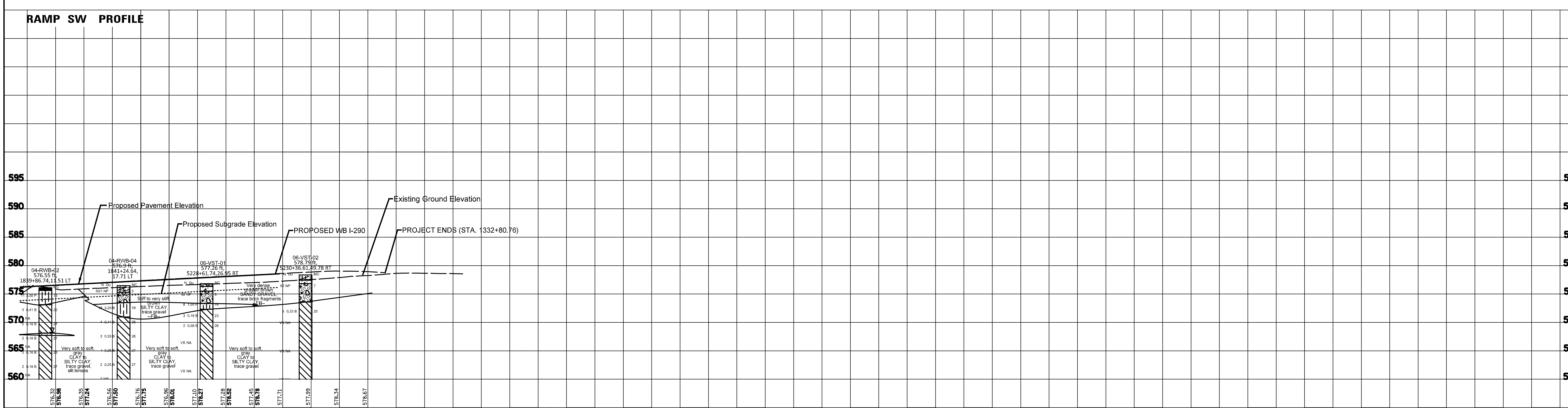
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EB I–290 PROFILE

SHEET 1 OF 1 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		COOK	11	7
		CONTRACT NO.		
	ILLINOIS	FED. AID PROJECT		





PLAN
NOTE BOOK ___
NO. ___
SURVEYED
PLOTTED
ALIGNMENT CHECKED
P.I. OF REF CHECKED
CADD FILE NAME
BY
DATE

PROFILE
NOTE BOOK ___
NO. ___
SURVEYED
PLOTTED
GRADES CHECKED
B.M. NOTED
STRUCTURE NOTATNS CHKD
BY
DATE

FILE PATH = $FILE$

Circle INTERCHANGE

$FILE$	DESIGNED -	REVISED -
USER NAME = $USER$	DRAWN -	REVISED -
PLOT SCALE = $SCALE$	CHECKED -	REVISED -
PLOT DATE = $DATE$	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAMP SW PROFILE

SHEET 1 OF 1 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		COOK	11	8

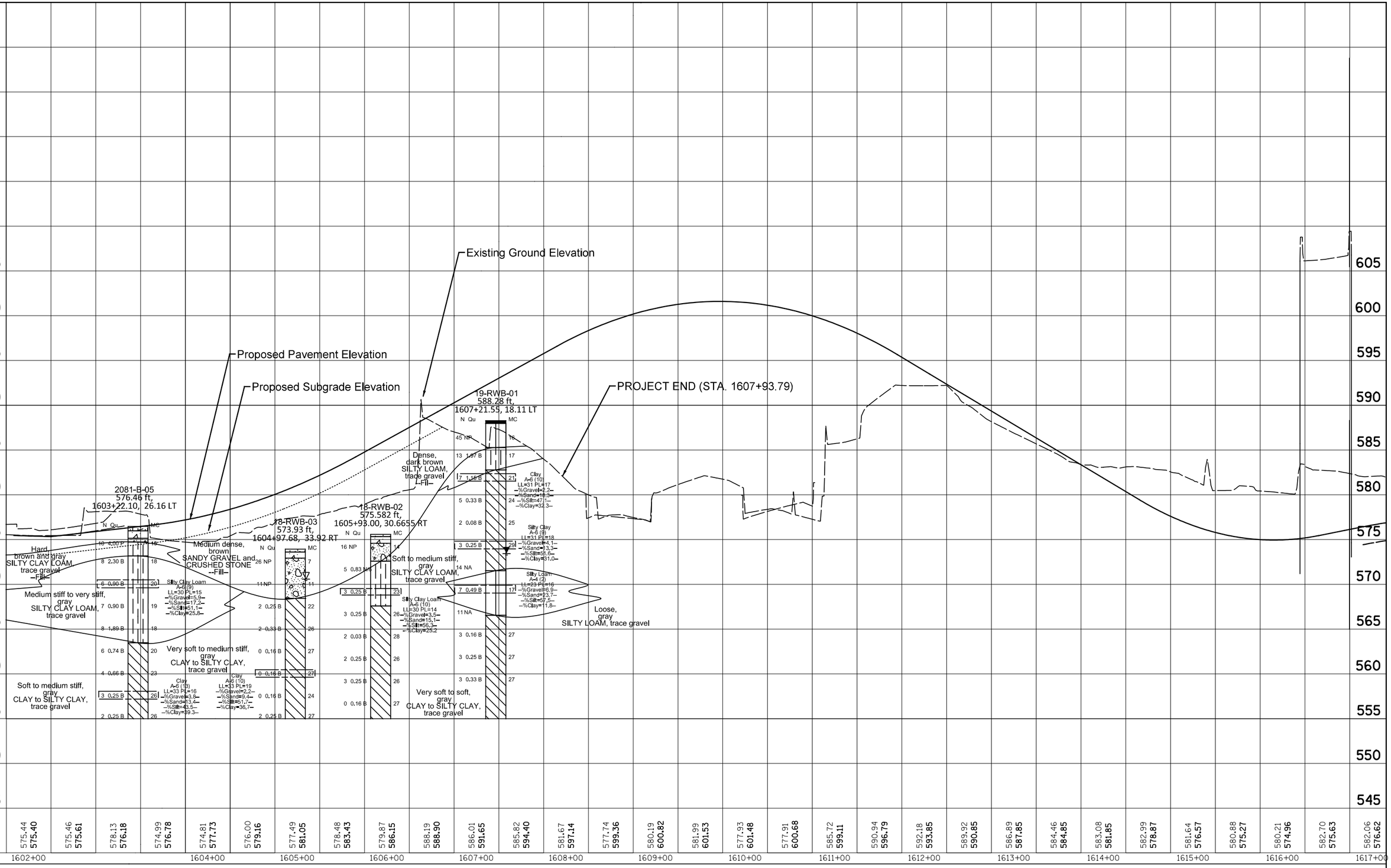
CONTRACT NO.

ILLINOIS FED. AID PROJECT

$MODEL.NAME$

PLAN
SURVEYED
PLOTTED
CROSS CHECKED
NOTE BOOK
NO.
BY
DATE
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
BM. NOTED
STRUCTURE NO.TAINS CHK'D

PROFILE
SURVEYED
PLOTTED
CROSS CHECKED
NOTE BOOK
NO.
BY
DATE
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
BM. NOTED
STRUCTURE NO.TAINS CHK'D



FILE PATH = $FILE1$

Jane Byrne INTERCHANGE

$FILE$	DESIGNED -	REVISED -
USER NAME = $USER$	DRAWN -	REVISED -
PLOT SCALE = $SCALE$	CHECKED -	REVISED -
PLOT DATE = $DATE$	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAMP EN
PROFILE
SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		COOK	11	9
		CONTRACT NO.		
	ILLINOIS FED. AID PROJECT			

$MODEL.NAME$

PLAN	DATE
SURVEYED	BY
PLOTTED	
ALIGNMENT CHECKED	
RT. OF WAY CHECKED	
CADD FILE NAME	
NOTE BOOK	
NO.	

PROFILE	DATE
SURVEYED	BY
PLOTTED	
GRADES CHECKED	
BM. NOTED	
STRUCTURE NO.	
TAN'S CHK'D	
NOTE BOOK	
NO.	

PROJECT BEGIN (STA. 1500+00.00)

12-RWB-09
594.05 ft,
7300+63.47, 07.94 RT

12-RWB-07
594.92 ft,
7301+82.91, 13.46 RT

12-RWB-05
594.38 ft,
7303+12.55, 17.30 RT

12-RWB-03
593.805ft,
7304+85.22, 20.3056 RT

2081-B-06
594.76 ft,
7302+57.20, 44.0821 RT

18-RWB-02
585.34 ft,
1605+93.00, 30.66 RT

1087-B-02
577.83 ft,
7808+76.55, 75.59 LT

Proposed Ground Elevation

Proposed Pavement Elevation

Proposed Subgrade Elevation

PROJECT END (STA. 1511+38.89)

Stiff, brown and gray SILTY CLAY LOAM, trace gravel

Very soft to soft, gray CLAY to SILTY CLAY, trace gravel

Clay A-6 (12) LL=33 PL=17 –%Gravel=4.1– –%Sand=14.3– –%Silt=47.2– –%Clay=34.4–

Very soft to medium stiff, black to gray CLAY to SILTY CLAY, trace gravel

Clay A-6 (12) LL=34 PL=17 –%Gravel=4.7– –%Sand=14.6– –%Silt=47.6– –%Clay=33.1–

Gravelly Silty Loam

Stiff, black to gray SILTY CLAY LOAM, trace gravel

Silty Clay Loam A-6 (7) LL=27 PL=15 %Gravel=4.4– –%Sand=20.5– –%Silt=54.0– –%Clay=21.1–

Very soft to medium stiff, black to gray CLAY to SILTY CLAY, trace gravel

Silty Clay A-6 (14) LL=35 PL=16 –%Gravel=6.3– –%Sand=13.5– –%Silt=48.9– –%Clay=31.4–

Very soft to medium stiff, gray, CLAY to SILTY CLAY, trace gravel

Medium dense, brown SANDY GRAVEL –Fill–

Loose to medium dense, brown CRUSHED STONE –Fill–

Silty Clay Loam A-6 (10) LL=30 PL=16 –%Gravel=3.6– –%Sand=15.1– –%Silt=55.3– –%Clay=25.2–

Soft to medium stiff, gray SILTY CLAY LOAM, trace gravel

Very soft to medium stiff, gray, CLAY to SILTY CLAY, trace gravel

Silty Clay A-6 (11) LL=32 PL=17 –%Gravel=1.9– –%Sand=15.6– –%Silt=52.2– –%Clay=30.3–

585 580 575 570 565 560 555 550 545

577.32 578.26 | 577.13 578.05 | 576.83 577.85 | 576.88 577.64 | 576.82 577.44 | 576.66 577.23 | 576.38 576.83 | 576.16 576.41 | 575.94 576.22 | 575.67 576.02 | 575.30 575.65 | 575.13 574.82 | 574.82 574.07 | 574.47 573.77 | 573.87 573.92 | 573.50 574.44 | 573.45 574.98 | 577.22 575.52 | 576.78 576.06 | 577.64 576.60 | 578.44 577.14 | 579.02 577.68 | 579.56 578.22 | 577.30 578.84 | 577.48 579.55 | 577.85 580.31 | 578.21 581.06 | 578.97 581.82 | 579.82 582.57 | 580.78 583.33

1500+00 1501+00 1502+00 1503+00 1504+00 1505+00 1506+00 1507+00 1508+00 1509+00 1510+00 1511+00 1512+00 1513+00 1514+00

FILE PATH = $FILE$

Jane Byrne INTERCHANGE

$FILES$	DESIGNED -	REVISED -
USER NAME = $USER$	DRAWN -	REVISED -
PLOT SCALE = $SCALE$	CHECKED -	REVISED -
PLOT DATE = $DATE$	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAMP ES
PROFILE

SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		COOK	11	10
		CONTRACT NO.		
	ILLINOIS FED. AID PROJECT			

$MODEL:NAME$

PLAN
SURVEYED
PLOTTED
DRAWN
BAR. NOTED
NOTE BOOK
NO.
BY
DATE
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME

PROFILE
SURVEYED
PLOTTED
DRAWN
BAR. NOTED
NOTE BOOK
NO.
BY
DATE
GRADES CHECKED
STRUCTURE NOTATNS CHKD

12-RWB-03
593.80 ft,
7304+85.22, 20.30 RT

20-1-B-06
593.23 ft,
3833+33.31, 17.29 LT

13-RWB-02
593.02 ft,
7307+69.61, 28.90 RT

13-RWB-01
593.56 ft,
7308+54.07, 16.31 RT

PROJECT ENDS (STA. 7309+39.95)

Existing Ground Elevation

Proposed Pavement Elevation

Proposed Subgrade Elevation

Loose to medium dense, gray and black SILTY LOAM, trace gravel, brick framents, roots
–Fill–

Loose, brown fine to medium SAND, trace gravel
–Fill–

Stiff to very stiff, gray SILTY CLAY

Soft to medium stiff, gray CLAY to SILTY CLAY, trace gravel

Loose to medium dense, gray CRUSHED CONCRETE and STONE
–Fill–

Very soft to medium stiff, brown and gray CLAY to SILTY CLAY, trace gravel

Silty Clay Loam
A-6 (7)
LL=27 PL=15
–%Gravel=4.4–
–%Sand=20.5–
–%Silt=54.0–
–%Clay=21.1–

Silty Clay
A-6 (14)
LL=35 PL=18
–%Gravel=6.3–
–%Sand=13.6–
–%Silt=48.9–
–%Clay=31.4–

Silty Clay
A-6 (15)
LL=35 PL=15
–%Gravel=2.2–
–%Sand=16.1–
–%Silt=50.7–
–%Clay=31.0–

595 590 585 580 575 570 565 560 555 550 545

7305+00	7306+00	7307+00	7308+00	7309+00	7310+00	7311+00	7312+00	7313+00	7314+00	7315+00	7316+00	7317+00	7318+00	7319+00
579.83	582.64	585.44	588.25	584.12	590.83	592.89	594.47	593.73	593.00	592.27	591.54	590.81	590.07	589.34
572.11	572.47	572.79	573.17	573.55	573.93	574.31	574.69	575.07	575.45	575.83	576.21	576.59	576.97	577.35
588.61	587.88	587.15	586.41	585.68	584.95	584.22	581.13	580.71	580.24	579.66	579.00	578.26	577.49	
577.73	578.11	578.49	578.87	579.25		579.93	579.74	579.00	577.81	576.57	575.57	575.25		

FILE PATH = $FILE$

Jane Byrne INTERCHANGE

$FILES$	DESIGNED -	REVISED -
USER NAME = $USER$	DRAWN -	REVISED -
PLOT SCALE = $SCALE$	CHECKED -	REVISED -
PLOT DATE = $DATE$	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EB TAYLOR EXIT RAMP
PROFILE

SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		COOK	11	11
		CONTRACT NO.		
		ILLINOIS FED. AID PROJECT		