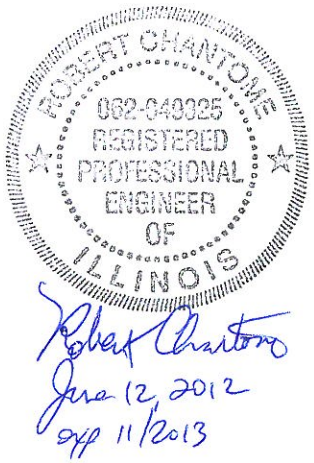

Prepared for:
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Structure Geotechnical Report

F.A.I. Route 74
Section 81-1-2
Rock Island County
Job No. P-92-032-01
Contract No. 64C08
PTB No. N/A
Retaining Wall IL-RW06
Structure Number 081-6015

June 2012

Table of Contents

Tables

Figures

1. Project Description

This report provides geotechnical data and recommendations for the proposed Retaining Wall IL-RW06, which is part of the Central Section of the I-74 over the Mississippi River Project. The project includes reconstruction of I-74 between 14th Avenue in Moline, Illinois and Lincoln Road in Bettendorf, Iowa. The retaining wall covered by this structure geotechnical report will be a new structure, constructed to retain fill along Ramp 7th-B.

Nearby project features that have an impact on the design or construction of the proposed retaining wall include the I-74 and Ramp 7th-A over 19th Street Bridges (S.N.'s 081-0179, 081-0180 and 081-0181), the north abutment retaining wall (IL-RW07, S.N. 081-6016), the I-74 roadway, Ramp 7th-B roadway, and the 19th Street roadway. Geotechnical recommendations for the bridges and Retaining Wall IL-RW07 are presented in separate structure geotechnical reports prepared by Hanson Professional Services Inc. (Hanson). Geotechnical recommendations for the interstate, ramp, and street will be contained in soil survey report prepared by Hanson.

This report supersedes the structure geotechnical report prepared by CH2M HILL in September 2009.

2. Location

The proposed Retaining Wall IL-RW06 is located in the north central portion of Rock Island County, within Section 32 of Township 18 North, Range 1 West. It is located between Ramp 7th-B Sta. 530+65.00 and Sta. 522+95.01. The wall separates I-74 and Ramp 7th-B on the high side from 19th Street on the low side.

3. Proposed Structure

The general structure widths and span arrangements of the bridges over 19th Street were determined during the previous Phase I design completed by another consultant. After further geotechnical analyses and a detailed study of the project staging, the previously proposed full-height MSE abutment configurations were determined to be unfeasible. The south spans were lengthened to move the abutment away from existing piers and a large storm sewer. The bridge abutments were changed to a conventional, closed configuration. Retaining Wall IL-RW07, located in front of the north abutment, was shifted closer to 19th Street and significantly reduced in height. Retaining Wall IL-RW06, previously located in front of the south abutment, was terminated at the west end of the abutment.

Retaining Wall IL-RW06 is now an MSE wall. The wall starts at the west end of the 19th Street bridges' south abutment. The top of the proposed MSE wall is even with the bridge seats. A bridge wingwall and abutment fill cone sit above the top of the MSE wall next to the bridge. The finished grade at the end of the wingwall is approximately 9 feet above the top of MSE wall. The base of the wall is several feet above existing grade as it crosses an infield area towards Ramp 7th-B. The grade from 19th Street rises at a 1V:2H to 1V:3H slope to the face of the wall. At Sta. 530+35.00, the wall turns northwards and follows the left shoulder or Ramp 7th-B. The grade in front of the wall gradually flattens to 1V:50H at Sta. 529+00.00. The wall continues along the ramp until the grades match at Sta. 522+95.01.

A wall using precast panels with the minimum reinforced soil mass width is preferred for cost and construction schedule. The wall will have a height, measured from the theoretical top of leveling pad to the finished grade line, between 19.4 and 16.8 feet across the gore between Ramp 7th-B and EB I-74 and between 0.0 and 26.5 feet along Ramp 7th-B. With this range of heights, a typical MSE wall section would have an equivalent uniform bearing pressure varying from 3,000 to 3,500 psf across the gore and 800 to 5,000 psf along the ramp.

The proposed wall will be constructed in stages in order to allow traffic to remain on the existing Ramp 7-S Bridge while the proposed Ramp 7th-B is being constructed. The north portion of the wall, located along the left

shoulder of Ramp 7th-B, will be constructed during the second stage of proposed 19th Street bridge construction. The south end of the wall, located under the Ramp 7-S Bridge, will be constructed in the third stage after the existing bridge is removed. The west end of the adjacent bridge abutment will be constructed in the same stage.

Construction of the wall will be governed by a performance specification. The MSE wall supplier will be responsible for the internal stability of the reinforced soil mass. This report provides geotechnical recommendations for external stability and global stability, which are the responsibility of the wall designer.

4. Site Investigation

The project site is located in the steeply sloping terrain of the bluffs along the Mississippi River. 19th Street is situated in a natural ravine. There was extensive grading of the proposed bridge site during construction of the existing I-74 alignment. Along the current I-74 centerline, the base of the ravine once was between approximately Sta. 58+00 and Sta. 63+50. 19th Street was in the area where the current bridges' north abutment end slopes are located today. The existing bridges' south abutments were constructed on more than 40 feet of fill placed when the highway was constructed. Presently, 19th Street slopes down to the northwest at approximately 3% grade, while I-74 slopes down to the north at approximately 3% to 6% grade.

The footprint of the proposed retaining wall generally lies at the base of the existing hillside along the south side of 19th Street. Where the wall turns away from Ramp 7th-B, the wall is located on the toe of the end slope of the existing Ramp 7-S Bridge. The existing bridge crosses over the wall alignment.

Test boring data was shown on the existing structure plans. It is presumed that these borings were drilled in the early 1970's. Fifteen borings were drilled to depths between 30 and 79 feet below grade. Standard penetration tests were generally performed at 2.5-feet intervals until bedrock was encountered. Although the soil strata logged in the upper part of these borings were disturbed by the original I-74 roadway and bridge construction, these borings do provide some useful information for the design of the new structures.

The field exploration that was completed specifically for the proposed structures was accomplished in three phases. The first two phases were completed in December 2005 and October 2007 to March 2008 by other consultants. IDOT provided the data collected from those two phases. The third phase was completed in June 2010 by Hanson. The primary purpose of the third phase was to collect additional samples of the shallow, softer soils for strength and consolidation testing. A representative from Hanson logged the borings and performed a general site reconnaissance during the third phase.

Eleven borings were drilled in the first two phases and four borings were drilled in the third phase. Locations of the borings were selected to avoid the numerous obstructions currently occupying the site. The maximum spacing between borings was approximately 100 feet. Standard Penetration Test samples were collected at 2.5 to 10.0 feet intervals in all borings. Several Shelby tube samples were collected at representative locations in cohesive strata. The boring depths ranged from 15.0 to 58.6 feet.

The boring locations are shown on the Boring Location Plan included in the Appendix. Boring logs are included in the Appendix.

5. Laboratory Investigation

Soil samples from the first and second phase borings were tested by others. Unconfined strength and moisture content tests were completed on split-spoon samples from approximately two-thirds of the borings. Index testing was completed on representative samples.

The soil samples obtained from the third phase borings were delivered to Hanson's soils laboratory and subjected to a testing program. Natural moisture content and visual classification tests were competed on all samples. Unconfined compressive strength tests, using a Rimac spring tester, were also completed when possible. One unconfined compression tests, one unconsolidated-undrained triaxial test, and one consolidation test were performed on Shelby tube samples.

The locations of the index tests, triaxial tests, and consolidation tests are indicated on the subsurface data profile. Laboratory test data from triaxial tests and consolidation tests is included in the Appendix.

6. Subsurface Profile

A subsurface data profile is presented in the Appendix for use by the structure designer. The data profile includes all of the borings that were recently drilled near the proposed structure.

The subsurface profile consists of deposits of fill material, alluvial soils, loessial soils, and glacial till overlying bedrock. The fill is generally located in the approach embankments on both sides of the existing structures. Alluvial soils are found at shallow depths beneath 19th Street and to the southwest. Loess is found towards the north end of 19th Street. Glacial till and bedrock are present at depth over the entire site. Strata elevations and depth were quite variable due to the site's location at the base of the bluff and the significant grading completed during construction of the existing structures.

Bedrock was encountered in five of the deeper borings drilled for this structure. The bedrock surface varies from Elev. 562.2 to Elev. 570.6 or 30 to 42 feet below the existing ground surface. The bedrock was a gray to black, very soft clay shale.

Glacial till was encountered in all of the borings. The top of this stratum was encountered between Elev. 580.1 and Elev. 604.2. It is typically brown to gray, very stiff to hard, silty clay with sand and gravel. Unconfined strengths generally were between 2.5 and 3.5 tsf, although softer, weathered zones were occasionally encountered near the top. Standard Penetration Test (SPT) values were typically between 10 and 16 blows per foot. Natural moisture contents ranged from 12 to 16 percent and averaged approximately 14 percent. Thin sand seams were encountered in a few locations within the otherwise clayey till.

Fill material, alluvial soils, and loess were encountered in all the borings except RW1810, RW1812, and RW1813, which were located closest to the existing hillside. These soils were variable and had little correlation between borings. They were generally stiff to very stiff clayey soils or loose sand soils. The thickness of these soils ranged from 8 to 20 feet where they were encountered. Softer alluvial soils were encountered in the older borings drilled under the current south approach embankment, but these softer soils were not readily apparent in the more recent borings drilled in the same area. It is possible that the alluvial soils were removed during construction of the existing embankments. They may also have been compressed by the more than 30 feet of fill placed during construction of the highway.

The groundwater conditions encountered in the borings were not consistent across the site. The groundwater elevations recorded on the boring logs are summarized in Table 7.1. No groundwater was encountered in most of the borings. Stabilized readings were not taken in any of the borings. For comparison, the water level in the Mississippi River, approximately 0.7 miles to the north of the site, is usually about Elev. 561.0.

Table 6.1 Groundwater Elevations

Boring No.	During Drilling	At End of Boring	24-hour Reading
19BR-107	-	-	-
ILR0601	569.1	-	-
ILR0603	-	-	-
ILR0604	-	-	-
ILR0606	-	-	-
ILR0608	-	-	-
ILR0609	-	-	-
ILR0611	-	-	-
RMP7THB-04	dry	-	-
RMP7THB-05	dry	-	-
RW06-2	-	590.6	-
RW06-3	dry	-	-
RW1810	-	-	-
RW1812	-	-	-
RW1813	-	-	-

The Illinois State Geological Survey Directory of Coal Mines does not list any mines immediately beneath the site; however, the directory does indicate that past mining has occurred in the general vicinity. Shafts for the Zeigler, Poston, and Highland Mines were located approximately 1.5 miles to the southeast of the site. These room and pillar mines were operated in the early 1900's.

7. Geotechnical Evaluations

Further analysis of the previously proposed full-height MSE abutment wall determined that configuration to be impracticable at this site. Ground improvement or removal and replacement of the softer alluvial soils would be required to meet overall stability and bearing capacity criteria. Tall temporary shoring would be needed to excavate for the reinforced soil mass of the first stage construction. Full-height temporary MSE walls would be needed to retain the first phase reinforced soil mass during excavation for the second and third phases. One of these temporary MSE walls would have an internally reinforced bin wall configuration due to the severe skew of the structure. The cost of the ground improvement and temporary structures eliminate the typical economic advantage of the MSE abutments.

It was determined that constructing new partial-height closed abutments on the existing bridges' end slopes was a better alternative. Retaining Wall IL-RW06, which remains an MSE wall, is now located only to the west of the proposed bridges. This configuration eliminates the overall stability and bearing capacity deficiencies of the very tall abutment walls. It also results in a significant reduction in excavation and temporary wall quantities.

The native soils between the bridge abutment and the wall corner have an allowable bearing pressure of 2,900 psf, which is not sufficient to support the wall. If the proposed fill below the base of the MSE wall is placed and the native soils are allowed to consolidate for 4 months, the allowable bearing pressure can be increased enough to support the wall. From the wall corner to the west end of the wall, the native soils are suitable for support of the proposed wall if soft soils are removed near Borings ILR0609, RMP7THB-05, and ILR0604. These soft soils are estimated to extend no more than 6 feet below the base of wall, so they may be easily excavated and replaced with suitable fill. Sliding stability satisfies AASHTO requirements along the entire length of the proposed wall.

Slope stability analyses of the wall's most critical sections were completed to determine the overall stability of the wall. These sections were located at the east end of the wall and at Sta. 529+00. Results of those analyses are included in the Appendix. The 1.84 and 2.96 factors of safety satisfy AASHTO requirements.

Approximately 0.5 inches of settlement is expected from the fill to be placed below the base of the wall. The estimated settlement net settlement of the proposed wall is 1.5 inches at the east end, 2.5 inches at the tallest point and 0.0 inches at the west end. Most of this settlement is expected to occur within 4 months of wall completion. Approximately 0.5 inch of settlement is due to recompression of the glacial till stratum, which could take up to 54 months to be 90 percent complete. The estimated magnitude and duration of settlement are considered acceptable for construction of an MSE wall.

Some differential settlement is anticipated near the proposed stage line. Theoretically, the subgrade soils within approximately 5' of the edge of a stage will consolidate 25% to 33% less than the central portion. When the adjacent stage is placed, the edge of the previous stage will settle to a level approximately equal to the central portion. This may be visible in the panel joints on the face of the wall. Due to the relatively small settlement magnitude, this is not expected to be a serious concern for this structure.

The proposed wall will apply additional stress on the existing 72-inch storm sewer that is located a few feet in front of the wall. At the closest point, the centerline of the sewer is approximately 6 feet in front of the wall and 15 feet below ground surface. Assuming an elastic stress distribution, the pipe will feel an additional 600 psf vertical pressure at this point because of the proposed wall. The additional stress will be less where the wall is farther from the pipe. It can be assumed that the wall would have negligible effect on the pipe where the pipe is outside of a 2V:1H slope extending from the base of the wall.

8. Design Recommendations

Removal and replacement is recommended for any soft cohesive soils that are located directly beneath the wall. Cohesive soils with an unconfined compressive strength that is less than the applied bearing pressure of the wall should be removed within the lateral limits shown in Figure 8.1. It is anticipated that these soft soils will be encountered at shallow depths over a small portion of the wall's footprint. Backfill and fill placed below the reinforced soil mass should be with porous granular embankment as shown in Figure 8.1. The select backfill material used in the reinforced soil mass may be used as an alternative to porous granular embankment.

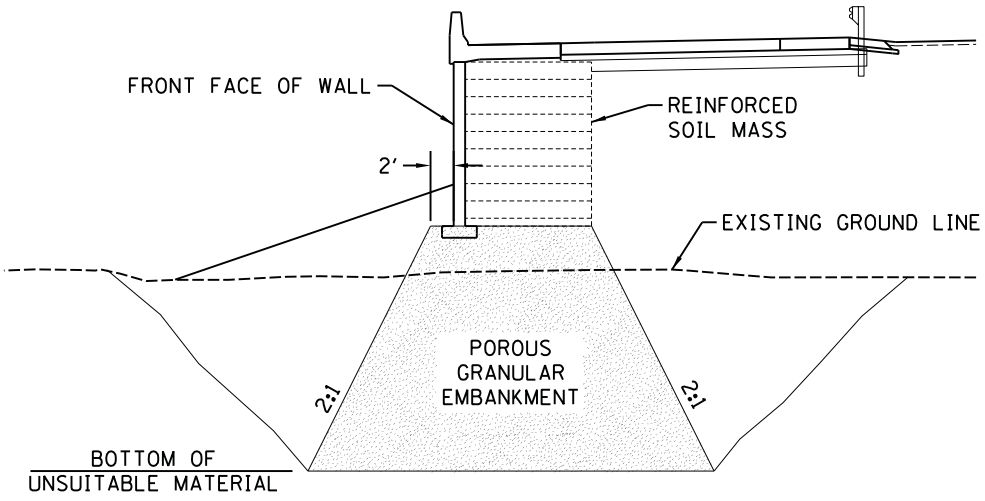

Figure 8.1 Lateral Limits of Unsuitable Material Removal and Replacement

The estimated vertical removal limits for the unsuitable soils are provided in Table 8.1. An estimated base of removal elevation is provided at each boring drilled in the vicinity. It is believed that the soft soils found in the borings beneath this wall are isolated strata. For plan quantities, the extents of the soft soil but should be assumed to extend at a constant elevation half way to the next boring along the wall. The actual limits of removal will be determined during construction based on the materials encountered.

Table 8.1 Estimated Bottom of Unsuitable Material

Boring No.	Station	Base of Removal Elevation	Objectionable Material
19BR-107	530+60	-	-
ILR0611	529+70	-	-
RMP7THB-04	529+69	-	-
RW06-2	529+20	-	-
RW1810	528+74	-	-
ILR0609	528+35	595.5	soft clay
RMP7THB-05	528+08	596.2	soft clayey silt
ILR0608	527+95	-	-
ILR0606	526+97	-	-
ILR0604	525+97	590.1	soft sandy clay
RW1812	525+47	-	-
ILR0603	524+88	-	-
RW06-3	524+37	-	-
RW1813	523+65	-	-
ILR0601	523+05	-	-

With the removal and replacement of the unsuitable soils, a conventional precast panel MSE wall is feasible. The theoretical top of leveling pad or base of reinforced soil mass may be located at the minimum embedment required by IDOT (3'-6" below finished grade). Any backfill or fill below the reinforced soil mass should be with either porous granular embankment or select backfill to the limits shown in Figure 8.1. Other material outside those limits may be embankment fill in accordance with the IDOT Standard Specifications for Road and Bridge Construction (IDOT Standard Specifications).

Between the east end of the wall and the corner at Sta. 530+35, all fill up to the base of the wall must be placed at least 4 months prior to constructing the reinforced soil mass. This includes the porous granular embankment below the wall and the general embankment fill up to this level in front of and behind the wall. Fill above this level may be placed in the area behind the proposed reinforced soil mass. Settlement plates or other monitoring are not required.

When designing for the external stability of the MSE wall, it should be assumed that the reinforced soil mass will be composed of a granular select backfill and the fill behind the reinforced soil mass will be embankment material as defined by the IDOT Standard Specifications. Both materials should be assumed to have a total unit weight of 125 pcf. The active earth pressure coefficient of the embankment fill could vary greatly depending on the actual material used, but should be assumed to be 0.36 for design

Between the east end of the wall and the corner at Sta. 530+35, the wall should be proportioned for an allowable bearing capacity of 4,000 psf. Along Ramp 7th-B, the wall should be proportioned for allowable bearing capacities of 4,000 psf at Sta. 530+35, 5,500 psf at Sta. 529+00, and 2,500 psf at Sta. 523+00. Allowable capacities should be interpolated between the values provided. Sliding stability should be checked against a nominal undrained sliding resistance of one-half of the allowable bearing pressure and a nominal drained sliding resistance of 0.53 times the effective vertical stress. The subgrade should be inspected before fill is placed. Any soft or otherwise unsuitable material should be removed and replaced with compacted porous granular embankment or select fill.

The external stability design should be completed using the parameters defined above. The minimum length to height ratio specified by AASHTO (0.70) will be acceptable for portion of the wall along Ramp 7th-B. A 0.85 length to height ratio is required for the portion between the EB I-74 bridge abutment and the corner at Sta. 530+35. The wider base is needed in this section because of the slope above the top of wall.

9. Construction Considerations

The proposed Ramp 7th-B embankment must be constructed while the adjacent existing Ramp 7-S Bridge is still in place. Since the two ramps are at approximately the same grade, a temporary wall will be needed to retain the fill for the proposed ramp from Sta. 530+35 to the existing Ramp 7-S bridge abutment. The temporary wall is expected to be between 13 and 15 feet tall from finished grade to finished grade, assuming that fill can brought in and compacted to a level 10 feet below the existing structure. A temporary MSE wall is suitable for this structure. The temporary wall will be founded on existing ground or new fill with an allowable bearing pressure of 3,700 psf.

The construction of MSE walls is not covered by the IDOT Standard Specifications. Guide Bridge Special Provisions No. 38, Mechanically Stabilized Earth Retaining Walls (Revised: April 19, 2012) and No. 57, Temporary Mechanically Stabilized Earth Retaining Walls (Revised: January 31, 2012), should be included in the construction documents. These special provisions require that the contractor take responsibility for the final design of much of the structure.

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Appendix

Boring Location Plan
Subsurface Data Profile
Boring Logs
Soils Laboratory Test Results
Summary of Slope Stability Analysis
Existing Structure Plans

RETAINING WALL IL-RW10

RETAINING WALL IL-RW09

RETAINING WALL IL-RW06
S.N. 081-6015

RETAINING WALL IL-RW07
S.N. 081-6016

RETAINING WALL IL-RW05
S.N. 081-6014

RAMP 7TH-B

RAMP 7TH-A

I-74 EB

I-74 WB

19TH ST

19TH ST

19BR-107

ILR0611

RW06-2

RW1810

ILR0609

RMP7THB-04

S.N. 081-0180

S.N. 081-0179

S.N. 081-0181

535+00

530+00

525+00

520+00

65+00

100+00

RET WALL

AC

CONC.PIPE

CORRUGATED METAL PIPES

LEGEND

RW600 BORING LOCATION

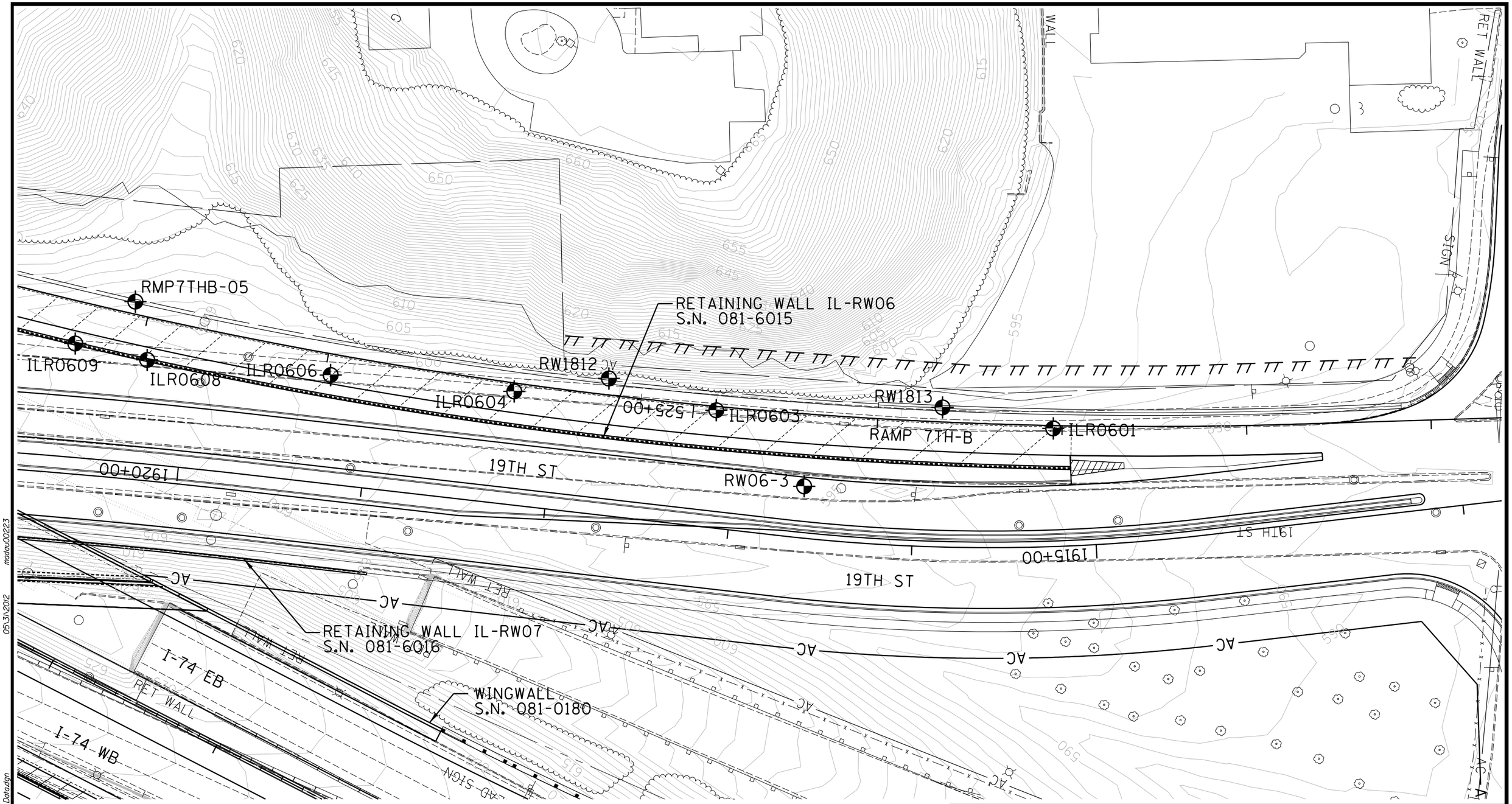
0 50 100
SCALE IN FEET

HANSON

BORING LOCATION PLAN

I-74 MAINLINE RETAINING WALL IL-RW06
S.N. 081-6015
ROCK ISLAND COUNTY, ILLINOIS

08H0120E 5/30/12



LEGEND

RW600 BORING LOCATION

0 50 100

SCALE IN FEET

HANSON

BORING LOCATION PLAN

I-74 MAINLINE RETAINING WALL IL-RW06
S.N. 081-6015
ROCK ISLAND COUNTY, ILLINOIS

08H0120E 5/30/12

madau00223
05\3\2012
ILRW06-A0432-006-Subsurface Dataqgn

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

19BR-107
Sta. 59+82, 60' RT

	N	Qu	w%	
609.10				
608.60				CONCRETE SIDEWALK - concrete (4-1/2" thick) + base course.
	7	1.4B	13.5	CLAY - brown to yellowish brown, some silt, trace gravel, medium plastic, stiff, slightly moist.
605.60				
	10	1.5B	15.9	SILT - dark brown, little to some clay, trace gravel, crumbly, slight to medium plastic, stiff, moist.
	10	1.3B	15.6	
		1.8P	24.3	- little clay. (LL=28, PI=7)
598.10				
	5	0.5P	14.4	CLAY TILL - dark brown (to 12.5 ft) to brown, to gray and tan, trace medium to coarse sand, trace fine gravel, stiff, moist (GLACIAL TILL).
	9	2.0B	14.1	- sandy till at 11.0'-12.5'.
		3.3B	14.4	-[Dry unit weight = 119.8 pcf]
590.60				
	14	2.3B	14.1	CLAY TILL - greenish brown to gray, trace medium to coarse sand, trace fine gravel, hard, moist to dry (GLACIAL TILL).
	20	2.6B	13.8	
	18	2.8B	14.5	
	16	2.7B	13.1	
	14	3.2B	13.9	
	14	3.0P	12.7	
570.60				
	45	>4.5P	14.9	CLAY SHALE - greenish gray to brown, clayey, hard, slightly to moderately weathered, slightly moist to dry.
565.60				
	86	>4.5P	13.5	CLAY SHALE - black to dark gray, feint to no laminations, hard, slightly moist to dry.
	113/9"	>4.5P	10.9	
	50/5"	>4.5P	10.3	
				- [Note: driller added water to hole to be able to turn augers below 50' depth]
	50/2"	>4.5P	12.8	- soft, laminated, clayey, sticky; falls apart and readily crumbles when moist; becomes sticky clay when wet.
	50/5"		7.9	- light and dark gray shale cuttings.
550.50				Bottom of hole = 58.6 feet

ILR0611
Sta. 529+70, 39' LT

	N	Qu	w%	
607.51				Fill - 4 inches of concrete
605.51				
	11			Silt (ML) - moist, trace fine to medium sand, medium dense
	12			
601.51				
	4	1.2S	19.2	Silt With Fine to Medium Sand (ML) - gray, slightly moist, loose to medium dense RIMAC: Pu = 20 lb (LL=27, PI=10)
	12			
597.51				
	4		13.0	Silty Fine to Medium Sand (SM) - gray, moist, loose (LL=28, PI=11)
595.51				
	16		9.2	Silty Sand (SM) - gray, moist, medium dense, trace of angular gravel; size <3/4". (LL=26, PI=9)
	9			
589.51				
	11	4.2S		Clay (CL) - gray, moist, very stiff to hard, trace fine to medium sand (LL=34, PI=20)
	12	2.0P		
	18	4.0P		
	23	3.0P		
569.51				
	77			Shale - gray, hard, laminated
567.51				Bottom of hole = 40.0 feet

RMP7THB-04
Sta. 529+69, 11' LT

	N	Qu	w%	
610.70				
610.30				TOPSOIL
	13	4.50P	11	FILL - Brown, moist, stiff, lean CLAY with trace very fine- to fine-grained sand
607.70				
	8	1.15B	18	Fill - Dark brown, moist, medium, SILT with trace fine-grained sand
605.20				
	12	1.80P	23	FILL - Dark brown, moist, stiff, clayey SILT with trace gravel
	12	2.09B	10	Light brown, moist, very stiff, lean CLAY with trace fine-grained sand and gravel
600.70				
598.70	17	1.50P	15	Brown, wet, medium dense, silty, clayey SAND with trace gravel
598.20				
	15	1.56B	14	Gray, moist, stiff, lean CLAY with trace gravel
595.70				Bottom of hole = 15.0 feet

LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
Q	Unconsolidated Undrained Triaxial Test
R	Consolidated Undrained Triaxial Test
C	Consolidation Test
DD ▽ 558.10	Water Surface Elevation Encountered in Boring DD = during drilling 24h = 24 hours after completion

SUBSURFACE DATA PROFILE
STRUCTURE NO. 081-6015

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

HANSON
Hanson Professional Services Inc.

JOB NO. 08H0120E
DATE 5/30/12
SHEET NO. 1
5 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1-2	ROCK ISLAND	-	
		CONTRACT NO. 64C08		
FED. ROAD DIST. NO. -	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RW06-2
Sta. 529+20, 41' LT

	N	Qu	w%		
605.60					
605.35		3.35S	15		TOPSOIL
					FILL - Brown with gray mottles, moist, SILT with trace fine-grained sand
602.60		2.32S	16		
	37		8		FILL - Dark brown, moist, stiff, SILT with trace sand and gravel
599.60	11		12		FILL - Dark brown, moist, stiff, SILT with trace sand and gravel, rock fragments
		0.55S	18	C	(LL=20, PI=7)
			18	Q	
595.60			9		
					Grayish brown, wet, medium dense, silty, clayey, medium- to coarse-grained SAND with gravel
592.60	12	2.00P	14		
	Oh				Gray, moist, very stiff, silty CLAY with trace sand and gravel
590.60 ▽	15	1.56B	16		
		3.49B	14		(LL=25, PI=13)
			13		
587.60		3.25P	12		
					Brown, wet, dense, silty, fine- to coarse-grained SAND with trace gravel
585.60	40		13		
					Bottom of hole = 20.0 feet

RW1810
Sta. 528+74, 23' LT

	N	Qu	w%	
604.24				
	17			Silt (MH) - Silt, trace gravel, light brown to brown, dry to moist, medium dense, stratified
602.24				Silt to clay, trace gravel and organics, light brown to brown, dry to moist, hard, stratified, till
600.24	25	4.5P		
	12			Clay (CL) - Clay, trace gravel, trace organics, light brown to brown, mottled orange brown and gray brown, very stiff to hard
	15	4.5P		
	10			Fill to 12'-14'
	12	4.5P		
	11	4.5P		
	14	3.2P		
	14	2.5P		
	20	2.2P		
	16	2.6P		
				1"-thick sandy clay seam in 34.0' sample
	15	2.3P		
564.24				
				Clay (CL) - trace gravel, little sand, gray brown, wet, very stiff
562.24	16	2.1P		
				Shale - Clayey Sand (2") to shale, gray brown, wet to moist, loose to hard, stratified
	50/5"			
				Shale, dark gray, moist, hard, homogenous
	50/4"			Let split spoon fall from 50.0' (50/6" = free fall)
554.24				
				Bottom of hole = 50.0 feet

ILR0609
Sta. 528+35, 23' LT

	N	Qu	w%	
603.53				
				Silty Fine to Coarse Sand (SM) - grayish brown, moist, medium dense
	16			
599.53				
	8			Well Graded Sand (SW) - yellowish brown, slightly moist, loose
597.53				Clay (CH) - dark brown, moist, soft
595.53		0.5		
				Sandy Silt (ML) - yellowish brown, moist, loose
	5	2.0		
	12			
589.53				
	14	5.4S		Silt (ML) - yellowish brown, moist, medium dense, trace coarse sand (LL=40, PI=24)
	12	3.0P		
583.53				
				Clay (CL) - gray, moist, very stiff to hard
	13	4.2B		
	14	2.0P		
	16	4.0P		
	94/9"			
562.53				
				Bottom of hole = 41.0 feet

LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
Q	Unconsolidated Undrained Triaxial Test
R	Consolidated Undrained Triaxial Test
C	Consolidation Test
DD ▽ 558.10	Water Surface Elevation Encountered in Boring DD = during drilling 24h = 24 hours after completion

SUBSURFACE DATA PROFILE
STRUCTURE NO. 081-6015

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

HANSON
Hanson Professional Services Inc.

JOB NO.	SHEET NO. 2	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
08H0120E		74	81-1-2	ROCK ISLAND	-	
DATE 5/30/12	5 SHEETS			CONTRACT NO. 64C08		
		FED. ROAD DIST. NO. -	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RMP7THB-05
Sta. 528+08, 7' RT

	N	Qu	w%	
602.20				
601.90				TOPSOIL
	8	2.80P	30	FILL - Dark brown, moist, medium, CLAY with trace silt
599.20				
	5	0.25B	24	FILL - Dark gray, moist, medium, clayey SILT
596.20				
	5	0.80P	18	FILL - Gray, moist, loose, silty, fine-grained SAND
594.20				
	10		18	FILL - Dark grayish brown, moist, stiff, silty CLAY with fine-grained sand
591.70				
	11	1.50P	17	Brown, moist, stiff, lean CLAY with trace silt
588.20				
	14	1.36B	15	Gray, moist, stiff, lean CLAY with very fine-grained sand and gravel
587.20				Bottom of hole = 15.0 feet

ILR0608
Sta. 527+95, 23' LT

	N	Qu	w%	
602.39				
				Silt (ML) - yellowish brown, moist, loose, trace fine to coarse sand
	8			
598.39				
	20			Sandy Silt (ML) - brown to dark brown, moist, very loose to medium dense
	8			
	7			
592.39				
				Fine to Coarse Sand (SP) - yellowish brown, moist, trace of fine to medium gravel
590.39				
	8			Silt (ML) - yellowish brown, moist, firm, trace fine to medium sand
	8			
	18			
582.39				
				Clay (CL) - dark gray, moist, stiff to very stiff, trace fine sand
	10			
	11			
	16			
	50/5"			
562.39				
				Bottom of hole = 40.0 feet

ILR0606
Sta. 526+97, 11' LT

	N	Qu	w%	
600.09				
				Fill - 8" Of Asphalt
598.09				
	23			Medium to Coarse Sand (SW) - yellowish brown, moist, loose to medium dense, trace of silt and clay
	6			
594.09				
	6		13.6	Silty Fine to Coarse Sand (SM) - grayish brown, moist, loose, trace of fine gravel; size < 3/4". (LL=27, PI=13)
592.09				
				Silt (ML) - yellowish brown, moist, loose, trace fine sand
	9	2.4		
588.09				
	9	2.1	14.9	Clay (CL) - gray, moist, very stiff, trace fine to medium RIMAC: 35 lbs (LL=28, PI=13)
	12	2.5P	14.4	
	15	2.5P		
	17	2.7		
	18	3.5P	13.4	
567.09				
	50/5"			Shale - gray, dry, hard, laminated
565.09				
				Bottom of hole = 35.0 feet

LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
Q	Unconsolidated Undrained Triaxial Test
R	Consolidated Undrained Triaxial Test
C	Consolidation Test
DD ▽ 558.10	Water Surface Elevation Encountered in Boring DD = during drilling 24h = 24 hours after completion

SUBSURFACE DATA PROFILE
STRUCTURE NO. 081-6015

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

HANSON
Hanson Professional Services Inc.

JOB NO. 08H0120E

DATE 5/30/12

SHEET NO. 3
5 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	81-1-2	ROCK ISLAND	-	
		CONTRACT NO. 64C08		
FED. ROAD DIST. NO. -	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ILR0604
Sta. 525+97, 5' LT

	N	Qu	w%	
598.11				8" Of Asphalt
596.11	50/6"			Sandy Clay (CL) - grayish brown, moist, soft to firm
	5			
	2	0.6	12.6	
590.11	8	3.5P	16.3	Silt (ML) - yellowish brown, moist, trace of fine sand, loose to medium dense (LL=38, PI=20)
	15	3.0	14.5	
586.11	9	3.0P	15.0	Clay (CL) - dark gray, moist, very stiff to hard, trace medium to coarse sand
	13	4.8		very stiff, trace of fine gravel; size < 3/4"
DD 578.11 ▽	13	3.0P		
	15	3.0P		very stiff
570.11	17			Sandy Clay With Gravel (CL) - dark gray, wet, very stiff, trace of fine gravel
568.11				Bottom of hole = 30.0 feet

RW1812
Sta. 525+47, 9' RT

	N	Qu	w%	
599.00	12	4.5+P		Clay (CL) - Clay, little gravel, dark brown, dry to moist, very hard, blocky
	22			Clay, little gravel, few brick, dark brown, dry to moist, very stiff, blocky
	3		13.0	Silty Clay, trace gravel, dark brown, dry to moist, very stiff, blocky 2" of sand at bottom of sample (LL=27, PI=16)
	12			
	13	4.5+P		Clay, trace gravel, gray brown, moist, hard, homogenous, till
	13	4.5+P		Clay, trace gravel, gray brown, moist, hard, homogenous, till
	9	2.1P		Clay, trace gravel, gray brown, moist, hard, homogenous, till
	15	2.0P		Clay, trace gravel, gray brown, moist, hard, homogenous, till
	10	2.0P		Clay, trace gravel, gray brown, moist, hard, homogenous, till
	15	2.1P		Clay, trace gravel, gray brown, moist, hard, homogenous, till
				Clay, trace gravel, gray brown, moist, hard, homogenous, till to shale, (CL-8")
569.00				Shale - Light gray, moist, hard, stratified
568.00				Bottom of hole = 31.0 feet

ILR0603
Sta. 524+88, 2' LT

	N	Qu	w%	
595.87				Fill - 8" Of Asphalt
593.87	7			Fill - Sample drove a stone
591.87	9			Fill - Sample drove a piece of brick
589.87	10	2.0P		Silt With Fine to Coarse Sand (ML) - yellowish brown, moist, medium dense
	11	2.5P		
585.87	12	2.5P		Clay (CL) - gray, moist, very stiff, trace fine to medium grained sand
581.87	8	2.0P		Clay With Trace Of Sand (CL) - gray, moist, very firm, fine to medium sand
	11	2.5P		rounded gravel; < 1/2 inches in 18.5' sample
	13	1.5P		
567.87				Bottom of hole = 28.0 feet

LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
Q	Unconsolidated Undrained Triaxial Test
R	Consolidated Undrained Triaxial Test
C	Consolidation Test
DD ▽ 558.10	Water Surface Elevation Encountered in Boring DD = during drilling 24h = 24 hours after completion

SUBSURFACE DATA PROFILE
STRUCTURE NO. 081-6015

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

HANSON
Hanson Professional Services Inc.

JOB NO.	SHEET NO. 4	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
08H0120E		74	81-1-2	ROCK ISLAND	-	
DATE 5/30/12	5 SHEETS			CONTRACT NO. 64C08		
		FED. ROAD DIST. NO. -	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RW06-3
Sta. 524+37, 39' LT

	N	Qu	w%	
595.20				
594.95				CONCRETE
593.70	11		16	FILL - Brown, moist, stiff, fine-grained sandy CLAY
			9	FILL - Brown, moist, medium dense, clayey, fine- to medium-grained SAND with trace gravel
	22		10	
587.20				Gray, moist, stiff, silty CLAY with trace sand
	14		14	
	16	1.77B	15	
	16	1.02S	14	
580.20				Bottom of hole = 15.0 feet

RW1813
Sta. 523+65, 8' RT

	N	Qu	w%	
593.90				
	19	4.5P		Silty Clay (CL) - Silty clay, little gravel, brown, dry to moist, hard, homogeneous.
591.90				
	13	4.5P		Clay (CL) - Clay, trace to little gravel, brown, dry to moist, very stiff to hard, homogeneous and blocky, poss. weathered till
	16	4.5P		
	22	4.5P		
	24	4.3P		
	13	4.2P		B-6: Becomes gray brown at 11', unweathered till
	11	2.8P		
	12	3.8P		
	13	3.2P		B-9: Sand lense at about 19.5' for 3-4", sand is wet
	19	3.5P		
567.40				Bottom of hole = 26.5 feet

ILR0601
Sta. 523+05, 2' LT

	N	Qu	w%	
592.08				
	4			Silt (ML) - gray transitioning to grayish brown, moist, trace of fine to medium grained sand, loose
	4	0.5P		
586.08				
	8			Gravelly Silt (ML) - yellowish brown, moist, low plasticity, loose
584.08				
	11			Gravelly Sand (SP) - yellowish brown, moist, medium dense
582.08				
	7	2.0P		Silt With Trace Of Sand (ML) - yellowish brown, moist, firm, with trace sands, loose; Rimac: Pu = 107 lbs
580.08				
	10	3.0P	14.5	Clay (CL) - gray, moist, stiff, low plasticity, trace of fine sand (LL=35, PI=22)
	9	3.5P	12.5	
576.08				
				Sandy Silt (ML) - gray, moist, stiff to very stiff
	6	2.5P	16.0	
DD				
569.08				
	14	1.4		
565.08				Bottom of hole = 27.0 feet

LEGEND

N	Standard Penetration Test N (blows/ft)
Qu	Unconfined Strength (tsf)
w%	Natural Moisture Content (%)
Q	Unconsolidated Undrained Triaxial Test
R	Consolidated Undrained Triaxial Test
C	Consolidation Test
DD ▽ 558.10	Water Surface Elevation Encountered in Boring DD = during drilling 24h = 24 hours after completion

SUBSURFACE DATA PROFILE
STRUCTURE NO. 081-6015

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

HANSON
Hanson Professional Services Inc.

JOB NO.	SHEET NO. 5	F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
08H0120E		74	81-1-2	ROCK ISLAND	_	
DATE 5/30/12	5 SHEETS			CONTRACT NO. 64C08		
		FED. ROAD DIST. NO. _	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
JCI

SOIL BORING LOG

Date 9/10/07

ROUTE I-74 **DESCRIPTION** New I-74 Bridge Over Mississippi River - Illinois Approach **LOGGED BY** KJB

SECTION _____ **LOCATION** (N=561873.84, E=2459651.753), **SEC.** 32, **TWP.** 18N, **RNG.** 1W, 4th **PM**

COUNTY Rock Island **DRILLING METHOD** HSA, CME 55 **HAMMER TYPE** CME AUTOMATIC

STRUCT. NO. _____
Station _____

BORING NO. 19BR-107
Station _____
Offset _____
Ground Surface Elev. 609.10 ft

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

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

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				CONCRETE SIDEWALK - concrete (4-1/2" thick) + base course. 608.60
	3			
	4	1.4	13.5	CLAY - brown to yellowish brown, some silt, trace gravel, medium plastic, stiff, slightly moist.
	3	B		
				605.60
	4			SILT - dark brown, little to some clay, trace gravel, crumbly, slight to medium plastic, stiff, moist.
	5	1.5	15.9	
-5	5	B		
	2			
	4	1.3	15.6	
	6	B		
		1.8	24.3	- little clay.
-10		P		
				598.10
	2			CLAY TILL - dark brown (to 12.5 ft) to brown, to gray and tan, trace medium to coarse sand, trace fine gravel, stiff, moist (GLACIAL TILL).
	2	0.5	14.4	
	3	P		
	3			- sandy till at 11.0'-12.5'.
	4	2.0	14.1	
-15	5	B		
		3.3	14.4	
		B		
				-[Dry unit weight = 119.8 pcf] 590.60
	4			
	6	2.3	14.1	
-20	8	B		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				CLAY TILL - greenish brown to gray, trace medium to coarse sand, trace fine gravel, hard, moist to dry (GLACIAL TILL). *(continued)*
	5			
	9	2.6	13.8	
	11	B		
	5			
	8	2.8	14.5	
-25	10	B		
	6			
	7	2.7	13.1	
	9	B		
	5			
	5	3.2	13.9	
-30	9	B		
	4			
	5	3.0	12.7	
-35	9	P		
				570.60
	6			CLAY SHALE - greenish gray to brown, clayey, hard, slightly to moderately weathered, slightly
	17	>4.5	14.9	
-40	28	P		

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

Illinois Department of Transportation
Division of Highways
JCI

SOIL BORING LOG

Date 9/10/07

ROUTE I-74 **DESCRIPTION** New I-74 Bridge Over Mississippi River - Illinois Approach **LOGGED BY** KJB

SECTION _____ **LOCATION** (N=561873.84, E=2459651.753), **SEC.** 32, **TWP.** 18N, **RNG.** 1W, 4th **PM**

COUNTY Rock Island **DRILLING METHOD** HSA, CME 55 **HAMMER TYPE** CME AUTOMATIC

STRUCT. NO. _____
Station _____

BORING NO. 19BR-107
Station _____
Offset _____
Ground Surface Elev. 609.10 ft

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

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

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				moist to dry.
				CLAY SHALE - greenish gray to brown, clayey, hard, slightly to moderately weathered, slightly moist to dry. *(continued)*
565.60				
	16			CLAY SHALE - black to dark gray, feint to no laminations, hard, slightly moist to dry.
	29	>4.5	13.5	
-45	57	P		
	19			
	58	>4.5	10.9	
	55/3"	P		
	20			
	50/5"	>4.5	10.3	
-50		P		
				- [Note: driller added water to hole to be able to turn augers below 50' depth]
	33			
	50/2"	>4.5	12.8	- soft, laminated, clayey, sticky; falls apart and readily crumbles when moist; becomes sticky clay when wet.
-55		P		
	50/5"		7.9	- light and dark gray shale cuttings.
550.50				End of Boring
-60				

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

Illinois Department of Transportation
Division of Highways
CH2M HILL

SOIL BORING LOG

Date 9/27/07

ROUTE I-74 DESCRIPTION New I-74 Bridge Over Mississippi River - Illinois Approach LOGGED BY KB

SECTION I-74 Bridge over Mississippi River LOCATION (N=562585.063, E=2459363.329), SEC. 32, TWP. 18N, RNG. 1W, 4th PM

COUNTY Rock Island DRILLING METHOD HSA, CME 55 HAMMER TYPE CME AUTOMATIC

STRUCT. NO. _____
Station _____

BORING NO. ILR0601
Station _____
Offset _____
Ground Surface Elev. 592.08 ft

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

Groundwater Elev.:
First Encounter 569.1 ft ▼
Upon Completion _____ ft
After _____ Hrs. _____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Silt (ML) gray transitioning to grayish brown, moist, trace of fine to medium grained sand, loose
	2			
	2 2			
	2			
-5	2 2	0.5 P		
586.08				
	3			**Gravelly Silt (ML)** yellowish brown, moist, low plasticity, loose
	4 4			
584.08				
	4			**Gravelly Sand (SP)** yellowish brown, moist, medium dense
	5 6			
582.08 -10				
	2			**Silt With Trace Of Sand (ML)** yellowish brown, moist, firm, with trace of sands, loose Rimac: Pu = 107 lbs
	3 4	2.0		
580.08				
	3			**Clay (CL)** gray, moist, stiff, low plasticity, trace of fine sand
	5 5	3.0 P		
	3			
-15	4 5	3.5 P		
576.08				
	3			**Sandy Silt (ML)** gray, moist, stiff to very stiff
	3 3	2.5 P		
-20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Sandy Silt (ML) gray, moist, stiff to very stiff *(continued)*
▼	3			
	7 7	1.4		
-25				
565.08				
				End of Boring
-30				
-35				
-40				

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

Illinois Department of Transportation
Division of Highways
CH2M HILL

SOIL BORING LOG

Date 9/28/07

ROUTE I-74 **DESCRIPTION** New I-74 Bridge Over Mississippi River - Illinois Approach **LOGGED BY** KB

SECTION I-74 Bridge over Mississippi River **LOCATION** (N=562416.936, E=2459435.425), **SEC.** 32, **TWP.** 18N, **RNG.** 1W, 4th **PM**

COUNTY Rock Island **DRILLING METHOD** HSA, CME 55 **HAMMER TYPE** CME AUTOMATIC

STRUCT. NO. _____
Station _____

BORING NO. ILR0603
Station _____
Offset _____
Ground Surface Elev. 595.87 ft

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

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

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Fill 8" Of Asphalt
593.87				
	2			**Fill**Sample drove a stone
	3 4			
591.87				
	2			**Fill**sample drove a piece of brick
-5	4 5			
589.87				
	2			**Silt With Fine to Coarse Sand (ML)** yellowish brown, moist, medium dense
	4 6	2.0 P		
	3			
	5 6	2.5 P		
585.87 -10				
	4			**Clay (CL)** gray, moist, very stiff, trace fine to medium grained sand
	6 6	2.5 P		
581.87				
	3			**Clay With Trace Of Sand (CL)** gray, moist, very firm, trace fine to medium sand
-15	3 5	2.0 P		
	3			rounded gravel;<½ inches in 18.5' sample
	5 6	2.5 P		
-20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Clay With Trace Of Sand (CL) gray, moist, very firm, trace fine to medium sand *(continued)*
	3			
	5 8	1.5 P		
-25				
567.87				
				End of Boring
-30				
-35				
-40				

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

BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
CH2M HILL

SOIL BORING LOG

Date 10/1/07

ROUTE I-74 **DESCRIPTION** New I-74 Bridge Over Mississippi River - Illinois Approach **LOGGED BY** KB

SECTION I-74 Bridge over Mississippi River **LOCATION** (N=562314.209, E=2459474.823), **SEC.** 32, **TWP.** 18N, **RNG.** 1W, 4th **PM**

COUNTY Rock Island **DRILLING METHOD** HSA, CME 55 **HAMMER TYPE** CME AUTOMATIC

STRUCT. NO. _____
Station _____

BORING NO. ILR0604
Station _____
Offset _____
Ground Surface Elev. 598.11 ft

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

Groundwater Elev.:
First Encounter 578.1 ft ▼
Upon Completion _____ ft
After _____ **Hrs.** _____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				8" Of Asphalt
596.11				
	6			**Sandy Clay (CL)**
	50/6"			grayish brown, moist, soft to firm
	2			
-5	3			
	2			
	2			
	1	0.6		
	1			
590.11				
	2			**Silt (ML)**
	3	3.5		yellowish brown, moist, trace of
	5	P		fine sand, loose to medium dense
-10				
	4			
	5	3.0		
	10			
586.11				
	1			**Clay (CL)**
	4	3.0		dark gray, moist, very stiff to hard,
	5	P		trace medium to coarse sand
	3			very stiff, trace of fine gravel; size <¾".
-15	5	4.8		
	8			
	3			
	5	3.0		
	8	P		
▼-20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Clay (CL) dark gray, moist, very stiff to hard, trace medium to coarse sand *(continued)*
	3			very stiff
	6	3.0		
	9	P		
-25				
570.11				
	6			**Sandy Clay With Gravel (CL)**
	8			dark gray, wet, very stiff, trace of
	9			fine gravel
568.11 -30				
				End of Boring
-35				
-40				

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

Illinois Department of Transportation
Division of Highways
CH2M HILL

SOIL BORING LOG

Date 10/1/07

ROUTE I-74 **DESCRIPTION** New I-74 Bridge Over Mississippi River - Illinois Approach **LOGGED BY** KB

SECTION I-74 Bridge over Mississippi River **LOCATION** (N=562221.098, E=2459510.977), **SEC.** 32, **TWP.** 18N, **RNG.** 1W, 4th **PM**

COUNTY Rock Island **DRILLING METHOD** HSA, CME 55 **HAMMER TYPE** CME AUTOMATIC

STRUCT. NO. _____
Station _____

BORING NO. ILR0606
Station _____
Offset _____
Ground Surface Elev. 600.09 ft

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

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

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Fill 8" Of Asphalt
598.09				
	5			**Medium to Coarse Sand (SW)** yellowish brown, moist, loose to medium dense, trace of silt and clay
	10			
	13			
	1			
-5	3			
	3			
594.09				
	4			**Silty Fine to Coarse Sand (SM)** grayish brown, moist, loose, trace of fine gravel; size <¾".
	3			
	3			
592.09				
				Silt (ML) yellowish brown, moist, loose, trace fine sand
-10	2			
	4	2.4		
	5			
588.09				
	2			**Clay (CL)** gray, moist, very stiff, trace fine to medium RIMAC: 35lbs
	3	2.1		
	6			
	3			
-15	4	2.5		
	8	P		
	3			
	6	2.5		
	9	P		
-20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Clay (CL) gray, moist, very stiff, trace fine to medium RIMAC: 35lbs *(continued)*
	5			
	8	2.7		
	9			
-25				
	5			
	7	3.5		
	11	P		
-30				
567.09				
	19			**Shale** gray, dry, hard, laminated
	50/5"			
565.09 -35				
				End of Boring
-40				

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

Illinois Department of Transportation
Division of Highways
CH2M HILL

SOIL BORING LOG

Date 9/28/07

ROUTE I-74 **DESCRIPTION** New I-74 Bridge Over Mississippi River - Illinois Approach **LOGGED BY** KB

SECTION I-74 Bridge over Mississippi River **LOCATION** (N=562128.284, E=2459547.702), **SEC.** 32, **TWP.** 18N, **RNG.** 1W, 4th **PM**

COUNTY Rock Island **DRILLING METHOD** HSA, CME 55 **HAMMER TYPE** CME AUTOMATIC

STRUCT. NO. _____
Station _____

BORING NO. ILR0608
Station _____
Offset _____
Ground Surface Elev. 602.39 ft

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

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

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Silt (ML) yellowish brown, moist, loose, trace fine to coarse sand
	2			
	3			
	5			
598.39				
	8			**Sandy Silt (ML)** brown to dark brown, moist, very loose to medium dense
-5	10			
	10			
	3			
	4			
	4			
	3			
	3			
	4			
592.39 -10				
				Fine to Coarse Sand (SP) yellowish brown, moist, trace of fine to medium gravel
590.39				
	3			**Silt (ML)** yellowish brown, moist, firm, trace fine to medium sand
	3			
	5			
	3			
-15	4			
	4			
	7			
	8			
	10			
582.39 -20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Clay (CL) dark gray, moist, stiff to very stiff, trace fine sand
	20			
	5			
	5			
-25				
	3			
	4			
	7			
-30				
	6			
	6			
	10			
-35				
	50/5"			
562.39 -40				

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

Illinois Department of Transportation
Division of Highways
CH2M HILL

SOIL BORING LOG

Date 9/28/07

ROUTE I-74 **DESCRIPTION** New I-74 Bridge Over Mississippi River - Illinois Approach **LOGGED BY** KB

SECTION I-74 Bridge over Mississippi River **LOCATION** (N=562128.284, E=2459547.702), **SEC.** 32, **TWP.** 18N, **RNG.** 1W, 4th **PM**

COUNTY Rock Island **DRILLING METHOD** HSA, CME 55 **HAMMER TYPE** CME AUTOMATIC

STRUCT. NO. _____
Station _____

BORING NO. ILR0608
Station _____
Offset _____
Ground Surface Elev. 602.39 ft

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

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

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				End of Boring
-45				
-50				
-55				
-60				

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

Illinois Department of Transportation
Division of Highways
CH2M HILL

SOIL BORING LOG

Date 10/2/07

ROUTE I-74 **DESCRIPTION** New I-74 Bridge Over Mississippi River - Illinois Approach **LOGGED BY** KB

SECTION I-74 Bridge over Mississippi River **LOCATION** (N=562089.377, E=2459557.006), **SEC.** 32, **TWP.** 18N, **RNG.** 1W, 4th **PM**

COUNTY Rock Island **DRILLING METHOD** HSA, CME 55 **HAMMER TYPE** CME AUTOMATIC

STRUCT. NO. _____
Station _____

BORING NO. ILR0609
Station _____
Offset _____
Ground Surface Elev. 603.53 ft

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

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

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Silty Fine to Coarse Sand (SM) grayish brown, moist, medium dense
	3			
	7			
	9			
599.53				
	3			**Well Graded Sand (SW)** yellowish brown, slightly moist, loose
-5	4			
	4			
597.53				
				Clay (CH) dark brown, moist, soft
		0.5		
595.53				
				Sandy Silt (ML) yellowish brown, moist, loose
-10				
	2			
	2	2.0		
	3			
	4			
	5			
	7			
589.53				
	3			**Silt (ML)** yellowish brown, moist, medium dense, trace coarse sand
-15	5	5.4		
	9	S		
	3			
	5	3.0		
	7	P		
583.53				
-20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Clay (CL) gray, moist, very stiff to hard
	3			
	5	4.2		
	8	B		
-25				
	3			
	5	2.0		
	9	P		
-30				
	3			
	5	4.0		
	11	P		
-35				
	21			
	44			
	50/3"			
-40				

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

Illinois Department of Transportation
Division of Highways
CH2M HILL

SOIL BORING LOG

Date 10/2/07

ROUTE I-74 **DESCRIPTION** New I-74 Bridge Over Mississippi River - Illinois Approach **LOGGED BY** KB

SECTION I-74 Bridge over Mississippi River **LOCATION** (N=562089.377, E=2459557.006), **SEC.** 32, **TWP.** 18N, **RNG.** 1W, 4th **PM**

COUNTY Rock Island **DRILLING METHOD** HSA, CME 55 **HAMMER TYPE** CME AUTOMATIC

STRUCT. NO. _____
Station _____

BORING NO. ILR0609
Station _____
Offset _____
Ground Surface Elev. 603.53 ft

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

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

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Clay (CL)
				gray, moist, very stiff to hard
562.53				*(continued)*
				End of Boring
-45				
-50				
-55				
-60				

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

Illinois Department of Transportation
Division of Highways
CH2M HILL

SOIL BORING LOG

Date 10/4/07

ROUTE I-74 **DESCRIPTION** New I-74 Bridge Over Mississippi River - Illinois Approach **LOGGED BY** KB

SECTION I-74 Bridge over Mississippi River **LOCATION** (N=561958.925, E=2459600.489), **SEC.** 32, **TWP.** 18N, **RNG.** 1W, 4th **PM**

COUNTY Rock Island **DRILLING METHOD** HSA, CME 55 **HAMMER TYPE** CME AUTOMATIC

STRUCT. NO. _____
Station _____

BORING NO. ILR0611
Station _____
Offset _____
Ground Surface Elev. 607.51 ft

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

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

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Fill 4-Inches Of Concrete
605.51				
	4			**Silt (ML)** moist, trace fine to medium sand, medium dense
	5			
	6			
	8			
-5	6			
	6			
601.51				
	3			**Silt With Fine to Medium Sand (ML)** gray, slightly moist, loose to medium dense RIMAC: Pu =20lb
	2	1.2		
	2	S		
	4			
	6			
	6			
597.51 -10				
	2			**Silty Fine to Medium Sand (SM)** gray, moist, loose
	2			
595.51				
	3			**Silty Sand (SM)** gray, moist, medium dense, trace of angular gravel; size <¾".
	8			
	8			
	1			
-15	5			
	4			
589.51				
	3			**Clay (CL)** gray, moist, very stiff to hard, trace fine to medium sand
	4	4.2		
	7	S		
-20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Clay (CL) gray, moist, very stiff to hard, trace fine to medium sand *(continued)*
	3			
	5	2.0		
	7	P		
-25				
	4			
	6	4.0		
	12	P		
-30				
	6			
	9	3.0		
	14	P		
-35				
569.51				
	10			**Shale** gray, hard, laminated
	27			
	50			
567.51 -40				

End of Boring

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

BBS, from 137 (Rev. 8-99)

HANSON

SOIL BORING LOG

Date 6/21/10

ROUTE F.A.I. 74 **DESCRIPTION** I-74 Over Mississippi River **LOGGED BY** JMB

SECTION 81B **LOCATION** SE¼ of SEC. 32, TWP. 18N, RNG. 1W, 4th P.M.

COUNTY Rock Island **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** Auto

STRUCT. NO. _____
Station _____
BORING NO. RMP 7th B-04
Station 529+69
Offset 11' Lt.
Ground Surface Elev. 610.7 ft

Surface Water Elev. _____
Stream Bed Elev. _____

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

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL 610.30				
FILL - Brown, moist, stiff, lean CLAY with trace very fine- to fine-grained sand	2	4 6 7	4.50P	11
607.70				
FILL - Dark brown, moist, medium, SILT with trace fine-grained sand	4	5 4 4	1.15B	18
605.20				
FILL - Dark brown, moist, stiff, clayey SILT with trace gravel	6	3 6 6	1.80P	23
	8	4 6 6	2.09B	10
600.70	10			
Light brown, moist, very stiff, lean CLAY with trace fine-grained sand and gravel		5 8 9	1.50P	15
598.70	12			
Brown, wet, medium dense, silty, clayey SAND with trace gravel 598.20				
Gray, moist, stiff, lean CLAY with trace gravel	14	5 6 9	1.56B	14
595.70				
End of Boring				

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

HANSON

SOIL BORING LOG

Date 6/21/10

ROUTE F.A.I. 74 **DESCRIPTION** I-74 Over Mississippi River **LOGGED BY** JMB

SECTION 81B **LOCATION** SE¼ of SEC. 32, TWP. 18N, RNG. 1W, 4th P.M.

COUNTY Rock Island **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** Auto

STRUCT. NO. _____
Station _____
BORING NO. RMP 7th B-05
Station 528+08
Offset 7' Rt.
Ground Surface Elev. 602.2 **ft**

Surface Water Elev. _____
Stream Bed Elev. _____

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

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL 601.90				
FILL - Dark brown, moist, medium, CLAY with trace silt	2	5 4 4	2.80P	30
599.20				
FILL - Dark gray, moist, medium, clayey SILT	4	2 2 3	0.25B	24
596.20	6			
FILL - Gray, moist, loose, silty, Fine-grained SAND		2 2 3	0.80P	18
594.20	8			
FILL - Dark grayish brown, moist, stiff, silty CLAY with fine-grained sand		6 6 4		18
591.70	10			
Brown, moist, stiff, lean CLAY with trace silt	12	3 5 6	1.50P	17
588.20	14	5 6 8	1.36B	15
Gray, moist, stiff, lean CLAY with very fine-grained sand and gravel 587.20				
End of Boring				

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

HANSON

SOIL BORING LOG

Date 6/21/10

ROUTE F.A.I. 74 **DESCRIPTION** I-74 Over Mississippi River **LOGGED BY** JMB

SECTION 81-1-2 **LOCATION** NE¼ of SEC. 32, TWP. 18N, RNG. 1W, 4th P.M.

COUNTY Rock Island **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** Auto

STRUCT. NO. 081-6015
Station
BORING NO. RW 06-2
Station 529+20
Offset 41' Lt.
Ground Surface Elev. 605.6 ft

Surface Water Elev.
Stream Bed Elev.

Groundwater Elev.:
First Encounter ft
Upon Completion 590.6 ft ▽
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
TOPSOIL 605.35			
FILL - Brown with gray mottles, moist, SILT with trace fine-grained sand		3.35S	15
2			
602.60			
FILL - Dark brown, moist, stiff, SILT with trace sand and gravel		2.32S	16
4			
	26 11		8
599.60			
6			
FILL - Dark brown, moist, stiff, SILT with trace sand and gravel, rock fragments	15 8 3		12
8		0.55S	18
			18
			9
595.60			
10			
Grayish brown, wet, medium dense, silty, clayey, medium- to coarse-grained SAND with gravel	8 6 6	2.00P	14
12			
592.60			
Gray, moist, very stiff, silty CLAY with trace sand and gravel	6 7 8	1.56B	16
14 ▽			
16		3.49B	14
		5.20B	13
		3.25P	12
587.60			
18			
Brown, wet, dense, silty, fine- to coarse-grained SAND with trace gravel	11 18 22		13
585.60			
20			

End of Boring

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

HANSON

SOIL BORING LOG

Date 6/21/10

ROUTE F.A.I. 74 **DESCRIPTION** I-74 Over Mississippi River **LOGGED BY** JMB

SECTION 81-1-2 **LOCATION** SE¼ of SEC. 32, TWP. 18N, RNG. 1W, 4th P.M.

COUNTY Rock Island **DRILLING METHOD** Hollow Stem Auger **HAMMER TYPE** Auto

STRUCT. NO. 081-6015
Station
BORING NO. RW 06-3
Station 524+37
Offset 39' Lt.
Ground Surface Elev. 595.2 ft

Surface Water Elev.
Stream Bed Elev.

Groundwater Elev.:
First Encounter NE ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CONCRETE 594.95			
FILL - Brown, moist, stiff, fine-grained sandy CLAY 593.70	4 5 6		16
FILL - Brown, moist, medium dense, clayey, fine- to medium-grained SAND with trace gravel			9
	5 10 12		10
587.20			
Gray, moist, stiff, silty CLAY with trace sand	7 7 7		14
	6 7 9	1.77B	15
	6 7 9	1.02S	14
580.20			
End of Boring			

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

Illinois Department of Transportation
Division of Highways
CH2M HILL

SOIL BORING LOG

Date 11/17/05

ROUTE I-74 **DESCRIPTION** New I-74 Bridge Over Mississippi River - Illinois Approach **LOGGED BY** L. Hunt

SECTION I-74 Bridge over Mississippi River **LOCATION** (N=562051.32, E=2459565.966), **SEC.** 32, **TWP.** 18N, **RNG.** 1W, 4th **PM**

COUNTY Rock Island **DRILLING METHOD** HSA, CME 55 **HAMMER TYPE** CME AUTOMATIC

STRUCT. NO. _____
Station _____

BORING NO. RW1810
Station _____
Offset _____
Ground Surface Elev. 604.24 ft

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

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

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	6			**Silt (MH)**
	9			Silt, trace gravel, light brown to
	8			brown, dry to moist, medium
	11			dense, stratified
602.24				
	7			Silt to clay, trace gravel and
	14	4.5		organics, light brown to brown, dry
	11	P		to moist, hard, stratified, till
600.24	11			
	6			**Clay (CL)**
-5	7			Clay, trace gravel, trace organics,
	5			light brown to brown, mottled
	6			orange brown and gray brown,
				very stiff to hard
	6			
	7	4.5		
	8	P		
	10			
	5			
	5			
	5			
-10	4			
				Fill to 12'-14'
	5			
	5	4.5		
	7	P		
	7			
	5			
	5	4.5		
	6	P		
	7			
-15	6	3.2		
	6	P		
	8			
	9			
-20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	3			**Clay (CL)**
	6	2.5		Clay, trace gravel, trace organics,
	8	P		light brown to brown, mottled
	10			orange brown and gray brown,
				very stiff to hard *(continued)*
	6			
-25	9	2.2		
	11	P		
	14			
-30				
	5			
	6	2.6		
	10	P		
	11			
	3			1"-thick sandy clay seam in 34.0'
				sample
-35	6	2.3		
	9	P		
	12			
-40				

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

Illinois Department of Transportation
Division of Highways
CH2M HILL

SOIL BORING LOG

Date 11/17/05

ROUTE I-74 **DESCRIPTION** New I-74 Bridge Over Mississippi River - Illinois Approach **LOGGED BY** L. Hunt

SECTION I-74 Bridge over Mississippi River **LOCATION** (N=562051.32, E=2459565.966), **SEC.** 32, **TWP.** 18N, **RNG.** 1W, 4th **PM**

COUNTY Rock Island **DRILLING METHOD** HSA, CME 55 **HAMMER TYPE** CME AUTOMATIC

STRUCT. NO. _____
Station _____

BORING NO. RW1810
Station _____
Offset _____
Ground Surface Elev. 604.24 ft

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

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

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	5			**Clay (CL)**, trace gravel, little sand, gray brown, wet, very stiff
	7	2.1		
	9	P		
562.24	12			
				Shale Clayey Sand (2") to shale, gray brown, wet to moist, loose to hard, stratified
	23			
-45	50/5			
				Shale, dark gray, moist, hard, homogenous Let split spoon fall from 50.0' (50/6" = free fall)
	50/6			
	50/4			
554.24 -50				End of Boring
-55				
-60				

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

CH2MHILL

PROJECT NUMBER:	BORING NUMBER:	
158835.AA.GS.01	RW1812	SHEET 1 OF 1

SOIL BORING LOG

PROJECT : I-74 Bridge over Mississippi River, Quad Cities IA/IL
LOCATION : I-74 Ramp 7th-B (562357.1 N, 2459445.8 E)

ELEVATION : 599.0 ft MSL
DRILLING CONTRACTOR : Terracon

DRILLING METHOD AND EQUIPMENT : CME 550, Hollow Stem Auger

WATER LEVELS : ---
START : 11/15/05 14:27
END : 11/15/05 15:34
LOGGER : L. Hunt

DEPTH BELOW EXISTING GRADE (ft)	INTERVAL (ft)	RECOVERY (in)	#TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	SYMBOLLIC LOG	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION
599.0	0.0						
	2.0	16.0	B-1-SS	3-6-6-6 (12)	**Clay (CL)** Clay, little gravel, dark brown, dry to moist, very hard, blocky		PP: 4.5+tsf
	4.0	12.0	B-2-SS	6-9-13-6 (22)	Clay, little gravel, few brick, dark brown, dry to moist, very stiff, blocky		
5							2" of sand at bottom of sample
594.0	6.0	10.0	B-3-SS	3-2-1-2 (3)	Silty Clay, trace gravel, dark brown, dry to moist, very stiff, blocky		Wc=13% LL: 27, PL: 16
	8.0	0.0	B-4-SS	2-4-8-9 (12)			
	10.0		B-5-SS	7-6-7-10 (13)	Clay, trace gravel, gray brown, moist, hard, homogenous, till		PP: 4.5+tsf
10							
589.0	12.0	24.0	B-6-SS	6-6-7-8 (13)	Clay, trace gravel, gray brown, moist, hard, homogenous, till		PP: 4.5+tsf
	14.0	24.0	B-7-SS	4-4-5-7 (9)	Clay, trace gravel, gray brown, moist, hard, homogenous, till		PP: 2.1tsf
15							PP: 2.0tsf
584.0	16.0	24.0	B-8-SS	4-7-8-10 (15)	Clay, trace gravel, gray brown, moist, hard, homogenous, till		
	19.0						
20							PP: 2.0tsf
579.0	21.0	24.0	B-9-SS	3-4-6-8 (10)	Clay, trace gravel, gray brown, moist, hard, homogenous, till		
	24.0						
25							PP: 2.1tsf
574.0	26.0	24.0	B-10-SS	4-7-8-9 (15)	Clay, trace gravel, gray brown, moist, hard, homogenous, till		
	29.0						
30							
569.0	31.0	13.0	B-11-SS		Clay, trace gravel, gray brown, moist, hard, homogenous, till to shale, (CL-8")		
					Shale Light gray, moist, hard, stratified		Bottom of borehole at 31.0'; auger apparatus broke down, spitting ball bearing as it turned
					Bottom of Boring at 31.0 ft below ground surface on 11/15/05 15:34		
35							

Illinois Department of Transportation
Division of Highways
CH2M HILL

SOIL BORING LOG

Date 11/14/05

ROUTE I-74 **DESCRIPTION** New I-74 Bridge Over Mississippi River - Illinois Approach **LOGGED BY** L. Hunt

SECTION I-74 Bridge over Mississippi River **LOCATION** (N=562526.163, E=2459379.709), **SEC.** 32, **TWP.** 18N, **RNG.** 1W, 4th **PM**

COUNTY Rock Island **DRILLING METHOD** HSA, CME 55 **HAMMER TYPE** CME AUTOMATIC

STRUCT. NO. _____
Station _____

BORING NO. RW1813
Station _____
Offset _____
Ground Surface Elev. 593.90 ft

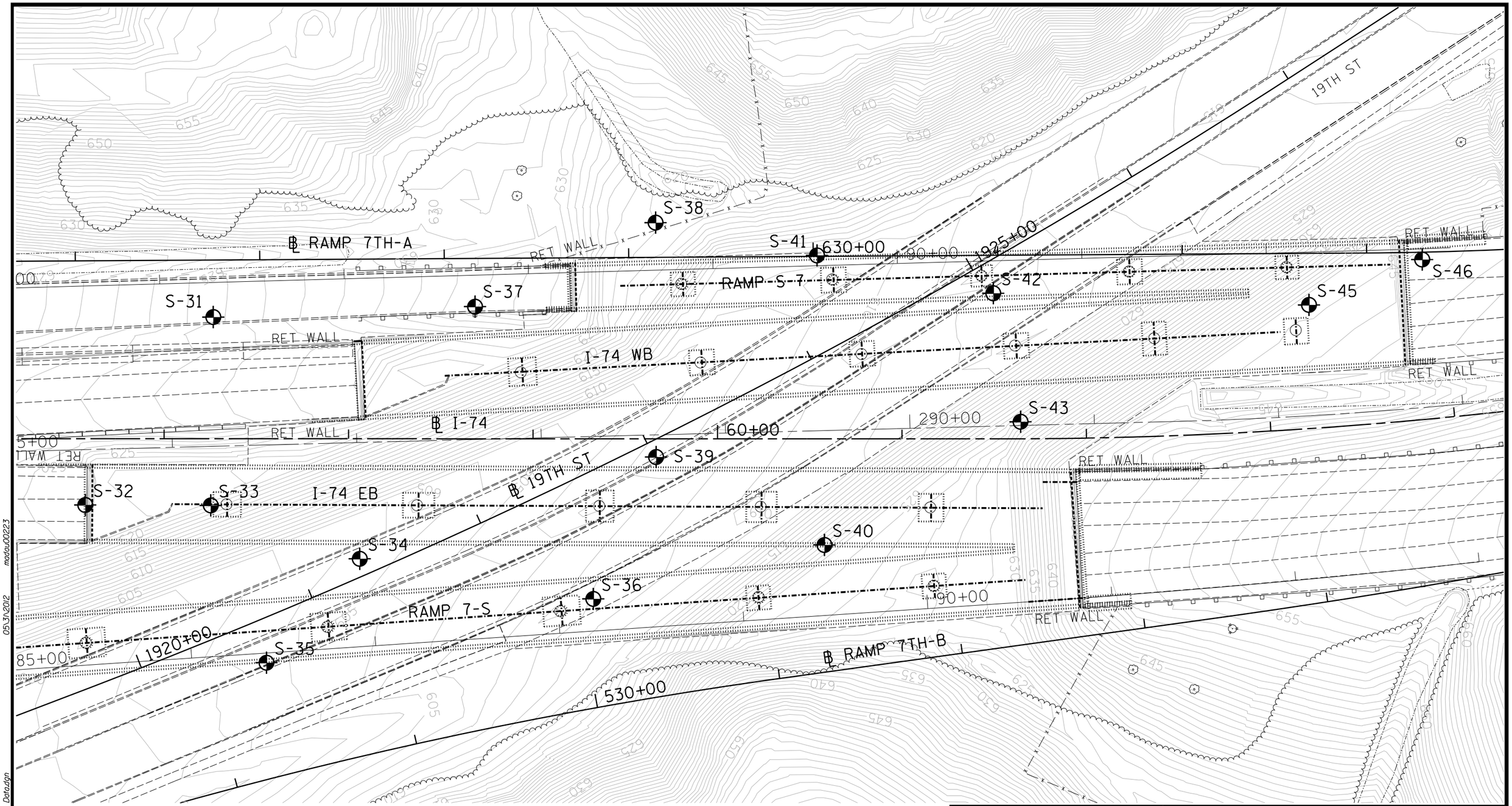
Surface Water Elev. _____ ft
Stream Bed Elev. _____ ft

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

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	7			**Silty Clay (CL)** Silty clay, little gravel, brown, dry to moist, hard, homogeneous.
	10	4.5		
	9	P		
591.90	8			
	5			**Clay (CL)** Clay, trace to little gravel, brown, dry to moist, very stiff to hard, homogeneous and blocky, poss. weathered till
	6	4.5		
	7	P		
	8			
	7			
-5	8	4.5		
	8	P		
	8			
	5			
	10	4.5		
	12	P		
	12			
	7			
	11	4.3		
	13	P		
-10	15			
	5			B-6: Becomes gray brown at 11', unweathered till
	6	4.2		
	7	P		
	9			
	4			
	5	2.8		
	6	P		
	6			
-15	3	3.8		
	5	P		
	7			
	10			
	5			B-9: Sand lense at about 19.5' for 3 - 4", sand is wet
-20	5	3.2		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	8	P		**Clay (CL)** Clay, trace to little gravel, brown, dry to moist, very stiff to hard, homogeneous and blocky, poss. weathered till *(continued)*
	12			
	5			
-25	8	3.5		
	11	P		
	15			
567.40				
				End of Boring
-30				
-35				
-40				

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



LEGEND

RW600 BORING LOCATION

0 50 100
SCALE IN FEET

HANSON

BORING LOCATION PLAN

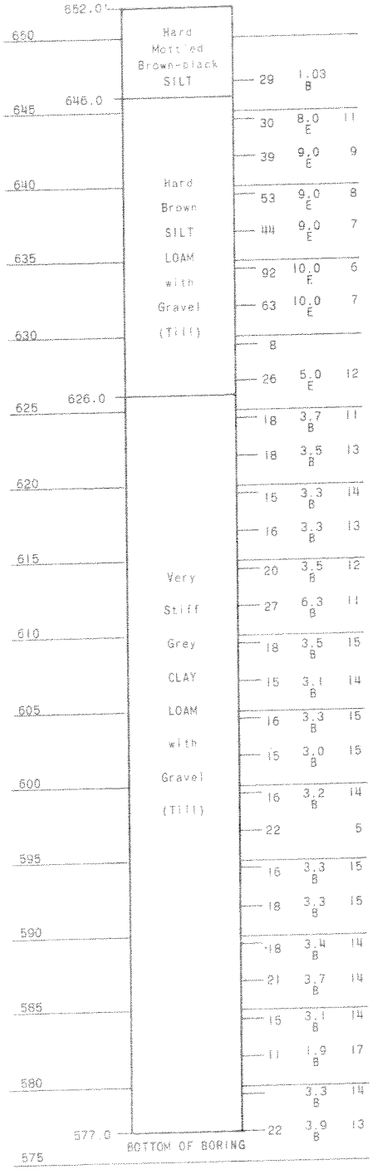
EXISTING I-74, RAMP 7-S, & RAMP S-7
OVER 19TH STREET
ROCK ISLAND COUNTY, ILLINOIS

08H0120E 5/30/12

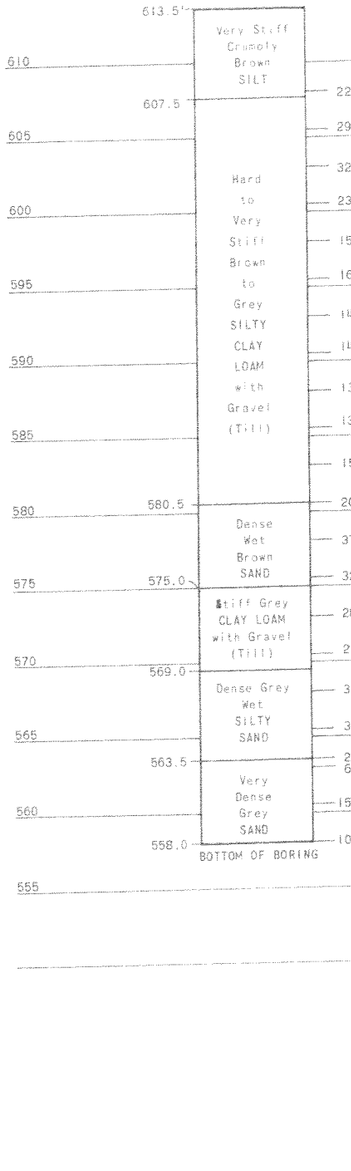
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 74	81-1HB	ROCK ISLAND	389	252
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT I-74		

DWG. NO. B-4

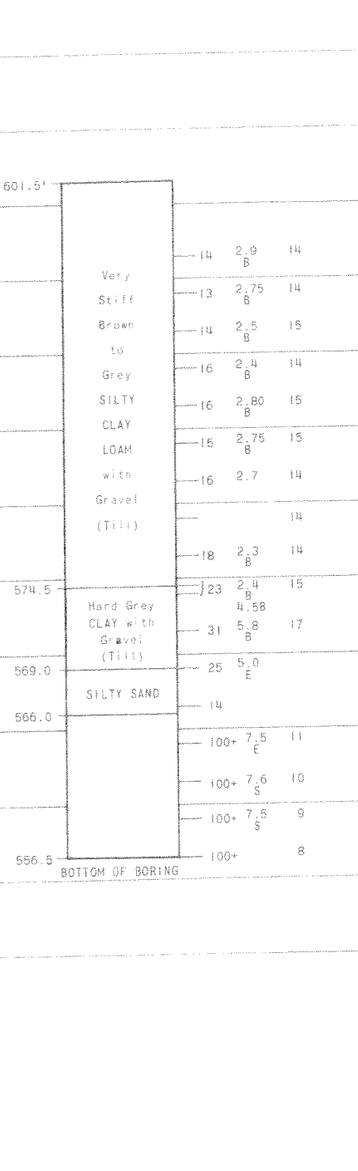
TEST BORING
NO. S-31
STATION 286+24 - 70' LT.



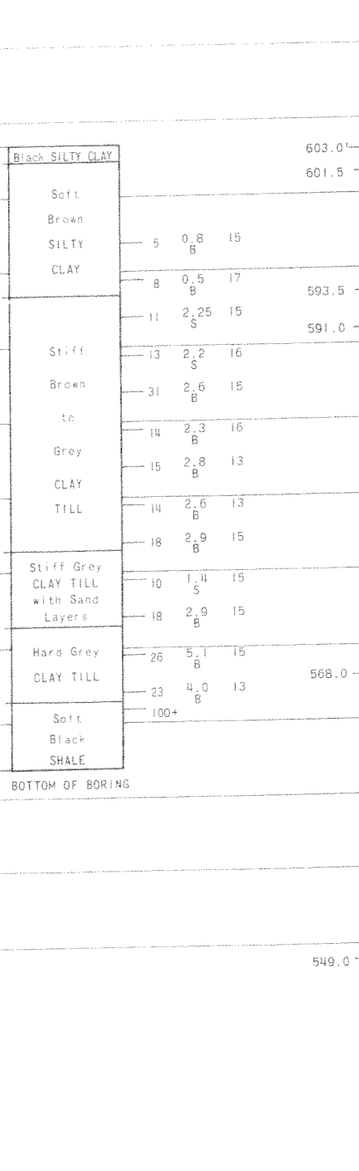
TEST BORING
NO. S-32
STATION 285+52 - 30' RT. ℄



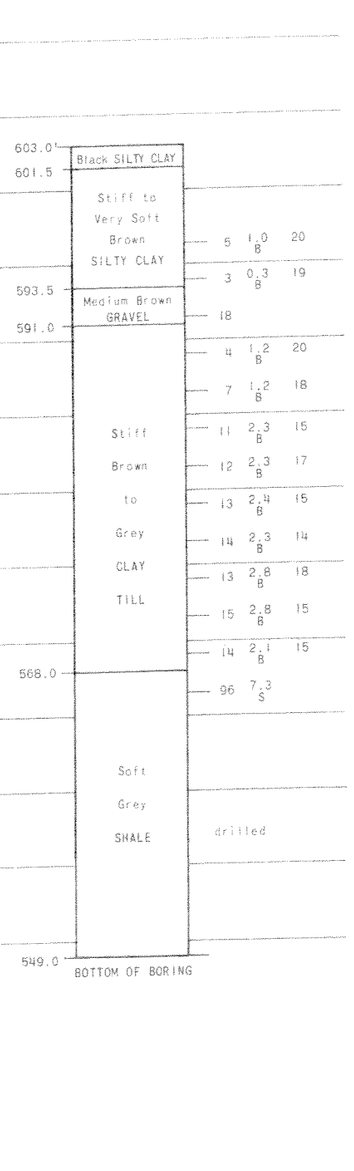
TEST BORING
NO. S-33
STATION 286+20 - 32' RT. ℄



TEST BORING
NO. S-34
STATION 287+00 - 63' RT. ℄



TEST BORING
NO. S-35
STATION 286+48 - 118' RT. ℄



DE LEUW, CATHER & COMPANY ENGINEERS
DESIGNED BY M. VADKERTY
DRAWN BY H. DE PERCZEL
CHECKED G. C. WAY
IN CHARGE E. S. MARTINS
APPROVED W.G. HORN

TEST BORINGS

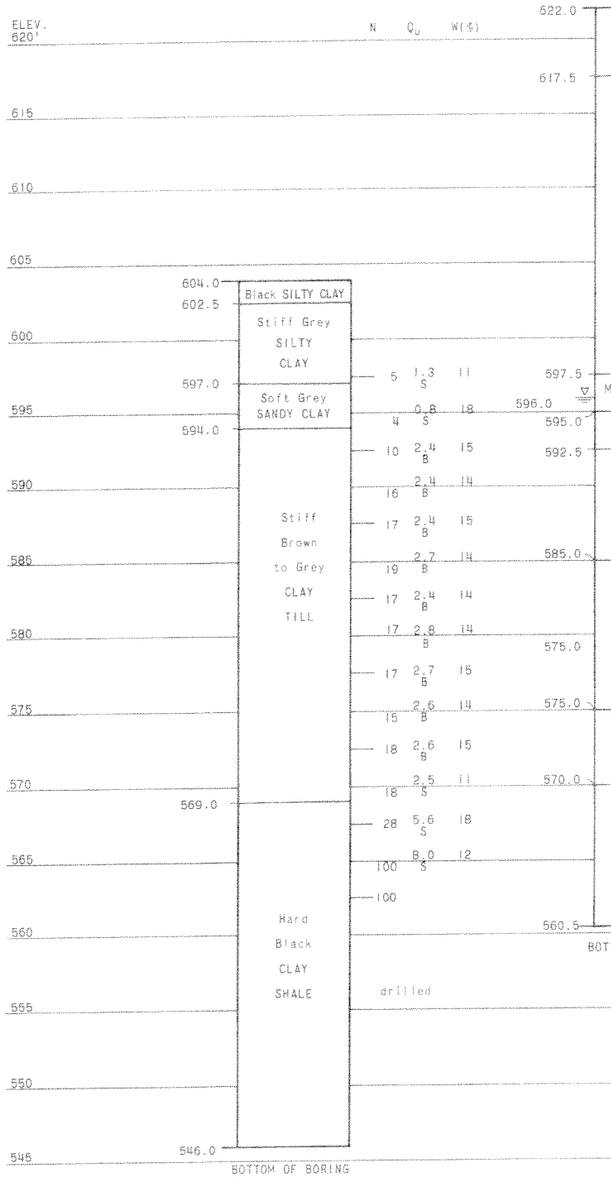
F.A.I. 74 - SECTION 81-1HB
F.A.I. 74 & RAMPS OVER RELOC. 19TH ST.
ROCK ISLAND COUNTY
STATION 289+23.09

SCALE: AS NOTED DATE:

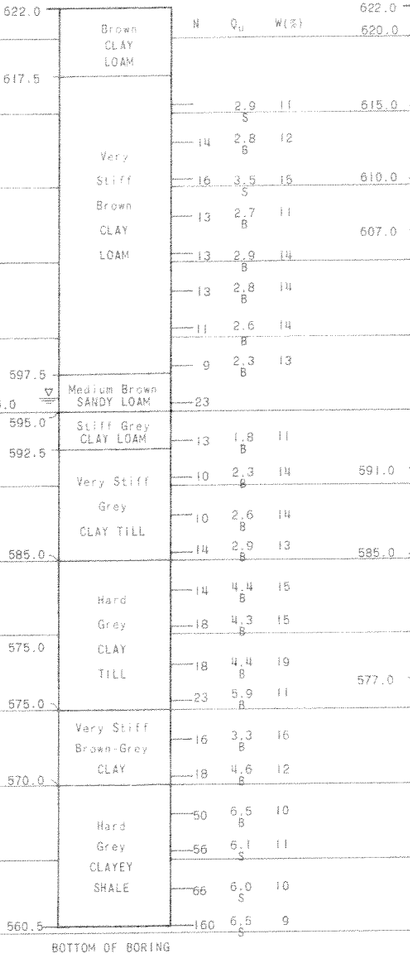
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 74	81-1HB	ROCK ISLAND	389	253
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT I-74		

DWG. NO. B-5

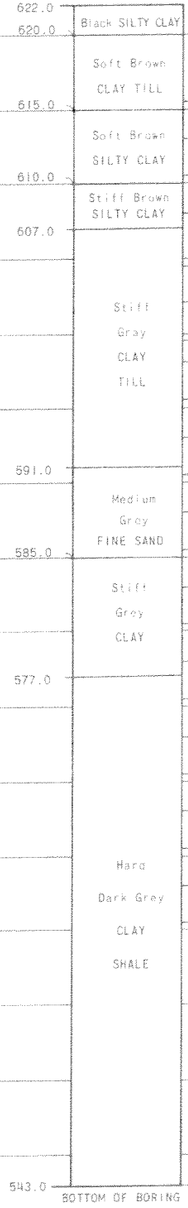
TEST BORING
NO. S-36
STATION 288+26 - 88' RT. ℄



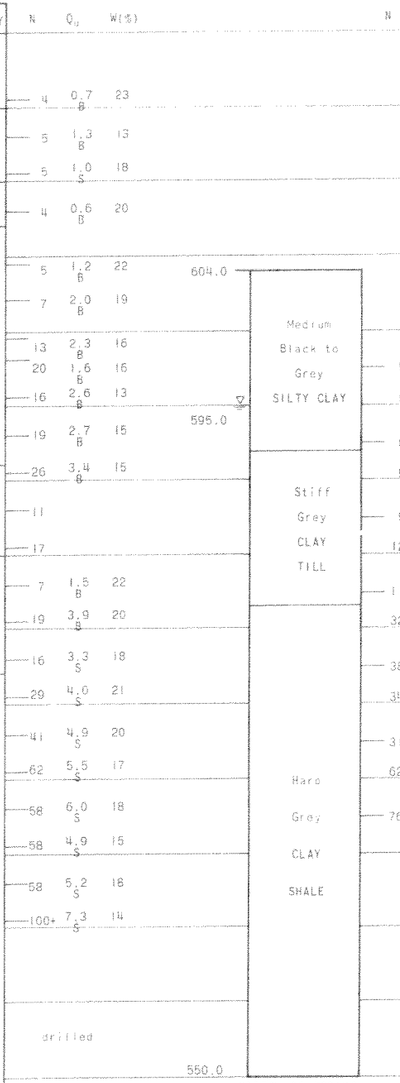
TEST BORING
NO. S-37
STATION 287+66 - 72' LT.



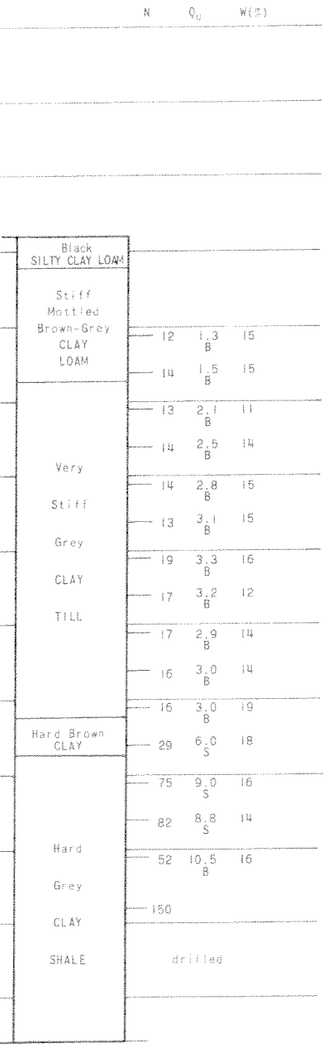
TEST BORING
NO. S-38
STATION 288+65 - 115' LT.



TEST BORING
NO. S-39
STATION 288+62 - 12' RT. ℄



TEST BORING
NO. S-40
STATION 289+52 - 62' RT.



DE LEUW, CATHER & COMPANY ENGINEERS
DESIGNED BY M. VADKERTY
DRAWN BY H. DE PERCZEL
CHECKED G. C. WAY
IN CHARGE E. S. MARTINS
APPROVED W.G. HORN

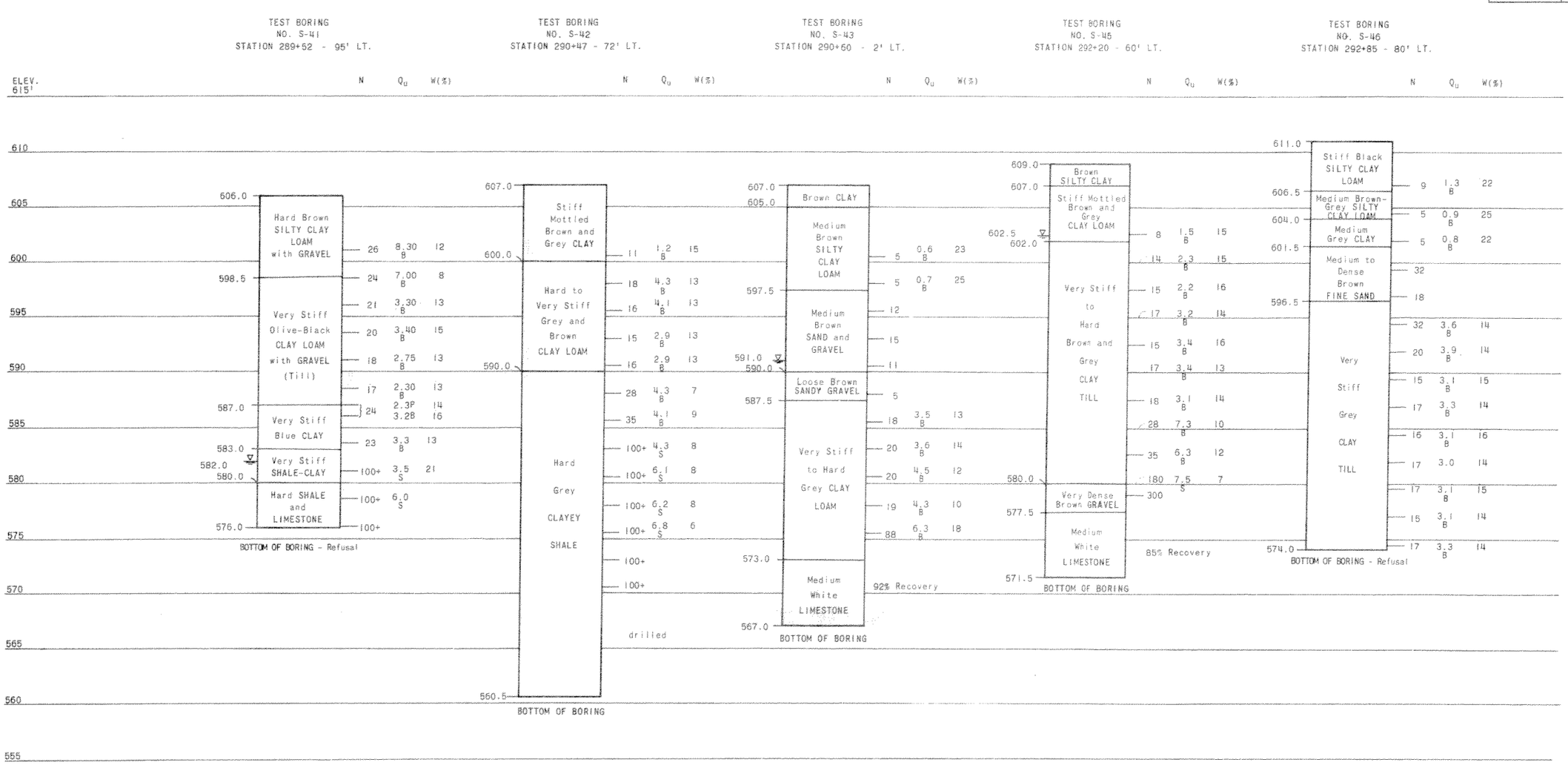
TEST BORINGS

F.A.I. 74 - SECTION 81-1HB
F.A.I. 74 & RAMPS OVER RELOC. 19TH ST.
ROCK ISLAND COUNTY
STATION 289+23.09

SCALE: AS NOTED DATE:

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 74	81-1HB	ROCK ISLAND	389	254
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT I-74		

DWG. NO. B-6



DE LEUW, CATHER & COMPANY ENGINEERS
DESIGNED BY M. VADKERTY
DRAWN BY H. DE PERCZEL
CHECKED G. C. WAY
IN CHARGE E. S. MARTINS
APPROVED W. G. HORN

TEST BORINGS

F. A. I. 74 - SECTION 81-1HB

F.A.I. 74 & RAMPS OVER RELOC. 19TH ST.

ROCK ISLAND COUNTY

STATION 289+23.09

SCALE: AS NOTED DATE:

Hanson Professional Services Inc.

Unconfined Compression Test Report (ASTM D2166)

Date 8/31/10

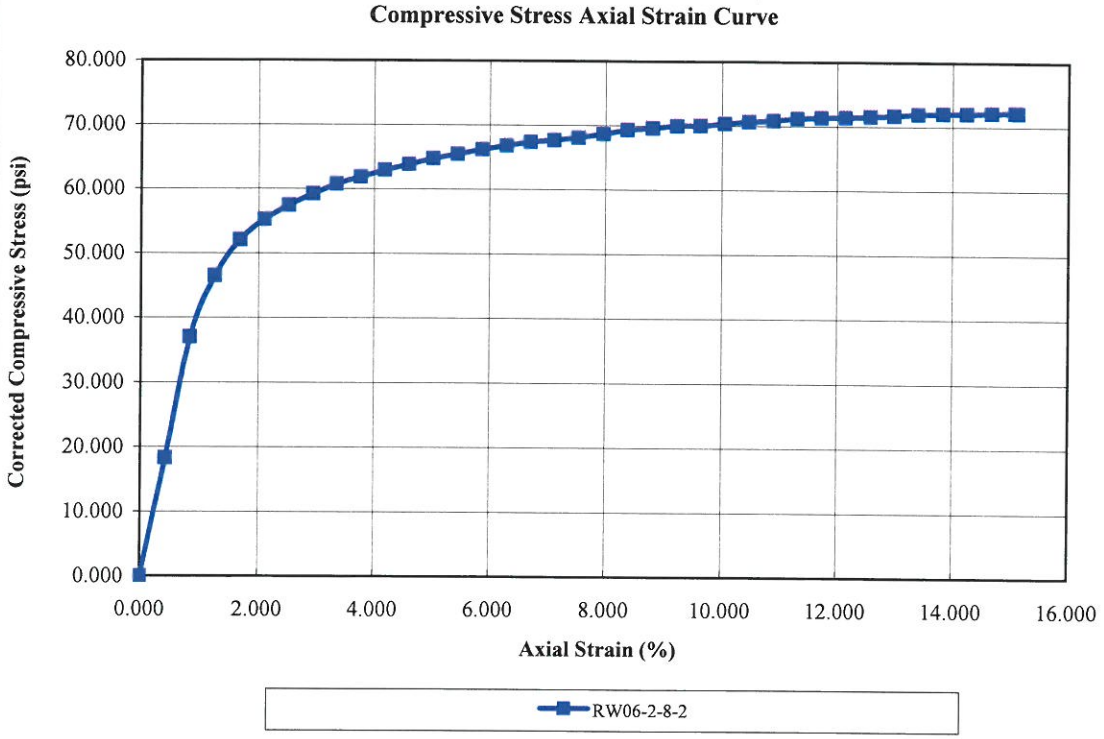
Checked By JCC

Date

Computed By

Date 8/12/10

Tested By Rin

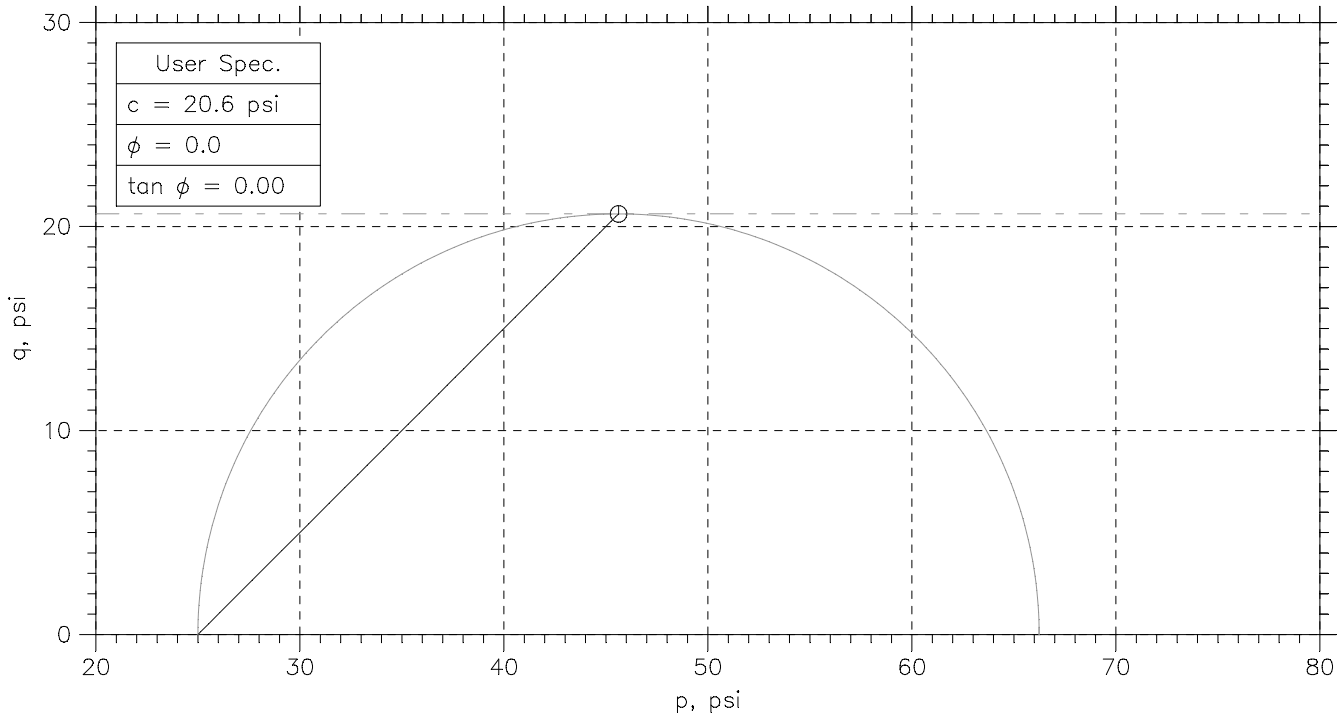


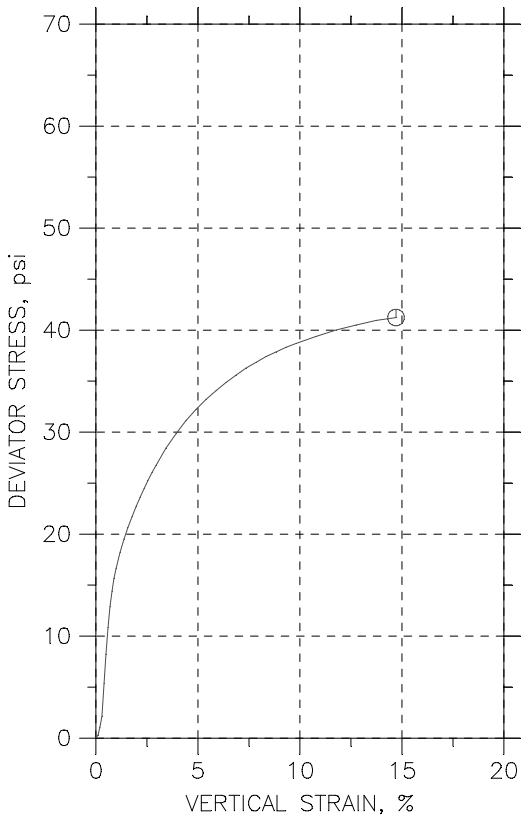
Before Test	Specimen A	B	C	D
Water Content (%)		12.60		
Dry Density (pcf)		124.100		
Saturation (%)		100.21		
Void Ratio		0.33		
Diameter (in)		2.886		
Height (in)		5.909		
Test Data	**A**	**B**	**C**	**D**
Unconfined Strength (psi)		72.205		
Undrained Shear Strength (tsf)		2.599		
Undrained Shear Strength (psi)		36.102		
Rate of Strain (in/min)		0.075000		
Strain at Failure (%)		15.08		
Description				

Project Information		Specimen Description	
Project Num	08H0120E		
Project	I-74 Mississippi River Bridge	RW06-2-8-2	Gray vf. sandy silty clay (tr. c. sand).
Depth	16.5-17.0		
Sample #	8-2		
Client		**Test Variables**	
		Specific Gravity	2.65
		Liquid Limit:	
		Plastic Limit:	

Remarks

UNCONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D2850





Symbol	⏲			
Sample No.	5-3			
Test No.	1			
Depth	8.7-9.2			
Tested by	RIN			
Test Date	8/17/10			
Checked by	JCC			
Check Date				
Diameter, in	2.827			
Height, in	5.601			
Water Content, %	9.3			
Dry Density, pcf	121.2			
Saturation, %	67.7			
Void Ratio	0.365			
Confining Stress, psi	25			
Undrained Strength, psi	20.62			
Max. Dev. Stress, psi	41.24			
Strain at Failure, %	14.7			
Strain Rate, %/min	1			
Estimated Specific Gravity	2.65			
Liquid Limit	0			
Plastic Limit	0			
Plasticity Index	0			

HANSON

Project: I-74 Mississippi River

Location: Quad Cities

Project No.: 08H0120E

Boring No.: RW06-2

Sample Type: Tube

Description: Brn. gray f. sandy clayey silt / so. sm. gravel.

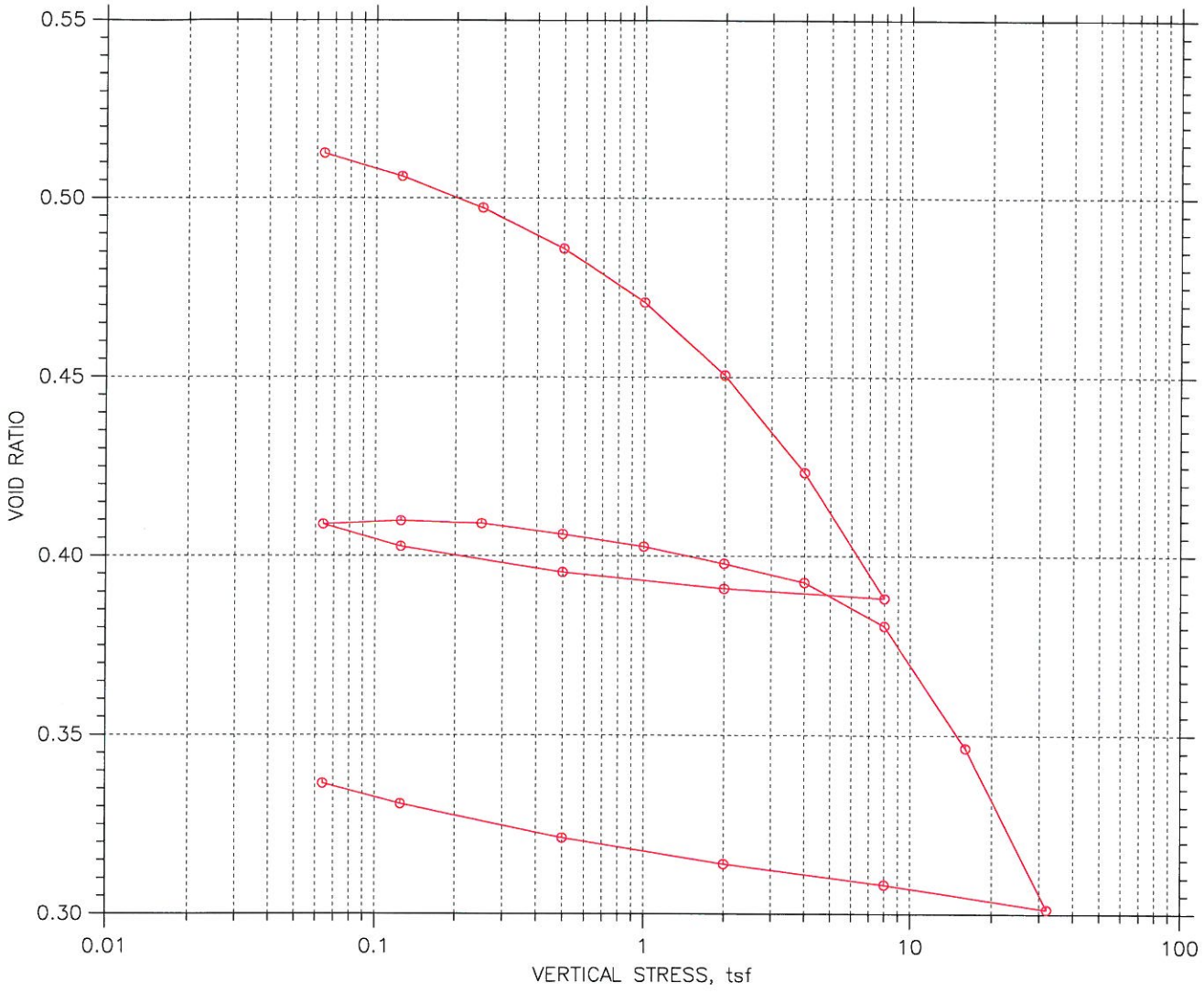
Remarks: 2500 # Load Cell Loadtrac II # 258112 LVDT55306

Phase calculations based on start of test.

Fri, 01-APR-2011 16:06:00

CONSOLIDATION TEST DATA

SUMMARY REPORT



				Before Test	After Test
Overburden Pressure: 0 tsf				Water Content, %	18.27	13.92
Preconsolidation Pressure: 0 tsf				Dry Unit Weight, pcf	108.9	123.8
Compression Index: 2.54639e-313				Saturation, %	93.33	109.66
Diameter: 2.5 in		Height: 0.994 in		Void Ratio	0.52	0.34
LL: 0	PL: 0	PI: 0	GS: 2.65			

HANSON	Project: I74 Missippi River	Location: Quad Cities	Project No.: 08H0120E
	Boring No.: RW06-2	Tested By: RIN	Checked By: JCC
	Sample No.: 5-2	Test Date: 8/24/10	Depth: 8.5-8.7
	Test No.: 1	Sample Type: Tube	Elevation: N/A
	Description: Brn. gray f. sandy clayey silt.		
	Remarks: LT107 2000# 2009 Calibration		

Wed, 15-SEP-2010 11:22:57

CONSOLIDATION TEST DATA

Project: I74 Missippi River
Boring No.: RW06-2
Sample No.: 5-2
Test No.: 1

Location: Quad Cities
Tested By: RIN
Test Date: 8/24/10
Sample Type: Tube

Project No.: 08H0120E
Checked By: JCC
Depth: 8.5-8.7
Elevation: N/A

Soil Description: Brn. gray f. sandy clayey silt.
Remarks: LT107 2000# 2009 Calibration

	Applied Stress tsf	Final Displacement in	Void Ratio	Strain at End %	T50 Fitting Sq.Rt. min	T50 Fitting Log min	Coefficient of Consolidation Sq.Rt. in^2/sec	Coefficient of Consolidation Log in^2/sec	Coefficient of Consolidation Ave. in^2/sec
1	0.064	0.004151	0.512	0.42	0.5	0.2	1.64e-003	4.12e-003	2.34e-003
2	0.125	0.008409	0.506	0.85	1.9	0.0	4.28e-004	0.00e+000	4.28e-004
3	0.25	0.01414	0.497	1.42	1.8	0.0	4.38e-004	0.00e+000	4.38e-004
4	0.5	0.02164	0.486	2.18	0.9	0.0	8.44e-004	0.00e+000	8.44e-004
5	1	0.03148	0.471	3.17	0.5	0.0	1.69e-003	0.00e+000	1.69e-003
6	2	0.04471	0.450	4.50	0.3	0.1	2.21e-003	9.58e-003	3.59e-003
7	4	0.06251	0.423	6.29	0.5	0.0	1.60e-003	2.45e-002	3.01e-003
8	8	0.08551	0.388	8.60	0.2	0.0	3.79e-003	3.38e-002	6.81e-003
9	2	0.08375	0.391	8.43	0.0	0.0	1.53e-001	0.00e+000	1.53e-001
10	0.5	0.08077	0.395	8.13	0.1	0.0	5.63e-003	4.51e-002	1.00e-002
11	0.125	0.07608	0.403	7.65	1.9	0.0	3.57e-004	0.00e+000	3.57e-004
12	0.064	0.07204	0.409	7.25	28.4	0.0	2.45e-005	0.00e+000	2.45e-005
13	0.125	0.07141	0.410	7.18	0.0	0.0	1.66e-002	1.59e-002	1.63e-002
14	0.25	0.07189	0.409	7.23	0.4	0.0	1.61e-003	0.00e+000	1.61e-003
15	0.5	0.07386	0.406	7.43	0.5	0.0	1.52e-003	1.81e-002	2.81e-003
16	1	0.07609	0.403	7.65	0.1	0.0	8.30e-003	3.32e-002	1.33e-002
17	2	0.07918	0.398	7.97	0.0	0.0	2.17e-002	6.01e-002	3.19e-002
18	4	0.08263	0.393	8.31	0.0	0.0	4.16e-002	7.79e-002	5.43e-002
19	8	0.09055	0.380	9.11	0.1	0.0	8.68e-003	0.00e+000	8.68e-003
20	16	0.1128	0.346	11.35	0.1	0.0	5.81e-003	4.59e-002	1.03e-002
21	32	0.1424	0.301	14.32	0.1	0.0	7.93e-003	4.73e-002	1.36e-002
22	8	0.1379	0.308	13.87	0.0	0.0	6.28e-002	0.00e+000	6.28e-002
23	2	0.1341	0.314	13.49	0.0	0.0	3.13e-002	1.70e+001	6.25e-002
24	0.5	0.1294	0.321	13.01	0.9	0.0	6.72e-004	0.00e+000	6.72e-004
25	0.125	0.1231	0.331	12.39	7.3	0.0	8.43e-005	0.00e+000	8.43e-005
26	0.064	0.1194	0.336	12.01	14.4	0.0	4.35e-005	0.00e+000	4.35e-005

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 74	81-1HB	ROCK ISLAND	389	213
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT 1-74		

DWG. NO. S-173

HORIZONTAL CURVE DATA

ITEM	CURVE 1	CURVE 2	CURVE 3	CURVE 4	CURVE 5
Δ	0°-49'-25"	19°-12'-00"	1°-44'-56"	2°-27'-13"	10°-34'-11"
D	2°-30'-00"	2°-30'-00"	2°-27'-56"	1°-00'-00"	4°-00'-00"
R	2291.83'	2291.83'	2323.83'	5729.58'	1432.39'
T	16.47'	387.63'	35.47'	122.70'	133.55'
L	32.94'	768.00'	70.94'	245.37'	266.33'
L.C.	32.94'	764.41'	70.94'	245.35'	265.94'
P.C. STA.	92+67.06	291+41.68	8+29.05	90+54.63	47+62.50
P.I. STA.	92+83.53	295+29.31	8+64.53	91+77.33	48+96.04
P.T. STA.	93+00.00	299+09.68	8+99.99	93+00.00	50+28.82

NOTES:

ALL DIMENSIONS SHOWN ARE BETWEEN POINTS ON A HORIZONTAL PLANE AT A TEMPERATURE OF 50° F.

-INDICATES FLOOR DRAIN.

-INDICATES LOCATION OF BORING HOLES.

-INDICATES LIGHT STANDARD (BY OTHERS)

BENCH MARKS

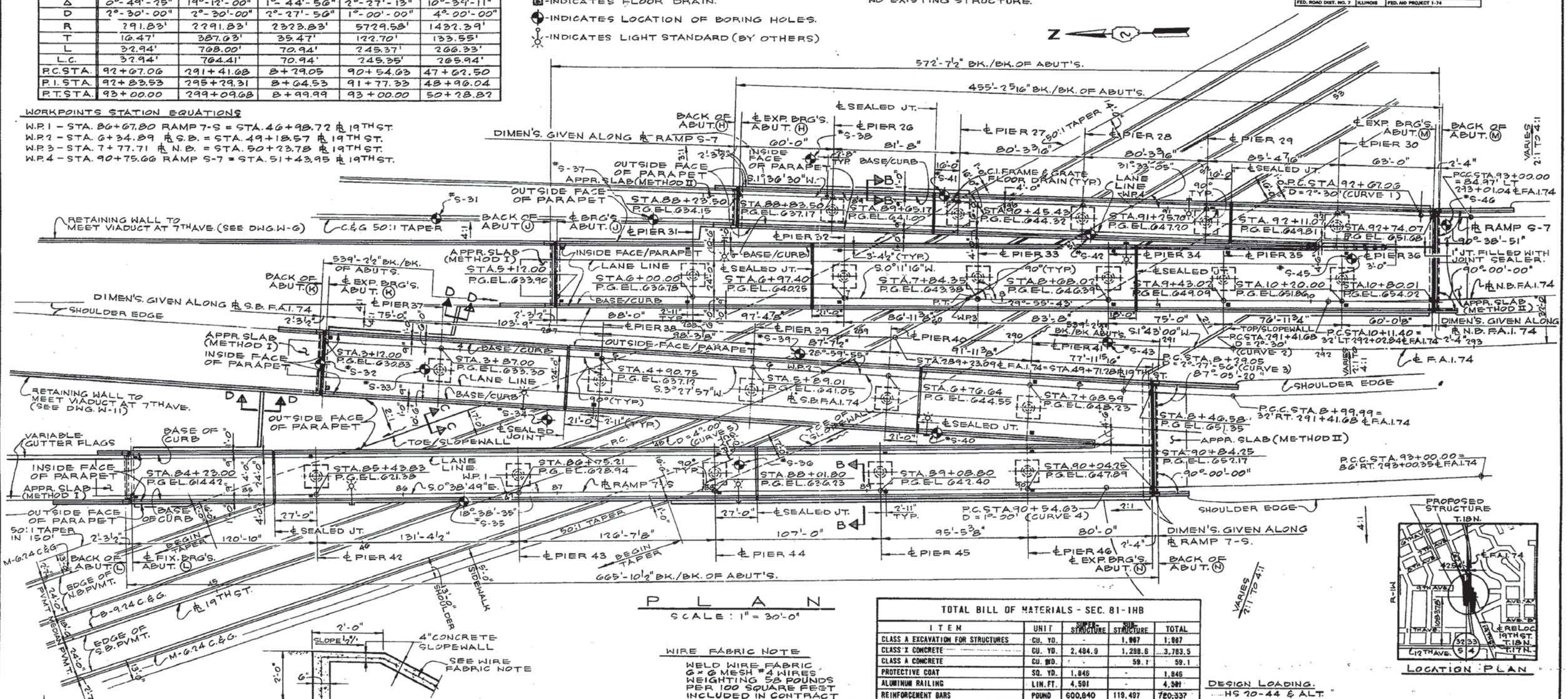
A-4B - CONC. MONUMENT 77' RT. ℄ F.A.I. 74 EL. 600.660

A-4C - CONC. MONUMENT 110' LT. ℄ F.A.I. 74 EL. 605.080

NO EXISTING STRUCTURE.

WORKPOINTS STATION EQUATIONS

W.P. 1 - STA. 86+67.80 RAMP 7-S = STA. 46+98.72 ℄ 19TH ST.
W.P. 2 - STA. 6+34.89 ℄ S.B. = STA. 49+18.57 ℄ 19TH ST.
W.P. 3 - STA. 7+77.71 ℄ N.B. = STA. 50+23.78 ℄ 19TH ST.
W.P. 4 - STA. 90+75.66 RAMP S-7 = STA. 51+43.95 ℄ 19TH ST.



PLAN

SCALE: 1" = 30'-0"

WIRE FABRIC NOTE

WELD WIRE FABRIC 6 × 6 MESH # 4 WIRES WEIGHTING 58 POUNDS PER 100 SQUARE FEET INCLUDED IN CONTRACT UNIT PRICE FOR SLOPEWALL

SLOPEWALL LAYOUT AND QUANTITIES ARE INCLUDED IN HIGHWAY PLANS FOR SECTION 81-1-2.

* APPROACH SLAB PILES NOT INCLUDED. SEE APPROACH SLAB DRAWINGS.

CALCULATED PLAN WEIGHT OF STRUCTURAL STEEL--3,258,390 LBS.

SPECIAL NOTE:

ALL PROFILE GRADE ELEVATIONS AND VERTICAL CURVE DATA GIVEN THROUGHOUT THE STRUCTURAL PLANS REFER TO TOP OF CONCRETE AND DO NOT INCLUDE THE 1½" BITUMINOUS CONCRETE SURFACE COURSE.

SECTION D-D

SCALE: ¾" = 1'-0"

SLOPEWALL SECTION AT ABUTMENTS

SCALE: ¾" = 1'-0"

SECTION B-B

SCALE: ¾" = 1'-0"

SECTION C-C

SCALE: ¾" = 1'-0"

TOTAL BILL OF MATERIALS - SEC. 81-1HB

ITEM	UNIT	SUPER-STRUCTURE	SUB-STRUCTURE	TOTAL
CLASS A EXCAVATION FOR STRUCTURES	CU. YD.	-	1,987	1,987
CLASS X CONCRETE	CU. YD.	2,484.9	1,298.6	3,783.5
CLASS A CONCRETE	CU. YD.	-	59.1	59.1
PROTECTIVE COAT	SQ. YD.	1,846	-	1,846
ALUMINUM RAILING	LIN. FT.	4,501	-	4,501
REINFORCEMENT BARS	POUND	600,840	119,497	720,337
BITUMINOUS CONCRETE SURFACE COURSE, CLASS I	TON	691	-	691
COAL TAR INTERLAYER PROTECTIVE COAT	SQ. YD.	8,190	-	8,190
FURNISHING CREOSOTED PILES UP TO 20 FEET*	LIN. FT.	-	620	620
FURNISHING CREOSOTED PILES 20.1 TO 30 FEET*	LIN. FT.	-	450	450
FURNISH AND ERECT STRUCTURAL STEEL	LUMP SUM	1	-	1
FURNISHING STEEL PILES (10BP42)	LIN. FT.	-	17,025	17,025
DRIVING TIMBER PILES*	LIN. FT.	-	1,070	1,070
DRIVING STEEL PILES	LIN. FT.	-	17,025	17,025
TEST PILE (TIMBER)	EACH	-	3	3
BRIDGE DRAINAGE SYSTEM, 19TH STREET	LUMP SUM	1	-	1
TEST PILE STEEL (10BP42)	EACH	-	28	28
NAME PLATES	EACH	3	-	3
STUD SHEAR CONNECTORS, 4"	EACH	15,183	-	15,183
PREFORMED JOINT SEALER 2½"	LIN. FT.	251	-	251
MODULAR PREFORMED EXPANSION JOINT, 3"	LIN. FT.	85	-	85
MODULAR PREFORMED EXPANSION JOINT, 2"	LIN. FT.	217	-	217
IMPACT ATTENUATION DEVICE, 8 BAY, NARROW WIDTH	EACH	1	-	1

LOCATION PLAN

DESIGN LOADING:

HS 20-44 & ALT.

DESIGN STRESSES:

f'c = 1200 P.S.I. SUPERSTRUCTURE. DECK SLABS.
f'c = 1400 P.S.I. CURBS, PARAPETS AND SUBSTRUCTURE.
f'c = 1000 P.S.I. RETAINING WALLS.
fs = 20,000 P.S.I. REINF. BARS & STRUCT. STEEL (A-36).
v = 75 P.S.I. MAX. ALLOW. SHEAR IN FOOTINGS.
n = 10
ALLOWABLE L.L. DEFLECTION - $\frac{L}{1000}$ (NON-COMPOSITE), $\frac{L}{1200}$ (COMPOSITE)

GENERAL PLAN

F.A.I. 74 - SECTION 81-1HB

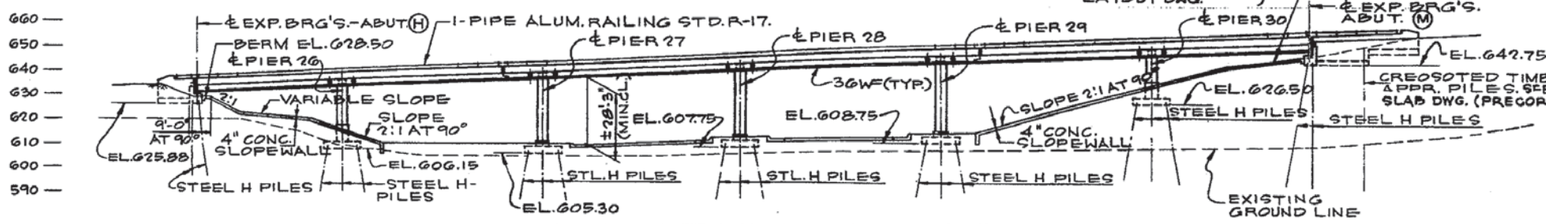
F.A.I. 74 & RAMPS OVER RELOC. 19TH ST.

ROCK ISLAND COUNTY

STATION 289+23.09

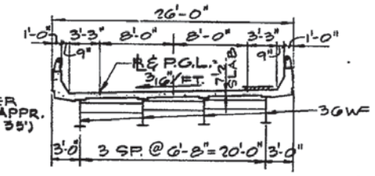
SCALE: AS NOTED DATE:

DE LEUW, CATHER & COMPANY ENGINEERS
DESIGNED BY J. BARRAZA
DRAWN BY G. P. ALLEMAN
CHECKED E. S. MARTINS
IN CHARGE E. S. MARTINS
APPROVED W.G. HORN



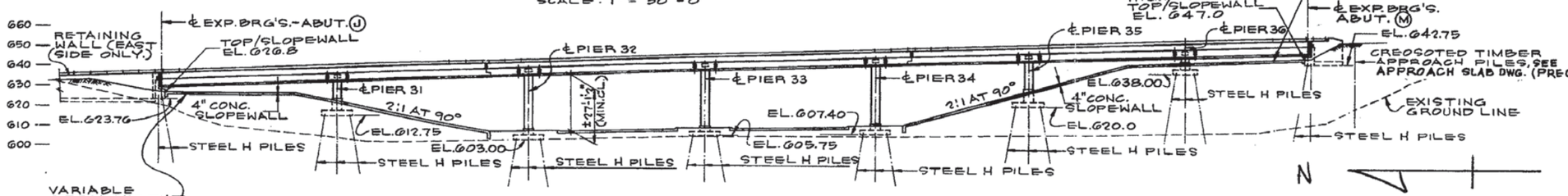
ELEVATION - RAMP S-7

SCALE: 1" = 30'-0"



RAMP S-7 - TYP. SECTION

(S.E. TRANSITION BEGINS AT STA. 91+00)



ELEVATION - N.B. F.A.I. 74

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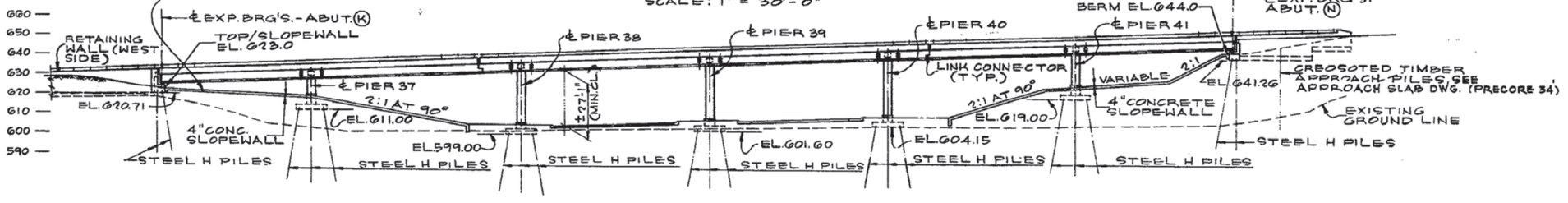
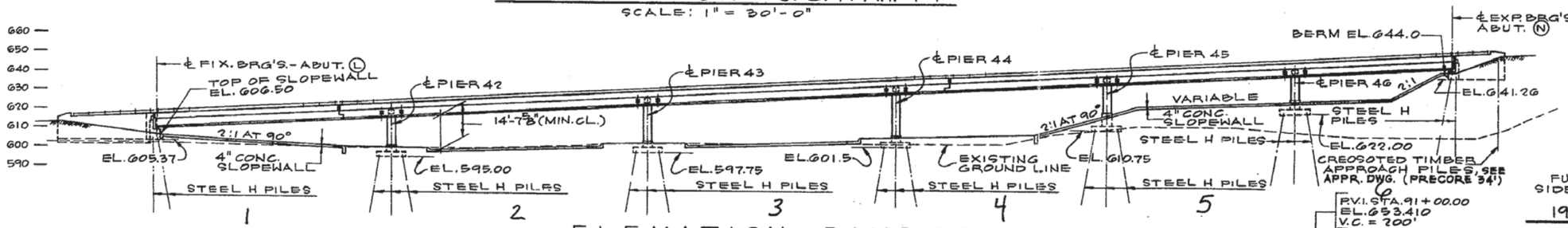


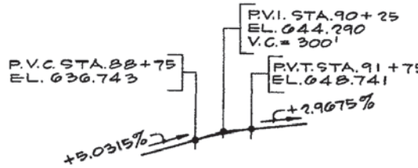
ELEVATION - S.B. F.A.I. 74

SCALE: 1" = 30'-0"

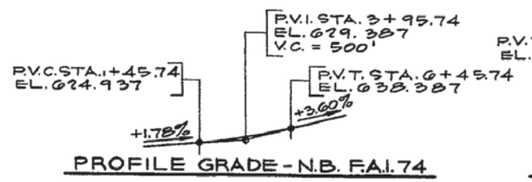


ELEVATION - RAMP 7-S

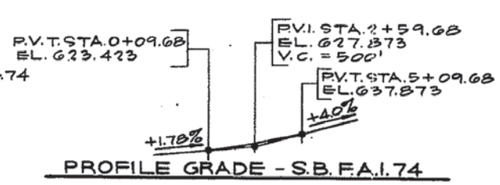
SCALE: 1" = 30'-0"



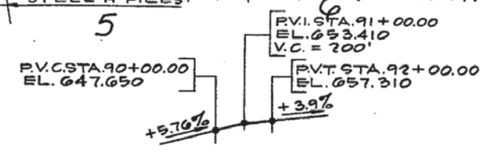
PROFILE GRADE - RAMP S-7



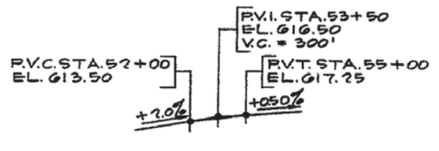
PROFILE GRADE - N.B. F.A.I. 74



PROFILE GRADE - S.B. F.A.I. 74



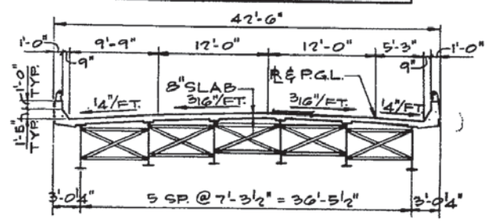
PROFILE GRADE RAMP 7-S



PROFILE GRADE - 19TH ST.

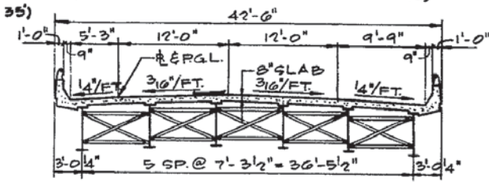
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 74	81-1HB	ROCK ISLAND	389	2/4
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT 1-74		

DWG. NO. S-174



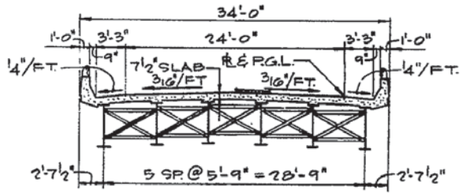
N.B. F.A.I. 74 - TYP. SECTION

(S.E. TRANSITION BEGINS AT STA. 8+75)

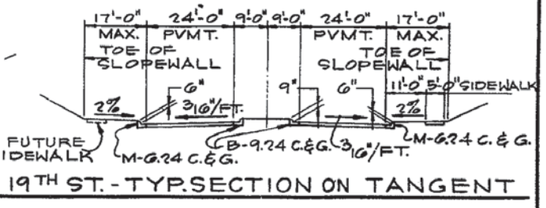


S.B. F.A.I 74 - TYP. SECTION

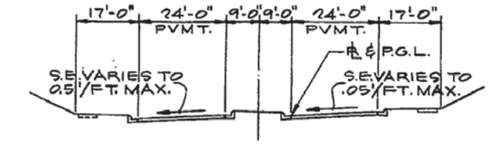
(S.E. TRANSITION BEGINS AT STA. 7+00)



RAMP 7-S - TYP. SECTION



19TH ST. - TYP. SECTION ON TANGENT



TYPICAL SECTION ON CURVE

DE LEUW, CATHER & COMPANY ENGINEERS
DESIGNED BY J. BARRAZA
DRAWN BY G. P. ALLEMAN
CHECKED E. S. MARTINS
IN CHARGE E. S. MARTINS
APPROVED W. G. HORN

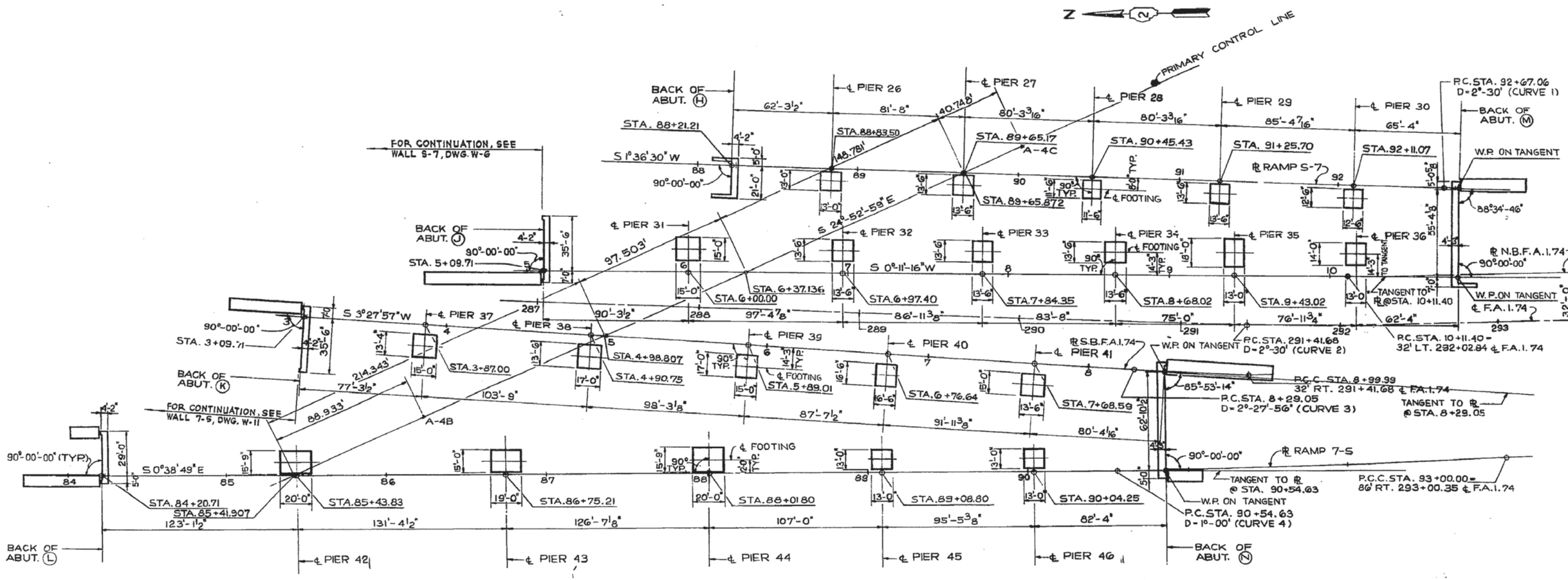
ELEVATIONS & SECTIONS

F.A.I. 74 - SECTION 81-1HB
F.A.I. 74 & RAMPS OVER RELOC. 19TH ST.
ROCK ISLAND COUNTY
STATION 289+23.09

SCALE: AS NOTED DATE:

DWG. NO. S-175

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 74	81-1HB	ROCK ISLAND	389	215
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT I-74		



FOUNDATION PLAN

SCALE: 1"= 30'-0"

DE LEUW, CATHER & COMPANY ENGINEERS
DESIGNED BY J.A. BARRAZA
DRAWN BY L. TROUSIL
CHECKED
IN CHARGE E.S. MARTINS
APPROVED W.G. HORN

SUBSTRUCTURE LOCATION

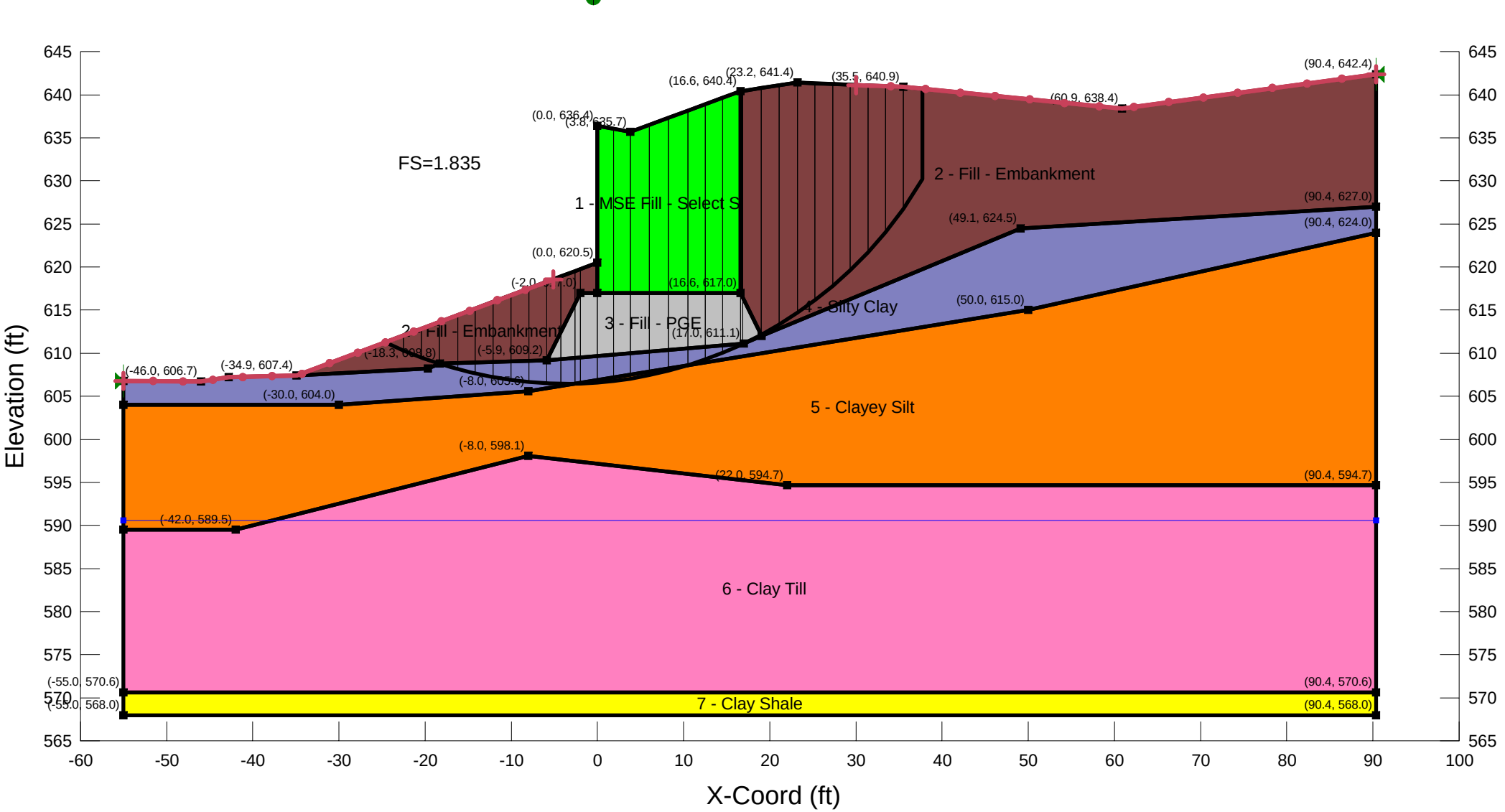
F.A.I. 74 - SECTION 81-1HB

F.A.I. 74 & RAMPS OVER RELOC. 19TH ST.

ROCK ISLAND COUNTY

STATION 289 + 23.09

SCALE: AS NOTED DATE:



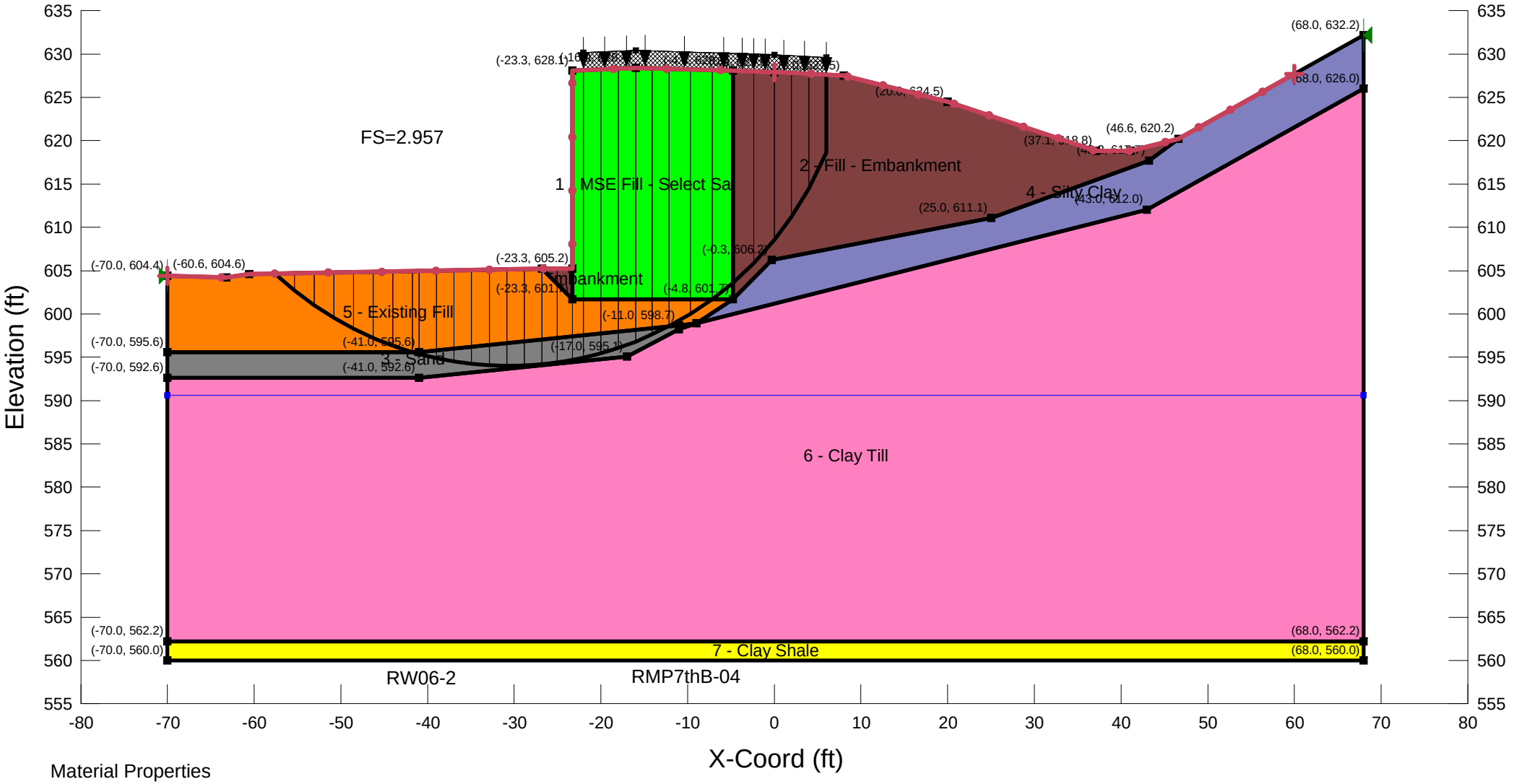
Material Properties

Name: 1 - MSE Fill - Select Sand Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 0 psf Phi: 34 °
Name: 2 - Fill - Embankment Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 1000 psf Phi: 0 °
Name: 3 - Fill - PGE Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 0 psf Phi: 32 °
Name: 4 - Silty Clay Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 1400 psf Phi: 0 °
Name: 5 - Clayey Silt Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 1500 psf Phi: 0 °
Name: 6 - Clay Till Model: Mohr-Coulomb Unit Weight: 136 pcf Cohesion: 2700 psf Phi: 0 °
Name: 7 - Clay Shale Model: Bedrock (Impenetrable)

SN 081-6015 - IL-RW06
Case 1 - East End of Wall - Circle
File Name: I-74 081-6015 east end.gsz
Last Edited By: Robert Chantome
Date: 5/21/2012 1:30:17 PM

I-74 OVER THE MISSISSIPPI RIVER
CENTRAL SECTION FINAL DESIGN
ILLINOIS DEPARTMENT OF TRANSPORTATION
ROCK ISLAND COUNTY, ILLINOIS

HANSON



Material Properties

Name: 1 - MSE Fill - Select Sand Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 0 psf Phi: 34 °
Name: 2 - Fill - Embankment Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 1000 psf Phi: 0 °
Name: 3 - Sand Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 0 psf Phi: 30 °
Name: 4 - Silty Clay Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 3000 psf Phi: 0 °
Name: 5 - Existing Fill Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 2800 psf Phi: 0 °
Name: 6 - Clay Till Model: Mohr-Coulomb Unit Weight: 136 pcf Cohesion: 2700 psf Phi: 0 °
Name: 7 - Clay Shale Model: Bedrock (Impenetrable)

SN 081-6015 - IL-RW06
Case 1 - Sta 529+00 - Circle
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I-74 OVER THE MISSISSIPPI RIVER
CENTRAL SECTION FINAL DESIGN
ILLINOIS DEPARTMENT OF TRANSPORTATION
ROCK ISLAND COUNTY, ILLINOIS

HANSON