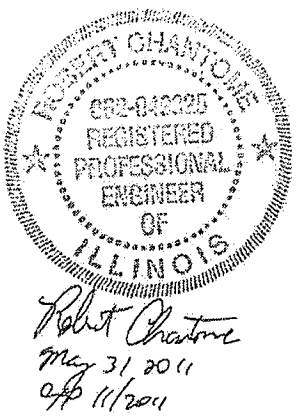

May 31, 2011
Rev 11/2011

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-RW11
Structure Number 081-6017

May 2011

REVISED: 12/02/11

Prepared for:
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Transportation, District 2
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Tables

1. Project Description

This report provides geotechnical data and recommendations for the proposed Retaining Wall IL-RW11, 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 replacement structure, constructed to retain fill at the north abutments of the new I-74 over 12th Avenue Bridges.

Nearby project features that have an impact on the design or construction of the proposed retaining wall include the I-74 over 12th Avenue Bridges (S.N.'s 081-0182 and 081-0183), the south abutment retaining wall (IL-RW13, S.N. 081-6020), the I-74 median retaining wall (IL-RW10), the I-74 roadway, and the 12th Avenue roadway. Geotechnical recommendations for the bridges and Retaining Wall IL-RW13 are presented in separate structure geotechnical reports prepared by Hanson Professional Services Inc. (Hanson). The geotechnical data and recommendations for Retaining Wall IL-RW10 are presented in a structure geotechnical report prepared by CH2M HILL in September 2009. Geotechnical recommendations for the interstate and street will be contained in soil survey reports prepared by Hanson.

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

2. Location

The proposed Retaining Wall IL-RW11 is located in the north central portion of Rock Island County, within Section 33 of Township 18 North, Range 1 West. It is located between I-74 Sta. 67+45 and 71+18. The wall separates I-74 and Ramp 7th-A on the high side from 12th Avenue on the low side.

3. Existing Structures

The existing structures, S.N. 081-0101 (Eastbound I-74) and S.N. 081-0102 (Westbound I-74), were constructed in 1973. They are single-span bridges with closed abutments. The abutment walls span the 50 feet wide median between the bridges. The profile grade line of the eastbound (southbound) bridge (Elev. 684.6) is approximately 7 feet higher than the westbound (northbound) bridge (Elev. 677.8). Due to the steep grade of 12th Avenue, the 21.7 feet overall height of the eastbound bridge abutment is actually shorter than the 26.5 feet height of the westbound bridge abutment. A considerable portion of the abutment wall is buried under a 1:2 spill slope. The exposed height of the abutment wall is approximately 10 to 12 feet. A semi-gravity retaining wall extends the east wingwall for more than 330 feet along the shoulder of WB I-74. Portions of the existing structure plans are included in the Appendix for reference.

The structure is supported on vertical and batter piles. Concrete piles with a 90 kip allowable capacity were used under the westbound abutment and the first 26 feet of the east wingwall. Timber piles with a 48 kip allowable capacity were used for the remainder of the structure. The pile tips are located in very stiff to hard clay (glacial till) at approximately Elev. 628 for the concrete piles and Elev. 632 to Elev. 640 for the timber piles.

4. Proposed Structure

The general structure type was determined by a previous value engineering study. The proposed grade separation will be a single-span bridge with mechanically stabilized earth (MSE) walls serving as the abutments. The MSE walls have U-shaped configurations in plan, which is typical for Illinois Department of Transportation (IDOT) structures. The walls terminate in the existing abutment cones at three of the four corners. At the northeast corner, IL-RW11 continues along the outside shoulder of WB I-74 for 360'-9" beyond the corner point. This

portion of the wall will replace the existing semi-gravity retaining wall. The face of the proposed abutment wall is approximately 15 feet in front of the existing abutment face. The wings are in the same location as the existing wingwalls. The portion of the wall along the east side of I-74 gradually flares to approximately 10 feet in front of the existing wall.

The bridge and wall geometry are configured for a mixed abutment, where the vertical bridge loads are supported by piles passing through the reinforced soil mass. The MSE wall will resist lateral loads applied to the bridge abutments. Based on information provided by the structure designer, the bridge's lateral load applied to the abutment by the superstructure will be approximately 1.3 kips per foot width.

The proposed wall will be constructed in stages in order to allow traffic on I-74 and 12th Avenue throughout the construction period. The middle portion of the wall, located in the current I-74 median, will be constructed first, followed by the east side (WB I-74), then the west side (EB I-74).

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 21.0 and 25.7 feet along the abutment and between 3.5 and 25.7 feet along the wings. With this range of heights, a typical MSE wall section would have an equivalent uniform bearing pressure varying from 3,300 to 4,200 psf under the bridges and 1,000 to 4,500 psf along the wings.

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.

5. Site Investigation

The project site is located in the steeply sloping terrain of the bluffs along the Mississippi River. The ground surface of the residences to the west is at approximately Elev. 691 feet, while the surface of a motel parking lot to the east is at approximately Elev. 658 feet. Existing I-74 is located on two terraces constructed on a former hillside. Presently, 12th Avenue slopes down to the east at approximately 8% grade, while I-74 slopes down to the north at approximately 3% grade.

The footprint of the proposed retaining wall generally lies within the existing I-74 embankment and 12th Avenue Bridge abutment spill slope. Along the east side of I-74, the wall encroaches on the motel parking lot.

Test boring data was shown on the existing structure plans. It is presumed that these borings were drilled in the early 1970's. Eight borings were drilled to depths between 55 and 65 feet below grade. Standard penetration tests were generally performed at 2.5-feet intervals for the entire boring. Boring Numbers 1 and 2 were drilled near the existing bridge abutments. Borings 5 through 8 were drilled along the existing east wingwall. Although the soil strata logged in the upper part of these borings were likely disturbed by the original I-74 roadway and bridge construction, the data for the lower strata are useful for design of the new retaining wall.

The field exploration that was completed specifically for the proposed structure was accomplished in three phases. The first two phases were completed in December 2005 and October 2007 by another consultant. 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 boring and performed a general site reconnaissance during the third phase.

Five borings were drilled in the first two phases and one boring was 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 125 feet. Standard Penetration Test samples were collected at 2.5 ft. to 10.0 ft. intervals in all borings. Several Shelby tube samples were collected at representative locations in cohesive strata. The boring depths ranged from 15.0 ft. to 99.25 ft.

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

6. Laboratory Investigation

Soil samples from the 1970's borings, first phase borings, and second phase borings were tested by others. Unconfined strength and moisture content test results, generally in accordance with current IDOT policies, are shown on the existing structure plans. The testing of samples collected from the first and second phase borings does not meet IDOT's current minimum requirements for structure borings. Unconfined strength and moisture content tests were completed on a small fraction of the samples. Index testing was completed on representative samples from two borings. Triaxial strength data from one sample was included in a summary of laboratory test results.

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. Two unconfined compression tests 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. All laboratory test data is included in the Appendix.

7. 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 and two of the older borings that were drilled behind the proposed structure.

The subsurface profile consists of deposits of fill material and loessial soils overlying glacial till. The till was encountered in all of the borings between Elev. 657.1 and Elev. 644.8 or 8 to 14 ft below grade in front of the highway embankment. Boring PB1001 encountered shale bedrock at Elev. 558.5 or 97 ft below grade.

Fill was encountered at the southwest corner of the site in Boring RW701. It extended from the ground surface to the top of the till stratum. The fill material was random, consisting of layers of stiff silty clay, loose sand with gravel, soft to stiff silty clay with debris.

The loessial soils were encountered in the other borings. Although similar in origin, these soils were quite variable in classification and consistency. Typically, they were soft to stiff silty clays, clayey silts, or silts. A seam of silty sand to sandy silt was found in several of the borings at the north end of the east wingwall. Unconfined strengths ranged from 0.5 to 4.0 tsf, with an average of 1.2 tsf along the abutment and 2.0 tsf along the west wingwall. Generally, the measured strengths were more consistent in the samples taken from borings along the west wingwall.

The till stratum is typically very stiff, gray sandy lean clay. Typical unconfined strengths were between 2.5 and 3.5 tsf. Standard Penetration Test (SPT) values were typically between 13 and 18 blows per foot. The SPT

values from the 1970's borings were significantly higher, but those tests were probably run with the older style drop hammers. Natural moisture contents ranged from 11 to 15 percent.

The groundwater conditions encountered in the borings were not consistent across the site. The 1970's borings generally were noted as being dry on completion. Boring PB1001 encountered groundwater at a depth of 8 feet (Elev. 647.5). Groundwater was not encountered in Boring RW11-1. The groundwater elevations recorded on the boring logs are summarized in Table 7.1. Stabilized readings were not taken in any of the borings. The groundwater encountered in PB1001 was located just above the till stratum, which could be a localized, perched condition. For comparison, the water level in the Mississippi River, approximately 0.9 miles to the north of the site, is usually about Elev. 561.0.

Table 7.1 Groundwater Elevations

Boring No.	During Drilling	At End of Boring	24-hour Reading
1	-	dry	-
2	-	dry	-
5	-	dry	-
6	-	dry	-
7	-	-	-
8	-	dry	-
ILR1101	-	-	-
ILR1103	-	-	-
ILR1105	-	-	-
PB1001	647.5	-	-
RW701	-	-	-
RW11-1	dry	-	-

The Illinois State Geological Survey Directory of Coal Mines does not list any mines in the immediate vicinity of the site.

8. Geotechnical Evaluations

A previous value engineering study determined that an MSE wall was preferred at this site. Due to the interdependence of this structure, the I-74 Over 12th Avenue Bridges, and the retaining wall supporting the bridges' south abutments, other types of retaining wall construction were not considered during the development of this SGR.

The native soils have an allowable bearing capacity of 2,500 psf along the west wingwall, 2,500 psf along the abutment, and 4,200 psf along the east wingwall north of I-74 Sta. 70+50. These capacities consider all soil layers within the zone of influence. The native soils have an undrained sliding resistance of 1,200 psf along the west wingwall and abutment and 2,050 psf along the east wingwall. The drained sliding resistance is 0.53 times the effective vertical stress for the entire wall. The proposed wall would meet the Standard Specifications for Highway Bridges (AASHTO) requirements for bearing pressure and sliding stability only along the east wingwall north of Sta. 70+50. The taller portions of the wall would exceed the allowable bearing capacity by as much as 2,000 psf.

Slope stability analyses of the wall's highest points along the abutment and along the wings were completed to determine the overall stability of the wall. Results of those analyses are included in the Appendix. The 1.86 and 1.84 factors of safety satisfy AASHTO requirements.

Although the upper native soils are relatively weak, they are overconsolidated and exhibit fairly low compressibility. The estimated total settlement under the weight of the proposed wall ranges up to 1.5 inches. Approximately one-half of this settlement is due to recompression of the glacial till stratum, which could take up to 200 months to be 90 percent complete. This magnitude and duration of settlement would not preclude construction of an MSE wall.

Some differential settlement is anticipated near the proposed stage lines. 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 would affect pavement constructed on top of the first stage and 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 native cohesive soils found at this site are relatively weak and will not support the weight of a conventional MSE wall. Typically, the alternative solutions are to either reduce the wall's bearing pressure or to increase the foundation soils' strength. Several potential treatment options were considered. Widening the reinforced soil mass and raising the wall in stages are not feasible for this wall. Removal and replacement of the foundation soils, the use of lightweight aggregate, and ground improvement with aggregate columns are possible solutions.

The removal and replacement of the relatively shallow, softer soils would normally be an ideal solution. At this wall, any excavation below the base of the reinforced soil mass would require additional excavation to lay back slopes through the existing embankment and additional shoring to support the interstate along the stage lines. The cost of the temporary work renders the removal and replacement alternative uneconomical when compared to the other possible solutions.

The use of lightweight granular backfill with a total unit weight of 75 pcf or less would reduce the applied bearing pressures to acceptable values. The lightweight aggregate must be used within the reinforced soil mass and within the backfill behind the reinforced soil mass. It is estimated that more than 4,000 cubic yards of lightweight aggregate would be needed. The cost of this material is not economical when compared to other possible solutions.

Vibrator compacted aggregate columns tipped in the very stiff, gray glacial till could increase the allowable bearing capacities above the applied bearing pressures. Our preliminary analyses indicate that relatively short columns with an area replacement ratio of 13 to 17 percent would be sufficient. Although ground improvement with tamper compacted aggregate columns was not expressly investigated, it is expected that the wall also could be successfully constructed using that technology. The cost of aggregate column ground improvement is expected to be significantly lower than the other feasible solutions.

9. Design Recommendations

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 for Road and Bridge Construction (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. Near the wall corners, where the backfill will be the select material placed behind the other face, an active earth pressure coefficient of 0.28 may be used.

Aggregate column ground improvement is the recommended treatment option. The results are highly dependent upon the equipment and techniques used to install the aggregate columns. The contractors that perform this type of work routinely design the improvement to specific geotechnical performance requirements. The lump sum cost of the treatment is expected to be approximately $80,000.

We recommend that the approximate horizontal limits of the aggregate column ground improvement be defined as an area bounded by a line 4 ft. beyond the perimeter of the reinforced soil mass. The limits along the wall should include the west wingwall, the portion along the face of the abutment, and the east wingwall between the face of the abutment and I-74 Sta. 70+50. Within these limits, the contractor should be required to satisfy the following performance requirements:

1. Minimum factor of safety of 1.5 against global slope stability failure of permanent condition.
2. Minimum factor of safety of 1.5 against global slope stability failure of temporary condition at end of Stage 1.
3. Minimum factor of safety of 2.0 against equivalent uniform service bearing pressure failure if a load test is performed.
4. Minimum factor of safety of 2.5 against equivalent uniform service bearing pressure failure if a load test is not performed.
5. Total settlement measured at the base of the wall not to exceed 4.0 inches.
6. Total settlement measured on the pavement not to exceed 1.0 inch.
7. Differential settlement measured along the base of the wall not to exceed 1/100.
8. Primary consolidation of the soil within the depth of the ACGI to be at least 90 percent complete when the bridge piles are to be driven. Any required waiting periods shall be coordinated with the bridge construction schedule.

It should be noted that most of these performance requirements can be satisfied without any improvement to the native subgrade. The bearing pressure requirement will control the design of the aggregate column ground improvement. The provision allowing for a lower factor of safety if a load test is performed has been included for consistency with other walls on the I-74 project.

Along the east wingwall where ground improvement is not required, the wall should be proportioned for an allowable bearing capacity of 4,200 psf. Sliding stability should be checked against a nominal undrained sliding resistance of 2,050 psf and a nominal drained sliding resistance of 0.53 times the effective vertical stress. The native soils should be inspected when the excavation reaches the base of the proposed wall. Any soft or otherwise unsuitable material should be removed and replaced with suitable compacted native soil.

With the ground improvement, 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 removals or other excavation below the reinforced soil mass should be backfilled with either the select backfill used in the reinforced soil mass or the granular material used as a drainage layer or working platform for the aggregate column ground improvement design. Other material outside the limits of the reinforced soil mass may be embankment fill in accordance with the IDOT Standard Specifications.

The external stability design should be completed using the parameters defined above. In areas with ground improvement, the applied bearing pressures should not be compared to allowable bearing capacities of the native soils. Instead, the estimated applied bearing pressures will be given as a performance requirement for the aggregate column ground improvement. The minimum length to height ratio specified by AASHTO (0.70) will be acceptable for the entire wall.

In areas where the footprint of the proposed MSE wall overlaps the existing semi-gravity wall, the existing structure must be removed. It is recommended that the tops of the existing piles be cut off at least one foot below the base of the wall or the base of the contractor's working platform in areas with ground improvement. Pile holes should be backfilled with compacted native material.

10. Construction Considerations

The construction of MSE walls and aggregate column ground improvement are not covered by the IDOT Standard Specifications. Guide Bridge Special Provisions No. 38, Mechanically Stabilized Earth Retaining Walls (Revised: January 18, 2011), and No. 71, Aggregate Column Ground Improvement (Revised: October 4, 2010), 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.

The general contractor will hire a specialty contractor to design and install the aggregate column ground improvement. He will also hire an MSE wall supplier to complete the MSE wall design and furnish the materials. The interdependence of the ground improvement and MSE wall designs must be considered when developing the plans. The MSE wall supplier will typically design a wall with a horizontal base with vertical steps at convenient locations. This results in a wall that is slightly taller and wider than the theoretical size shown on the construction plans. The wall supplier may also use different assumptions for unit weight and lateral earth pressure on the reinforced soil mass. Because of these factors, the target bearing pressure for the ground improvement contractor should be 5% to 10% higher than the theoretical value calculated during preliminary design.

The ground improvement contractor will need to assign strength and consolidation properties to the native soils in order to design the aggregate columns. All of the soils laboratory data in the Appendix to this report should be included in the contract documents. Usually, this is accomplished by adding a "Geotechnical Investigation Laboratory Data" section to the special provisions.

Obstructions, such as old footings, pavements, utilities, etc., that are within the area to be treated with aggregate column ground improvement generally should be removed. Although it is possible to predrill the columns through large obstructions or space the columns around smaller obstructions, this increases the cost and reduces the effectiveness of the ground improvement.

The piles supporting the existing bridges are a special case that should be investigated thoroughly. The existing piles could potentially interfere with the aggregate columns and the new bridge piles. It is not unusual for aggregate columns to be installed around piles; however, the number of piles at this site is much larger than typical. There must be enough clear space within the horizontal limits of improvement to allow 2′-6″ to 3′-0″ diameter aggregate columns to be installed at 5′-0″ to 7′-0″ intervals. If the relationship between the existing structure and new structure results in a site that is too congested, then some of the existing piles must be removed completely.

The first stage of construction will require top-down shoring for near-vertical cuts along the inside shoulders of EB and WB I-74. The height of this shoring exceeds the maximum values in the Bridge Manual's Design Guide 3.13.1 – Temporary Sheet Piling Design. The existing abutment's large pile cap will have a significant impact on the design of the shoring. A contractor-designed temporary wall is recommended. Guide Bridge Special Provision No. 44, Temporary Soil Retention System (Revised: May 11, 2009), should be included in the construction documents.

The first stage will also require temporary vertical faces along the sides of the reinforced soil mass, perpendicular to the front face of the permanent wall. These vertical faces should not be formed by placing the select backfill against the temporary soil retention system. This would inhibit compaction of the select backfill and obstruct

removal of the temporary soil retention system. Temporary, wire-faced MSE walls are recommended along the stage lines. Guide Bridge Special Provision No. 57, Temporary Mechanically Stabilized Earth Retaining Walls (Revised: October 4, 2010), should be included in the construction documents.

The piles for the I-74 over 12th Avenue Bridges (S.N. 081-0182 and 081-0183), which are located within the reinforced soil mass for this wall, will interfere with the placement and compaction of the select backfill. The piles must either be driven prior to placing the select backfill or driven through sleeves after placing the select backfill. Refer to the structure geotechnical report for those structures for specific recommendations.

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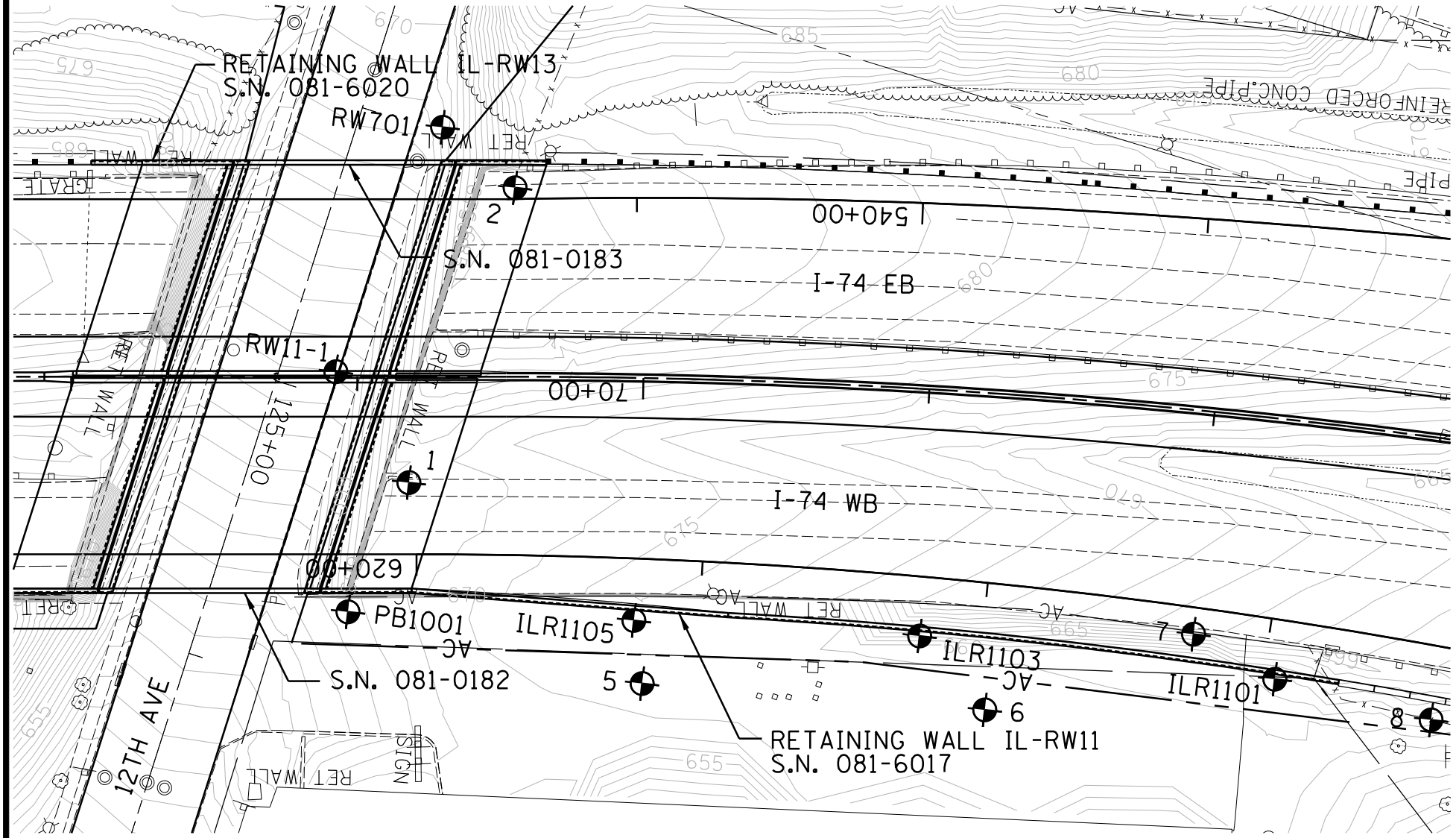
Appendix

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

ILRW11-A0432-011-Subsurface Data.dgn 04\21\2011



LEGEND

RW600 BORING LOCATION

0 50 100

SCALE IN FEET

N

HANSON

BORING LOCATION PLAN

12TH AVENUE RETAINING WALL IL-RW11
S.N. 081-6017
ROCK ISLAND COUNTY, ILLINOIS

08H0120E 3/28/11

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RW701
Sta. 70+70, 87' RT

	N	Qu	w%	
669.09				
668.59				Topsoil - Grass root matter. Hole offset to bottom of slope adjacent to existing manhole gps point #48
667.59	20			
	6			Silty Clay (CL-ML) - Gray brown, stiff, dry, fine to coarse, rounded-subrounded gravel, fill
	5			Poorly Graded Sand With Gravel (SP) - Brown, dry, fine to coarse, fine to medium rounded-subrounded gravel, fill
	2			
659.09	2			Soft silty clay with wood piece in shoe followed by dark reddish brown sand and clay and old concrete pieces, fill
657.09	3	1.3P		Silty Clay (CL-ML) - Gray moist/wet, soft, high plasticity, fine to coarse, subangular-angular gravel, fill
	10	1.3P		Sandy Lean Clay Trace Gravel (CL) - Gray, moist, soft/stiff, medium plasticity, fine to medium, rounded-subrounded gravel, till
	20	4.5P		Piece of coarse gravel in toe, possibly caused poor recovery. Stop for day at 3:30pm, Start on 12/14/05 at 8:30am, start mud rotary at 20' after sampling
	12	1.5P		
				No recovery, possibly pounded on gravel
	14			
	7	2.5P		
	10	2.0P		
	15			
620.00				

	N	Qu	w%	
620.00				
	16	2.5P		Gray, unweathered glacial clay
	17	2.5P		
600.00				

	N	Qu	w%	
600.00				
	23	2.5P		
	20	2.5P		
572.09	24	2.3P		

Bottom of hole = 97.0 feet

2
Sta. 70+45, 66' RT

	N	Qu	w%	
684.00				
				Seat Augers
680.50				
	17	1.15B	11	Very Stiff to Hard SILTY CLAY LOAM
	22	1.40E	7	
676.00				
	39		4	Stiff to Hard Yellow and Grey SILT
	50	4.00E	5	
	32		5	
	31		7	
	22	1.38B	9	
	13	1.68B	20	
660.00				
	14	0.93B	21	Medium to Very Stiff SILTY CLAY LOAM to CLAY LOAM
	14	1.55S	25	
	15	2.13B	19	
	13	1.78	21	
	7	0.58B	20	
648.00				
	30	4.40S	12	Hard Grey CLAY LOAM with Gravel (TILL)
	35	5.15S	12	
643.00				
	16	1.68B	11	Stiff to Very Stiff Grey CLAY LOAM with Gravel (TILL)
	17	1.94	13	
	22	2.13B	13	
	19	2.33B	13	
	24	3.02B	12	
	25	2.82B	12	
	22	3.20B	12	
	25	3.49B	11	
	18	1.12B	15	
	25	2.72B	13	
	24	2.60B	14	
	27	3.02B	13	
609.00	25	2.95B	15	

Bottom of hole = 75.0 feet

RW11-1
Sta. 71+08, 2' RT

	N	Qu	w%		
659.90					
659.70					ASPHALT
659.10					CONCRETE
	9	0.96S	20		Gray with brown mottles, moist, stiff, silty CLAY
656.90		2.13S	20		
		0.55S	19		Brown with gray mottles, moist, stiff, silty CLAY with trace very-fine grained sand
653.90					
652.65	17	1.77B	17		Brown, moist, very stiff, silty CLAY with trace sand
652.40		0.42S	21	C	Brown, wet, very stiff, sandy clayey SILT with trace sand and gravel
		2.00P	19		
		1.12S	18		Brown, slightly moist, very stiff, SILT with trace sand and clay
648.40	29	3.44S	13		Gray, slightly moist, very stiff, silty CLAY with trace sand and gravel
644.90	33	5.01B	10		

Bottom of hole = 15.0 feet

LEGEND

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

558.10

SUBSURFACE DATA PROFILE
STRUCTURE NO. 081-6017

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

HANSON
Hanson Professional Services Inc.

JOB NO. 08H0120E
DATE 3/28/11
SHEET NO. 1
3 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

I
Sta. 70+82, 37' LT

	N	Qu	w%	
674.80				
	16	1.01S	13	Medium to Stiff Grey and Tan SILT
	19	1.09S	6	
	25	1.05E	13	
	32	1.10E	14	
	28	0.97S	18	
	27	0.92S	23	
658.80				
	25	2.72S	18	Stiff to Very Siff Brown CLAY LOAM with GRAVEL
	22	3.10S	19	
652.30				
	20	1.44B	15	Medium Brown SILTY SAND
650.50	18			
	17	6.79B	12	Very Stiff to Hard Brown to Gray CLAY LOAM with Gravel (TILL)
	36	2.30B	11	
	40	2.65B	8	
		4.27B	12	
	30	3.30B	12	
	24	4.17B	12	
	24	2.91B	13	
	27	3.49B	12	
	28	2.88B	11	
	23	3.00B	12	
	25	2.85B	13	
	24	3.49B	13	
	28	3.88B	12	
	32	4.27B	14	
	31	4.07B	12	
	27	1.94B	15	
		2.91B		
	25	3.38B	14	
609.80	27	3.49B	13	

Bottom of hole = 65.0 feet

PB1001
Sta. 71+03, 82' LT

	N	Qu	w%	
655.49				
654.49				Asphalt - 2.5 inches of asphalt followed by gravel-base. Hole offset 9' east of abutment wall
652.49	6			
	13	4.5P		Silty Clay (CL) - Light grayish brown, moist, stiff, low plasticity, with iron oxide staining and small metal and miscellaneous fill material, possibly fill
650.49				
DD	26	2.0P		
647.5				
646.49	18	0.3P		Sandy Lean Clay, Trace Gravel (CL) - Reddish brown, moist, hard, low plasticity, fine sand with fine to coarse, subrounded-subangular gravel, embedded throughout, possibly fill
	13	<0.25-4.5*		Silty Clay (CL) - Reddish brown, moist/dry, stiff, some gravel, possibly loess Reddish brown, wet, soft, trace very fine sand, loess. Power auger to 7', start HSA
	20	4.5P		
	17	3.0P		Sandy Lean Clay, Trace Gravel (CL) - Brown to dark gray, moist, fine rounded-subrounded gravel embedded throughout, hard, glacial fill Dark gray
	11	2.5P		
	13	2.3P		
	16	3.5P		
	17	4.0P		
	22	2.0P		
	22	2.5P		
	16	3.0P		
600.00				

600.00				
	20	2.8P		
	20	2.3P		
	19	2.5P		
	22	2.0P		
580.00				

580.00				
	26	3.0P		
	26	3.5P		
	76/9"	4.5P		Fine sand in shoe
	50/6"			Poorly graded sand seam, gray, wet, very dense, fine to medium sand, rapid dilatancy, estimated 50% fines, this seam extends to about 93'
	50/2"	3.8P		
558.49				Shale - Dark gray/black, moderately weathered, weak rock, Possible bedrock at 97'
556.24	50/3"			

Bottom of hole = 99.25 feet

ILR1105
Sta. 70+02, 85' LT

	N	Qu	w%	
658.82				
				Silt With Trace Of Sand (ML) - yellowish brown, slightly moist, firm, fine to medium grained, low plasticity (LL=30 PI=14)
	6			
	8	2.1S	15.0	firm - RIMAC: Pu = 35lbs (shear) (LL=29 PI=14)
	9	2.0S		stiff
	8	2.0P		firm
	8	2.0P	13.0	firm (LL=30 PI=17)
	8	2.0P		firm
644.82				
	10	4.2S	12.0	Clay (CL) - dark gray, moist, stiff, moderate plasticity, trace of coarse sand (LL=34 PI=22) RIMAC: Pu = 70lbs (shear)
	14	2.0P		stiff
	13	2.5P		stiff
	15	4.8S		stiff, low plasticity RIMAC: Pu = 80lbs (shear)
	15	3.0P		stiff, no sand observed
	16	3.0P		very stiff, trace coarse sand
	18	3.0P		very stiff
	17	3.0P		very stiff
608.82				

Bottom of hole = 50.0 feet

LEGEND

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

SUBSURFACE DATA PROFILE
STRUCTURE NO. 081-6017

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

HANSON
Hanson Professional Services Inc.

JOB NO. 08H0120E
DATE 3/28/11
SHEET NO. 2
3 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

ILR1103
Sta. 68+98. 86' LT

	N	Qu	w%	
659.15				Silt (ML) - yellowish brown, slightly moist, firm, low plasticity
	6			
	6	3.0B		RIMAC: Pu = 50lbs (bulging)
	5			
651.15				
	16			Silty Sand (SM) - grayish brown, wet, medium, fine to medium grained, low plasticity
649.15	7	1.8S		RIMAC: Pu = 30lbs (shear)
	10			Clay (CL) - gray, moist, firm, moderate plasticity, trace of fine sand
	10	4.8B		
	12	2.0P		trace of coarse sand
	15	3.0P		trace of coarse sand
	17	6.6S		trace of fine sand RIMAC: Pu = 110lbs (shear)
626.15				
	17	2.0P		Silt With Trace Of Sand (ML) - yellowish brown, moist, very stiff, fine to medium grained, moderate plasticity
621.15				
	16	3.5P		Clay With Trace Of Gravel (CL) - gray, moist, very stiff, fine to medium grained, moderate plasticity, gravel size <1"
	16	3.5P		
	18	3.0P		no gravel; trace of coarse sand
609.15				Bottom of hole = 50.0 feet

ILR1101
Sta. 67+69. 91' LT

	N	Qu	w%	
660.57				
660.07				2" Asphalt
	10			Silt (ML) - yellowish brown, slightly moist, stiff, low plasticity, trace fine sand
	6	2.1S		
654.57				
	9			Silty Sand (SM) - yellowish brown, slightly moist, loose, fine to medium grained, low plasticity
652.57				
	8	4.2S	18.0	Silt (ML) - yellowish brown, slightly moist, firm, moderate plasticity, some fine sand
	14			RIMAC: Pu = 70lbs (shear) (LL=35 PI=21) stiff, trace of coarse sand
648.57				
	9		13.0	Clay (CL) - gray, slightly moist, stiff, low plasticity, trace of fine sand (LL=31 PI=14)
	18	3.0P	13.0	very stiff (LL=35 PI=18)
	13	3.0P		stiff
	13	6.6B		stiff, trace of fine sub-angular gravel, <1" in size, RIMAC: Pu = 110lbs (bulging)
	11	4.0P	12.0	
				dark gray, slightly moist, stiff, low plasticity, trace of fine sand
	17	3.5P		
	18	3.5P		very stiff, trace of coarse sand
	17	4.0P		very stiff
	19	4.5P		very stiff
610.57				Bottom of hole = 50.0 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	Water Surface Elevation Encountered in Boring DD = during drilling 24h = 24 hours after completion
558.10 ▽	

SUBSURFACE DATA PROFILE
STRUCTURE NO. 081-6017

PROFESSIONAL DESIGN FIRM LICENSE #184-001084

HANSON
Hanson Professional Services Inc.

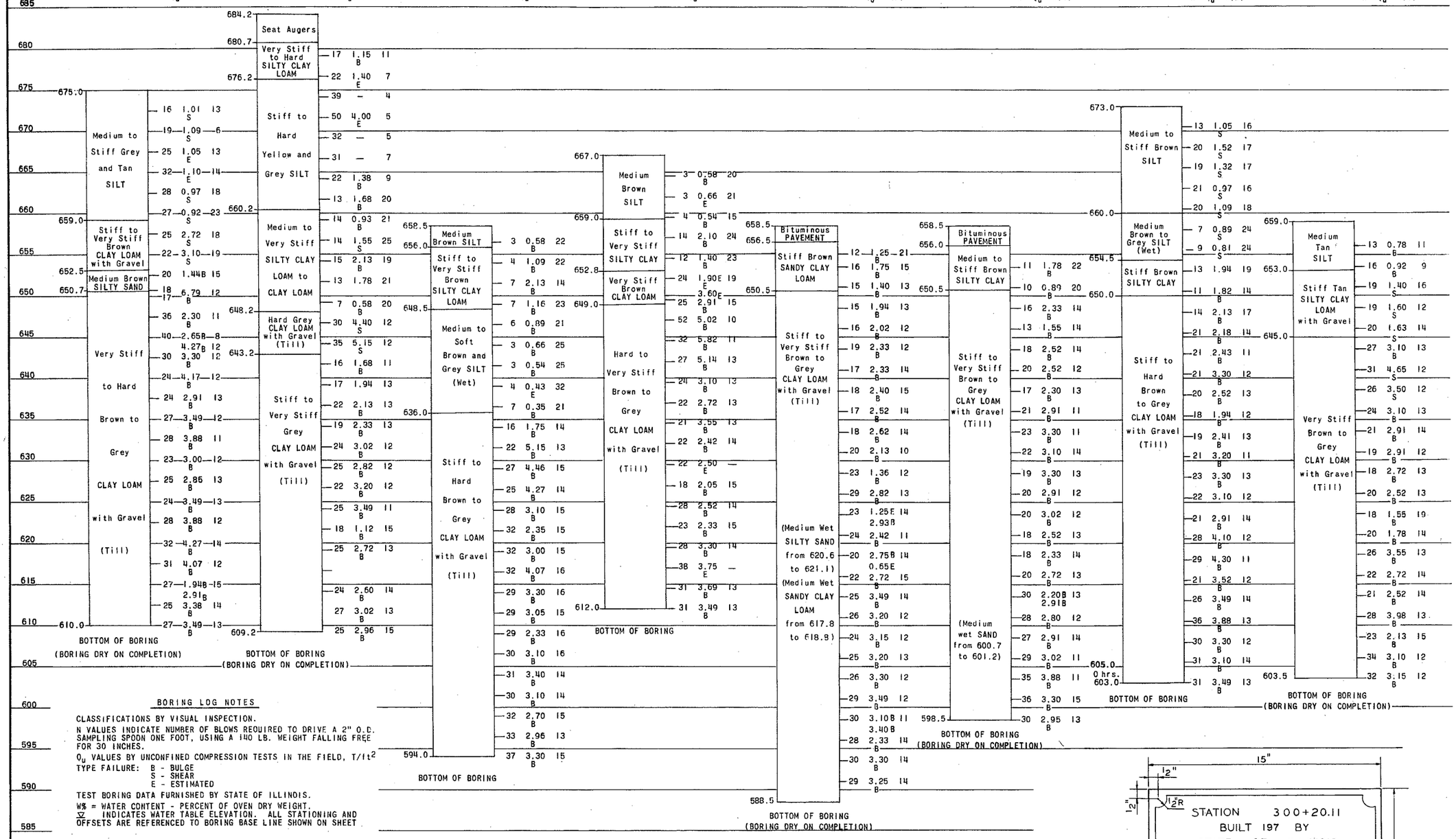
JOB NO. 08H0120E
DATE 3/28/11

SHEET NO. 3
3 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		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 74	81-1HB-1	ROCK ISLAND	389	255
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT I-74-1( ) 11.4		

DWG. NO. S-2



BORING LOG NOTES

CLASSIFICATIONS BY VISUAL INSPECTION.

N VALUES INDICATE NUMBER OF BLOWS REQUIRED TO DRIVE A 2" O.D. SAMPLING SPOON ONE FOOT, USING A 140 LB. WEIGHT FALLING FREE FOR 30 INCHES.

Q_u VALUES BY UNCONFINED COMPRESSION TESTS IN THE FIELD, T/ft^2

TYPE FAILURE: B - BULGE
S - SHEAR
E - ESTIMATED

TEST BORING DATA FURNISHED BY STATE OF ILLINOIS.

W% = WATER CONTENT - PERCENT OF OVEN DRY WEIGHT.

▽ INDICATES WATER TABLE ELEVATION. ALL STATIONING AND OFFSETS ARE REFERENCED TO BORING BASE LINE SHOWN ON SHEET

SPECIAL NOTE

"S" DRAWING NUMBERS ON THE STRUCTURAL DRAWINGS FOR SECTION 81-1HB-1 MAY BE REPEATED ON DRAWINGS FOR OTHER SECTIONS IN THE SAME CONSTRUCTION CONTRACT. DRAWINGS ARE INDEPENDENTLY NUMBERED FOR SECTION 81-1HB-1 AND NO CROSS-REFERENCES ARE MADE OR INTENDED TO DRAWINGS FOR A DIFFERENT SECTION. ALL PROFILE GRADE ELEVATIONS AND VERTICAL CURVE DATA GIVEN THROUGHOUT THE STRUCTURAL PLANS REFER TO TOP OF CONCRETE AND DO NOT INCLUDE THE 1-1/2" BITUMINOUS CONCRETE SURFACE COURSE.

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

CENTER OF 7/16" Ø COUNTERSUNK HOLES FOR BOLTS WHEN REQUIRED

LETTERING FOR NAME PLATES
FOR DETAILS SEE STANDARD NO. 2113

TEST BORINGS AND NAME PLATES

F.A.I. 74 - SECTION 81-1HB-1
F.A.I. 74 OVER 12TH AVE.

ROCK ISLAND COUNTY

STATION 300+20.11

SCALE: AS NOTED DATE:

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=561111.597, E=2459861.347), **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. ILR1101
Station _____
Offset _____
Ground Surface Elev. 660.57 **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
				2" Asphalt 660.07
				Silt (ML) yellowish brown, slightly moist, stiff, low plasticity, trace fine sand
	3			
	5 5			
	3			
-5	3 3	2.1 S		
				654.57
	2			**Silty Sand (SM)** yellowish brown, slightly moist, loose, fine to medium grained, low plasticity
	4 5			
				652.57
	3			**Silt (ML)**
	3 5	4.2 S	18.0	yellowish brown, slightly moist, firm, moderate plasticity, some fine sand RIMAC: Pu = 70lbs (shear)
-10				
	2			stiff, trace of coarse sand
	6 8			
				648.57
	2			**Clay (CL)**
	3 6		13.0	gray, slightly moist, stiff, low plasticity, trace of fine sand
	5			very stiff
-15	8 10	3.0 P	13.0	
	4			stiff
	5 8	3.0 P		
-20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Clay (CL) gray, slightly moist, stiff, low plasticity, trace of fine sand *(continued)*
	2			stiff, trace of fine sub-angular gravel,<1" in size
	5 8	6.6 B		RIMAC: Pu = 110lbs (bulging)
-25				
	5			
	5 6	4.0 P	12.0	
-30				
				dark gray, slightly moist, stiff, low plasticity, trace of fine sand
	5			
	7 10	3.5 P		
-35				
	5			very stiff, trace of coarse sand
	8 10	3.5 P		
-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=561111.597, E=2459861.347), **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. ILR1101
Station _____
Offset _____
Ground Surface Elev. 660.57 **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 (%)	
Clay (CL) gray, slightly moist, stiff, low plasticity, trace of fine sand *(continued)*				
very stiff	6			
	8 9	4.0 P		
-45				
very stiff	4			
	8 11	4.5 P		
610.57 -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)

Illinois Department of Transportation
Division of Highways
CH2M HILL

SOIL BORING LOG

Date 10/3/07

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=560989.55, E=2459888.561), **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. ILR1103
Station _____
Offset _____
Ground Surface Elev. 659.15 **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, slightly moist, firm, low plasticity
	3			
	3			
	3			
	1			RIMAC: Pu = 50lbs (bulging)
-5	3	3.0		
	3	B		
	2			
	2			
	3			
651.15				
	4			**Silty Sand (SM)** grayish brown, wet, medium, fine to medium grained, low plasticity RIMAC: Pu = 30lbs (shear)
	10			
	6			
649.15 -10				
	1			**Clay (CL)** gray, moist, firm, moderate plasticity, trace of fine sand
	2	1.8		
	5	S		
	3			
	4			
	6			
	3			
-15	5	4.8		
	5	B		
	3			trace of coarse sand
	5	2.0		
	7	P		
-20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Clay (CL) gray, moist, firm, moderate plasticity, trace of fine sand *(continued)*
	3			trace of coarse sand
	6	3.0		
	9	P		
-25				
	3			trace of fine sand
	7	6.6		RIMAC: Pu = 110lbs (shear)
	10	S		
-30				
626.15				
	1			**Silt With Trace Of Sand(ML)** yellowish brown, moist, very stiff, fine to medium grained, moderate plasticity
	8	2.0		
	9	P		
-35				
621.15				
	5			**Clay With Trace Of Gravel(CL)** gray, moist, very stiff, fine to medium grained, moderate plasticity, gravel size < 1"
	7	3.5		
	9	P		
-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 10/3/07

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=560989.55, E=2459888.561), **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. ILR1103
Station _____
Offset _____
Ground Surface Elev. 659.15 **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 (%)	
Clay With Trace Of Gravel(CL) gray, moist, very stiff, fine to medium grained, moderate plasticity, gravel size < 1" *(continued)*				
	5			
	7 9	3.5 P		
-45				
No gravel; trace of coarse sand	5			
	8 10	3.0 P		
609.15 -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)

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=560893.607, E=2459916.795), **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. ILR1105
Station _____
Offset _____
Ground Surface Elev. 658.82 **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 With Trace Of Sand(ML) yellowish brown, slightly moist, firm, fine to medium grained, low plasticity
	2			
	3 3			
				firm
	2			
				RIMAC: Pu = 35lbs (shear)
-5	3 5	2.1 S	15.0	
				stiff
	1			
	3 6	2.0 P		
				firm
	3			
	3 5	2.0 P		
-10				
				firm
	2			
	3 5	2.0 P	13.0	
				firm
	1			
	3 5	2.0 P		
644.82				
				Clay (CL) dark gray, moist, stiff, moderate plasticity, trace of coarse sand RIMAC: Pu = 70lbs (shear)
	3			
-15	4 6	4.2 S	12.0	
				stiff
	3			
	5 9	2.0 P		
-20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Clay (CL) dark gray, moist, stiff, moderate plasticity, trace of coarse sand RIMAC: Pu = 70lbs (shear) *(continued)*
				stiff
	4			
	5 8	2.5 P		
-25				
				stiff, low plasticity
	3			
				RIMAC: Pu = 80lbs (shear)
	6 9	4.8 S		
-30				
				stiff, no sand observed
	4			
	6 9	3.0 P		
-35				
				very stiff, trace coarse sand
	3			
	7 9	3.0 P		
-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=560893.607, E=2459916.795), **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. ILR1105
Station _____
Offset _____
Ground Surface Elev. 658.82 **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) dark gray, moist, stiff, moderate plasticity, trace of coarse sand RIMAC: Pu = 70lbs (shear) *(continued)*
	5			very stiff
	8 10	3.0 P		
-45				
	5			very stiff
	7 10	3.0 P		
608.82 -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)

Illinois Department of Transportation
Division of Highways
CH2M HILL

SOIL BORING LOG

Date 12/6/05

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

SECTION I-74 Bridge over Mississippi River **LOCATION** (N=560798.355, E=2459947.258), **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. PB1001
Station 71+99.57
Offset 82.08ft
Ground Surface Elev. 655.49 ft

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

Groundwater Elev.:
First Encounter 647.5 ft ▼
Upon Completion _____ ft
After _____ **Hrs.** _____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Asphalt 2.5 inches of asphalt followed by gravel sub-base Hole offset 9' east of abutment wall
654.49	2			
	3			**Silty Clay (CL)** Light grayish brown, moist, stiff, low plasticity, with iron oxide staining and small metal and miscellaneous fill material, possibly fill
	3			
	4			
652.49	2			
	8	4.5 P		**Sandy Lean Clay, Trace Gravel (CL)** Reddish brown, moist, hard, low plasticity, fine sand with fine to coarse, subrounded-subangular gravel embedded throughout, possibly fill
	5			
650.49 -5	10			
	5			
	12	2.0 P		**Silty Clay (CL)** Reddish brown, moist/dry, stiff, some gravel, possibly loess Reddish brown, wet, soft, trace very fine sand, loess Power auger to 7', start HSA
	14			
	15			
	4			
▼	9	0.3 P		
	9			
646.49	8			
	4			
-10	6	<0.25-4.5+ P		**Sandy Lean Clay, Trace Gravel (CL)** Brown to dark gray, moist, fine rounded-subrounded gravel embedded throughout, hard, glacial till Dark gray
	7			
	8			
	4			
	8	4.5 P		
	12			
	13			
	4			
	8	3.0 P		
	9			
-15	9			
-20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	2			**Sandy Lean Clay, Trace Gravel (CL)** Brown to dark gray, moist, fine rounded-subrounded gravel embedded throughout, hard, glacial till *(continued)*
	5	2.5 P		
	6			
	7			
-25	4			
	6	2.3 P		
	7			
	9			
-30	5			
	7	3.5 P		
	9			
	10			
-35	6			
	7	4.0 P		
	10			
	10			
-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 12/6/05

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

SECTION I-74 Bridge over Mississippi River **LOCATION** (N=560798.355, E=2459947.258), **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. PB1001
Station 71+99.57
Offset 82.08ft
Ground Surface Elev. 655.49 ft

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

Groundwater Elev.:
First Encounter 647.5 ft ▼
Upon Completion _____ ft
After _____ **Hrs.** _____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sandy Lean Clay, Trace Gravel (CL) Brown to dark gray, moist, fine rounded-subrounded gravel embedded throughout, hard, glacial till *(continued)*	7			**Sandy Lean Clay, Trace Gravel (CL)** Brown to dark gray, moist, fine rounded-subrounded gravel embedded throughout, hard, glacial till *(continued)*	6		
	10 12 13	2.0 P			9 11 13	2.3 P	
-45	7			-65	6		
	8 14 12	2.5 P			8 11 12	2.5 P	
-50	6			-70	6		
	7 9 11	3.0 P			7 15 14	2.0 P	
-55	6			-75	6		
	9 11 13	2.8 P			10 16 14	3.0 P	
-60				-80			

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 12/6/05

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

SECTION I-74 Bridge over Mississippi River **LOCATION** (N=560798.355, E=2459947.258), **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. PB1001
Station 71+99.57
Offset 82.08ft
Ground Surface Elev. 655.49 ft

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

Groundwater Elev.:
First Encounter 647.5 ft ▼
Upon Completion _____ ft
After _____ **Hrs.** _____ ft

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Sandy Lean Clay, Trace Gravel (CL) Brown to dark gray, moist, fine rounded-subrounded gravel embedded throughout, hard, glacial till *(continued)*		6 10 16 24	3.5 P	
	-85			
Fine sand in shoe		14 26 50/3	4.5 P	
	-90			
Poorly graded sand seam, gray, wet, very dense, fine to medium sand, rapid dilatancy, estimated 50% fines, this seam extends to about 93'		50/6		
	-95	36		
		50/2	3.8 P	
	558.49			
Shale Dark gray/black, moderately weathered, weak rock Possible bedrock at 97'		28		
	556.24	50/3		
End of Boring	-100			

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 12/13/05

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

SECTION I-74 Bridge over Mississippi River **LOCATION** (N=560773.1, E=2459776.703), **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. RW701
Station 70+70.19
Offset 87.11ft
Ground Surface Elev. 669.09 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
				Topsoil
	6			Grass root matter Hole offset to bottom of slope adjacent to existing manhole gps point #48
668.59				
	10			**Silty Clay (CL-ML)**
	10			Gray brown, stiff, dry, fine to coarse, rounded-subrounded gravel, fill
667.59	6			
	4			**Poorly Graded Sand With Gravel (SP)**
	4			Brown, dry, fine to coarse, fine to medium rounded-subrounded gravel, fill
	2			
	6			
	2			
-5	2			
	3			
	2			
	3			
	1			
	1			
	2			
	2			Soft silty clay with wood piece in shoe followed by dark reddish brown sand and silty clay and old concrete pieces, fill
	1			
	1			
659.09 -10	6			
	3			**Silty Clay (CL-ML)**
	1	1.3 P		Gray, moist/wet, soft, high plasticity, fine to coarse, subangular-angular gravel, fill
	2			
657.09	3			
	3			**Sandy Lean Clay Trace Gravel (CL)**
	4	1.3 P		Gray, moist, soft/stiff, medium plasticity, fine to medium, rounded-subrounded gravel, till
	6			
	6			
-15				
-20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	4			**Sandy Lean Clay Trace Gravel (CL)**
	8	4.5		Gray, moist, soft/stiff, medium plasticity, fine to medium, rounded-subrounded gravel, till *(continued)*
	12	P		
	14			
				Piece of coarse gravel in toe, possibly caused poor recovery
				Stop for day at 3:30 pm, Start on 12/14/05 at 8:30 am, start mud rotary at 20' after sampling
-25				
	4			
	5	1.5		
	7	P		
	7			
-30				
	4			No recovery, possibly pounded on gravel
	6			
	8			
	10			
-35				
	2			
	2	2.5		
	5	P		
	6			
-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 12/13/05

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

SECTION I-74 Bridge over Mississippi River **LOCATION** (N=560773.1, E=2459776.703), **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. RW701
Station 70+70.19
Offset 87.11ft
Ground Surface Elev. 669.09 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
	3			**Sandy Lean Clay Trace Gravel (CL)** Gray, moist, soft/stiff, medium plasticity, fine to medium, rounded-subrounded gravel, till *(continued)*
	3	2.0		
	7	P		
	8			
-45	4			
	6			
	9			
	11			
-50				
-55				Gray, unweathered glacial clay
	5			
	6	2.5		
	10	P		
	11			
-60				
-65				**Sandy Lean Clay Trace Gravel (CL)** Gray, moist, soft/stiff, medium plasticity, fine to medium, rounded-subrounded gravel, till *(continued)*
	5			
	7	2.5		
	10	P		
	12			
-70				
-75				
	6			
	9	2.5		
	14	P		
	15			
-80				

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 12/13/05

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

SECTION I-74 Bridge over Mississippi River **LOCATION** (N=560773.1, E=2459776.703), **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. RW701
Station 70+70.19
Offset 87.11ft
Ground Surface Elev. 669.09 **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
				Sandy Lean Clay Trace Gravel (CL)
				Gray, moist, soft/stiff, medium plasticity, fine to medium, rounded-subrounded gravel, till *(continued)*
-85	6			
	9 11 13	2.5 P		
-90				
-95	6			
	10 14 15	2.3 P		
572.09				
				End of Boring
-100				

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 6/24/10

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

SECTION 81-1-2 **LOCATION** SW¼ of SEC. 33, TWP. 18N, RNG. 1W, 4th P.M.

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

STRUCT. NO. 081-6017
Station
BORING NO. RW 11-1
Station 71+08
Offset 2' Rt.
Ground Surface Elev. 659.9 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 (%)
ASPHALT 659.70 / CONCRETE 659.10				
Gray with brown mottles, moist, stiff, silty CLAY	2	4 4 5	0.96S	20
656.90				
Brown with gray mottles, moist, stiff, silty CLAY with trace very-fine grained sand	4		2.13S	20
			1.10S	19
653.90	6	5 7 10	1.77B	17
652.65				
Brown, wet, very stiff, sandy clayey SILT with trace sand and gravel 652.40	8		0.42S	21
Brown, slightly moist, very stiff, SILT with trace sand and clay			2.00P	19
			2.24S	18
	10			
648.40		10 13 16	3.44S	13
Gray, slightly moist, very stiff, silty CLAY with trace sand and gravel	12			
	14	7 15 18	5.01B	10
644.90				
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)

Summary of Laboratory Test Results, I-74 Corridor, 081-6017

Boring	Soil	Depth to Top of Sample (ft)	Sample #	Unified Classification	AASHTO Classification	IDH Classification	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	LL	PL	PI	#10 (%)	#40 (%)	#200 (%)	In-Situ WC (%)	Dry Density (pcf)	Total Stress Friction Angle (deg.)	Total Stress Cohesion (psf)	Effective Stress Friction Angle (deg.)	Effective Stress Cohesion (psf)
ILR1101	Silt	8-10	4	CL							35	14	21				18					
	Clay	12	6	CL	A-6(6)	CL.LO.	12	26	41	21	31	17	14	88	80	62	13					
	Clay	14	7	CL		CL					35	17	18				13					
	Clay	30	10	CL		CL.LO.	5	30	37	28				95	86	65	12					
ILR1105	Silt	2	1	CL	A-6(7)		2	28	70		30	16	14	98	90	70						
	Silt	4	3	CL							29	15	14				15	118	22	173	29	115
	Silt	10	5	CL	A-6(8)	CL.LO.	2	34	43	21	30	13	17	98	89	64	13					
	Clay	14	7	CL		CL					34	12	22				12					

Hanson Professional Services Inc.

Unconfined Compression Test Report (ASTM D2166)

Date 8/30/10

Checked By JCC

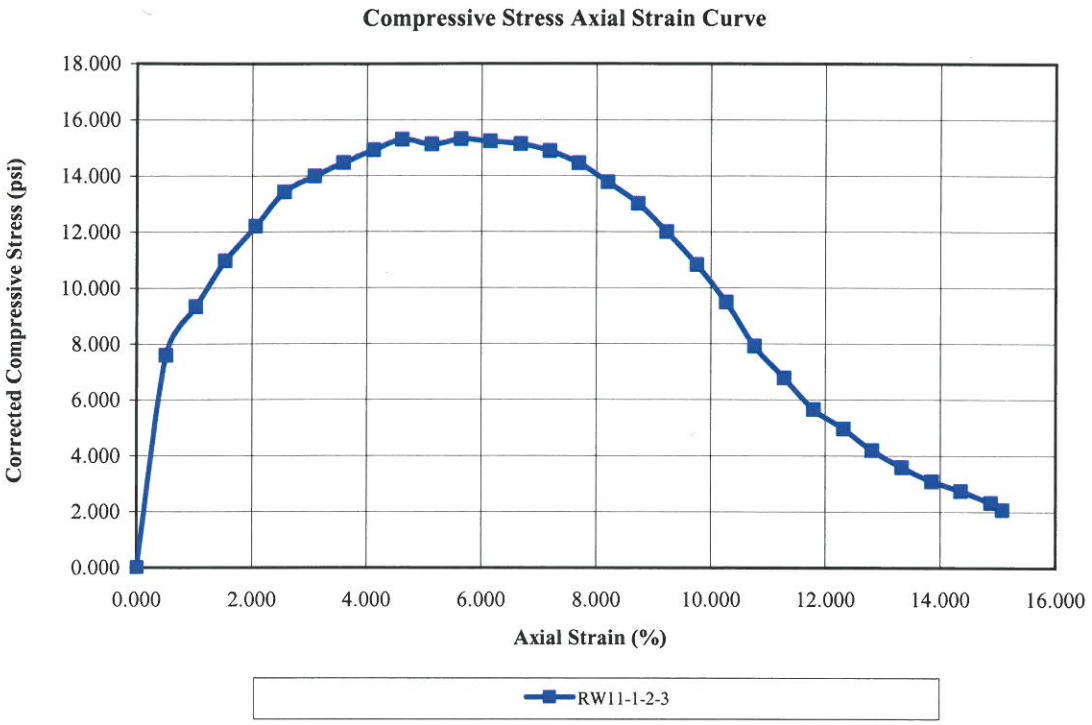
Date

Computed By

7/2/10

Date

Tested By RIN



Before Test	Specimen A	B	C	D
Water Content (%)		18.59		
Dry Density (pcf)		108.886		
Saturation (%)		94.86		
Void Ratio		0.52		
Diameter (in)		2.869		
Height (in)		4.901		
Test Data	**A**	**B**	**C**	**D**
Unconfined Strength (psi)		15.328		
Undrained Shear Strength (tsf)		0.552		
Undrained Shear Strength (psi)		7.664		
Rate of Strain (in/min)		0.090000		
Strain at Failure (%)		5.64		
Description				

Project Information		Specimen Description	
Project Num	08H0120E		
Project	I-74	RW11-1-2-3	Brn. & gray vf. sandy clayey silt (tr. c. sa. & gr).
Depth	4.0-4.5		
Sample #	2-3		
Client		**Test Variables**	
		Specific Gravity	2.65
		Liquid Limit:	
		Plastic Limit:	

Remarks

Hanson Professional Services Inc.

Unconfined Compression Test Report (ASTM D2166)

Date 8/30/10

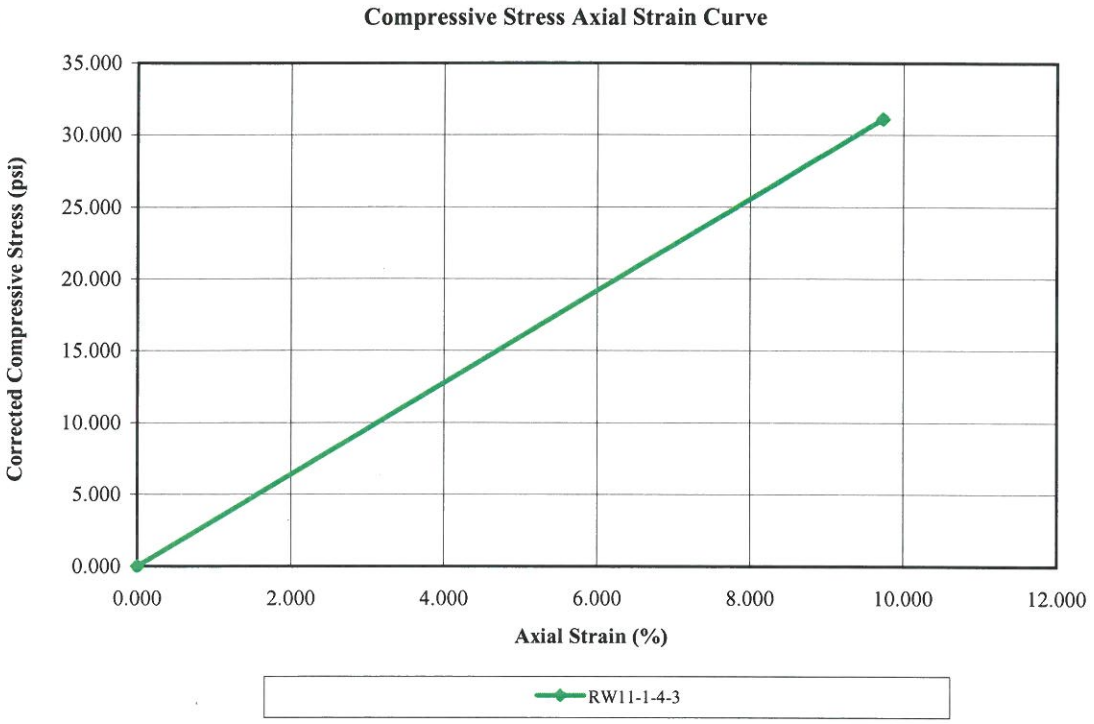
Checked By JCC

Date

Computed By

7/2/10

Tested By RIN



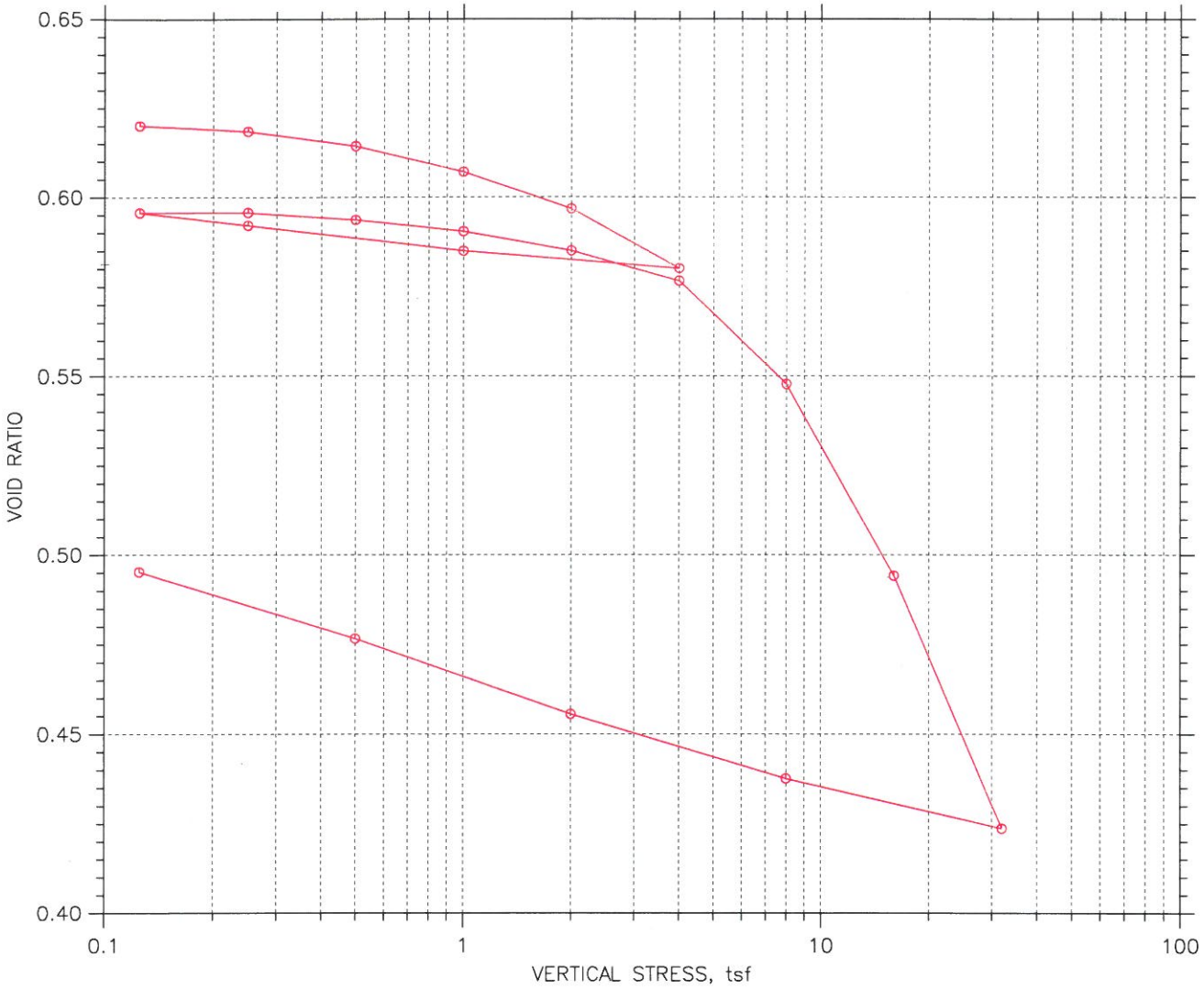
Before Test	Specimen A	B	C	D
Water Content (%)	18.42			
Dry Density (pcf)	111.700			
Saturation (%)	101.57			
Void Ratio	0.48			
Diameter (in)	2.901			
Height (in)	4.171			
Test Data	**A**	**B**	**C**	**D**
Unconfined Strength (psi)	31.093			
Undrained Shear Strength (tsf)	1.119			
Undrained Shear Strength (psi)	15.547			
Rate of Strain (in/min)	0.150000			
Strain at Failure (%)	9.74			
Description				

Project Information		Specimen Description	
Project Num	08H0120E	RW11-1-4-3	Brn. & gray vf. sandy silty clay / ox. spots.
Project	I-74		
Depth	9.0-9.5		
Sample #	4-3		
Client		**Test Variables**	
		Specific Gravity	2.65
		Liquid Limit:	
		Plastic Limit:	

Remarks

CONSOLIDATION TEST DATA

SUMMARY REPORT



					Before Test	After Test
Overburden Pressure: 0 tsf				Water Content, %	24.41	21.52
Preconsolidation Pressure: 0 tsf				Dry Unit Weight, pcf	102.	110.6
Compression Index: 2.54639e-313				Saturation, %	104.00	115.13
Diameter: 2.5 in		Height: 0.998 in		Void Ratio	0.62	0.50
LL: 0	PL: 0	PI: 0	GS: 2.65			

HANSON	Project: I74	Location: Quad Cities	Project No.: 08H0120E
	Boring No.: RW11-1	Tested By: RIN	Checked By: JCC
	Sample No.: 4-1	Test Date: 6/29/10	Depth: 8.2-8.5
	Test No.: 1	Sample Type: Tube	Elevation: N/A
	Description: Orange brn. & gray vf. sandy clayey silt.		
	Remarks: LT107 2000# 2009 Calibration		

Tue, 06-JUL-2010 10:30:04

CONSOLIDATION TEST DATA

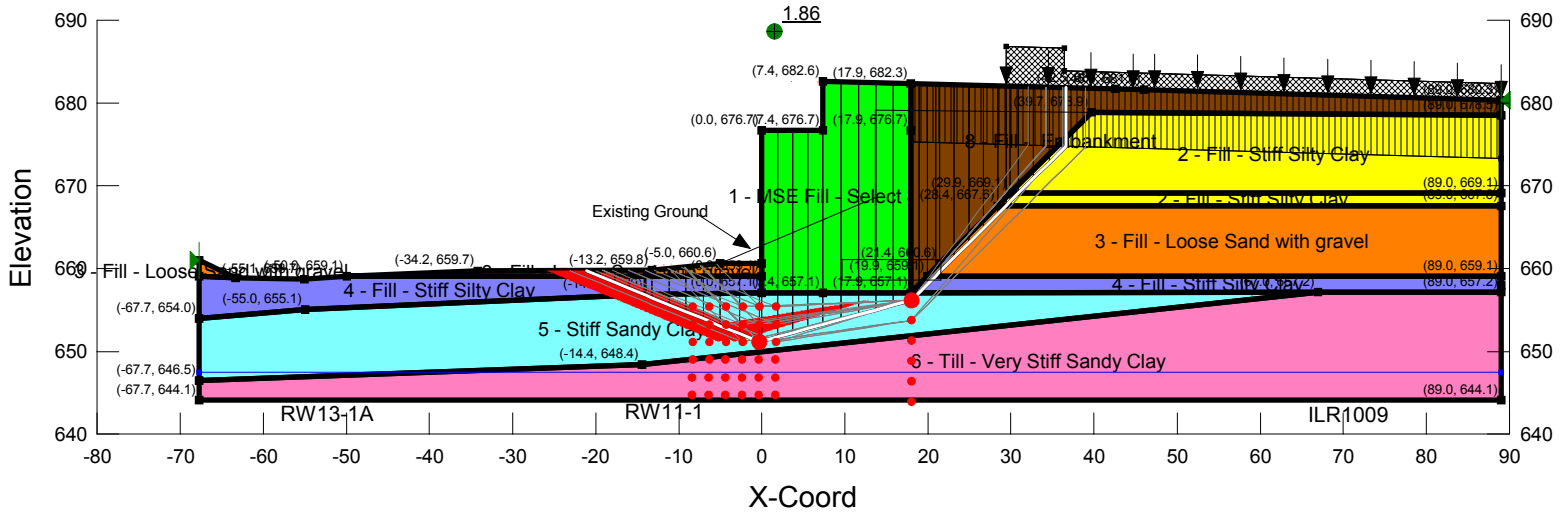
Project: I74
Boring No.: RW11-1
Sample No.: 4-1
Test No.: 1

Location: Quad Cities
Tested By: RIN
Test Date: 6/29/10
Sample Type: Tube

Project No.: 08H0120E
Checked By: JCC
Depth: 8.2-8.5
Elevation: N/A

Soil Description: Orange brn. & gray vf. 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	0.125	0.001291	0.620	0.13	0.0	0.0	2.65e-002	2.85e-002	2.75e-002
2	0.25	0.002291	0.618	0.23	0.3	0.0	2.42e-003	0.00e+000	2.42e-003
3	0.5	0.004821	0.614	0.48	0.3	0.1	3.25e-003	1.38e-002	5.27e-003
4	1	0.009281	0.607	0.93	0.1	0.0	6.61e-003	2.00e-002	9.94e-003
5	2	0.01566	0.597	1.57	0.1	0.0	1.02e-002	3.39e-002	1.57e-002
6	4	0.02592	0.580	2.60	0.2	0.0	4.68e-003	0.00e+000	4.68e-003
7	1	0.02296	0.585	2.30	0.0	0.0	6.55e-002	8.82e-002	7.52e-002
8	0.25	0.01847	0.592	1.85	0.2	0.1	3.43e-003	1.24e-002	5.38e-003
9	0.125	0.0163	0.596	1.63	0.9	0.4	8.43e-004	1.97e-003	1.18e-003
10	0.25	0.01625	0.596	1.63	0.1	0.0	1.34e-002	2.98e-002	1.85e-002
11	0.5	0.01757	0.594	1.76	0.1	0.0	1.24e-002	2.92e-002	1.74e-002
12	1	0.01958	0.590	1.96	0.1	0.0	1.21e-002	2.97e-002	1.72e-002
13	2	0.02291	0.585	2.30	0.0	0.0	2.49e-002	4.89e-002	3.30e-002
14	4	0.02804	0.577	2.81	0.1	0.0	1.01e-002	5.00e-002	1.67e-002
15	8	0.04581	0.548	4.59	0.2	0.1	3.28e-003	1.11e-002	5.07e-003
16	16	0.07868	0.494	7.88	0.2	0.2	3.02e-003	4.24e-003	3.53e-003
17	32	0.1221	0.424	12.24	0.4	0.3	1.85e-003	2.05e-003	1.95e-003
18	8	0.1135	0.438	11.37	0.0	0.0	6.72e-002	0.00e+000	6.72e-002
19	2	0.1024	0.456	10.26	0.2	0.0	3.76e-003	1.42e-002	5.95e-003
20	0.5	0.0895	0.477	8.97	1.8	0.0	3.72e-004	0.00e+000	3.72e-004
21	0.125	0.07804	0.495	7.82	7.0	0.0	9.80e-005	0.00e+000	9.80e-005



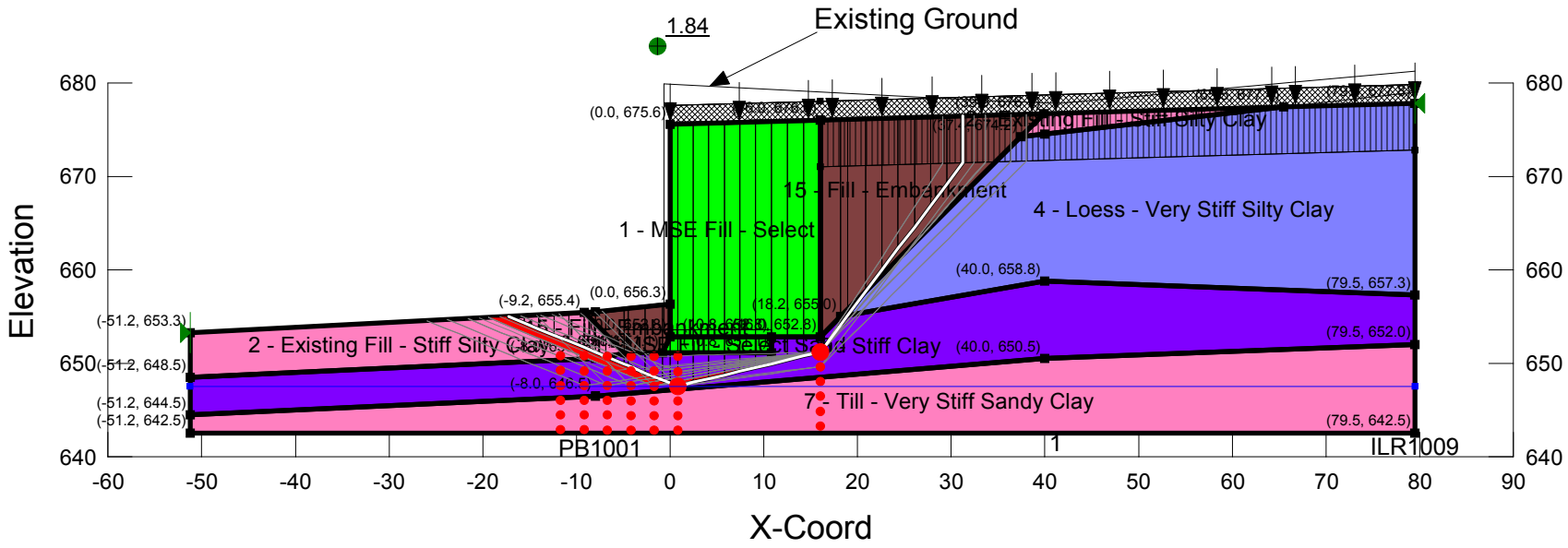
Material Properties

Name: 1 - MSE Fill - Select Sand Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 0 psf Phi: 34 °
Name: 2 - Fill - Stiff Silty Clay Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 1000 psf Phi: 0 °
Name: 3 - Fill - Loose Sand with gravel Model: Mohr-Coulomb Unit Weight: 115 pcf Cohesion: 0 psf Phi: 30 °
Name: 4 - Fill - Stiff Silty Clay Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 1000 psf Phi: 0 °
Name: 5 - Stiff Sandy Clay Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 1300 psf Phi: 0 °
Name: 6 - Till - Very Stiff Sandy Clay Model: Mohr-Coulomb Unit Weight: 130 pcf Cohesion: 3500 psf Phi: 0 °
Name: 8 - Fill - Embankment Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 1000 psf Phi: 0 °

SN 081-6017 IL-RW11 SN 081-0183 (N. Abut) (A-A')
Case 2 - Through Abutment - Wedge
File Name: I-74 N Abut 081-0183 6017 - Through Abutment.gsz
Last Edited By: Ryan English
Date: 4/19/2011 11:57:55 AM

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

HANSON
Engineering | Architecture | Planning | Allied Services



Material Properties

Name: 1 - MSE Fill - Select Sand Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 0 psf Phi: 34 °

Name: 2 - Existing Fill - Stiff Silty Clay Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 1000 psf Phi: 0 °

Name: 4 - Loess - Very Stiff Silty Clay Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 2000 psf Phi: 0 °

Name: 6 - Stiff Clay Model: Mohr-Coulomb Unit Weight: 120 pcf Cohesion: 1000 psf Phi: 0 °

Name: 7 - Till - Very Stiff Sandy Clay Model: Mohr-Coulomb Unit Weight: 130 pcf Cohesion: 3500 psf Phi: 0 °

Name: 15 - Fill - Embankment Model: Mohr-Coulomb Unit Weight: 125 pcf Cohesion: 1000 psf Phi: 0 °

SN 081-6017 IL-RW11 SN 081-0183 (N. Abut) (B-B')
Case 1 - Through East Side - Wedge
File Name: I-74 N Abut 081-0183 6017 - Through East Side.gsz
Last Edited By: Ryan English
Date: 4/19/2011 1:01:24 PM

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

HANSON
Engineering | Architecture | Planning | Allied Services

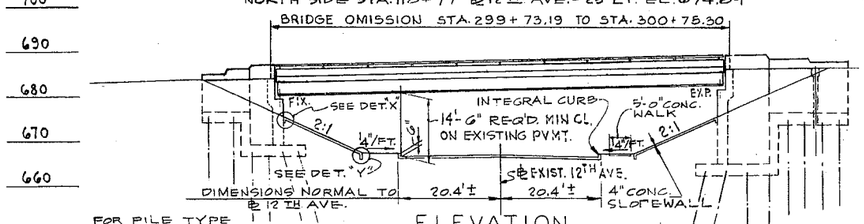
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 74	81-1HB-1	ROCK ISLAND	389	256
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT I-74-1(..) 3,1,4		

DWG. NO. S-3

BENCH MARKS

12-1 - R.R. SPIKE IN 24" STUMP AT S.E. CORNER OF 12TH AVE. AND 18TH ST. "A" ℄ STA. 122+90 - 45' RT. - EL. 648.71.

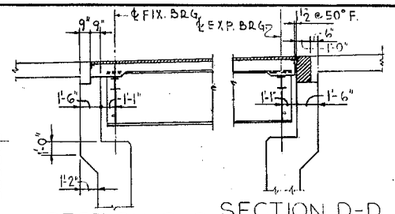
12-2 - □-CUT ON S.E. CORNER OF 8" CONCRETE RETAINING WALL ON NORTH SIDE STA. 118+77 ℄ 12TH AVE. - 23' LT. EL. 674.89



ELEVATION
SCALE: 1/16" = 1'-0"

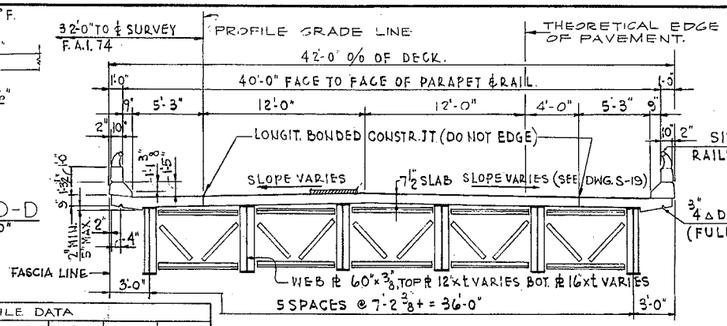
FOR PILE TYPE SEE DWG. S-5.

TABLE I SLOPE WALL TOE ELEVATION		
	STATION	ELEVATION
NORTH ABUT.	120+21.90	667.05
	121+79.92	654.39
SOUTH ABUT.	120+44.16	665.26
	122+02.54	652.57



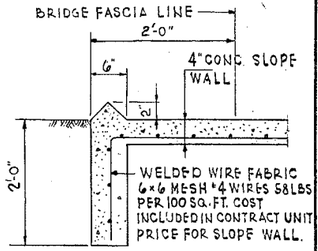
SECTION C-C
SCALE: 3/16" = 1'-0"

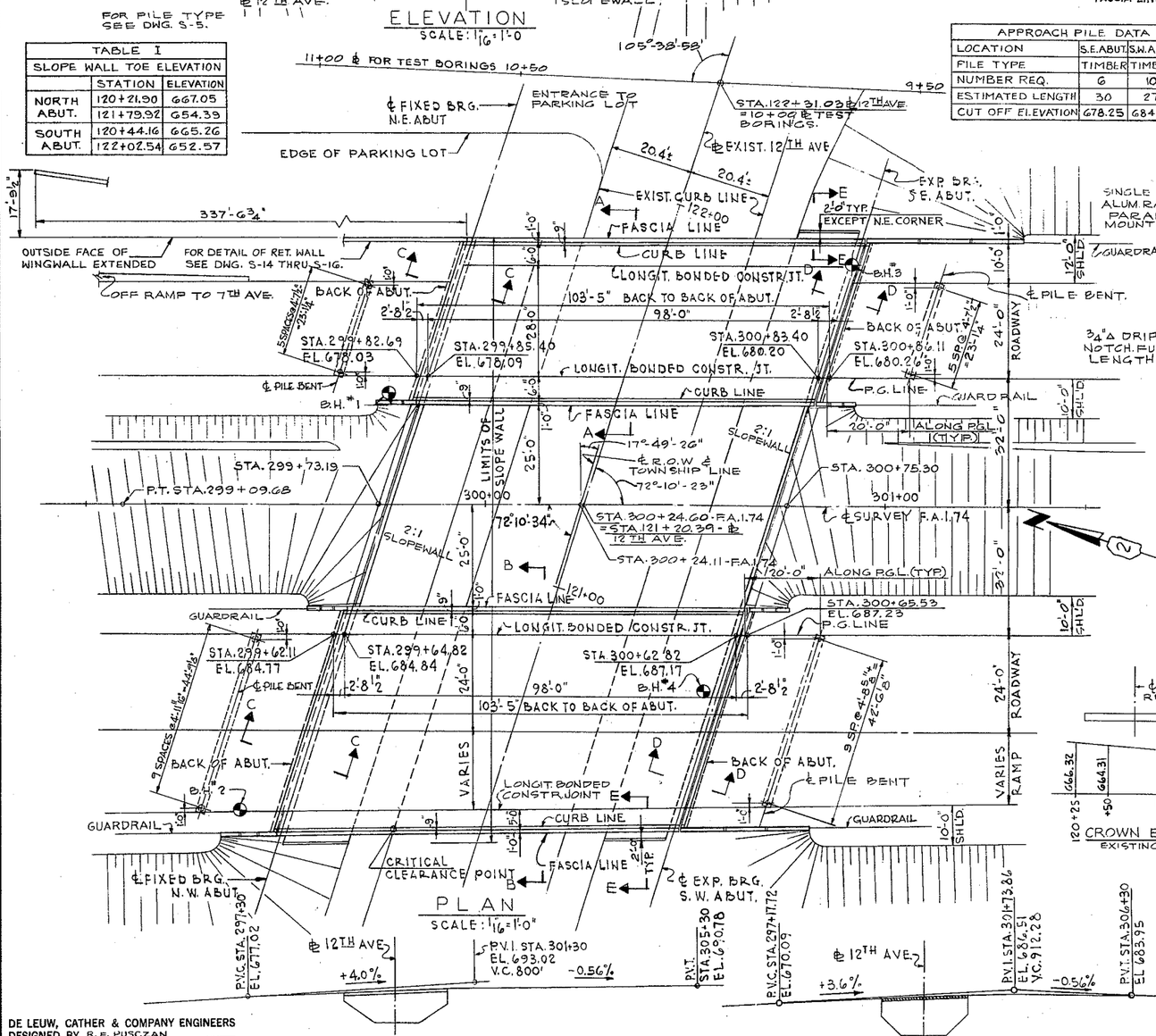
SECTION D-D
SCALE: 3/16" = 1'-0"



SECTION A-A
SCALE: 3/16" = 1'-0"

APPROACH PILE DATA				
LOCATION	S.E. ABUT.	S.W. ABUT.	N.E. ABUT.	N.W. ABUT.
PILE TYPE	TIMBER	TIMBER	TIMBER	TIMBER
NUMBER REQ.	6	10	6	10
ESTIMATED LENGTH	30	27	20	20
CUT OFF EL. ELEVATION	678.25	684.68	675.00	682.75

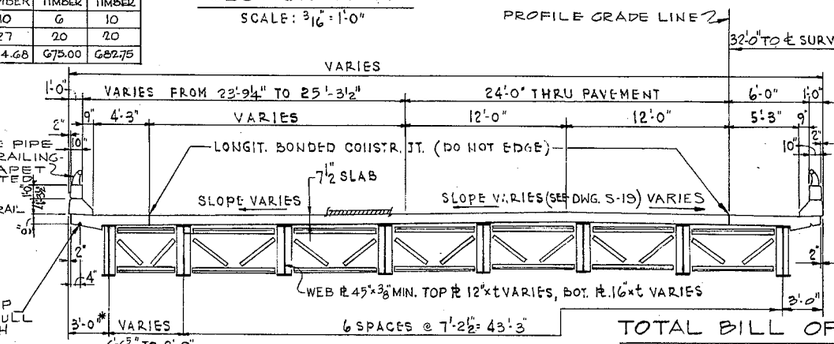




PLAN
SCALE: 1/16" = 1'-0"

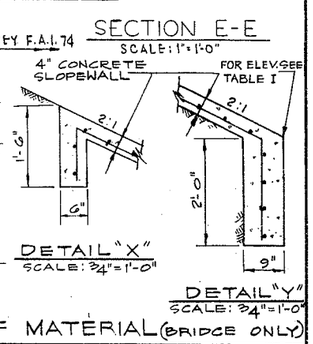
S.B. PROFILE GRADE F.A.I. 74

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



* NORMAL TO FASCIA

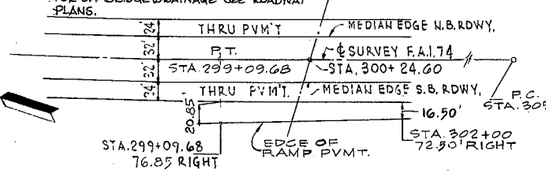
SECTION B-B
SCALE: 3/16" = 1'-0"



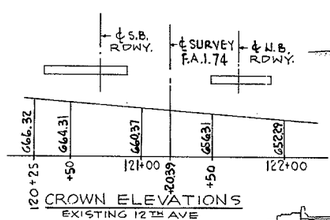
DETAIL "X"
SCALE: ¾" = 1'-0"

DETAIL "Y"
SCALE: ¾" = 1'-0"

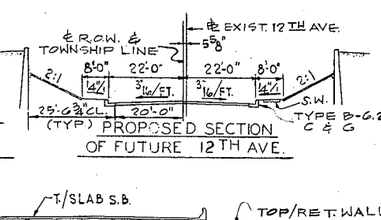
NOTES:
FOR GENERAL NOTES SEE DWG. G-1
FOR APPROACH SLAB DETAILS SEE CIVIL DWG.
FOR OFF BRIDGE DRAINAGE SEE ROADWAY PLANS.

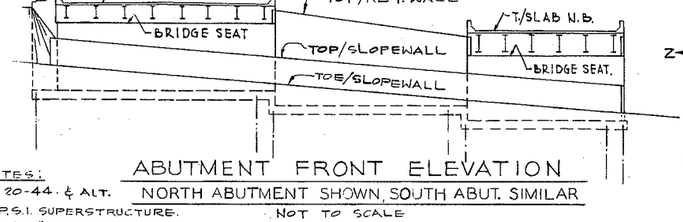


DIAGRAMMATIC LAYOUT



CROWN ELEVATIONS
EXISTING 12TH AVE





ABUTMENT FRONT ELEVATION
NORTH ABUTMENT SHOWN, SOUTH ABUT. SIMILAR
NOT TO SCALE

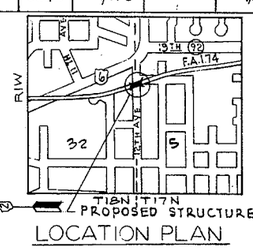
DESIGN NOTES:
LOADING - HS 20-44 & ALT.
fc = 1200 P.S.I. SUPERSTRUCTURE.
fc = 1000 P.S.I. SUBSTRUCTURE.
fs = 20,000 P.S.I. REINFORCEMENT BARS & STRUCTURAL STEEL. (A-36).
v = 75 P.S.I. MAX. SHEAR IN FOOTINGS.
n = 10
ALLOWABLE L.L. DEFLECTION - L/1200 (COMPOSITE)

TOTAL BILL OF MATERIAL (BRIDGE ONLY)

ITEM	UNIT	SUPER STRUCTURE	SUB-STRUCTURE	TOTAL
POROUS GRANULAR BACKFILL	CU. YD.	—	875	875
CLASS A EXCAVATION FOR STRUCTURES	CU. YD.	—	4257	4257
PROTECTIVE COAT	SQ. YD.	323	—	323
CLASS X CONCRETE	CU. YD.	295.9	1,682.0	1977.9
FURNISHING AND ERECTING STR. STEEL	L.S.	1		1
STUD SHEAR CONNECTORS	EACH	4,984	—	4,984
ALUMINUM RAILING	LIN. FT.	401	328	729
REINFORCEMENT BARS	POUND	81,900	154,623	236,523
FURNISHING CREOSOTED PILES UP TO 20'	LIN. FT.	—	1,295	1,295
* FURNISHING CREOSOTED PILES 20.1' TO 38'	LIN. FT.	—	7,117	7,117
FURNISHING CREOSOTED PILES OVER 38'	LIN. FT.	—	440	440
FURNISHING CONCRETE PILES	LIN. FT.	—	3,756	3,756
DRIVING TIMBER PILES	LIN. FT.	—	8,852	8,852
DRIVING CONCRETE PILES	LIN. FT.	—	3,756	3,756
TEST PILE TIMBER	EACH	—	3	3
TEST PILE CONCRETE	EACH	—	3	3
NAME PLATES	EACH	—	2	2
PIPE UNDERDRAINS, PERFORATED CORRUGATED STEEL PIPE 6"	LIN. FT.	—	766	766
SLOPE WALL 4"	SQ. YD.	—	618	618
PREFORMED JOINT SEALER	LIN. FT.	102	—	102
BITUMINOUS CONCRETE SURFACE COURSE, CLASS I	TON	87	—	87
COAL TAR INTERLAYER PROTECTIVE COAT	SQ. YD.	1,028	—	1,028

* INCLUDES 770 LIN. FT. OF TIMBER PILES FOR APPROACH PILE BENTS.

WIRE FABRIC NOTE:
SLOPE WALL SHALL BE REINFORCED WITH WELDED WIRE FABRIC 6"x6" MESH, WEIGHING 58 LBS. PER 100 SQ. FT. COST INCIDENTAL TO SLOPE WALL.



T18N; T17N
PROPOSED STRUCTURES
LOCATION PLAN

DE LEUW, CATHER & COMPANY ENGINEERS
DESIGNED BY R.F. HUSCZAN
DRAWN BY A.L. BURDKAS & G.P. ALLEMAN
CHECKED
IN CHARGE E.S. MARTINS
APPROVED W.G. HORN

GENERAL PLAN & ELEVATION
F.A.I. 74 - SECTION 81-1HB-1
F.A.I. 74 OVER 12TH AVE.
ROCK ISLAND COUNTY
STATION 300 + 20.11
SCALE: AS NOTED DATE:

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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 74	81-1HB-1	ROCK ISLAND	389	258
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT I-74-1( ) 1.4		

DWG. NO. S-5

PILE DATA

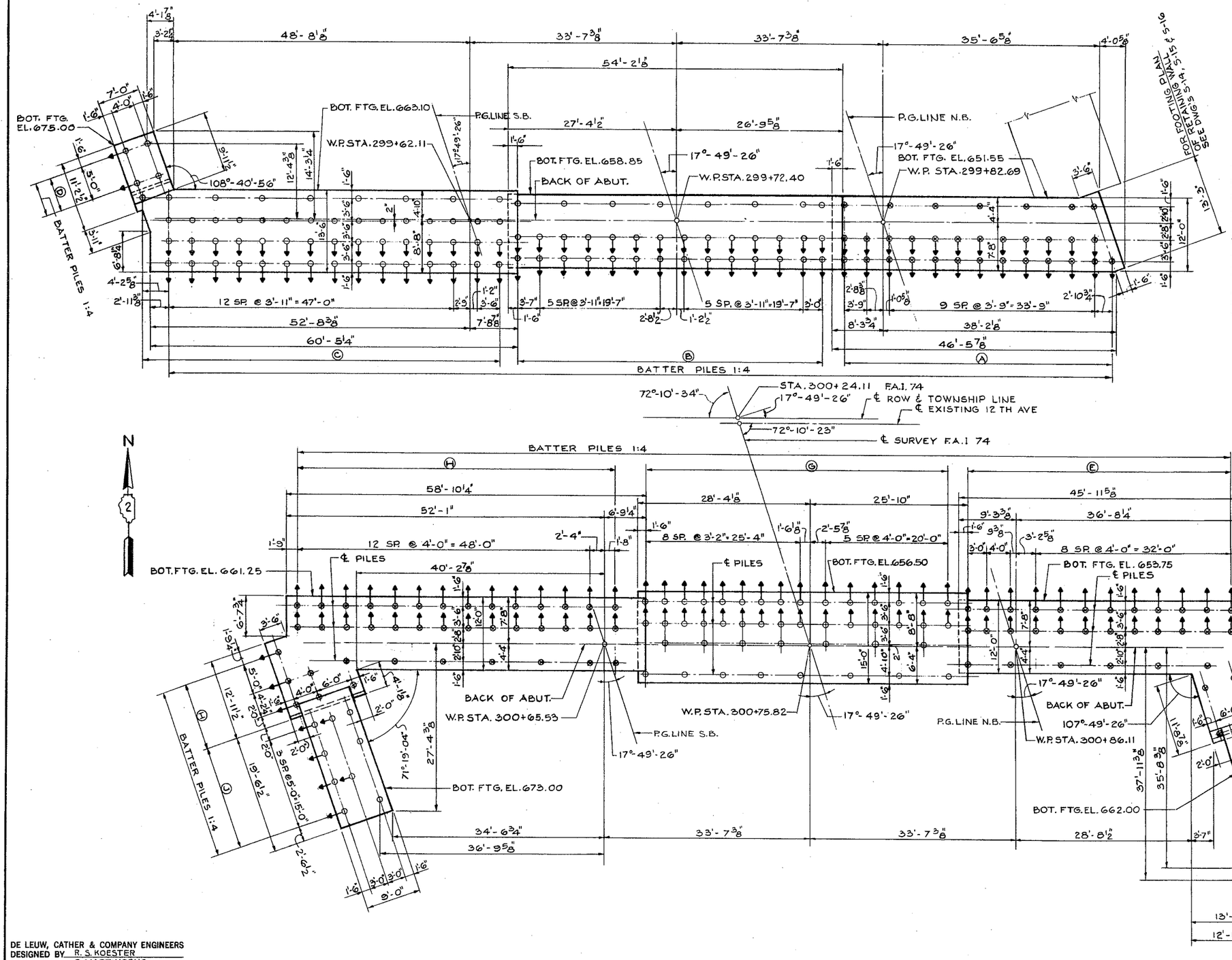
PLAN LOCATION	STRUCTURE	PILE TYPE	MINIMUM CAPACITY TONS	NUMBER REQUIRED	ESTIMATED LENGTH FT.	CUT OFF ELEVATION
(A)	N.E.ABUT.	CONCRETE	45	32	24	652.55
(B)	N.MIDWALL	TIMBER	24	36	20	659.85
(C)	N.W. ABUT.	TIMBER	24	54	26	664.10
(D)	N.W. ABUT. WINGWALL	TIMBER	24	4	38'	676.00
(E)	S.E. ABUT. E. END	CONCRETE	45	39	44	654.75
	S.E. ABUT. W. END				34	
(F)	S.E. ABUT. WINGWALL	TIMBER	24	10	44	663.00
(G)	S. MIDWALL E. END	TIMBER	24	45	28	657.50
	S. MIDWALL W. END				14	
(H)	S.W.ABUT.	CONCRETE	45	41	27	662.25
(J)	S.W.ABUT. WINGWALL	TIMBER	24	9	30	674.00

○ DENOTES BATTER PILES

O DENOTES TIMBER PILES
⊗ DENOTES CONCRETE PILES

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
FURNISHING CREOSOTED PILES UP TO 20'	LIN. FT.	975
FURNISHING CREOSOTED PILES FROM 20.1' TO 38'	LIN. FT.	2496
FURNISHING CREOSOTED PILES OVER 38'	LIN. FT.	440
DRIVING TIMBER PILES	LIN. FT.	3911
TEST PILES (TIMBER)	EACH	2
FURNISHING CONCRETE PILES	LIN. FT.	3306
DRIVING CONCRETE PILES	LIN. FT.	3306
TEST PILES (CONCRETE)	EACH	3

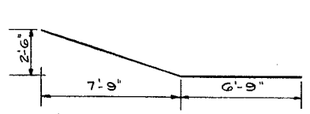


PILE PLAN

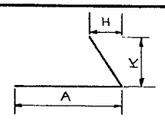
F.A.I. 74 - SECTION 81-1HB-1
F.A.I. 74 OVER 12TH AVE.
ROCK ISLAND COUNTY
STATION 300 + 20.11
SCALE: 1/8" = 1'-0" DATE:

DE LEUW, CATHER & COMPANY ENGINEERS
DESIGNED BY R. S. KOESTER
DRAWN BY O. MARTINSONS
CHECKED K. Mayfield
IN CHARGE E. S. MARTINS
APPROVED W.G. HORN

NOTES
FOR WALL CROSS SECTIONS SEE DWG. S-17.
MIN. BAR LAP = 24 DIA.
ALL BENT BAR DIMENSIONS ARE OUT TO OUT.
FOR DETAILS OF ALUMINUM RAILING SEE DWG. S-23.
FOR DETAILS OF DRAINAGE & BACKFILL SEE DWG. S-17.
Ⓔ = EXPANSION JOINT } FOR DETAILS SEE DWG. S-16.
Ⓒ = CONTRACTION JOINT }
FOR PROTECTIVE COAT QUANTITES SEE DWG. S-18.



BAR t31

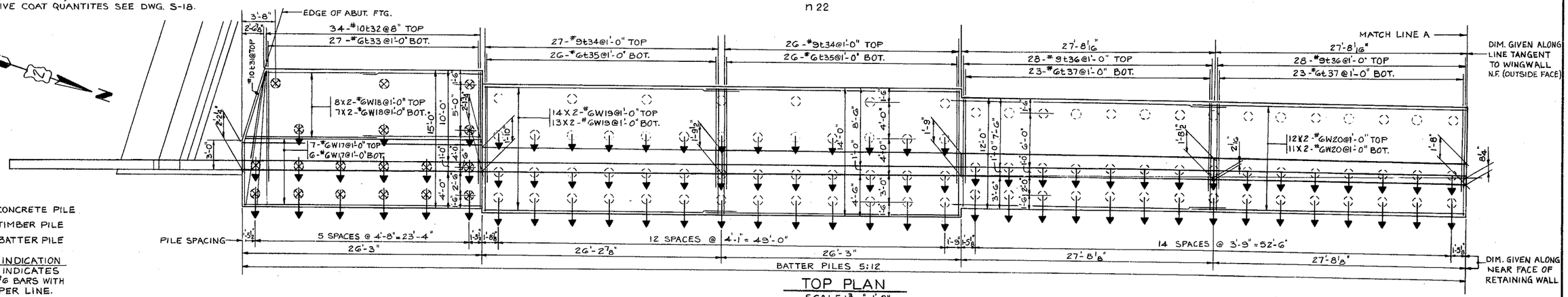


BAR n14, n15 & n16
n 22

BAR	A	H	K
n14	8'-9"	3½"	5'-9"
n15	9'-0"	3"	5'-10"
n16	4'-9"	2½"	4'-8"
n22	4'-9"	½"	0'-9"

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 74	81-1HB-1	ROCK ISLAND	389	267
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT I-74-1( )14		

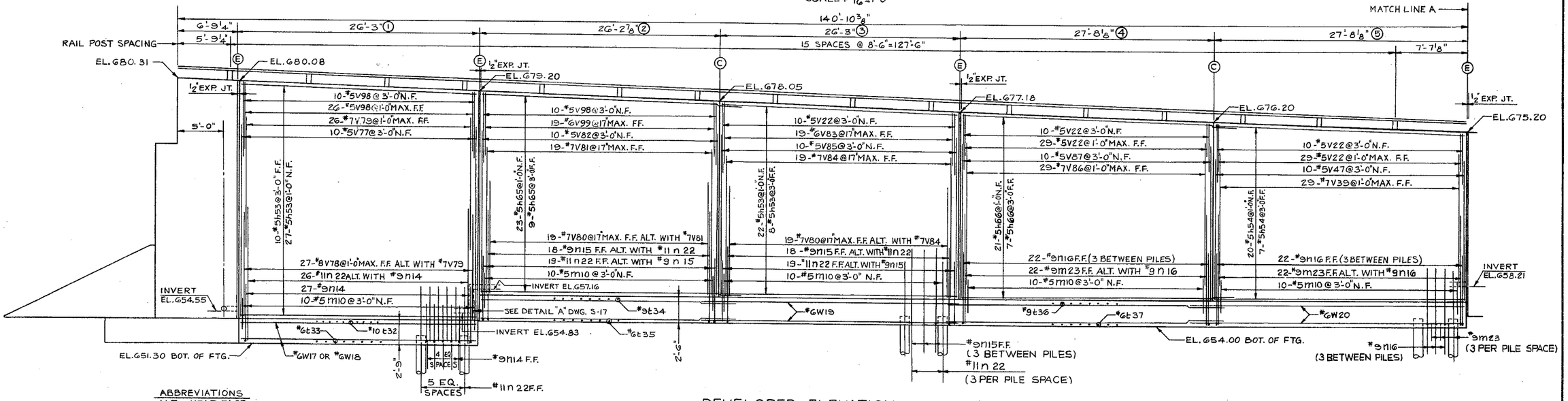
DWG. NO. S-14



⊗ DENOTES CONCRETE PILE
○ DENOTES TIMBER PILE
⏀ DENOTES BATTER PILE

KEY TO BAR INDICATION
12 X 2-#6 ETC. INDICATES 12 LINES OF #6 BARS WITH 2 LENGTHS PER LINE.

TOP PLAN
SCALE: 3/16" = 1'-0"



ABBREVIATIONS
N.F. = NEAR FACE
F.F. = FAR FACE

DEVELOPED ELEVATION
SCALE: 3/16" = 1'-0"

Note: For Rusticotion Details See Dwg. S-17A.

PILE DATA

PANEL LOCATION	①	② – ③	④ – ⑤
PILE TYPE	CONCRETE	TIMBER	TIMBER
MINIMUM CAPACITY TONS	45	24	24
NUMBER REQUIRED	18	46	45
ESTIMATED LENGTH FT.	25	21	23
CUT OFF ELEVATION	652.30	655.00	655.00

DE LEUW, CATHER & COMPANY ENGINEERS
DESIGNED BY R.D. KOESTER
DRAWN BY R.S. GHORBANIAN
CHECKED
IN CHARGE E.S. MARTINS
APPROVED W.G. HORN

BAR LIST PANELS ① THRU ⑤

BAR	NO.	SIZE	LENGTH	SHAPE	BAR	NO.	SIZE	LENGTH	SHAPE	BAR	NO.	SIZE	LENGTH	SHAPE	BAR	NO.	SIZE	LENGTH	SHAPE
h66	28	#5	29'-1"	—	m16	44	#9	11'-0"	⌐	V39	29	#7	16'-6"	—	V86	29	#7	17'-6"	—
h53	67	#5	25'-11"	—	n22	64	#11	5'-6"	⌐	V47	10	#5	16'-6"	—	V87	10	#5	17'-6"	—
h54	27	#5	27'-4"	—	t31	1	#10	14'-10"	⌐	V77	10	#5	22'-9"	—	V98	46	#5	4'-6"	—
h65	32	#5	27'-8"	—	t32	39	#10	14'-8"	—	V78	27	#8	12'-0"	—	V99	19	#6	4'-9"	—
m10	50	#5	2'-6"	—	t33	27	#6	9'-6"	—	V79	26	#7	22'-9"	—	W17	13	#6	25'-11"	—
					t34	53	#9	13'-8"	—	V80	38	#7	9'-3"	—	W18	30	#6	13'-9"	—
					t35	52	#6	8'-4"	—	V81	19	#7	19'-6"	—	W19	48	#6	26'-3"	—
m23	44	#9	9'-0"	—	t36	56	#9	11'-6"	—	V82	10	#5	19'-6"	—	W20	46	#6	29'-3"	—
					t37	46	#6	7'-8"	—	V83	19	#6	4'-6"	—					
n14	27	#9	14'-6"	⌐						V84	19	#7	18'-6"	—					
n15	62	#9	14'-10"	⌐	V22	78	#5	4'-3"	—	V85	10	#5	18'-6"	—					

* INCLUDES ALUMINUM RAILING FOR WINGWALL "A" (SEE DWG. S-11.)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
CLASS A EXCAVATION FOR STRUCTURES	CU. YD.	1037
CLASS X CONCRETE	CU. YD.	311.7
REINFORCEMENT BARS	POUND	35,760
FURNISHING CREOSOTED PILES 20' TO 38 FT.	LIN. FT.	2001
DRIVING TIMBER PILES	LIN. FT.	2001
FURNISHING CONCRETE PILES	LIN. FT.	450
DRIVING CONCRETE PILES	LIN. FT.	450
*ALUMINUM RAILING	LIN. FT.	141
PIPE UNDERDRAINS PERFORATED CORR. STEEL PIPE 6"	LIN. FT.	136
POROUS GRANULAR BACKFILL	CU. YD.	193

NORTHEAST RETAINING WALL PANELS 1 THRU 5

F.A.I. 74 - SECTION 81-1HB-1
F.A.I. 74 OVER 12TH AVE.

ROCK ISLAND COUNTY

STATION 300 + 20.11

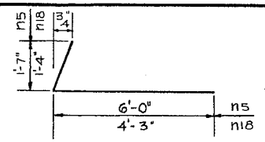
SCALE: AS NOTED DATE:

NOTES

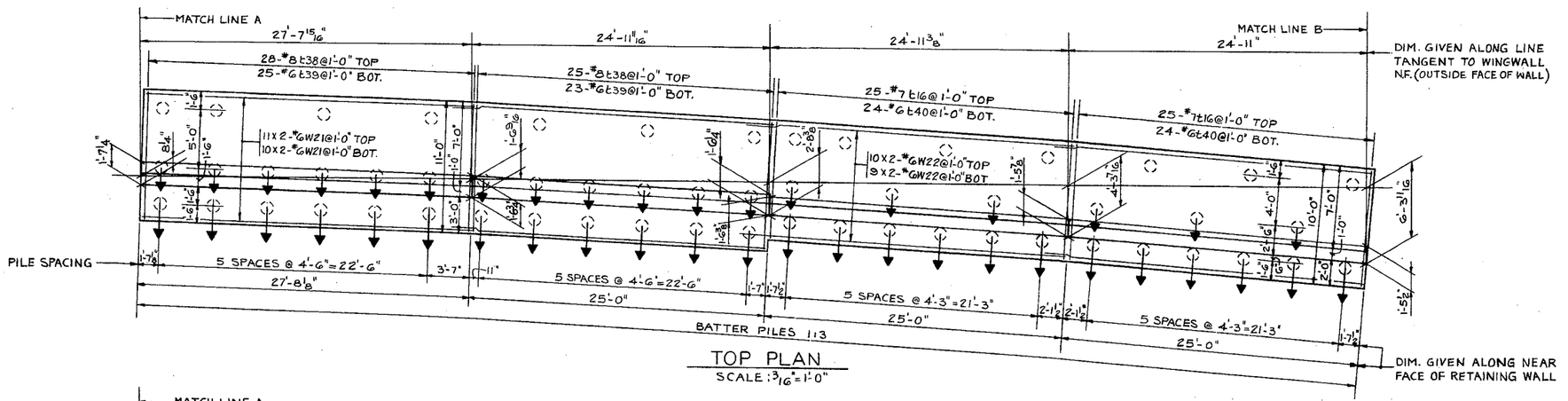
FOR WALL CROSS SECTIONS SEE DWG. S-17.
MIN. BAR LAP = 24 DIA.
ALL BENT BAR DIMENSIONS ARE OUT TO OUT.
FOR DETAILS OF ALUMINUM RAILING SEE DWG. S-23.
FOR DETAILS OF DRAINAGE & BACKFILL SEE DWG. S-17.
Ⓔ = EXPANSION JOINT
Ⓒ = CONTRACTION JOINT } FOR DETAILS SEE DWG. S-16.
FOR PROTECTIVE COAT QUANTITIES SEE DWG. S-18.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 74	81-1HB-1	ROCK ISLAND.	389	268
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT I-74-1( )1.4		

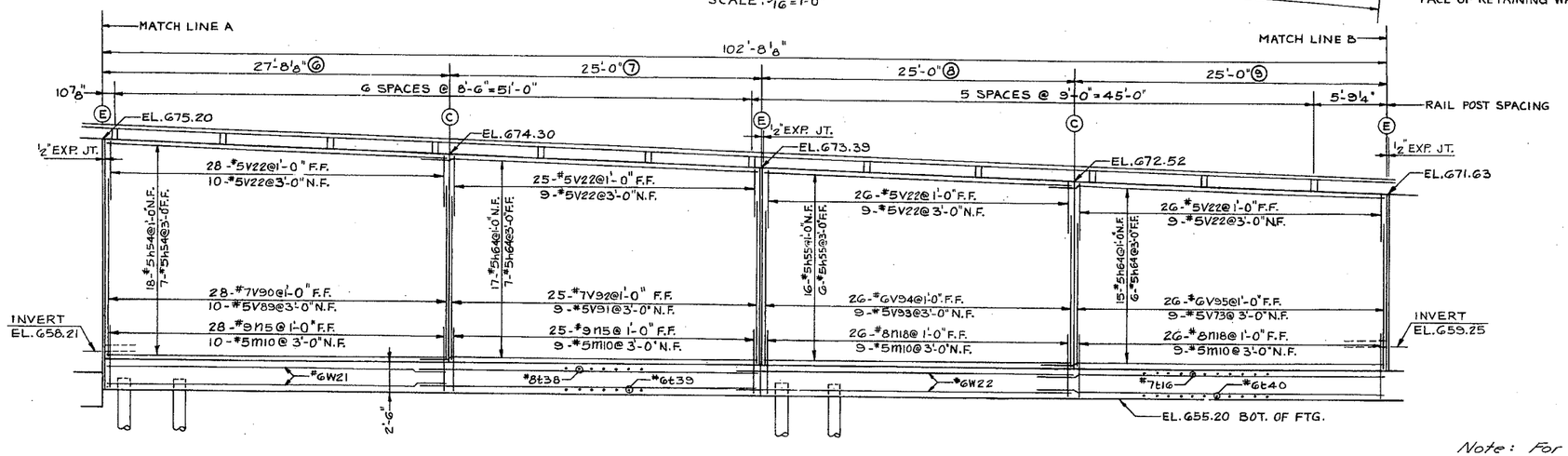
DWG. NO. S-15



BAR n5 & n18



TOP PLAN
SCALE: 3/16" = 1'-0"



DEVELOPED ELEVATION
SCALE: 3/16" = 1'-0"

Note: For Rustication Details See Dwg. S-17A.

○ DENOTES TIMBER PILE
Ⓟ DENOTES BATTER PILE

KEY TO BAR INDICATION
12 x 2-#6 ETC. INDICATES 12 LINES OF #6 BARS WITH 2 LENGTHS PER LINE.

ABBREVIATIONS
N.F. = NEAR FACE
F.F. = FAR FACE

PILE DATA	
PANEL LOCATION	⑥ - ⑨
PILE TYPE	TIMBER
MINIMUM CAPACITY TONS	24
NUMBER REQUIRED	56
ESTIMATED LENGTH FEET	24
CUT OFF ELEVATION	656.20

DE LEUW, CATHER & COMPANY ENGINEERS
DESIGNED BY R. D. KOESTER
DRAWN BY R. S. GHORBANIAN
CHECKED W. Mitzelfelt
IN CHARGE E. S. MARTINS
APPROVED W.G. HORN

BAR LIST PANELS ⑥ THRU ⑨

BAR	NO.	SIZE	LENGTH	SHAPE	BAR	NO.	SIZE	LENGTH	SHAPE	BAR	NO.	SIZE	LENGTH	SHAPE	BAR	NO.	SIZE	LENGTH	SHAPE
					t39	48	#6	10'-8"	—	V95	26	#6	11'-9"	—					
h54	25	#5	27'-4"	—	t40	48	#6	9'-8"	—										
h55	22	#5	24'-8"	—															
h64	45	#5	26'-5"	—	V22	142	#5	4'-3"	—	W21	42	#6	26'-11"	—					
m10	37	#5	2'-6"	—	V73	9	#5	11'-9"	—	W22	38	#6	26'-6"	—					
					V89	10	#5	14'-4"	—										
n15	53	#9	7'-7"	L	V90	28	#7	14'-4"	—										
n18	52	#8	5'-7"	L	V91	9	#5	13'-5"	—										
					V92	25	#7	13'-5"	—										
t16	50	#7	9'-8"	—	V93	9	#5	12'-6"	—										
t38	53	#8	10'-8"	—	V94	26	#6	12'-6"	—										

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
CLASS A EXCAVATION FOR STRUCTURES	CU. YD.	709
CLASS X CONCRETE	CU. YD.	172.4
POROUS GRANULAR BACKFILL	CU. YD.	104
REINFORCEMENT BARS	POUND	15,520
FURNISHING CREOSOTED PILES 20.1 TO 38 FT.	LIN. FT.	1320
DRIVING TIMBER PILES	LIN. FT.	1320
PIPE UNDERDRAINS PERFORATED CORR. STEEL PIPE 6"	LIN. FT.	103
ALUMINUM RAILING	LIN. FT.	103
TEST PILE (TIMBER)	EACH	1

NORTHEAST RETAINING WALL PANELS 6 THRU 9

F.A.I. 74 - SECTION 81-1HB-1
F.A.I. 74 OVER 12TH AVE.

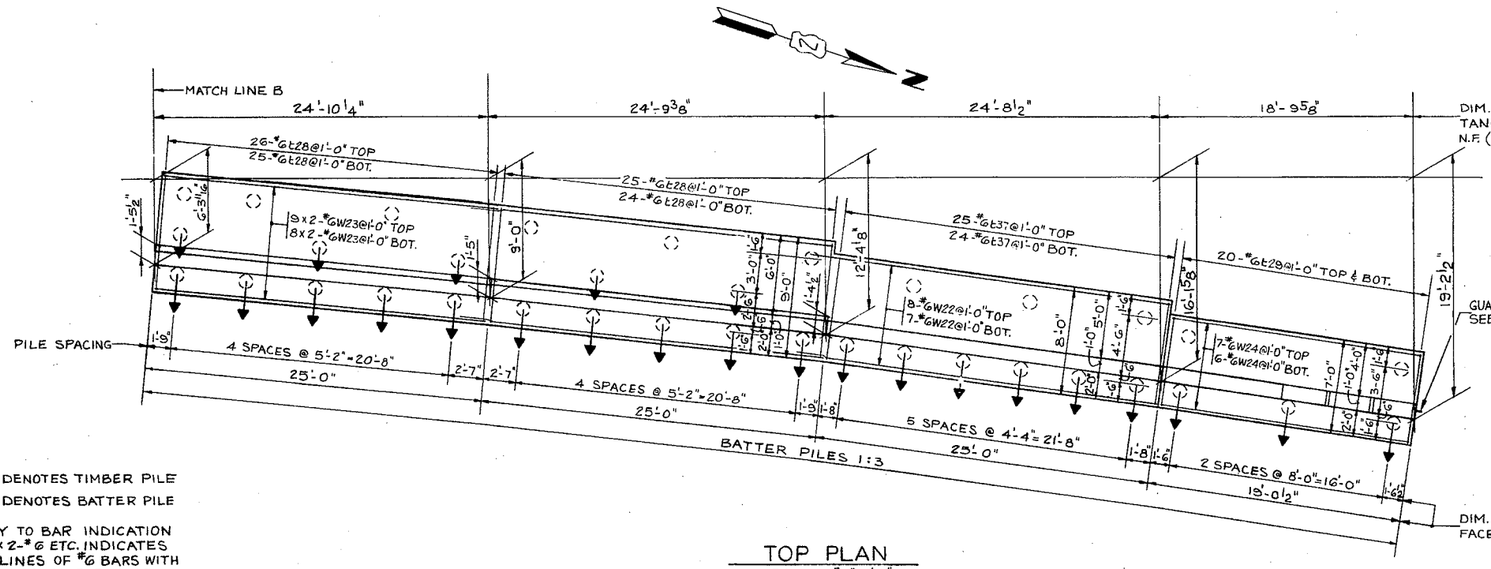
ROCK ISLAND COUNTY

STATION 300 + 20.11

SCALE: AS NOTED DATE:

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 74	81-1HB-1	ROCK ISLAND	389	269
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT I-74-1( )1.4		

DWG. NO. S-16

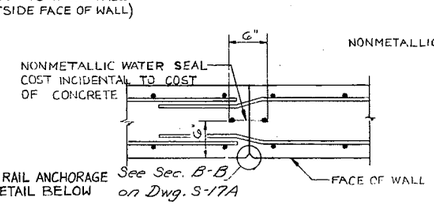


○ DENOTES TIMBER PILE

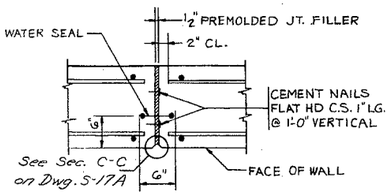
Ⓑ DENOTES BATTER PILE

KEY TO BAR INDICATION
12 x 2-#6 ETC. INDICATES 12 LINES OF #6 BARS WITH 2 LENGTHS PER LINE.

TOP PLAN
SCALE: 3/16"=1'-0"

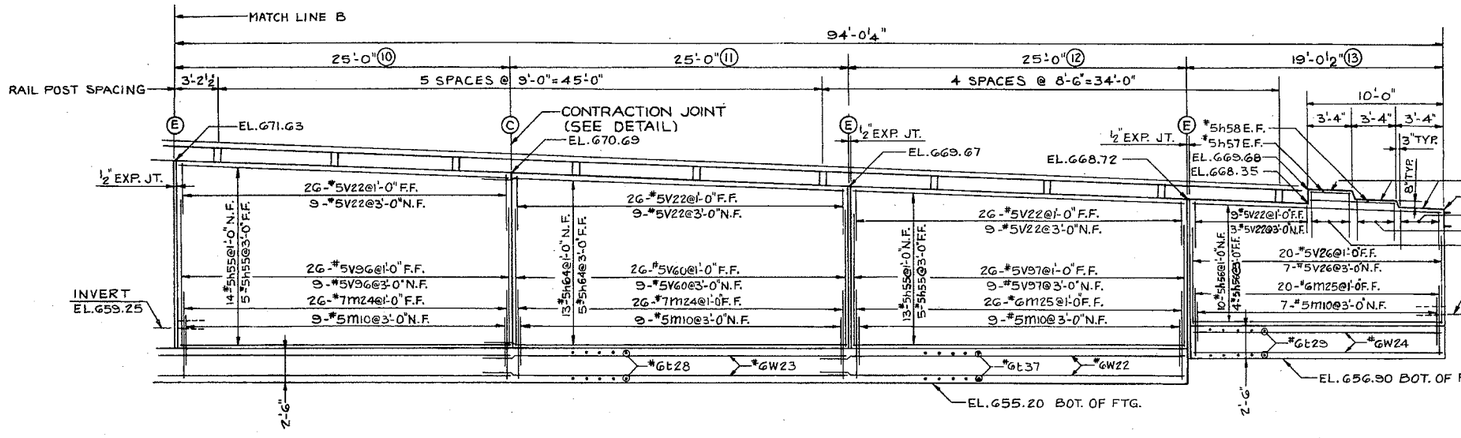


CONTRACTION JOINT
SCALE: 1"=1'-0"



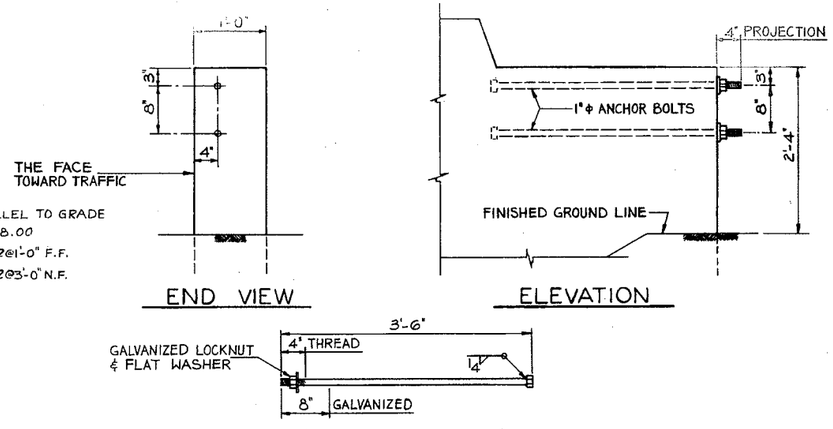
EXPANSION JOINT
SCALE: 1"=1'-0"

Note: For Rustication Details See Dwg. S-17A



ABBREVIATIONS
N.F. = NEAR FACE
F.F. = FAR FACE
E.F. = EACH FACE

DEVELOPED ELEVATION
SCALE: 3/16"=1'-0"



END VIEW

ELEVATION

1" ϕ ANCHOR BOLT

COST OF BOLTS TO BE INCIDENTAL TO BRIDGE STRUCTURE (SEE ALSO DWG. S-7 & S-8)

GUARD RAIL ANCHORAGE DETAIL
SCALE: 1"=1'-0"

NOTES:
MIN. BAR LAP = 24 DIA.
FOR WALL CROSS SECTIONS SEE DWG. S-17.
ALL BENT BAR DIMENSIONS ARE OUT TO OUT.
FOR DETAILS OF ALUMINUM RAILING SEE DWG. S-23.
FOR DETAILS OF DRAINAGE & BACKFILL SEE DWG. S-17.
FOR PROTECTIVE COAT QUANTITIES SEE DWG. S-18.

PILE DATA

PANEL LOCATION	(10) – (12)	(13)
PILE TYPE	TIMBER	TIMBER
MINIMUM CAPACITY TONS	24	24
NUMBER REQUIRED	30	5
ESTIMATED LENGTH FT.	24	26
CUT OFF ELEVATION	656.20	657.90

DE LEUW, CATHER & COMPANY ENGINEERS
DESIGNED BY R.D. KOESTER
DRAWN BY R.S. GHORBANIAN
CHECKED W. Martin
IN CHARGE E.S. MARTINS
APPROVED W.G. HORN

BAR LIST PANELS (10) THRU (13)

BAR	NO.	SIZE	LENGTH	SHAPE	BAR	NO.	SIZE	LENGTH	SHAPE	BAR	NO.	SIZE	LENGTH	SHAPE	BAR	NO.	SIZE	LENGTH	SHAPE
					t28	100	#6	8'-8"	—	W22	15	#6	26'-6"	—					
h55	37	#5	24'-8"	—	t29	40	#6	6'-8"	—	W23	34	#6	25'-7"	—					
h56	14	#5	18'-8"	—	t37	49	#6	7'-8"	—	W24	13	#6	18'-8"	—					
h57	2	#5	3'-1"	—															
h58	2	#5	6'-5"	—	V22	135	#5	4'-3"	—										
h64	18	#5	26'-5"	—	V26	27	#5	7'-0"	—										
m10	34	#5	2'-6"	—	V60	35	#5	9'-5"	—										
m24	52	#7	4'-0"	—	V96	35	#5	10'-9"	—										
m25	46	#6	4'-0"	—	V97	35	#5	8'-10"	—										

BILL OF MATERIAL

ITEM	UNIT	QUANITITY
CLASS A EXCAVATION FOR STRUCTURES	CU. YD.	455
CLASS X CONCRETE	CU. YD.	116.8
POROUS GRANULAR BACKFILL	CU. YD.	58
REINFORCEMENT BARS	POUND	8933
FURNISHING CREOSOTED PILES 20.1 TO 38 FT.	LIN. FT.	850
DRIVING TIMBER PILES	LIN. FT.	850
PIPE UNDERDRAINS PERFORATED CORR. STEEL PIPE 6"	LIN. FT.	94
ALUMINUM RAILING	LIN. FT.	84

NORTHEAST RETAINING WALL PANELS 10 THRU 13

F.A.I. 74 - SECTION 81-1HB-1
F.A.I. 74 OVER 12TH AVE.

ROCK ISLAND COUNTY

STATION 300 + 20.11

SCALE: AS NOTED DATE: