Structural Geotechnical Report

Retaining Wall Structure No. 099-0909
Sta. 803+30 to 805+30.50
Weber Road
Will County, Illinois

Prepared for

Illinois Department of Transportation

Contract Number: PTB 169-017
Design Section Engineer Team:
Knight E/A, Inc.

January 27, 2015
First Revision February 11, 2015
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Third Revision May 15, 2015

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May 15, 2015

Mr. John Murillo, PE
Project Manager
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Structural Geotechnical Report – Retaining Wall
Proposed Structure Number: 099-0909
Weber Road
Sta. 803+30 to 805+30.50
County: Will
Job Number: PTB 169-017

Dear Mr. Murillo:

Attached is a copy of the Structural Geotechnical Report for the above referenced project. The report provides a brief description of the site investigation, site conditions and foundation recommendations. The site investigation included advancing four (4) soil borings to depths of either 30 or 35 feet.

Should you have any questions or require additional information, please call us at 312-733-6262.

Sincerely,

Kalyan Chandhuri, P.E.
Senior Engineer

Ala E Sassila, Ph.D., P.E.
Principal

Structural Geotechnical Report
Proposed Structure Number: 099-0909
Weber Road
Sta. 803+30 to 805+30.50

Will County, Illinois
Contract Number: PTB 169-017

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TABLE OF CONTENTS

Figure

Tables

Appendices

Structural Geotechnical Report
Retaining Wall Structure No. 099-0909
Weber Road
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1.0 INTRODUCTION

GSG Consultants, Inc. (GSG) completed a geotechnical investigation for the construction of a new retaining wall along Weber Road in Bolingbrook in Will County, Illinois. The purpose of the investigation was to explore the subsurface conditions, to determine engineering properties of the subsurface soil, and develop design and construction recommendations for the project.

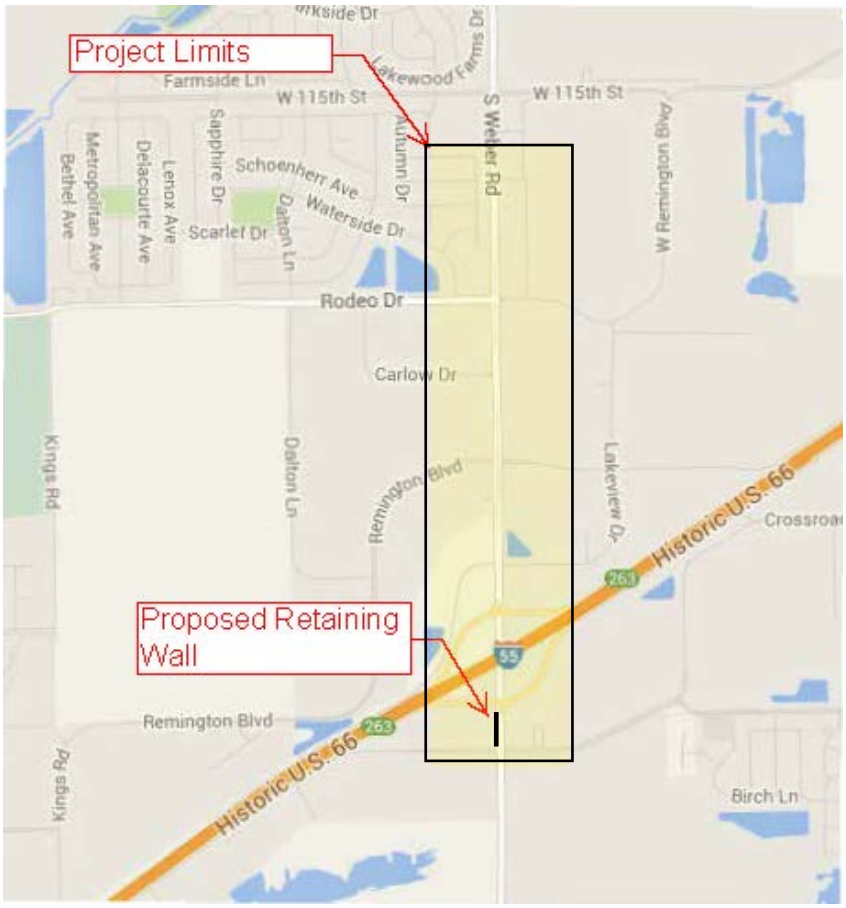

Figure 1: Project Location Map

1.1 Site Conditions

Weber Road runs north-south and crosses over I-55 between a residential area to the south and open undeveloped land to the north. A retaining wall is proposed along Weber Road immediately south of Ramp C that feeds traffic from I-55 northbound to Weber Road south. The overall location of the proposed retaining wall construction gradually slopes down into the existing Speedway parking lot immediately west of Weber Road.

Figure 2: A view to the north-Proposed retaining wall location on Weber Rd before Ramp C

1.2 Proposed Retaining Wall Information

Design plans dated January 27, 2015 were provided by Knight (project structural engineers). The overall project will include the widening of Weber Road to include additional traffic lanes and shoulders, which will require re-grading of the existing slopes. A retaining wall will be constructed along the western edge of Weber Road where Ramp C connects to Weber Road. The following table presents a summary of the proposed retaining wall at this location.

Table 1 –Wall information

Structure Designation	Wall Location	Wall Type	Approximate Length (ft)	Maximum Exposed Wall Height (ft)
099-0909	Sta. 803+30 to Sta. 805+30.50	Soldier Pile	231	13

A plan of the proposed retaining wall in relation to the existing ground surface can be found in **Appendix B**, General Plan and Elevation.

1.3 Regional Geology

GSG reviewed several published documents in an effort to determine the regional geological setting in the area of the site. The subject area is located in the northwest portion of Will County, Illinois. The surficial geologic deposits in this area are typically glacial drift deposited during the Wisconsin Glacial Age. This project is located geographically in the Wheaton Moraine, part of the Valparaiso Morainic System in the Wadsworth of the Wedron Formation. This moraine is primarily silty, sandy, or gravelly till with local areas of silty clayey till, many lenses of poorly sorted gravel, and abundant small kames. This formation overlies the Silurian Joliet Dolomite Bedrock Formation with limestone at approximately 28 feet to 75 feet below ground surface in the subject area.

2.0 SITE SUBSURFACE EXPLORATION PROGRAM

This section describes the subsurface exploration program and laboratory testing program completed as part of this project.

2.1 Subsurface Exploration Program

The proposed locations of the soil borings were provided by Knight, and were completed in the field based on field conditions and accessibility. The proposed depths of the soil borings were determined by GSG in accordance with the IDOT procedures and requirements. Based on the length of the final retaining wall configuration, a total of four (4) soil borings at intervals of 75 feet were required.

The site subsurface exploration was conducted on October 22, 2014 and included advancing standard penetration test (SPT) borings along the length of the proposed wall on South Weber Road. A total of four (4) borings were completed in this phase of the investigation to depths of either 30 or 35 feet. The locations of the soil borings are shown on the **Appendix A - Boring Location Diagram and Subsurface Profile**.

The soil borings were drilled using an all-terrain mounted drill rig using 3¼-inch I.D. hollow stem augers. Soil sampling was performed according to AASHTO T 206, "Penetration Test and Split Barrel Sampling of Soils." Soil samples were obtained at 2.5 foot intervals to a depth of 30 feet and 5 foot intervals beyond that. Water level measurements were made in each boring when evidence of free groundwater was detected on the drill rods or in the samples. The boreholes were also checked for free water immediately after auger removal, and before filling the open boreholes with soil cuttings.

GSG's field representative inspected, visually classified and logged the soil samples during the subsurface exploration activities, and performed unconfined compressive strength tests on cohesive soil samples using a calibrated Rimac compression tester and a calibrated hand penetrometer in accordance with IDOT procedures and requirements. Representative soil samples were collected from each sample interval, and were placed in jars and returned to the laboratory for further testing and evaluation.

2.2 Laboratory Testing Program

All samples were inspected in the laboratory to verify the field classifications. A laboratory testing program was undertaken to characterize and determine engineering properties of the subsurface soils encountered in the area of the proposed retaining wall.

The following laboratory tests were performed on representative soil samples:

- Moisture content ASTM D2216/ AASHTO T-265
- Grain Size Analysis ASTM C136/ AASHTO T-88/ AASHTO T-27
- Atterberg Limits ASTM D 4318 / AASHTO T-89 / AASHTO T-90
- Dry Unit Weight ASTM D7263

The laboratory tests were performed in accordance with test procedures outlined in the IDOT Geotechnical Manual (1999), and per ASTM and AASHTO requirements. Based on the laboratory test results, the soils encountered were classified according to the AASHTO and the Illinois Division of Highways (IDH) classification systems. The results of the laboratory testing program are included in **the Appendix D**, **Laboratory Test Results**, and are also shown along with the field test results in **Appendix C, Soil Boring Logs.**

2.3 Subsurface Conditions

This section provides a brief description of the soils encountered in the borings performed. Variations in the general subsurface soil profile were noted during the drilling activities. Detailed descriptions of the subsurface soils are provided in the Soil Boring Logs **(Appendix C)** and are shown graphically in the Subsurface Profile **(Appendix A)**.

The soil boring logs provide specific conditions encountered at each boring location. The soil boring logs include soil descriptions, stratifications, penetration resistance, elevations, location of the samples, and laboratory test data. Unless otherwise noted, soil descriptions indicated on boring logs are visual identifications. The stratifications shown on the boring logs represent the conditions only at the actual boring locations, and represent the approximate boundary between subsurface materials; however, the actual transition may be gradual.

2.3.1 Soil Conditions

Approximately 12 inches of topsoil was observed at the surface of each boring, underlain by silty clay fill soils to depths of 6 feet below grade (elevation 643 ft). Beneath the fill, the borings

encountered predominantly very stiff to hard silty clay and clay soils to depths of 28 feet below existing grade (elevation 620 ft). Following this layer, the borings encountered stiff and very stiff silt to the termination depth at 30 feet below existing grade (elevation 618 ft) in borings RW-02, RW-03 and RW-04 and to the depth of 33.5 feet (elevation 614.5 ft) in boring RW-01. Following the silt layer in RW-01, the boring noted very dense gravel to the termination depth of 35 feet (elevation 613 ft).

Generally, the fill soils had unconfined compressive strength results ranging from 2 tsf to 6 tsf; the native clay soils had unconfined compressive strength results ranging from 2.08 tsf to 7.91 tsf; and the native silt soils had unconfined compressive strength results averaging about 1.25 tsf. Representative native silty clay samples had dry unit weights of 111.6 and 114.9 pcf.

2.3.2 Groundwater Conditions

Water levels were checked in each boring to determine the general groundwater conditions present at the site, and were measured while drilling and after each boring was completed. Groundwater was not encountered in the borings while drilling or after the completion of drilling.

Based on the color change from brown to gray, it is anticipated that the long term groundwater level is near elevation 636 feet. Water level readings were made in the boreholes at times and under conditions shown on the boring logs and stated in the text of this report. However, it should be noted that fluctuations in groundwater level may occur due to variations in rainfall, other climatic conditions, or other factors not evident at the time measurements were made and reported herein.

3.0 GEOTECHNICAL ANALYSES

This section provides GSG's geotechnical analysis and recommendations for the design of the proposed retaining wall based on the results of the initial field exploration, laboratory testing, and geotechnical analysis. Subsurface conditions in unexplored locations may vary from those encountered at the boring locations.

3.1 Derivation of Soil Parameters for Design

Unit weights, friction angles and shear strength parameters were estimated using standard penetration test (SPT) results for the fill and cohesionless soils and in-situ and laboratory test results for cohesive soils.

Table 2 presents generalized soil parameters to be used for design based on the laboratory and in-situ testing data:

Table 2 – Summary of On-site Soil Parameters

Depth/Elevation (feet)	Soil Description	In situ Unit Weight γ (pcf)	Undrained		Drained	
			Cohesion c (psf)	Friction Angle ϕ (Degrees)	Cohesion c (psf)	Friction Angle ϕ (Degrees)
	New Engineered Granular Fill	120	n/a	30	n/a	30
	New Engineered Clay Fill	120	1,500	0	75	28
Surface to 643'	Existing Clay Fill	136	2,000-6,000	0	50	26
643'-635.5'	Brown Very Stiff to Hard Clay	133	4,000-7,910	0	100	30
635.5'-621'	Gray Very Stiff to Hard Clay	133	2,080-4,990	0	75	28

Depth/Elevation (feet)	Soil Description	In situ Unit Weight γ (pcf)	Undrained		Drained	
			Cohesion c (psf)	Friction Angle ϕ (Degrees)	Cohesion c (psf)	Friction Angle ϕ (Degrees)
621'-614.5'	Stiff to Very Stiff Silt	125	1,250	0	50	27
Below 613'	Gray Very Dense Gravel	140	n/a	38	n/a	38

3.2 Seismic Parameters

The seismic hazard for the site was analyzed per the IDOT Geotechnical Manual, IDOT Bridge Design Manual, and AASHTO LRFD Bridge Design Specifications.

The Seismic Soil Site Class was determined per the requirements of All Geotechnical Manual Users (AGMU) Memo 9.1, Design Guide for Seismic Site Class Determination, and the "Seismic Site Class Determination" Excel spreadsheet provided by IDOT. A global Site Class Definition was determined for this project, and was found to be Soil Site Class C. The Seismic Performance Zone (SPZ) was determined using Figure 2.3.10-2 in the IDOT Bridge Manual, and was found to be Seismic Performance Zone 1.

The AASHTO Seismic Design Parameters program was used to determine the peak ground acceleration coefficient (PGA), and the short (S_{DS}) and long (S_{D1}) period design spectral acceleration coefficients. The S_{DS} was determined to be 0.124g and the S_{D1} was determined to be 0.066g.

4.0 GEOTECHNICAL RECOMMENDATIONS

This section provides recommendation regarding foundation and design parameters for the proposed retaining wall. The recommendations were developed based on the project information provided by Knight and the results of the site investigation. If there are any significant changes to the project characteristics or if significantly different subsurface conditions are encountered during construction, GSG should be consulted so that the recommendations of this report can be reviewed. The foundation design recommendations were completed per the AASHTO LRFD 7th Edition (2014).

4.1 Retaining Wall Design Analysis

The design plans provided by Knight indicate a soldier pile and lagging wall to be constructed at this location. Based on the proposed plan, the wall will be used in fill areas with a maximum new fill height of up to 13 feet above the existing grade. GSG evaluated the global stability and settlements to determine the suitability of soldier pile retaining system for this section of the project.

4.1.1 Wall and Embankment Settlement

The wall is to be constructed in a fill area. The anticipated maximum height of the fill is 13 feet above existing grade. The estimated settlement due to the placement of fill materials for the construction of the proposed soldier pile wall is 0.6 inch.

4.1.2 Slope Stability Analyses

The wall contractor should confirm stability requirements based on the final wall configurations. The following parameters were used to evaluate the wall:

Table 3– Wall Description

Maximum total exposed height of the retaining wall (H)*	13 feet
Estimated total height of retaining wall (H)	26 feet
Unit weight of the retained fill (embankment)	120 pcf
Internal friction angle for the select backfill (native soils)	28 degrees

*Based on design and cross section drawings provided by Knight

Slide 6.0 is a comprehensive slope stability analysis software that performs finite element analysis and was used to evaluate the proposed retaining wall geometry for the project. The proposed designs were analyzed based on the preliminary grading and the soils encountered while drilling. Plans of the proposed retaining wall in relation to the existing ground surface can be found in **Appendix B**, Retaining Wall General Plan. Based on the geometry, and the soil borings, global stability analyses were performed for both circular and block failure analysis using the simplified Bishop and Janbu analyses methods. The analyses were performed using the soil parameters in Table 2 above.

4.1.3 Slope Stability Results

Circular and block failure analyses were evaluated using Bishop and Janbu analyses methods for a short term (undrained) condition and long term (drained) condition for the proposed retaining wall geometry. The analyses were performed at Station 805+31, which represents the highest fill elevation of the proposed wall. Table 4 provides a summary of the stability analyses for both cases.

Table 4– Stability Analyses Results

Analysis Exhibit	Station	Failure Type	Factor of Safety	Required Minimum Factor of Safety
Exhibit 1	805+31	Circular – Short Term	6.8	1.5
Exhibit 2		Circular – Long Term	3.5	1.5
Exhibit 3		Block (Sliding) – Short Term	5.8	1.5
Exhibit 4		Block (Sliding) – Long Term	2.6	1.5

Based on the analyses results, the proposed retaining wall meets the minimum factor of safety of 1.5. **Appendix E** presents copies of the slope stability analyses.

4.2 Retaining Wall Design Recommendations

Soldier pile walls could be constructed by either drilling shafts or driving steel piles at required centers along the retaining wall alignment into the bearing stratum. Drilled soldier piles should be performed in accordance with the Guide Bridge Special Provisions (GBSP) No. 42. The drilling methods used to maintain the shaft excavation side wall stability during various phases of shaft excavation and concrete placement, must be appropriate for the soil conditions encountered.

Soldier pile walls may also consist of driven steel piles, typically H-pile sections, installed to specified depths/elevations per the design. Driven soldier piles should be performed in accordance with the GBSP No. 43.

Resistance to lateral movement or overturning of the soldier piles is furnished by passive resistance of the soil below the depth of excavation. The passive pressure between piles should act over an effective width equal to three times the width of the soldier piles. The width for drilled soldier piles should be taken as the diameter of the concrete encasement and the width for driven soldier piles should be taken as the width of the flange.

Engineering analyses and design of the proposed wall shall be performed using the current AASHTO Load and Resistance Factor Design (LRFD) Methodology as required by the IDOT. LRFD methodology incorporates the use of load factors and resistance factors to account for uncertainty in applied loads and load resistance of structure elements separately. The AASHTO LRFD Bridge Design Specifications outline load factors and combinations for various strength, extreme event, service, and fatigue limit states. Section 11, which outlines geotechnical criteria for retaining walls, of the AASHTO Specifications requires the evaluation of bearing resistance failure, lateral sliding, and overturning at the strength limit state and excessive vertical displacement, excessive lateral displacement, and overall stability at the service limit state.

Table 5 provides the load factors to be used in the design of the retaining wall in accordance with AASHTO Table 3.4.1-1, Load Combinations and Load Factors, and Table 3.4.1-2, load Factors for Permanent Loads.

Table 5 - LRFD Load Factors for Retaining Wall Design

	Type of Load	Bearing Resistance Strength IA	Sliding and Eccentricity Strength IB	Settlement Service I
Load Factors for Vertical Loads	Dead Load of Structural Components (DC)	1.25	0.90	1.00
	Vertical Earth Pressure Load (EV)	1.35	1.00	1.00
	Earth Surcharge Load (ES)	1.50		1.00
	Live Load Surcharge (LS)	1.75		1.00
Load Factors for Horizontal Loads	Horizontal Earth Pressure Load (EH) Active At-Rest AEP for anchored walls	 1.50 1.35 1.35	1.00	1.00
	Earth Surcharge (ES)	1.50		
	Live Load Surcharge (LS)	1.75	1.00	1.00

4.2.1 Lateral Earth Pressures and Loading

The wall shall be designed to withstand earth and live lateral earth pressures. The lateral earth pressures on retaining walls depend on the type of wall (i.e. restrained or unrestrained), the type of backfill and the method of placement against the wall, and the magnitude of surcharge weight on the ground surface adjacent to the wall. Soldier pile walls are considered flexible and such the earth loads may be calculated using active earth pressure for load above the design grade, and both active and passive earth pressures below the design grade. The active earth pressure coefficient (Ka), and the passive earth pressure coefficient (Kp) were determined in accordance with AASHTO Section 3.11.5.3 and 3.11.5.4, respectively.

Table 6 presents the recommended lateral earth pressures soil parameters to be used for the proposed wall design based on the anticipated soil types at this site.

Table 6 – Lateral Earth Pressures Soil Parameters

Soil Type	In-situ Unit Weight (pcf) (γ)	Angle of Internal Friction (ϕ)	Active Earth Pressure Coefficient (Ka)	Passive Earth Pressure Coefficient (Kp)	Coefficient of Subgrade Modulus (pci)	Soil Strain Parameter E50
New Engineered Granular Fill	120	30	0.33	3.0	90	N/A

Soil Type	In-situ Unit Weight (pcf) (γ)	Angle of Internal Friction (ϕ)	Active Earth Pressure Coefficient (Ka)	Passive Earth Pressure Coefficient (Kp)	Coefficient of Subgrade Modulus (pci)	Soil Strain Parameter E50
New Engineered Clay Fill	120	28	0.36	2.77	1,000	0.007
Existing Clay Fill	136	26	0.39	2.56	1,000	0.007
Brown to Gray Very Stiff to Hard Clay	133	30	0.33	3.0	1,500	0.005
Gray Stiff Silt	125	20	0.49	2.04	500	0.01

Traffic and other surcharge loads should be included in the retaining wall design. A live load surcharge shall be applied where vehicular load is expected to act on the surface of the backfill within a distance equal to one-half the wall height behind the back face of the wall in accordance with Article 3.11.6.4 of AASHTO LRFD Bridge Design Specifications. The live load surcharge may be estimated as a uniform horizontal earth pressure due to an equivalent height (Heq) of soil. Table 7 provides the equivalent heights of soils for vehicular loadings on retaining walls.

Table 7 - Equivalent Height of Soil for Vehicular Loading on Retaining Walls Parallel to Traffic (AASHTO LRFD Manual - Table 3.11.6.4-2)

Retaining Wall Height (ft)	H_{eq} Distance from Wall Back face to Edge of Traffic	
	0 feet	1.0 feet or Further
5	5.0 feet	2.0 feet
10	3.5 feet	2.0 feet
≥20	2.0 feet	2.0 feet

GSG recommends designing the retaining wall using the drained condition. This could be accomplished by placing a minimum of 2 feet of free draining materials, Porous Granular Embankment, as measured laterally from the back of the wall. The backfill should be placed in accordance with the IDOT SSRBC. Heavy compaction equipment should not be allowed closer than five (5) feet to the retaining wall to prevent inducing high lateral earth pressures and causing wall yielding and/or other damage.

5.0 Construction Considerations

All work performed for the proposed project should conform to the requirements in the IDOT SSRBC (2012). Any deviation from the requirements in the manuals above should be approved by the design engineer.

5.1 Existing Utilities

Before proceeding with construction, any existing underground utility lines that will interfere with construction should be completely rerouted or removed from beneath the proposed construction areas. Existing utility lines that are to be abandoned in place should be removed and/or plugged with a minimum of 2 feet of cement grout. All excavations resulting from underground utilities removal activities should be cleaned of loose and disturbed materials, including all previously-placed backfill, and backfilled with suitable fill materials in accordance with the requirements of this section. During the clearing and stripping operations, positive surface drainage should be maintained to prevent the accumulation of water.

5.2 Excavations

The contractor will be responsible to provide a safe excavation during the construction activities of the project. All excavations should be conducted in accordance with applicable federal, state, and local safety regulations, including, but not limited to the Occupational Safety and Health administration (OSHA) excavation safety standards. Excavation stability and soil pressures on temporary shoring are dependent on soil conditions, depth of excavations, installation procedures, and the magnitude of any surcharge loads on the ground surface adjacent to the excavation. Excavation near existing structures and underground utilities should be performed with extreme care to avoid undermining existing structures. Excavations should not extend below the level of adjacent existing foundations or utilities unless underpinning or other support is installed. It is the responsibility of the contractor for field determinations of applicable conditions and providing adequate shoring for all excavation activities.

5.3 Groundwater Management

It is anticipated that the long term water table is greater than 10 feet below the existing ground surface. GSG does not anticipate groundwater related issues during construction activity; however, water may become perched in the existing fill material encountered at the surface. If rainwater run-off or perched water is accumulated at the base of excavation, the contractor should remove accumulated water using conventional sump pit and pump

procedures, and maintain a dry and stable excavation. The location of the sump should be determined by the contractor based on field conditions. During earthmoving activities at the site, grading should be performed to ensure that drainage is maintained throughout the construction period. Water should not be allowed to accumulate in the foundation area either during or after construction. Undercut and excavated areas should be sloped toward one corner to facilitate removal of any collected rainwater or surface run-off. Grades should be sloped away from the excavations to minimize runoff from entering the areas.

If water seepage occurs during footing excavations or where wet conditions are encountered such that the water cannot be removed with conventional sumping, we recommend placing open grade stone similar to IDOT CA-7 to stabilize the bottom of the excavation below the water table. The CA-7 stone should be placed to 12 inches above the water table, in 12-inch lifts, and should be compacted with the use of a heavy smooth drum roller or heavy vibratory plate compactor until stable. The remaining portion of the excavation beneath the footings should be backfilled using approved structural fill.

6.0 LIMITATIONS

This report has been prepared for the exclusive use of the Illinois Department of Transportation and its structural consultant. The recommendations provided in the report are specific to the project described herein, and are based on the information obtained at the soil boring locations within the proposed retaining wall area. The analyses performed and the recommendations provided in this report are based on subsurface conditions determined at the location of the borings. This report may not reflect all variations that may occur between boring locations or at some other time, the nature and extent of which may not become evident until during the time of construction. If variations in subsurface conditions become evident after submission of this report, it will be necessary to evaluate their nature and review the recommendations presented herein.

APPENDIX A

BORING LOCATION MAP & SUBSURFACE PROFILE

PROPOSED RETAINING WALL

WEBER ROAD

NORMANTOWN ROAD

RAMP C

RAMP D

I-55

RAMP B

RAMP A

SPEEDWAY

SPEEDWAY CAR WASH

DISCOUNT TIRE STORE

MCDONALDS

7-11

BURGER KING

WHITE CASTLE

CAR WASH

PIPEYES

DAYS INN

CREME DE LA CREME

CRACKER BARREL

SHELL GAS

CAR WASH

WENDY'S

COUNTRY INNS & SUITES

GSG CONSULTANTS, INC.
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tel: 312.733.6262 • fax: 312.733.5612

USER NAME = $USER$	DESIGNED - NE	REVISED -
	DRAWN - KNIGHT E/A	REVISED -
PLOT SCALE = $SCALE$	CHECKED - DE	REVISED -
PLOT DATE = $DATE$	DATE - 11/11/14	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEBER RD /-55 REDESIGN
SOIL BORING PLAN

SCALE: 100 | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 55	WEBER RD FROM	WILL		
	NORMANTOWN RD TO 135TH ST	CONTRACT NO. 60X10		
	ILLINOIS FED. AID PROJECT			

PLAN

DATE	BY	
		SURVEYED
		PLOTTED
		PLOTTED CHECKED
		ALIGNMENT CHECKED
		RT. OF WAY CHECKED
		CADD FILE NAME

NOTE BOOK
NO.

PROFILE

DATE	BY	
		SURVEYED
		PLOTTED
		PLOTTED CHECKED
		ELEV. CHECKED
		ELEV. NOTED
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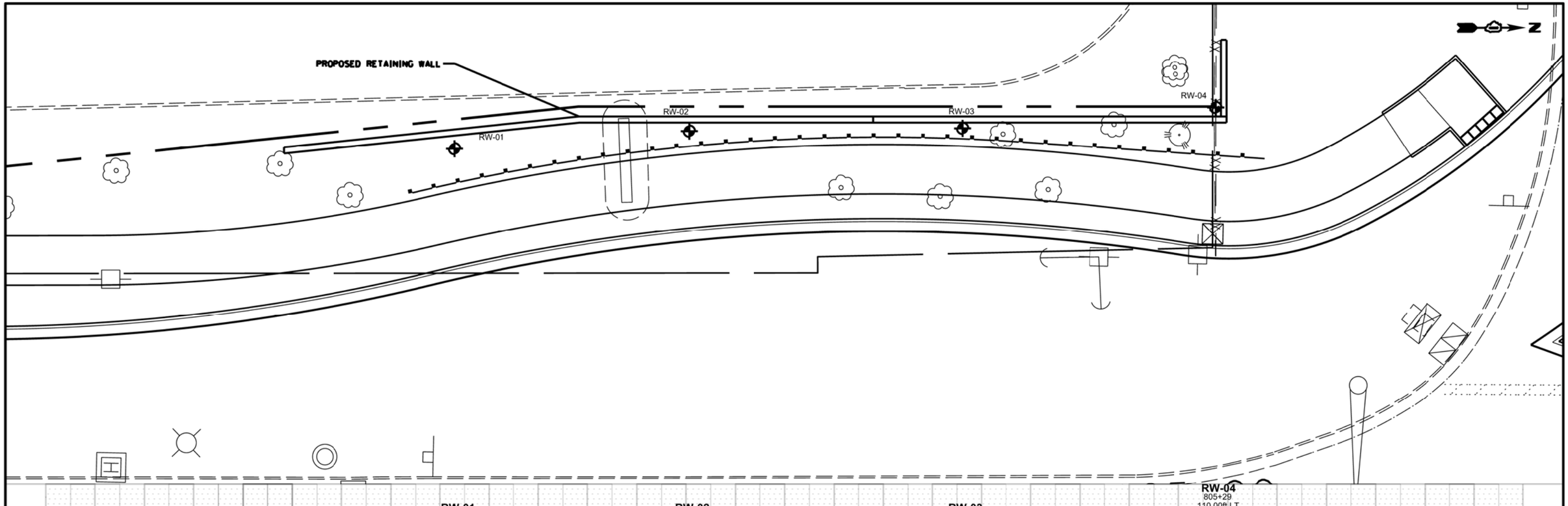
NOTE BOOK
NO.



RW-01
803+75
102.00ft LT

	EL	D	N	Qu	w%
12 inches of Topsoil	647.00	0			
			10	2.75 P	27
Brown, Moist to Very Moist FILL: SILTY CLAY			15	6 P	17
	642.00	5			
			12	4.37 B	20
Brown, Moist FILL: SILTY CLAY			15	7.91 B	19
	637.00	10			
			16	4.99 B	19
			18	4.99 B	20
		15			
			16	4.99 B	19
Very Stiff to Hard Gray, Moist SILTY CLAY (CL/ML)			9	2.08 B	21
		20			
			11	2.08 B	22
			10	2.08 B	21
		25			
			11	2.08 B	21
	619.50				
Stiff Gray, Moist SILT, with sand (ML)			19	1.25 P	18
		30			
	614.50				
Very Dense Gray, Moist GRAVEL, with sand (GPS)	613.00		69		3
		35			

End of Boring

RW-02
804+23
105.00ft LT

	EL	D	N	Qu	w%	D
12 inches of Topsoil	647.00	0				
			9	2 P	26	
Brown, Moist to Very Moist FILL: SILTY CLAY, trace sand			8	3 P	17	
	642.00	5				
			14	5.41 B	20	
Hard Brown, Moist SILTY CLAY (CL/ML)			19	6 P	19	111.6
	637.00	10				
			12	2.08 B	22	
			10	3.74 B	20	
		15				
			12	3.74 B	19	
Very Stiff Gray, Moist SILTY CLAY (CL/ML)			11	2.5 B	21	
		20				
			11	2.5 B	21	
			11	2.5 B	22	
		25				
	620.50		14	2.08 B	21	
Very Stiff Gray, Moist SILT (ML)	618.00		24		19	
		30				

End of Boring

RW-03
804+78
106.00ft LT

	EL	D	N	Qu	w%	D
12 inches of Topsoil	648.00	0				
	647.00		10	2 P	25	
Brown, Moist FILL: SILTY CLAY	644.50					
Brown, Moist FILL: SILTY CLAY, with gravel, trace sand			10	3 P	14	
	642.00	5				
			13	4 P	17	
Very Stiff Brown, Moist SILTY CLAY (CL/ML)			17		NR	
		10				
			22		NR	
	634.50					
			10	3.74 B	19	
		15				
			10	2.91 B	22	
Very Stiff Gray, Moist SILTY CLAY (CL/ML)			8	2.91 B	21	109.9
		20				
			11	2.08 B	22	
			9	2.08 B	23	
		25				
	621.00		22	1.25 P	16	
Stiff Gray, Moist SILT (ML)	618.00		14	1.25 P	19	
		30				

End of Boring

RW-04
805+29
110.00ft LT

	EL	D	N	Qu	w%	D
12 inches of Topsoil	650.00	0				
	649.00		10	2.5 P	24	
Brown, Moist FILL: SILTY CLAY			12	2.29 B	18	114.9
	644.00	5				
			15	5.2 B	20	
Very Stiff to Hard Brown, Moist SILTY CLAY (CL/ML)			17	7 P	20	
		10				
			12	4.58 B	18	
	636.50					
			18	2.75 P	18	
		15				
			13	2.08 B	19	
			12	2.29 B	19	
Very Stiff Gray, Moist SILTY CLAY (CL/ML)		20				
			12	2.29 B	21	
			10	2.08 B	23	
		25				
	622.50		22	2.08 B	19	
Stiff Gray, Moist SANDY SILT (ML)	620.00		25	1.25 P	17	
		30				

End of Boring

650 645 640 635 630 625 620 615 610

803+00 803+20 803+40 803+60 803+80 804+00 804+20 804+40 804+60 804+80 805+00 805+20 805+40 805+60 805+80 806+00

GSG CONSULTANTS, INC.
855 West Adams, Suite 200
Chicago, Illinois 60607
tel: 312.733.6262 • fax: 312.733.5612

USER NAME = $USER$	DESIGNED - NE	REVISED -	
	DRAWN - KNIGHT E/A	REVISED -	
PLOT SCALE = $SCALE$	CHECKED - DE	REVISED -	
PLOT DATE = $DATE$	DATE - 11/20/14	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEBER ROAD /\-55 REDESIGN
RET WALL SOIL BORING PLAN & PROFILE

SCALE: 10 | SHEET 1 OF 1 SHEETS | STA. 803+00 TO STA. 806+00

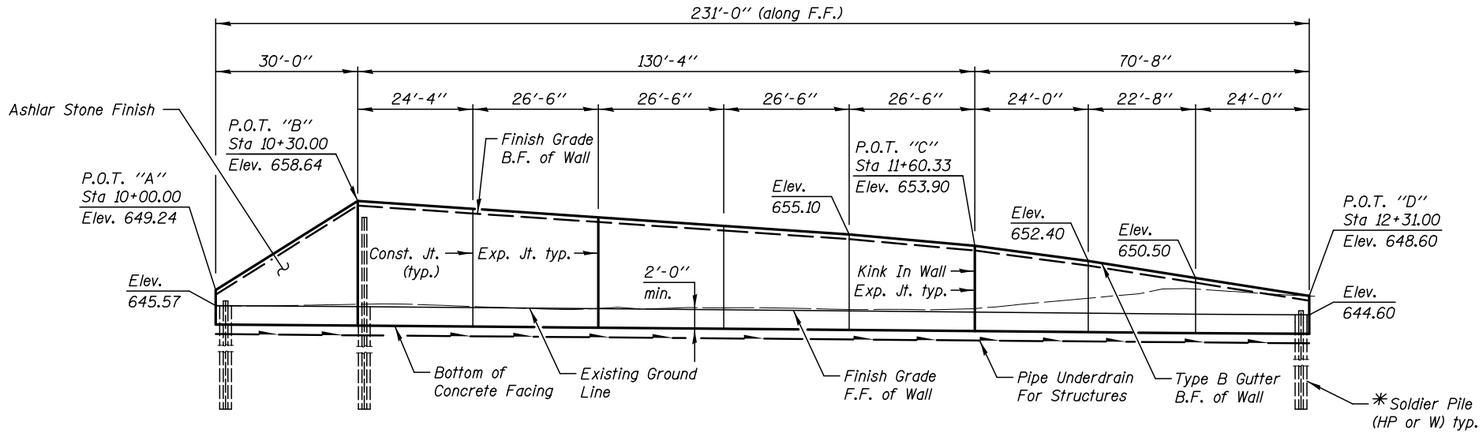
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 55	WEBER ROAD FROM	WILL		
	NORMANTOWN RD TO 135TH ST	CONTRACT NO. 60X10		
	ILLINOIS FED. AID PROJECT			

APPENDIX B

RETAINING WALL GENERAL PLAN

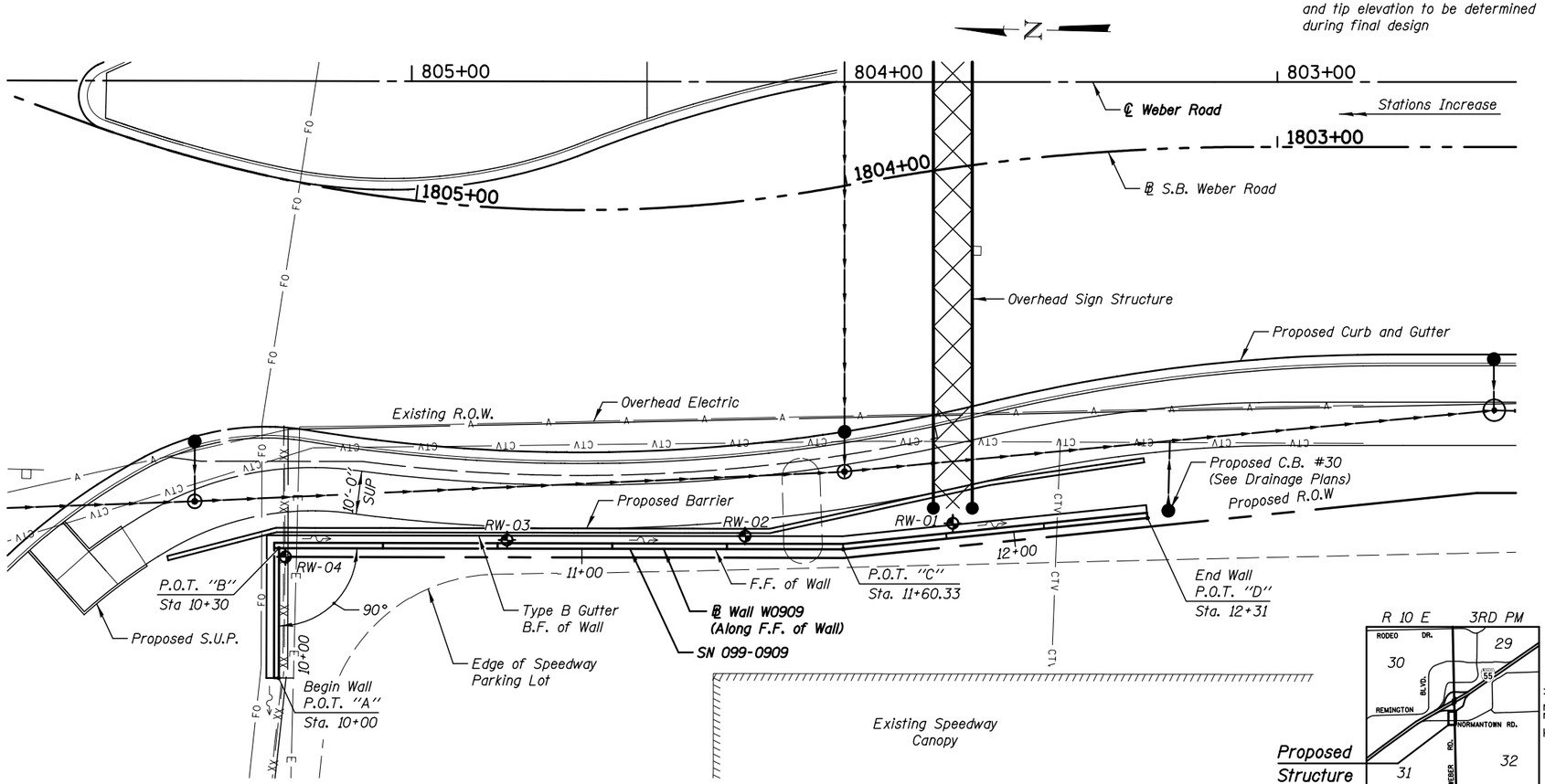
Bench Mark: BM Lin17 Chiseled "X" on south bolt of round light pole foundation between I-55 southbound and existing I-55 ramp to Weber Road Mile marker 263.71 sign. Elev. 654.37

Existing Structure: None.



DEVELOPED ELEVATION

✳ Pile section, spacing, shaft diameter and tip elevation to be determined during final design



PLAN

CURVE DATA

℄ SB Weber Road Curve SB-1
- Δ = 10° 44′ 13″ (LT)
- D = 11° 27′ 33″
- R = 500.00′
- T = 46.99′
- L = 93.70′
- E = 12.48′
- PC STA. 1803+05.61
- PT STA. 1803+99.30
- PI STA. 1803+52.59

℄ SB Weber Road Curve SB-2
- Δ = 30° 50′ 40″ (RT)
- D = 17° 09′ 16″
- R = 334.00′
- T = 92.14′
- L = 179.80′
- E = 12.48′
- PC STA. 1803+99.30
- PT STA. 1805+79.11
- PI STA. 1804+91.44

℄ Wall W0909 (Offsets from ℄ S.B. Weber Rd. to F.F. of wall)

POT "A"
Sta. 10+00.00 - ℄ Wall W0909 =
Sta. 1805+14.17, 113.63′ Lt. - ℄ S.B. Weber Rd.

POT "B"
Sta. 10+30.00 - ℄ Wall W0909 =
Sta. 1805+17.86, 84.01′ Lt. - ℄ S.B. Weber Rd.

POT "C"
Sta. 11+60.33 - ℄ Wall W0909 =
Sta. 1804+13.15, 82.83′ Lt. - ℄ S.B. Weber Rd.

POT "D"
Sta. 12+31.00 - ℄ Wall W0909 =
Sta. 1803+35.10, 85.08′ Lt. - ℄ S.B. Weber Rd.

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, Customary U.S. Units, 7th Edition

DESIGN STRESSES

FIELD UNITS

- f'_c = 3,500 psi
- f_y = 60,000 psi (reinforcement)
- f_y = 50,000 psi (AASHTO M270 Gr. 50)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1})=0.093g
Design Spectral Acceleration at 0.2 sec. (S_{DS})=0.165g
Soil Site Class = D

HIGHWAY CLASSIFICATION

F.A.P. Route 856 - Weber Road
Functional Class: Other Principal Arterial
ADT: 39,200 (2010); 63,000 (2040)
DHV: 5,430
ADTT: 6%
Design Speed: 35 mph
Posted Speed: 30 mph
Directional Distribution: 55:45

Legend

Soil Borings

F.F. Front Face
B.F. Back Face
S.U.P. Shared Use Path

LOCATION SKETCH

GENERAL PLAN & ELEVATION

WEBER ROAD
F.A.P. RTE. 856 SEC. (99-1HB-1)A
WILL COUNTY
STA. 803+30.00 TO 805+30.50
STRUCTURE NO. 099-0909

KNIGHT
Engineers & Architects

		DESIGNED - FJW	REVISED
		CHECKED - TB	REVISED
SCALE - NONE		DRAWN - DC	REVISED
DATE - 1/27/2015		CHECKED - TB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 1 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
856	(99-1HB-1) R-1	WILL		
		CONTRACT NO. 60X10		
	ILLINOIS FED. AID PROJECT			

APPENDIX C

SOIL BORING LOGS

Illinois Department of Transportation
Division of Highways
GSG CONSULTANTS INC.

SOIL BORING LOG

Date 10/22/14

ROUTE Weber Road **DESCRIPTION** Proposed Weber Road & I-55 Improvements **LOGGED BY** JH

SECTION Normantown Road to 135th Street/Romeo Road **LOCATION** Retaining Wall, **SEC.** , **TWP.** , **RNG.** , **Latitude** , **Longitude**

COUNTY Will County **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO. NA
Station NA

BORING NO. RW-01
Station 803+75
Offset 102.00ft LT
Ground Surface Elev. 648.00 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter None ft
Upon Completion None ft
After NA **Hrs.** NA ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				12 inches of Topsoil
				647.00
	3			Brown, Moist to Very Moist
	5	2.8	27	FILL: SILTY CLAY
	5	P		
	3			
	6	6.0	17	
-5	9	P		
				642.00
	3			Hard
	5	4.4	20	Brown, Moist
	7	B		CLAY (CL)
	3			
	7	7.9	19	
-10	8	B		
				637.00
	4			Very Stiff to Hard
	7	5.0	19	Gray, Moist
	9	B		CLAY (CL)
	5			
	9	5.0	20	
-15	9	B		
	4			
	7	5.0	19	
	9	B		
	3			
	3	2.1	21	
-20	6	B		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	2			Very Stiff to Hard
	5	2.1	22	Gray, Moist
	6	B		CLAY (CL) *(continued)*
	3			
	4	2.1	21	
-25	6	B		
	3			
	5	2.1	21	
	6	B		
				619.50
	6			Stiff
	5	1.3	18	Gray, Moist
-30	14	P		SILT, with sand (ML)
				614.50
	23			Very Dense
	29		3	Gray, Dry
-35	40			GRAVEL, with sand (GPS)
				613.00
				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)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
GSG CONSULTANTS INC.

SOIL BORING LOG

Date 10/22/14

ROUTE Weber Road **DESCRIPTION** Proposed Weber Road & I-55 Improvements **LOGGED BY** JH

SECTION Normantown Road to 135th Street/Romeo Road **LOCATION** Retaining Wall, **SEC.** , **TWP.** , **RNG.** , **Latitude** , **Longitude**

COUNTY Will County **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO. NA
Station NA

BORING NO. RW-02
Station 804+23
Offset 105.00ft LT
Ground Surface Elev. 648.00 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter None ft
Upon Completion None ft
After NA **Hrs.** NA ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				12 inches of Topsoil
				647.00
	3			Brown, Moist to Very Moist
	4	2.0	26	FILL: SILTY CLAY, trace sand
	5	P		
	3			
	4	3.0	17	
-5	4	P		
				642.00
	4			Hard
	6	5.4	20	Brown, Moist
	8	B		CLAY (CL)
	5			
	8	6.0	19	
-10	11	P		
				637.00
	5			Very Stiff
	5	2.1	22	Gray, Moist
	7	B		CLAY (CL)
	2			
	4	3.7	20	
-15	6	B		
	3			
	5	3.7	19	
	7	B		
	3			
	5	2.5	21	
-20	6	B		
	2			Very Stiff
	5	2.5	21	Gray, Moist
	6	B		CLAY (CL) *(continued)*
	3			
	5	2.5	22	
-25	6	B		
	3			
	4	2.1	21	
	10	B		
				620.50
	16			Very Stiff
	12		19	Gray, Moist
-30	12			SILT (ML)
				618.00
				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
GSG CONSULTANTS INC.

SOIL BORING LOG

Date 10/22/14

ROUTE Weber Road **DESCRIPTION** Proposed Weber Road & I-55 Improvements **LOGGED BY** JH

SECTION Normantown Road to 135th Street/Romeo Road **LOCATION** Retaining Wall, **SEC.** , **TWP.** , **RNG.** , **Latitude** , **Longitude**

COUNTY Will County **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO. NA
Station NA

BORING NO. RW-03
Station 804+78
Offset 106.00ft LT
Ground Surface Elev. 648.00 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter None ft
Upon Completion None ft
After NA **Hrs.** NA ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				12 inches of Topsoil
				647.00
	3			Brown, Moist
	4	2.0	25	FILL: SILTY CLAY
	6	P		
				644.50
	4			Brown, Moist
	5	3.0	14	FILL: SILTY CLAY, with gravel,
-5	5	P		trace sand
				642.00
	3			Very Stiff to Hard
	6	4.0	17	Brown, Moist
	7	P		CLAY (CL)
	7			
	8		NR	
-10	9			
	8			
	10		NR	
	12			
				634.50
	4			Very Stiff
	4	3.7	19	Gray, Moist
-15	6	B		CLAY (CL)
	3			
	5	2.9	22	
	5	B		
	3			
	4	2.9	21	
-20	4	B		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Very Stiff
				Gray, Moist
				CLAY (CL) *(continued)*
	3			
	5	2.1	22	
	6	B		
	2			
	4	2.1	23	
-25	5	B		
	3			
	10	1.3	16	
	12	P		
				621.00
				Stiff
				Gray, Moist
				SILT (ML)
	7			
	6	1.3	19	
-30	8	P		
				618.00
				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)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
GSG CONSULTANTS INC.

SOIL BORING LOG

Date 10/22/14

ROUTE Weber Road **DESCRIPTION** Proposed Weber Road & I-55 Improvements **LOGGED BY** JH

SECTION Normantown Road to 135th Street/Romeo Road **LOCATION** Retaining Wall, **SEC.** , **TWP.** , **RNG.** , **Latitude** , **Longitude**

COUNTY Will County **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO. NA
Station NA

BORING NO. RW-04
Station 805+29
Offset 110.00ft LT
Ground Surface Elev. 650.00 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter None ft
Upon Completion None ft
After NA **Hrs.** NA ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				12 inches of Topsoil
				649.00
	3			Brown, Moist
	4	2.5	24	FILL: SILTY CLAY
	6	P		
	3			
	5	2.3	18	
-5	7	B		
				644.00
	6			Very Stiff to Hard
	7	5.2	20	Brown, Moist
	8	B		CLAY (CL)
	4			
	7	7.0	20	
-10	10	P		
	4			
	5	4.6	18	
	7	B		
				636.50
	7			Very Stiff
	8	2.8	18	Gray, Moist
-15	10	P		CLAY (CL)
	5			
	6	2.1	19	
	7	B		
	3			
	5	2.3	19	
-20	7	B		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	3			Very Stiff
	6	2.3	21	Gray, Moist
	6	B		CLAY (CL) *(continued)*
	3			
	4	2.1	23	
-25	6	B		
	4			
	6	2.1	19	
	16	B		
				622.50
	11			Stiff
	14	1.3	17	Gray, Moist
-30	11	P		SILT, trace sand (ML)
				620.00
				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)

BBS, form 137 (Rev. 8-99)

APPENDIX D

LABORATORY TEST RESULTS TABLES

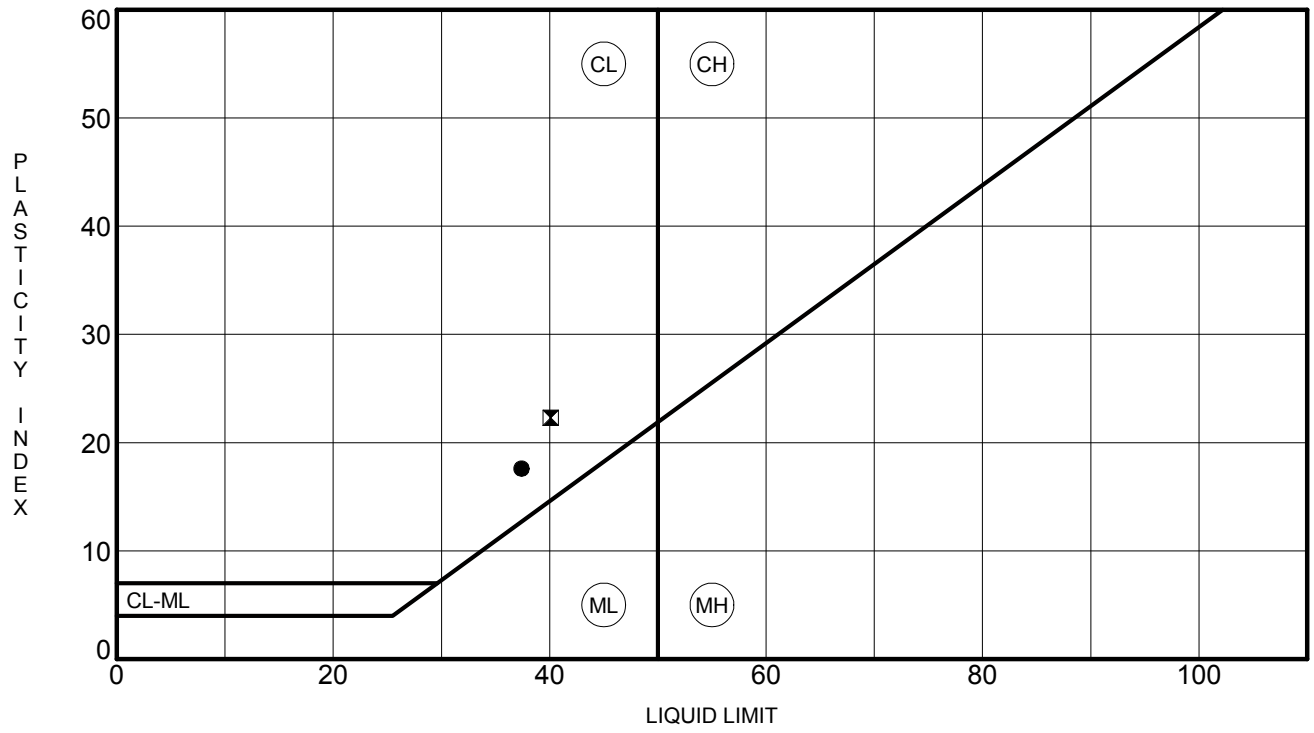
Retaining Wall
Route: Weber Road over I-55 Stevenson Expressway
Will County, Illinois

Dry Unit Weight Results				
Boring ID	Sample Number	Sample		Dry Unit Weight (pcf)
		Top (ft.)	Bottom (ft.)	
RW-2	SS-4	8.5	10	111.6
RW-3	SS-8	18.5	20	109.9
RW-4	SS-2	3.5	5	114.9

Atterberg Limit Results						
Boring ID	Sample Number	Sample		Liquid Limit	Plastic Limit	Plasticity Index
		Top (ft.)	Bottom (ft.)			
RW-1	SS-4	8.5	10	37.4	19.8	17.6

Retaining Wall
Route: Weber Road over I-55 Stevenson Expressway
Will County, Illinois

Sieve & Hydrometer Results													
Boring ID	Sample Number	Sample (Below Existing		Sieve Analysis, Percent Passing (%)						Particle Size Distribution, AASHTO			
		Top (ft.)	Bottom (ft.)	4.76mm (#4)	2.00mm (#10)	0.425mm (#40)	0.075mm (#200)	0.005mm	0.002mm	Gravel (AASHTO) (%)	Sand (AASHTO) (%)	Silt (AASHTO) (%)	Clay (AASHTO) (%)
RW-1	SS-12	28.5	30	100	100	100	93.9			0	6.1		



	Specimen Identification		LL	PL	PI	Fines	Classification
●	**RW-01**	**8.50**	**37.4**	**19.8**	**17.6**		
⧓	**RW-03**	**16.00**	**40.1**	**17.8**	**22.3**		

Illinois Department of Transportation
Division of Highways
GSG CONSULTANTS INC.

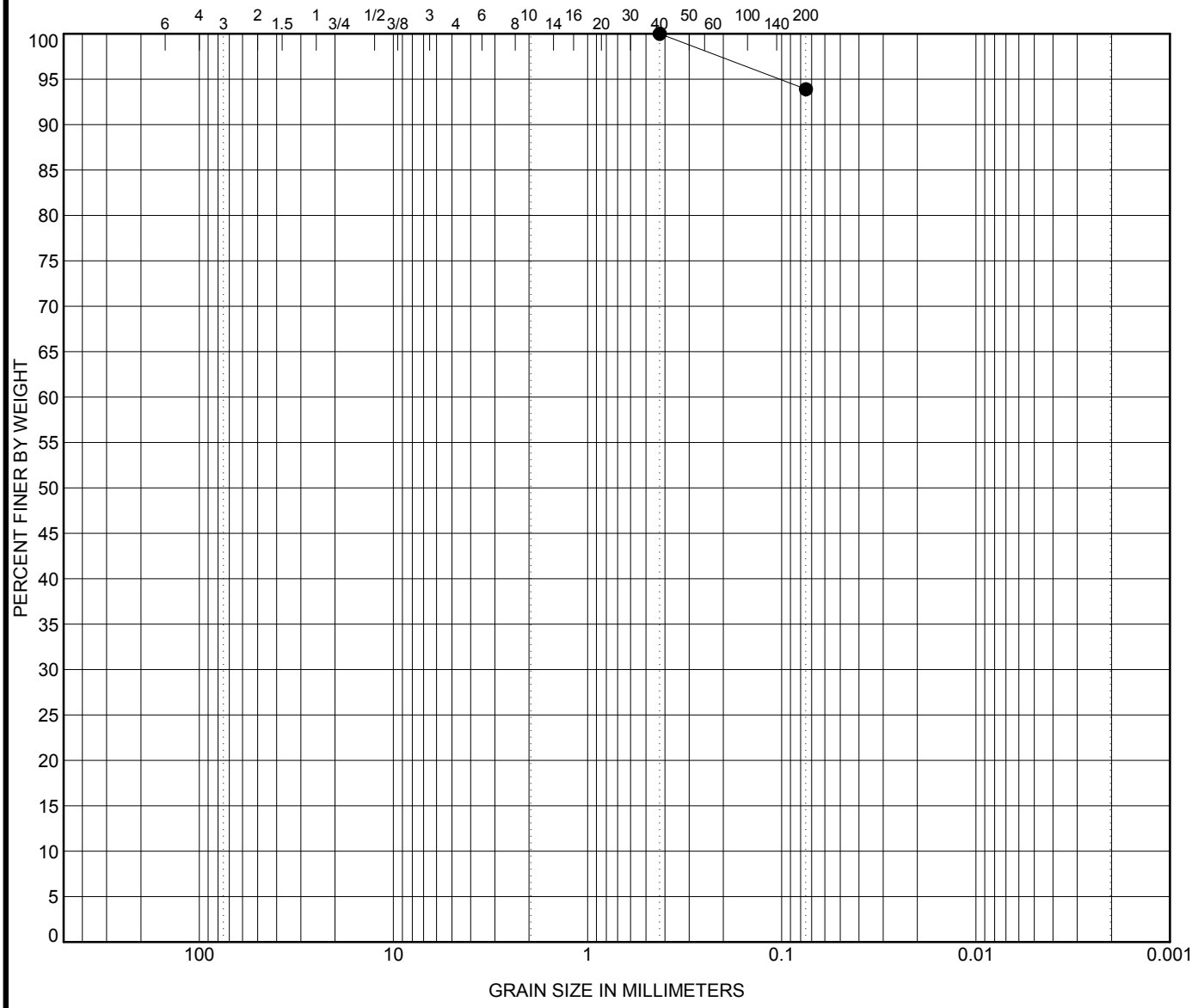
ATTERBERG LIMITS' RESULTS

Route: Weber Road

Section: Normantown Road to 135th Street/Romeo Road

County: Will County

ATTERBERG_LIMITS KNIGHTWEBERROAD-GINT.GPJ IL_DOT.GDT 12/17/14



COBBLES	GRAVEL	SAND		SILT	CLAY
		coarse	fine		

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	**RW-01**	**28.50**						

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**RW-01**	**28.50**	**0.425**				**0.0**	**6.1**	**93.9**	

Illinois Department of Transportation
Division of Highways
GSG CONSULTANTS INC.

IDH GRAIN SIZE DISTRIBUTION

Route: Weber Road

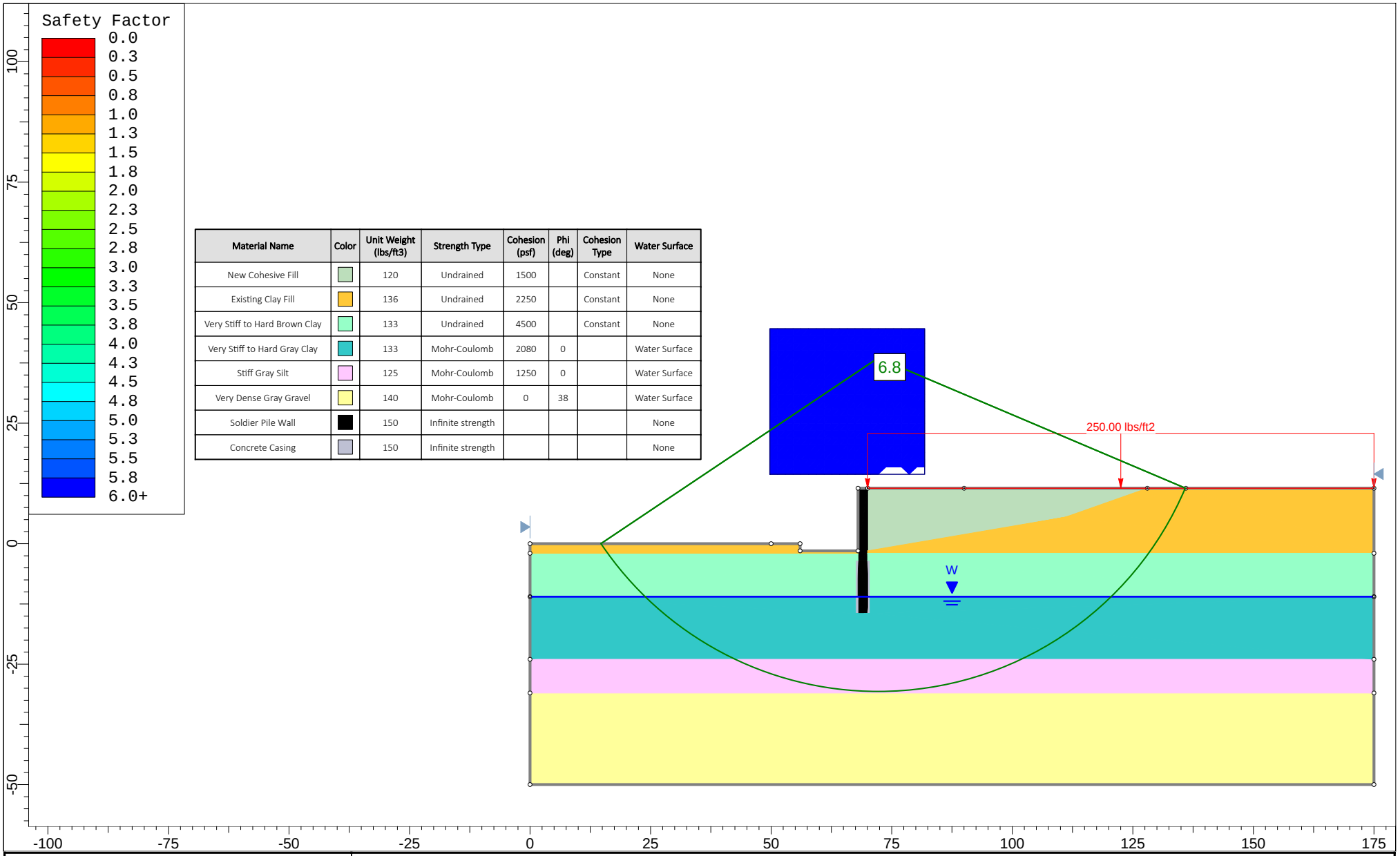
Section: Normantown Road to 135th Street/Romeo Road

County: Will County

GRAIN_SIZE_IDH_3-18-11 KNIGHTWEBERROAD-GINT.GPJ IL_DOT.GDT 12/17/14

APPENDIX E

SLOPE STABILITY ANALYSES

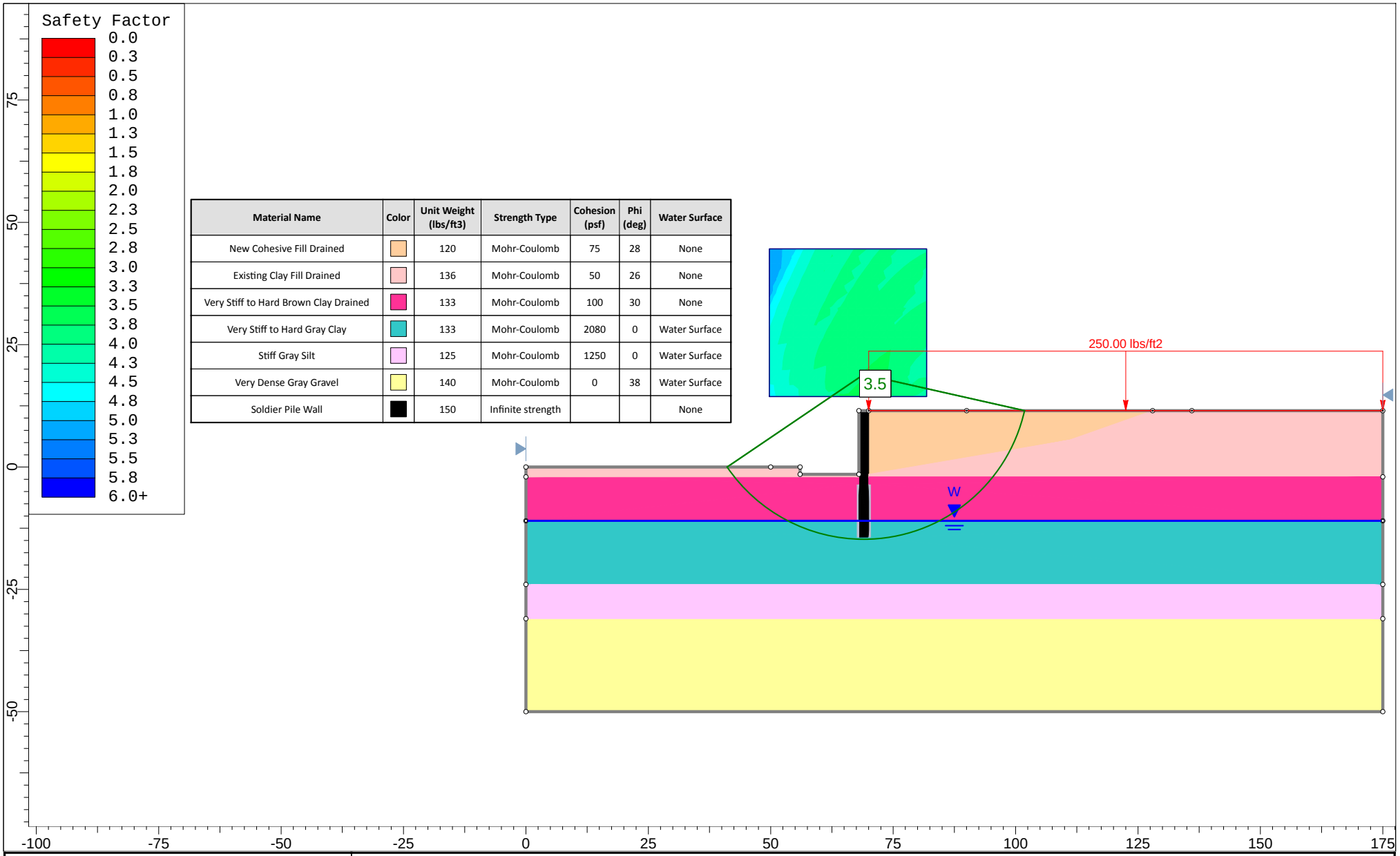


Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Cohesion Type	Water Surface
New Cohesive Fill		120	Undrained	1500		Constant	None
Existing Clay Fill		136	Undrained	2250		Constant	None
Very Stiff to Hard Brown Clay		133	Undrained	4500		Constant	None
Very Stiff to Hard Gray Clay		133	Mohr-Coulomb	2080	0		Water Surface
Stiff Gray Silt		125	Mohr-Coulomb	1250	0		Water Surface
Very Dense Gray Gravel		140	Mohr-Coulomb	0	38		Water Surface
Soldier Pile Wall		150	Infinite strength				None
Concrete Casing		150	Infinite strength				None

rocscience

SLIDEINTERPRET 6.033

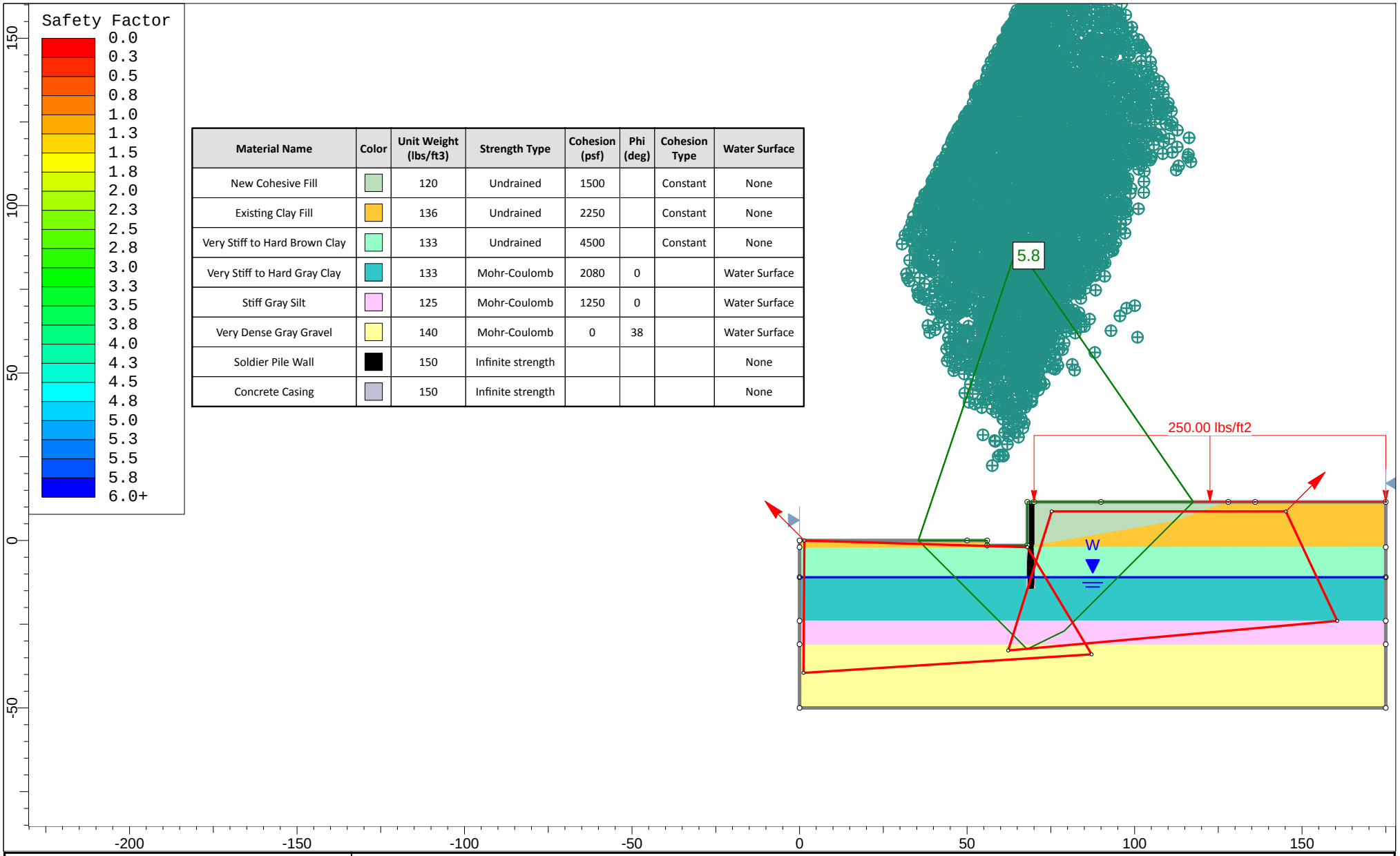
Project	Weber Road Retaining Wall		
Analysis Description	Exhibit 1_Circular Failure_Short Term		
Drawn By	KSC	*Scale* 1:330	*Company* GSG Consultants, Inc.
Date	1/20/2015, 12:34:44 PM		*File Name* Weber Road Ret Wall _Circular Short Term.slim



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface
New Cohesive Fill Drained		120	Mohr-Coulomb	75	28	None
Existing Clay Fill Drained		136	Mohr-Coulomb	50	26	None
Very Stiff to Hard Brown Clay Drained		133	Mohr-Coulomb	100	30	None
Very Stiff to Hard Gray Clay		133	Mohr-Coulomb	2080	0	Water Surface
Stiff Gray Silt		125	Mohr-Coulomb	1250	0	Water Surface
Very Dense Gray Gravel		140	Mohr-Coulomb	0	38	Water Surface
Soldier Pile Wall		150	Infinite strength			None

Project	Weber Road Retaining Wall		
Analysis Description	Exhibit 2_Circular Failure_Long Term		
Drawn By KSC	*Scale* 1:325	*Company* GSG Consultants, Inc.	
Date 1/20/2015, 12:34:44 PM		*File Name* Weber Road Ret Wall _Circular Long Term.slim	

SLIDEINTERPRET 6.033

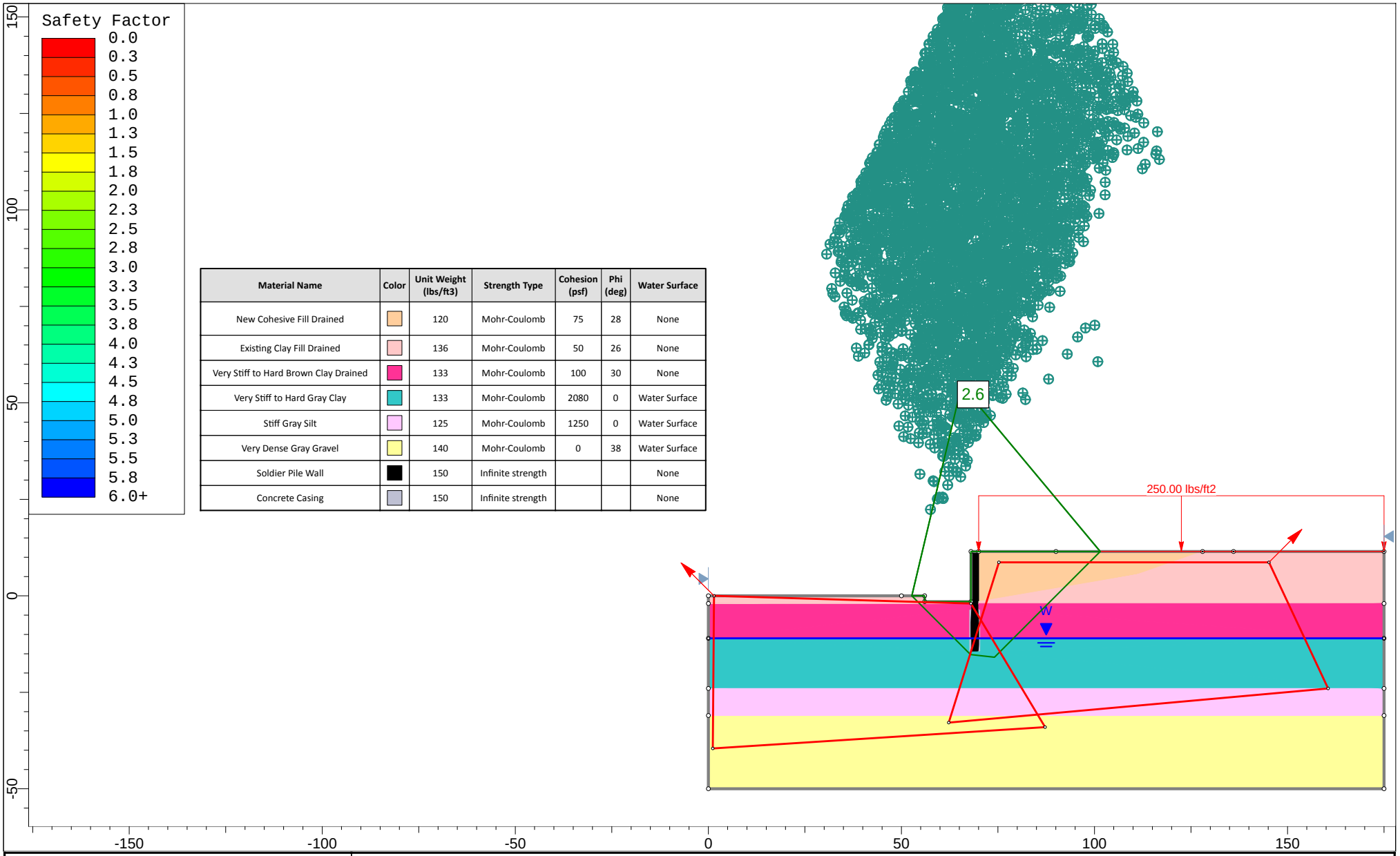


Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Cohesion Type	Water Surface
New Cohesive Fill		120	Undrained	1500		Constant	None
Existing Clay Fill		136	Undrained	2250		Constant	None
Very Stiff to Hard Brown Clay		133	Undrained	4500		Constant	None
Very Stiff to Hard Gray Clay		133	Mohr-Coulomb	2080	0		Water Surface
Stiff Gray Silt		125	Mohr-Coulomb	1250	0		Water Surface
Very Dense Gray Gravel		140	Mohr-Coulomb	0	38		Water Surface
Soldier Pile Wall		150	Infinite strength				None
Concrete Casing		150	Infinite strength				None

rocscience

SLIDEINTERPRET 6.033

Project	Weber Road Retaining Wall		
Analysis Description	Exhibit 3_Block Failure_Short Term		
Drawn By	KSC	Scale 1:475	Company GSG Consultants, Inc.
Date	1/20/2015, 12:34:44 PM		File Name Weber Road Ret Wall _Block Short Term.slim



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface
New Cohesive Fill Drained		120	Mohr-Coulomb	75	28	None
Existing Clay Fill Drained		136	Mohr-Coulomb	50	26	None
Very Stiff to Hard Brown Clay Drained		133	Mohr-Coulomb	100	30	None
Very Stiff to Hard Gray Clay		133	Mohr-Coulomb	2080	0	Water Surface
Stiff Gray Silt		125	Mohr-Coulomb	1250	0	Water Surface
Very Dense Gray Gravel		140	Mohr-Coulomb	0	38	Water Surface
Soldier Pile Wall		150	Infinite strength			None
Concrete Casing		150	Infinite strength			None

SLIDEINTERPRET 6.033

Project	Weber Road Retaining Wall		
Analysis Description	Exhibit 4_Block Failure_Long Term		
Drawn By	KSC	*Scale* 1:412	*Company* GSG Consultants, Inc.
Date	1/20/2015, 12:34:44 PM		*File Name* Weber Road Ret Wall _Block Long Term.slim