STRUCTURE GEOTECHNICAL REPORT

Retaining Wall 2

Structure No. 099-W802

South of Interstate 80 EB and Richards Street Ramp A

IDOT Job D-91-061-09 (PTB 152, Item 004)

Joliet, Will County, Illinois

Submitted to:

HBP Illinois Partners, JV
c/o HNTB
One South Wacker Drive
Suite 900
Chicago, Illinois 60606

Prepared by:

Geo Services, Inc.
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GSI Job No. 13125

Revised: July 16, 2020

Geo Services, Inc.
Geotechnical, Environmental and Civil Engineering
An MBE - DBE Firm

April 15, 2020
Revised July 16, 2020

HBP Illinois Partners, JV
One South Wacker Drive, Suite 900
Chicago, Illinois 60606

Attn: Mr. Dan Filice, P.E., S.E.
Bowman, Barrett, and Associates, Inc.

Job No. 13125

Re: Structure Geotechnical Report – Revised
Retaining Wall 2 – Structure No. 099-W802
Along Interstate 80 (EB) and South of Richards Street Ramp A
Joliet, Will County, Illinois
IDOT Job Number: D-91-061-09 (PTB 152, Item 004)

Dear Mr. Filice:

The following revised report presents the geotechnical analysis and recommendations for Retaining Wall 2 – Structure No. 099-W802 to be constructed along Interstate 80 (EB) and south of Richards Street Ramp A. A total of four (4) soil borings (RW-17 through RW-20) were completed. Copies of the boring logs along with a boring location plan are included in this report.

If there are any questions regarding the information submitted herein, please do not hesitate to contact us.

Very truly yours,

GEO SERVICES, Inc.

LICENSED PROFESSIONAL ENGINEER
MADHUSUDHANA RAO KARRI
062.071352
STATE OF ILLINOIS

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enc.

TABLE OF CONTENTS

SECTION 01: INTRODUCTION

This report presents the results of the geotechnical investigation for Retaining Wall 2 to be located along the Richards Street Ramp A to the southbound Richards Street at the intersection of Interstate 80 (eastbound) in Joliet, Will County, Illinois. The results of four (4) soil borings (RW-17 through RW-20) completed by Geo Services, along with a boring location plan are included with this report.

Boring locations were selected by Geo Services, Inc. and were reviewed and approved by HBP Illinois Partners, JV. Boring locations were located in the field by Geo Services, Inc. (GSI) personnel after review of accessibility and utility locations. Estimated elevations of the as-drilled borings were taken from the topographic and cross-section drawings provided by HBP. The as-drilled locations for the borings are shown on the Soil Boring Plan included in the Appendix.

This report includes descriptions of soil and groundwater conditions, recommendations pertaining to the design and construction of the retaining wall.

SECTION 02: PROJECT DESCRIPTION

As part of the I-80 Improvements project, (IDOT Job D-91-061-09), a retaining wall is proposed to retain the Ramp A alignment near the southwest corner of Richards Street and I-80 EB. The new retaining wall will begin from approximate Station 106+62.75 extending to about Station 109+98.88 and will have a total length of approximately 363 feet. Based on the TSL plans available to us, the estimated top of leveling pad elevations will range approximately between 540.5 to 545.0 feet. The retaining wall will have a maximum wall height of approximately 17’-3”.

SECTION 03: SUBSURFACE INVESTIGATION PROCEDURES

The borings were performed in March 2020 with a truck-mounted drilling rig and were advanced by means of hollow stem auger techniques. After a depth of 10 feet, the borings were advanced by using mud rotary and/or rock coring procedures. Representative soil samples were obtained by using split spoon sampling procedures in accordance with AASHTO Method T-206. Samples obtained in the field were returned to our laboratory for further examination and testing. Bedrock cores were also obtained using an NX-size double tube core barrel with a diamond impregnated bit. Samples obtained in the field were returned to our laboratory for further examination and testing.

Split spoon sampling involves driving a 2.0-inch outside diameter split-barrel sampler into the soil with a 140-pound weight falling freely through a distance of 30 inches. Blow counts are recorded at 6" intervals and the blow counts are shown on the boring logs. The number of blows required to advance the sampler the last 12 inches is termed the

Standard Penetration Resistance (N). The N value is an indication of the relative density of the soil.

SECTION 04: LAB TESTING PROGRAM

The test procedures were performed in accordance with test procedures discussed in the IDOT Geotechnical Manual. All split-spoon samples obtained from the drilling operation were visually classified in the field.

The soil testing program included performing water content tests of the non-cohesive samples recovered. The test was performed upon representative portions of the samples obtained in the field. In addition, unconfined compressive testing was performed on rock cores obtained from the field and are indicated on the rock core logs.

The results of the laboratory testing, along with visual classifications of the materials based upon both the Illinois textural classification and the AASHTO Soil Classification System, are indicated on the boring logs.

SECTION 05: SUBSURFACE CONDITIONS

The following sections provide general descriptions of the typical soil profiles encountered in the area of the proposed retaining wall. Specific soil conditions can be found in the boring logs located in the Appendix section of the report.

Approximately 12 to 18 inches of asphalt underlain by 4 to 24 inches of crushed stone aggregate or about 15 inches of topsoil was encountered at the surface of the borings. Below the surficial materials, subsurface soils encountered in the borings generally consisted of clay loam to silty clay loam and clayey sand and silt with varying amounts of gravel to depths of about 18 to 32 feet. Below this, native soils consisting of loose to medium dense silt loam were encountered to depths of about 18 to 37.5 feet.

It should be noted that below the fill in borings RW-18 and RW-19, a layer of silty loam with varying amounts of organics (with organic content of 3.0 to 4.2 percent) was encountered to depths of about 28 to 32 feet. A summary of organic content test results is presented in Table 1 below.

Table 1 – Laboratory Testing Results: Organic Content

Boring	Sample Depth (feet)	Organic Content (%)
RW-18	28.5 – 30.0	3.0
RW-19	26.0 – 27.5	4.2

Below the overburden soils, highly to moderately fractured and weathered bedrock was encountered. Bedrock coring was performed in the borings extending to their termination depths of about 30 to 46.5 feet below existing grade. A summary of the bedrock information obtained during our exploration is tabulated in Table 2.

Table 2 – Bedrock Information Summary

Boring	Station (Alignment)	Offset	Top of Bedrock Elevation (feet)	RQD	Compressive Strength (psi)
RW-17	Sta. 722+92 (I-80)	68.2' Right	518.9	39.0%	7,835
RW-18	Sta. 723+90 (I-80)	82.0' Right	520.5	48.3%	11,785
RW-19 Run 1	Sta. 724+89 (I-80)	99.0' Right	522.7	8.0%	4,800
RW-19 Run 2	Sta. 724+89 (I-80)	99.0' Right	522.7	43.8%	4,260
RW-20	Sta. 725+84 (I-80)	128.0' Right	532.0	41.0%	3,725

SECTION 06: WATER TABLE CONDITIONS

Borings were observed during and after the completion of drilling for the presence and level of water. Water was not observed in borings RW-17 and RW-18 at least to depths of about 10 feet before the drilling fluid was introduced. During drilling, water was observed at depths of about 7 feet below existing grade (El. 543.0 to 544.2 feet) in borings RW-19 and RW-20. However, due to the granular nature of fill materials encountered in borings RW-19 and RW-20, the apparent water observed may likely due to a perched condition within the fill materials. Therefore, the long-term groundwater level can be assumed at the interface of cohesive fill materials and granular native soils at approximate elevation of 524 to 532 feet or at least at a depth of about 18 feet below existing grade. Fluctuations in the amount of water accumulated and in the hydrostatic water table can be anticipated depending on variations in precipitation and surface runoff.

SECTION 07: ANALYSES

Settlement

Based on the preliminary information provided, we understand that approximately 14 feet of new embankment fill will be required for the proposed widening. Due to the weight of the new fill, settlements on the order of 1 inch or less are estimated. Differential settlements on the order of ½ to 2/3 of total settlement are anticipated.

Slope Stability

For preliminary global slope stability calculations, a mechanically stabilized earth (MSE) retaining wall type with a height of approximately 17'-3" was used in our analysis. The wall foundations are anticipated to be supported on medium stiff to stiff clay loam soils at a depth of at least 3.5 feet. A slope stability program (STABL V3.0) was used to calculate factors of safety (FOS) at a typical cross-section at approximate Station 106+75 along the proposed wall alignment. A traffic surcharge load of 250 psf was considered. We calculated a Factor of Safety (FOS) of 2.9 for undrained (short-term) condition and a FOS of 1.8 for the drained (long-term) conditions, which satisfies the Factor of Safety requirement (FOS ≥ 1.5) per IDOT slope stability criteria. No slope stability issues were identified.

SECTION 08: FOUNDATION RECOMMENDATIONS

Recommended Wall Type Options

Based on the soil conditions encountered within our borings as shown on the logs, and the proposed wall/ site geometry (fill area), recommended wall types include cast-in-place or precast concrete (gravity/ non-gravity type) walls supported on shallow spread footing foundations or Mechanically Stabilized Earth (MSE) walls.

The most appropriate retaining wall type will depend on factors such as site geometry (existing/proposed slopes, wall heights), existing site conditions, as well as cost-effectiveness, constructability, and schedule. The following provides a general discussion of soil conditions as they relate to the retaining wall construction.

Shallow Foundation Recommendations

Based on the TSL plans and cross-sections available, the top of leveling pad elevation was estimated approximately as 540.5 to 545.0 feet. The top of leveling pad elevation should be at least 3.5 feet below the finished grade elevation for frost protection. Based on this, the proposed wall footing foundations are expected to be supported on native stiff clay loam fill materials. A summary of the bearing analyses for different wall types is provided in the following table.

Table 4 – Shallow Foundation Design Parameters

Foundation - Wall Type	Top of Leveling Pad Elevation (feet)	Anticipated Bearing Material	Estimated Bearing Resistance (psf)	
			Allowable[1]	Factored[2]
Spread Footings - Concrete Walls	540.5 to 545.0	Stiff to Very Stiff Clay Fill or Medium Dense to Dense Clayey Sand/ Gravel Fill	4,000	6,600
MSE Wall	540.5 to 545.0	Stiff to Very Stiff Clay Fill or Medium Dense to Dense Clayey Sand/ Gravel Fill	4,000	7,800

1. Factor of Safety of 3.0 was used to calculate the Allowable Bearing as per ASD method.
2. Factored Bearing Resistance is computed for a resistance factor of 0.55 for gravity or semi-gravity walls and a factor of 0.65 can be used for MSE type walls as per LRFD Table 11.5.7.1.

We recommend using a resistance factor against sliding of 1.0 for MSE walls as per LRFD Table 11.5.7.1 and 0.85 for cast in-place concrete on clay and 0.50 for passive earth pressure component against sliding resistance as per LRFD Table 10.5.5.2.2-1.

If materials with less than adequate bearing strength are noted at the foundation level during footing construction, the weaker material encountered at the base of the footings should be undercut to reach suitable soil, and the undercut area filled with structural fill rockfill or crushed aggregate materials. Significant undercuts are not anticipated at the foundation bearing elevations based on the soils encountered in the borings. However, since the soils encountered at the anticipated bearing elevation in all the three borings consisted of fill materials, we recommend assuming 10% of the shallow foundations to require at least 12 inches of nominal depth of undercut for budgeting purposes to account for variability of fill and/or any unsuitable soils.

Subgrade soils at the foundation bearing elevations should be verified in the field at the time of construction by an experienced Geotechnical Engineer or their representative. Actual extents of any remedial treatments shall be determined at that time. If soils with less than adequate bearing strength are noted at the foundation level during footing foundation construction, the weaker soils should be undercut to reach suitable bearing materials and the undercut area backfilled with lean concrete. Structural fill used to support footings shall be extended at least 12 inches beyond the proposed footing limits and then 1 foot horizontally for each 1 foot of fill placed below the base of the footing. Any new structural fill shall consist of inorganic material and free of debris. Suitable fill materials include crushed granular materials meeting the gradation requirements of IDOT CA-1, CA-6, or CA-7.

Structural fill shall be placed in loose lifts having a maximum of 8 inches in thickness. For IDOT CA-6 type fill, the material should be compacted to a minimum of 95% of the maximum dry density obtained in accordance with modified Proctor method (ASTM D-1557). The moisture content of the fill shall be within +/- 2% of the optimum moisture

content. IDOT CA-1 and CA-7 type materials can be compacted by placing in lifts and rolling with a smooth drum vibratory compactor or thoroughly tamping with the bucket of a backhoe.

Embankment fill behind the retaining wall should be placed in compliance with Section 205 of the IDOT Standard Specifications for Road and Bridge Construction. Backfill behind the wall should consist of a compacted, free-draining granular material.

A proper drainage system should be designed and provided behind cantilever wall (or MSE and gravity wall, if used) design. The chosen retaining wall type should be designed by an Illinois licensed Structural Engineer.

SECTION 09: CONSTRUCTION CONSIDERATIONS

Excavations in excess of 4 feet shall have side-slopes in accordance with OSHA safety standards and requirements. Movement of adjacent soils near the edge of and into excavation areas should be prevented.

Any temporary soil retention system shall be designed by the Contractor (or as directed by the Engineer) as specified in IDOT GBSP 44. Allowances should be made for any surcharge loads adjacent to the excavation areas. The information provided below should not be interpreted to mean that Geo Services Inc. is assuming responsibility for construction site safety or the contractor's activities. Construction site safety is the sole responsibility of the contractor, who should also be solely responsible for the means, methods, and sequencing of construction operations.

The OSHA Occupational Safety and Health Standards-Excavations classify soils into three basic types (Type A, B, and C). Depending upon the soil type, OSHA requirements for temporary excavation slopes range from 3/4H to 1V (horizontal to vertical) for Type A soils, 1H to 1V for Type B soils, and 1-1/2H to 1V for Type C soils. Per OSHA, any excavation extending to a depth of more than 20 feet shall be designed by a licensed professional engineer.

Based upon the subsurface conditions encountered at the boring locations, the excavations should be expected to extend through predominately stiff to very stiff cohesive soils (embankment fill). The cohesive fill material sampled in the borings typically exhibited unconfined compressive strengths in excess of 0.5 tsf. Cohesive soils having unconfined compressive strengths greater than 0.5 tsf but less than 1.5 tsf classify as Type B soils according to OSHA regulations. Considerations should be given to the allowable construction easement when developing the excavation plan. Particular caution should be exercised if excavations are performed near existing utility lines. Existing backfill for utility lines is often poorly compacted and the limits of the old excavation form a ready failure surface. The OSHA trench safety guidelines for adequate side slopes based on the soil types may not apply in these situations.

According to IDOT Standard Construction Specifications, all new embankments to be placed on existing slopes, 3H:1V or steeper, must be keyed to the existing slopes by stepping and benching to avoid future sliding of the new embankments over the existing slopes.

SECTION 10: GENERAL QUALIFICATIONS

The analysis and recommendations presented in this report are based upon the data obtained from the soil borings performed at the indicated locations and from any other information discussed in this report. This report does not reflect any variations that may occur between borings or across the site. In addition, the soil samples cannot be relied on to accurately reflect the strata variations that usually exist between sampling locations. The nature and extent of such variations may not become evident until construction. If variations appear evident, it will be necessary to reevaluate the recommendations of the report. In addition, it is recommended that Geo Services Inc. be retained to perform construction observation and thereby provide a complete professional geotechnical engineering service through the observational method.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No other warranties, either expressed or implied, are intended or made. In the event that any changes in the nature, design or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions of this report modified or verified in writing by the geotechnical engineer. Also note that Geo Services Inc. is not responsible for any claims, damages, or liability associated with any other party's interpretation of this report's subsurface data or reuse of the report's subsurface data or engineering analyses without the express written authorization of Geo Services Inc.

APPENDIX A

GENERAL NOTES

GENERAL NOTES

CLASSIFICATION

American Association of State Highway & Transportation Officials (AASHTO) System used for soil classification.

Cohesionless Soils

Relative Density	No. of Blows per foot N
Very Loose	0 to 4
Loose	4 to 10
Medium Dense	10 to 30
Dense	30 to 50
Very Dense	Over 50

Cohesive Soils

Consistency	Unconfined Compressive Strength - qu (tsf)
Very Soft	Less than 0.25
Soft	0.25 - 0.5
Medium Stiff	0.5 - 1.0
Stiff	1.0 - 2.0
Very Stiff	2.0 - 4.0
Hard	Over 4.0

TERMINOLOGY

Streaks are considered to be paper thick. **Lenses** are considered to be less than 2 inches thick. **Layers** are considered to be less than 6 inches thick. **Stratum** are considered to be greater than 6 inches thick.

DRILLING AND SAMPLING SYMBOLS

SS:	Split Spoon 1-3/8" I.D., 2" O.D.	HS:	Housel Sampler
ST:	Shelby Tube 2" O.D., except where noted	WS:	Wash Sample
AS:	Auger Sample	FT:	Fish Tail
DB:	Diamond Bit - NX: BX: AX	RB:	Rock Bit
CB:	Carboloy Bit - NX: BX: AX	WO:	Wash Out
OS:	Osterberg Sampler		

Standard "N" Penetration: Blows per foot of a 140 lb. hammer falling 30" on a 2" O.D. Split Spoon

WATER LEVEL MEASUREMENT SYMBOLS

WL:	Water	WD:	While Drilling
WCI:	Wet Cave In	BCR:	Before Casing Removal
DCI:	Dry Cave In	ACR:	After Casing Removal
WS:	While sampling	AB:	After Boring

Water levels indicated on the boring logs are the levels measured in the boring at the times indicated. In pervious soils, the indicated elevations are considered reliable ground water levels. In impervious soils, the accurate determination of ground water elevations is not possible in even several days observation, and additional evidence on ground water elevations must be sought.

APPENDIX B

BORING LOCATION PLAN AND PROFILE

PROP ℄ RICHARDS RAMP D

PROP ℄ RICHARDS RAMP D

JOLIET

RICHARDS STREET

WB I-80

EB I-80

RW-17

RW-18

RW-19

RW-20

WALL 2

EXIST ℄ RICHARDS RAMP A

EXIST ℄ RICHARDS RAMP B

Abandoned

OVERHEAD SIGN

SIGN

TREES

SCRUB

HICKORY CREEK

120+00

125+00

130+00

135+00

140+00

705+00

710+00

720+00

725+00

730+00

PLAN

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

NOTE BOOK
NO.

BY

DATE

PROFILE

SURVEYED
PLOTTED
GRADES CHECKED
BM. NOTED
STRUCTURE NOTATNS CHKD

NOTE BOOK
NO.

BY

DATE

Geo Services, Inc.
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Naperville, Illinois 60565
(630) 355-2838

USER NAME =	DESIGNED - RWC	REVISED -	
	DRAWN - RWC	REVISED -	
PLOT SCALE =	CHECKED - AJP	REVISED -	
PLOT DATE =	DATE - 4/4/2020	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INTERSTATE I-80 PHASE 2
RETAINING WALL 2 I-80 EB BETWEEN HICKORY CREEK & RICHARDS ST
SOIL BORING PLAN

SCALE: 1"=50' | SHEET NO. 1 OF 1 SHEETS | STA. - | TO STA. -

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80		WILL	-	-
IDOT JOB No. D-91-061-09				
ILLINOIS FED. AID PROJECT				

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

PROFILE
SURVEYED
PLOTTED
CROSS SECTIONS CHKD
BM. NOTED
STRUCTURE NOTATIONS CHKD
NOTE BOOK
NO.
DATE
BY

565 560 555 550 545 540 535 530 525 520 515 510 505 500 495

RW-17
722+92
68.2' Right
556.4

	N	Qu	W%
PAVEMENT	9	3.5P	21
	12	2.0P	15
	23	3.9B	12
CLAY LOAM (FILL)	16	3.0P	17
	8	0.8B	18
	9	2.0P	16
	25	1.5P	16
	16	4.5P	17
	21	4.0P	20
	20	2.5P	18
	28	3.5P	15
	28		16
SILTY LOAM TO LOAM	8		22
	50/1"		NR
BEDROCK			

EOB

RW-18
723+90
82.0' Right
554.0

	N	Qu	W%
PAVEMENT	32		2
CRUSHED STONE	31		5
CLAY LOAM (FILL)	12	1.7B	14
	20		16
SILT W/ GRAVEL (FILL)	22		17
	9	1.5P	16
CLAY LOAM (FILL)	26	2.0P	17
CLAYEY SILT (FILL)	30		11
SILTY CLAY LOAM (FILL)	31	2.2B	14
	23	1.3B	16
CLAYEY SAND & GRAVEL (FILL)	16		22
SILTY CLAY W/ ORGANICS	8	2.0P	40
FRACTURED ROCK	50/1		16
BEDROCK			

EOB

RW-19
724+89
99.0' Right
551.2

	N	Qu	W%
PAVEMENT	17		16
CLAYEY SAND W/ STONE (FILL)	24		10
	22		22
	16		19
	17		23
CRUSHED STONE	20		11
	29		6
	30		4
COBBLES (FILL)	50/0"		NR
CLAYEY SAND W/ SILT (FILL)	31		12
SILTY CLAY W/ ORGANICS	14		41
BEDROCK	50/0"		NR

EOB

RW-20
725+84
127.8' Right
550.0

	N	Qu	W%
PAVEMENT	6		4
CRUSHED ASPHALT	21	3.0P	17
CLAY LOAM W/ STONE (FILL)	33		17
CLAYEY GRAVEL (FILL)	25		13
	12		18
CLAYEY STONE & GRAVEL (FILL)	34		13
	29		11
BEDROCK	50/0"		NR

EOB

LEGEND

BORING NUMBER
STATION
OFFSET
ELEVATION

N-VALUE

N	Qu	W%
10	2.5P	22
9	NP	7
16	1.5B	14
27	-	12

EOB

SOIL STRENGTH (TSF)
B-BULGE
S-SHEAR
P-POCKET PENETROMETER

MOISTURE CONTENT (%)
NR=NO RECOVERY

GROUNDWATER ELEVATION
▼ FIRST ENCOUNTER
▽ AT COMPLETION
▽ 24 HRS WATER LEVEL

EOB=END OF BORING

5 0 5 10
VERTICAL SCALE: 1"=5'-0"

50 0 50 100
HORIZONTAL SCALE: 1"=50'-0"

717+00 718+00 719+00 720+00 721+00 722+00 723+00 724+00 725+00 726+00 727+00 728+00 729+00 730+00 731+00

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	DRAWN - RWC	REVISED -	
PLOT SCALE =	CHECKED - AJP	REVISED -	
PLOT DATE =	DATE - 4/4/2020	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INTERSTATE I-80 PHASE 2
RETAINING WALL 2 I-80 EB BETWEEN HICKORY CREEK & RICHARDS ST
SOIL BORING PLAN

SCALE: 1"=50'H 1"=5'V | SHEET NO. 1 OF 1 SHEETS | STA. - | TO STA. -

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80		WILL	-	-
IDOT JOB No. D-91-061-09				
ILLINOIS FED. AID PROJECT				

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APPENDIX C

BORING LOGS

Geo Services, Inc.
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(630) 355-2818

SOIL BORING LOG

GSI Job No. 13125

Page 1 **of** 1

Date 3/26/20

ROUTE F.A.I RTE. 80 **DESCRIPTION** I-80 Phase II (Near Term) **LOGGED BY** TZ

SECTION 2013-008B & 2013-009B **LOCATION** SW 1/4, **SEC.** 15, **TWP.** T35N, **RNG.** R10E, 3rd **PM**

COUNTY Will **DRILLING METHOD** Hollow Stem Auger/Rotary **HAMMER TYPE** CME Automatic

STRUCT. NO. _____
Station _____

BORING NO. RW-17
Station 722+92
Offset 68.20ft Right
Ground Surface Elev. 556.43 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter Dry to 10.0' ft
Upon Completion n/a ft
After _____ **Hrs.** _____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
18.0" ASPHALT, 4.0" CRUSHED STONE			
	4		
554.60	4	3.5	21
CLAY LOAM-brown & gray-very stiff to hard (Fill)	5	P	
	4		
	4	2.0	15
-5	8	P	
	5		
	9	3.9	12
	14	B	
	3		
	6	3.0	17
-10	10	P	
	3		
	3	0.8	18
	5	B	
	3		
	4	2.0	16
-15	5	P	
	8		
	12	1.5	16
	13	P	
	9		
	8	4.5	17
-20	8	P	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY LOAM-brown & gray-very stiff to hard (Fill) *(continued)*			
	8		
	12	4.0	20
	9	P	
	6		
	7	2.5	18
-25	13	P	
	11		
	13	3.5	15
	15	P	
	7		
	10		16
-30	18		
524.43			
SILTY LOAM to LOAM-dark brown & gray-loose			
	4		
	4		22
-35	4		
518.93			
Drillers Observation: Apparent bedrock			
	50/1"		
516.93			NR
Borehole continued with rock coring. -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), GP-Geoprobe Hand Auger
BBS, from 137 (Rev. 8-99)

Z:\PROJECTS\2013\13125 HNTB, I-80 PHASE II (NEAR TERM)\13125 BORING LOGS\13125_LOG.GPJ 4/20/20

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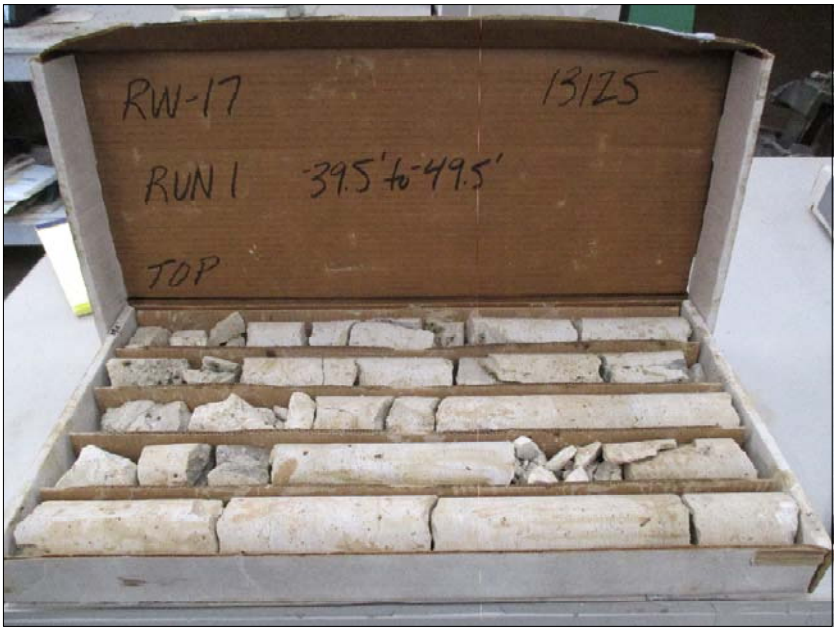
ROCK CORE LOG

PAGE 1 of 1
DATE 3/36/2020
LOGGED BY RJ
GSI JOB No. 13125

ROUTE -- DESCRIPTION I-80 Reconstruction (Near Term Phase 2)
SECTION -- LOCATION SEC 15, T35N, R10E, SW 1/4, 3rd PM
COUNTY Will CORING METHOD Rotary Wash
STRUCT. NO. -- CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Station -- Core Diameter 2.0 in
BORING NO. **RW-17** Top of Rock Elev. 518.9
Station 722+92 Begin Core Elev. 516.9
Offset 68.2' Right
Ground Surface Elev. 556.4

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
	1	97.0	39.0	n/a	560 @ 46.2'
-44.5					
-49.5					

SILURIAN SYSTEM, NIAGARAN SERIES DOLOMITE
RUN 1 (-39.5' to -49.5')
Light gray & porous with horizontal to wavy bedding. Numerous horizontal fractures throughout with some light weathering.



Color pictures of the cores Yes Cores will be stored for examination for -
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

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Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2818

SOIL BORING LOG

GSI Job No. 13125

Page 1 **of** 1

Date 3/30/20

ROUTE F.A.I RTE. 80 **DESCRIPTION** I-80 Phase II (Near Term) **LOGGED BY** TZ

SECTION 2013-008B & 2013-009B **LOCATION** SW 1/4, **SEC.** 15, **TWP.** T35N, **RNG.** R10E, 3rd **PM**

COUNTY Will **DRILLING METHOD** Hollow Stem Auger/Rotary **HAMMER TYPE** CME Automatic

STRUCT. NO. _____
Station _____

BORING NO. RW-18
Station 723+90
Offset 82.00ft Right
Ground Surface Elev. 554.02 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter Dry to 10.0' ft
Upon Completion n/a ft
After _____ **Hrs.** _____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				15.0" ASPHALT
				552.77
	21			CRUSHED STONE-medium dense to dense
	10		2	
	22			
	15			
	24		5	
-5	7			
				548.52
	13			CLAY LOAM-brown & gray-stiff to very stiff (Fill)
	5	1.7	14	
	7	B		
	7			
				545.02
	10		16	SILT with GRAVEL-gray-medium dense (Fill)
-10	10			
	8			
	10		17	
	12			
				541.02
	5			CLAY LOAM-gray-stiff (Fill)
	4	1.5	16	
-15	5	P		
	6			
	11	2.0	17	
	15	P		
	9			
				535.02
	13		11	CLAYEY SILT with GRAVEL-gray-dense (Fill)
-20	17			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				533.52
	9			SILTY CLAY LOAM-gray-stiff to very stiff (Fill)
	15	2.2	14	
	16	B		
	7			
	11	1.3	16	
-25	12	B		
				528.52
	5			CLAYEY SAND & GRAVEL-black-medium dense (Fill)
	8		22	
	8			
				526.02
	4			SILTY CLAY with Organics-dark brown, gray & black-loose (Organic Content @ 28.5'-30.0' =3.0%)
	4	2.0	40	
-30	4	P		
				522.02
				FRACTURED ROCK-gray-very dense
				520.52
	50/1"			Drillers Observation: Apparent bedrock
			16	
-35				
				518.02
				Borehole continued with rock coring.
-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), GP-Geoprobe Hand Auger
BBS, from 137 (Rev. 8-99)

Z:\PROJECTS\2013\13125 HNTB, I-80 PHASE II (NEAR TERM)\13125 BORING LOGS\13125_LOG.GPJ 4/20/20

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805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

ROCK CORE LOG

DATE 3/30/202

LOGGED BY RJ

GSI JOB No. 13125

ROUTE -- DESCRIPTION I-80 Reconstruction (Near Term Phase 2)

SECTION -- LOCATION SEC 15, T35N, R10E, SW 1/4, 3rd PM

COUNTY Will CORING METHOD Rotary Wash

STRUCT. NO. -- CORING BARREL TYPE & SIZE NX Double Swivel-10 ft

Station --

BORING NO. **RW-18**

Station 723+90

Offset 82.0' Right

Ground Surface Elev. 554.0

Core Diameter 2.0 in

Top of Rock Elev. 520.5

Begin Core Elev. 518.0

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
	1	100.0	48.3	n/a	850 @ 45.3'
-41.0					
-46.0					

SILURIAN SYSTEM, NIAGARAN SERIES DOLOMITE
RUN 1 (-36' to -46.0')
Light gray to gray with & porous with horizontal bedding. Numerous horizontal fractures throughout with some chert inclusions.

Color pictures of the cores Yes Cores will be stored for examination for -

The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

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SOIL BORING LOG

GSI Job No. 13125

Page 1 **of** 1

Date 3/31/20

ROUTE F.A.I RTE. 80 **DESCRIPTION** I-80 Phase II (Near Term) **LOGGED BY** TZ

SECTION 2013-008B & 2013-009B **LOCATION** SW 1/4, **SEC.** 15, **TWP.** T35N, **RNG.** R10E, 3rd **PM**

COUNTY Will **DRILLING METHOD** Hollow Stem Auger/Rotary **HAMMER TYPE** CME Automatic

STRUCT. NO.
Station

BORING NO. RW-19
Station 724+89
Offset 99.00ft Right
Ground Surface Elev. 551.18 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter 544.2 ft ▼
Upon Completion n/a ft
After ____ **Hrs.** ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
15.0" TOPSOIL			
549.93			
CLAYEY SAND with Stone-dark brown, gray & black-medium dense (Fill)	5		
	6 11		16
	7		
	14 10		10
-5			
	16		
▼	12 10		22
	6		
	7 9		19
-10			
	7		
	8 9		23
538.18			
CRUSHED STONE-medium dense to dense (Fill)	9		
	11 9		11
-15			
	11		
	12 17		6
	6		
	10 20		4
-20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CRUSHED STONE-medium dense to dense (Fill) *(continued)*			
530.18			
Drillers Observation: Cobbles (Fill)	-		
	- -		NR
528.18			
CLAYEY SAND with SILT & GRAVEL-dark brown, gray & black-medium dense (Fill)	17		
	18 13		12
-25			
525.68			
SILTY CLAY with Organics-dark gray to black-medium dense (Organic Content @ 26.0'-27.5' = 4.2%)	4		
	4 10		41
523.18			
Drillers Observation: Apparent bedrock	50/0"		
			NR
521.18 -30			
Borehole continued with rock coring.			
-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), GP-Geoprobe Hand Auger
BBS, from 137 (Rev. 8-99)

Z:\PROJECTS\2013\13125 HNTB, I-80 PHASE II (NEAR TERM)\13125 BORING LOGS\13125_LOG.GPJ 4/20/20

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ROCK CORE LOG

DATE 3/31/2020

LOGGED BY RJ

GSI JOB No. 13125

ROUTE -- DESCRIPTION I-80 Reconstruction (Near Term Phase 2)

SECTION -- LOCATION SEC 15, T35N, R10E, SW 1/4, 3rd PM

COUNTY Will CORING METHOD Rotary Wash

STRUCT. NO. -- CORING BARREL TYPE & SIZE NX Double Swivel-10 ft

Station -- Core Diameter 2.0 in

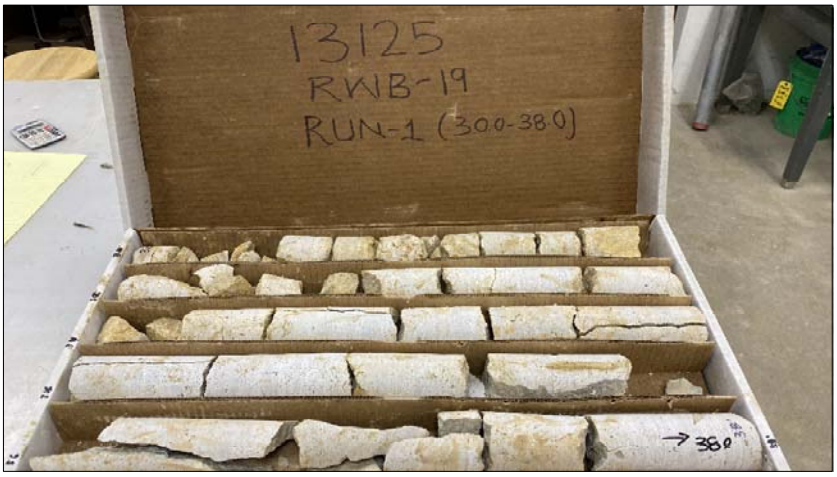
BORING NO. **RW-19** Top of Rock Elev. 522.7

Station 724+89 Begin Core Elev. 521.2

Offset 99.0' Right

Ground Surface Elev. 551.2

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
SILURIAN SYSTEM, NIAGARAN SERIES DOLOMITE RUN 1 (-30.0' to -38.0') Light gray with horizontal bedding. Numerous horizontal fractures throughout with some light weathering & rust staining.	1	100.0	8.0	n/a	350 @ 37.5'
-35.0					
-38.0					



Color pictures of the cores Yes Cores will be stored for examination for -

The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

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ROCK CORE LOG

DATE 3/31/2020

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GSI JOB No. 13125

ROUTE -- DESCRIPTION I-80 Reconstruction (Near Term Phase 2)

SECTION -- LOCATION SEC 15, T35N, R10E, SW 1/4, 3rd PM

COUNTY Will CORING METHOD Rotary Wash

STRUCT. NO. -- CORING BARREL TYPE & SIZE NX Double Swivel-10 ft

Station -- Core Diameter 2.0 in

BORING NO. **RW-19** Top of Rock Elev. 522.7

Station 724+89 Begin Core Elev. 521.2

Offset 99.0' Right

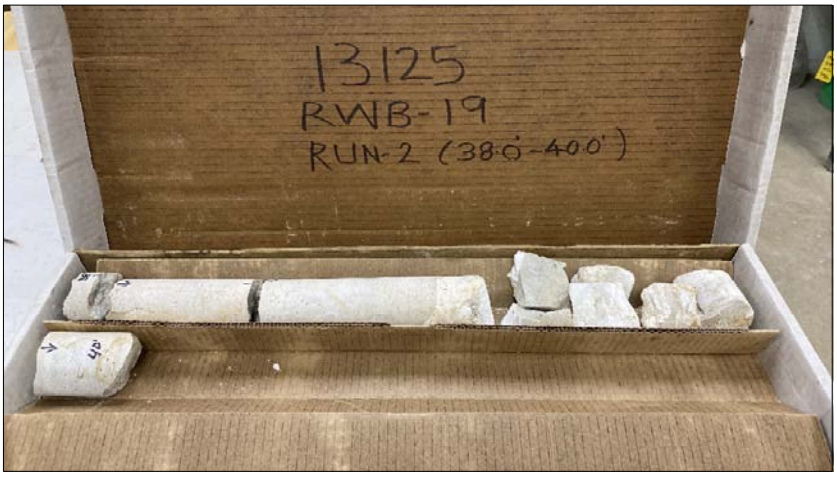
Ground Surface Elev. 551.2

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
	2	100.0	43.8	n/a	310 @ 38.6'

SILURIAN SYSTEM, NIAGARAN SERIES DOLOMITE
RUN 2 (-38.0' to -40.0')
Light gray to gray with & slightly porous with horizontal. Numerous horizontal fractures throughout with some large chert nodules.

-40.0

-14



Color pictures of the cores Yes Cores will be stored for examination for -

The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

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SOIL BORING LOG

GSI Job No. 13125

Date 4/2/20

ROUTE F.A.I RTE. 80 **DESCRIPTION** I-80 Phase II (Near Term) **LOGGED BY** TZ

SECTION 2013-008B & 2013-009B **LOCATION** SW 1/4, **SEC.** 15, **TWP.** T35N, **RNG.** R10E, 3rd **PM**

COUNTY Will **DRILLING METHOD** Hollow Stem Auger/Rotary **HAMMER TYPE** CME Automatic

STRUCT. NO.
Station

BORING NO. RW-20
Station 725+84
Offset 127.80ft Right
Ground Surface Elev. 550.02 ft

Surface Water Elev. n/a ft
Stream Bed Elev. n/a ft

Groundwater Elev.:
First Encounter 543.0 ft ▼
Upon Completion n/a ft
After ____ **Hrs.** ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Material
				ASPHALT
549.02				
	3			CRUSHED ASPHALT-loose
	3		4	
	3			
547.02				
	7			CLAY LOAM with Stone-dark brown & gray-very stiff (Fill)
	8	3.0	17	
-5	13	P		
543.52	6			
▼	9		17	CLAYEY GRAVEL-gray-medium dense to dense (Fill)
	24			
	7			
	9		13	
-10	16			
	5			
	5		18	
	7			
537.02				
	4			CLAYEY GRAVEL & STONE-dark brown & gray-medium dense (Fill)
	7		13	
-15	17			
	6			
	8		11	
	21			
532.02				
	50/0"			Drillers Observation: Apparent bedrock
			NR	
530.02 -20				

Borehole continued with rock coring.

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), GP-Geoprobe Hand Auger
BBS, from 137 (Rev. 8-99)

Z:\PROJECTS\2013\13125 HNTB, I-80 PHASE II (NEAR TERM)\13125 BORING LOGS\13125_LOG.GPJ 4/20/20

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

ROCK CORE LOG

DATE 4/2/2020

LOGGED BY RJ

GSI JOB No. 13125

ROUTE --

DESCRIPTION I-80 Reconstruction (Near Term Phase 2)

SECTION --

LOCATION SEC 15, T35N, R10E, SW 1/4, 3rd PM

COUNTY Will

CORING METHOD Rotary Wash

STRUCT. NO. --

CORING BARREL TYPE & SIZE NX Double Swivel-10 ft

Station --

Core Diameter 2.0 in

BORING NO. **RW-20**

Top of Rock Elev. 532.0

Station 725+84

Begin Core Elev. 530.0

Offset 127.8' Right

Ground Surface Elev. 550.0

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
	1	100.0	41.0	n/a	270 @ 28.6'
-25.0					
-30.0					

SILURIAN SYSTEM, NIAGARAN SERIES DOLOMITE
RUN 1 (-20.0' to -30.0')
Light gray & porous with horizontal bedding. Numerous horizontal fractures throughout with some vugs & vertical fractures.

Color pictures of the cores Yes Cores will be stored for examination for -

The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

APPENDIX D

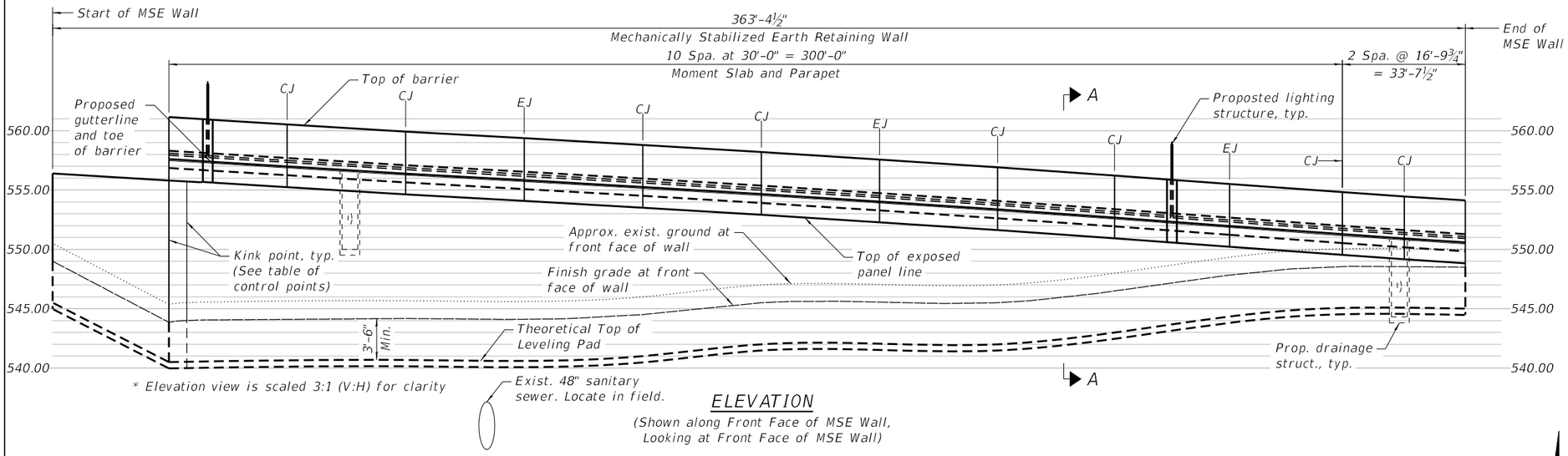
WALL PLAN & PROFILES

Bench Mark: Square cut on middle step of S.E. wingwall of bridge over Richards WB roadway. Elev. = 558.98

Existing Structure: None

Staged construction shall be utilized to maintain traffic during construction.

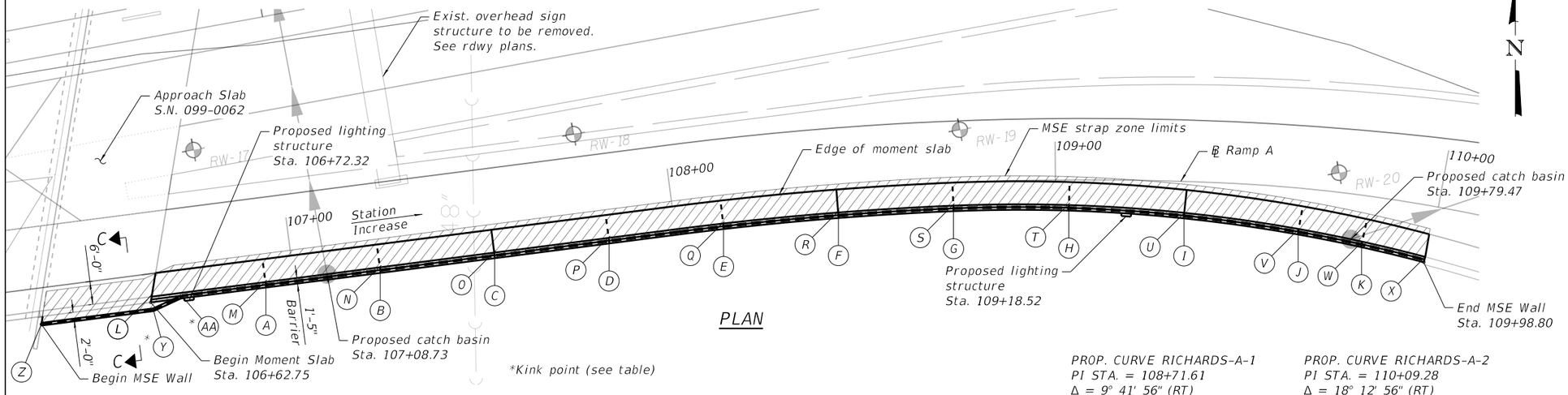
No salvage.



* Elevation view is scaled 3:1 (V:H) for clarity

ELEVATION

(Shown along Front Face of MSE Wall, Looking at Front Face of MSE Wall)



*Kink point (see table)

PLAN

MSE WALL CONTROL POINTS

Description	Station	Offset	T/ Exposed Panel Line	Finished Grade
Point Z	106+33.37	9.42' RT.	556.43	549.00
Point Y	106+62.75	9.42' RT.	555.80	543.85
Point AA	106+70.65	6.92' RT.	555.65	544.00
Point A	106+92.77	6.92' RT.	555.22	544.25
Point B	107+22.77	6.92' RT.	554.63	544.25
Point C	107+52.77	6.92' RT.	554.08	544.37
Point D	107+82.77	6.92' RT.	553.49	544.50
Point E	108+12.77	6.92' RT.	552.85	545.50
Point F	108+42.77	6.92' RT.	552.19	545.75
Point G	108+72.77	6.92' RT.	551.50	545.50
Point H	109+03.42	7.47' RT.	550.81	546.50
Point I	109+33.67	9.10' RT.	550.10	547.92
Point J	109+64.23	11.54' RT.	549.41	549.00
Point K	109+81.49	12.93' RT.	549.04	549.00
End	109+98.80	14.30' RT.	548.71	548.75

MOMENT SLAB CONTROL POINTS

Description	Station	Offset	Elev. @ Toe of Barrier
Point L	106+62.75	6.00' RT.	557.48
Point M	106+92.57	6.00' RT.	556.84
Point N	107+22.57	6.00' RT.	556.25
Point O	107+52.57	6.00' RT.	555.70
Point P	107+82.57	6.00' RT.	555.11
Point Q	108+12.67	6.00' RT.	554.47
Point R	108+42.92	6.00' RT.	553.81
Point S	108+73.17	6.00' RT.	553.12
Point T	109+03.46	6.55' RT.	552.43
Point U	109+33.74	8.19' RT.	551.72
Point V	109+64.31	10.62' RT.	551.03
Point W	109+81.57	12.00' RT.	550.67
Point X	109+98.88	13.37' RT.	550.33

PROP. CURVE RICHARDS-A-1
PI STA. = 108+71.61
Δ = 9° 41' 56" (RT)
D = 6° 52' 42"
R = 833.00'
T = 70.67'
L = 141.01'
E = 2.99'
e = 6.0%
P.C. STA = 108+00.94
P.T. STA = 109+41.95

PROP. CURVE RICHARDS-A-2
PI STA. = 110+09.28
Δ = 18° 12' 56" (RT)
D = 13° 38' 31"
R = 420.00'
T = 67.33'
L = 133.53'
E = 5.36'
e = 6.0%
P.C. STA = 109+41.95
P.T. STA = 110+75.48

Notes:

1. Geotechnical information can be found in Structure Geotechnical Report, Retaining Wall 2" dated April 15, 2020.
2. See Sheet 2 for Section A-A and Section C-C.
3. CJ (Construction Joint) and EJ (Expansion Joint)
4. Offsets are measured from ℄ Ramp A to front face of MSE wall panels for MSE Wall Control Points.
5. Offsets are measured from ℄ Ramp A to the toe of the barrier for Moment Slab Control Points.

HIGHWAY CLASSIFICATION

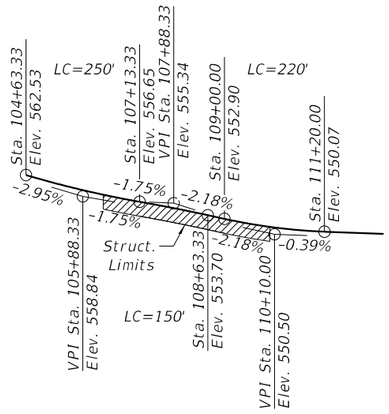
F.A.I. Rte. 80 EB
Functional Class: Interstate
ADT: 40,137 (2017); 62,317 (2040)
ADTT: 10,717 (2017); 16,639 (2040)
DHV: 3,161 (2017)
Design Speed: 60 m.p.h.
Posted Speed: 55 m.p.h.
One-Way Traffic

DESIGN SPECIFICATIONS

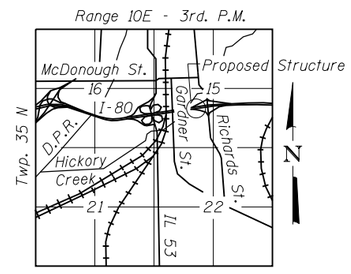
2017 AASHTO LRFD Bridge Design Specifications, 8th Edition

DESIGN STRESSES

FIELD UNITS
f'c = 4,000 psi (Moment Slab and Parapet)
fy = 60,000 psi (Reinforcement)
PRECAST UNITS
f'c = 4,500 psi (Precast Panels)



PROFILE GRADE PROP. RAMP A



LOCATION SKETCH

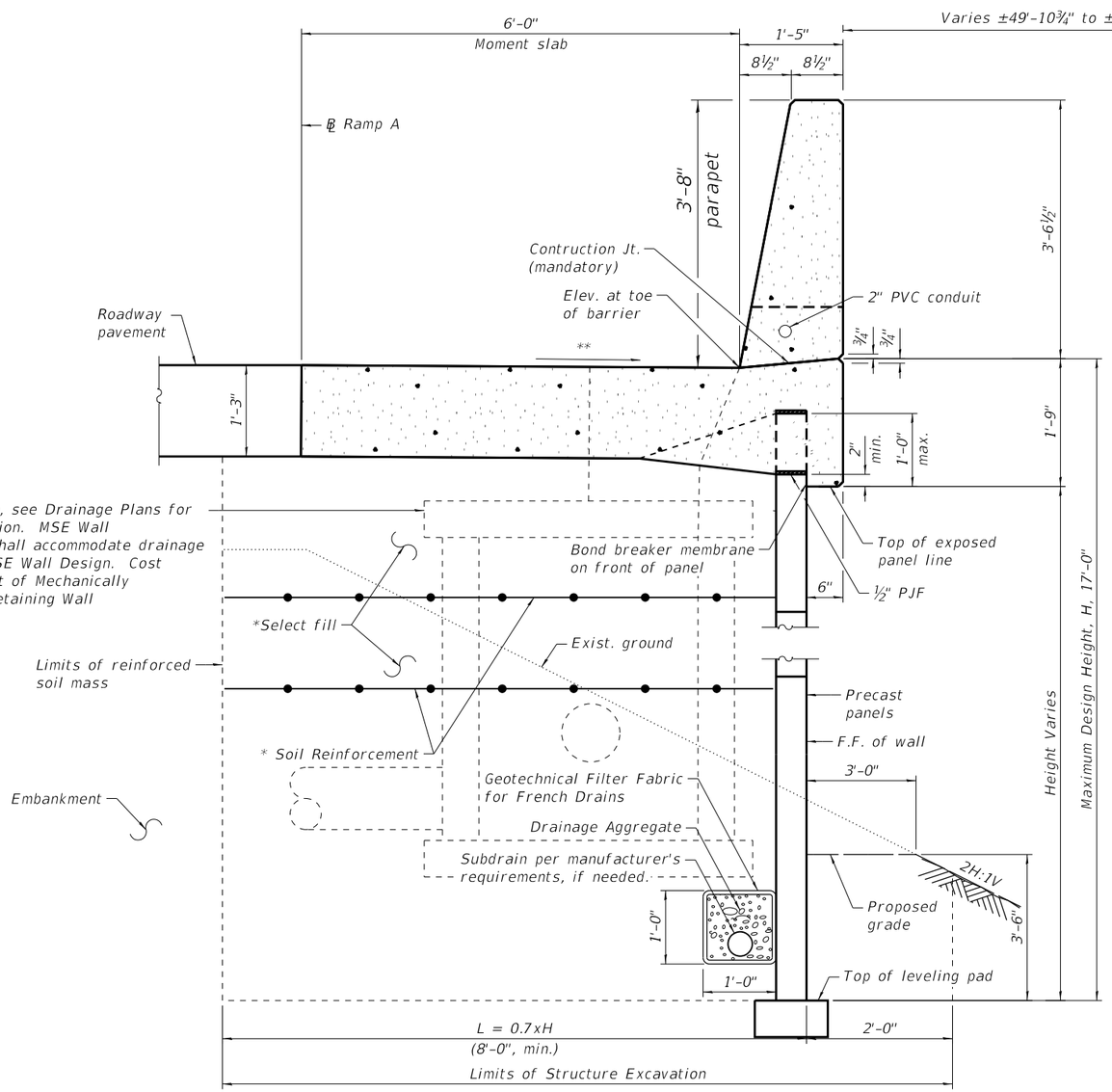
GENERAL PLAN AND ELEVATION
F.A.I. RTE 80 - SECTION 2013-008B
WILL COUNTY
STATION 106+62.75 TO 109+98.88
STRUCTURE NO. 099-W802

DB STERLIN CONSULTANTS, INC. 123 N. WACKER DRIVE SUITE 2000 CHICAGO, ILLINOIS 60606 TEL: (312)857-1006 FAX: (312)857-1066	USER NAME =	DESIGNED - JMM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		CHECKED - RVS	REVISED -	
	PLOT SCALE =	DRAWN - JSK	REVISED -	
	PLOT DATE = 04/24/2020	CHECKED - RVS	REVISED -	

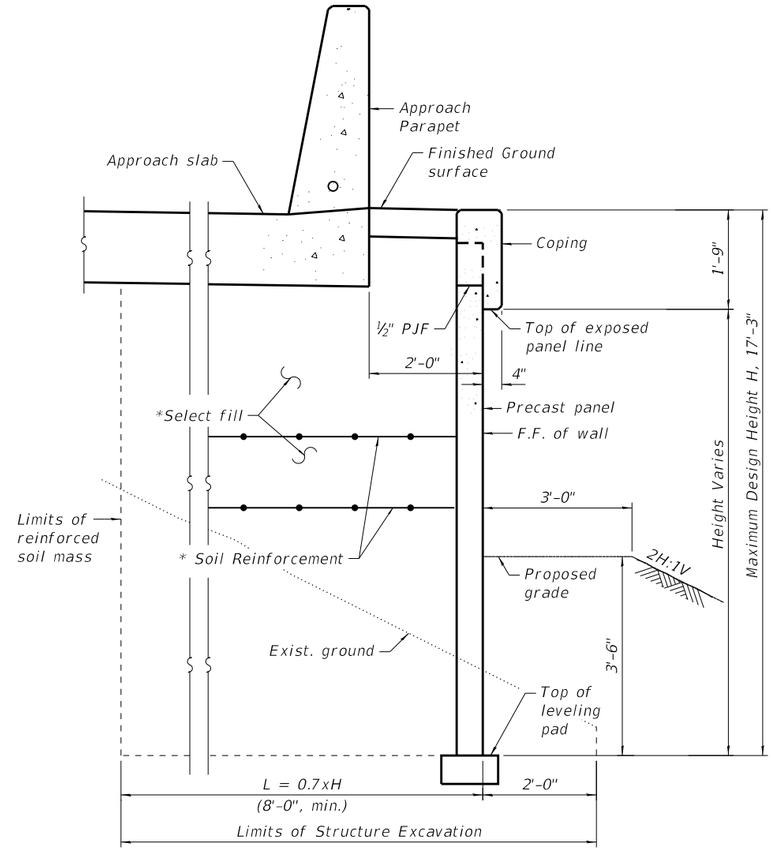
SHEET 1 OF 2 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	2013-008B	WILL	2	1
		CONTRACT NO. 60W34		
	ILLINOIS	FED. AID PROJECT		

FILE NAME:
7/6/2020 10:42:24 AM



SECTION A-A



SECTION C-C

* The M.S.E. wall supplier's internal stability design shall account for the anchorage slab's bearing pressure surcharge of 1.0 ksf and horizontal sliding force of 0.5 kips/ft. of wall.

** For shoulder slope, see Roadway Plans

DETAILS
F.A.I. RTE 80 - SECTION 2013-008B
WILL COUNTY
STATION 106+62.75 TO 109+98.88
STRUCTURE NO. 099-W802

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE

POTENTIAL NOISE WALL LOCATION

557.33

557.49

2.45%

1.23%

1.22%

558.04

Hickory Creek End of East Approach

H= 14'

722+83.51 R 3
B/L = PR I-80
EAST ABUTMENT
SKEWED SECTION

722+83.51

POTENTIAL NOISE WALL LOCATION

567.75

2.83%

BRIDGE OVER HICKORY CREEK

0.94%

0.94%

567.75

EX R/W

720+17.83 R 3
B/L = PR I-80
WEST ABUTMENT
SKEWED SECTION

720+17.83

ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE

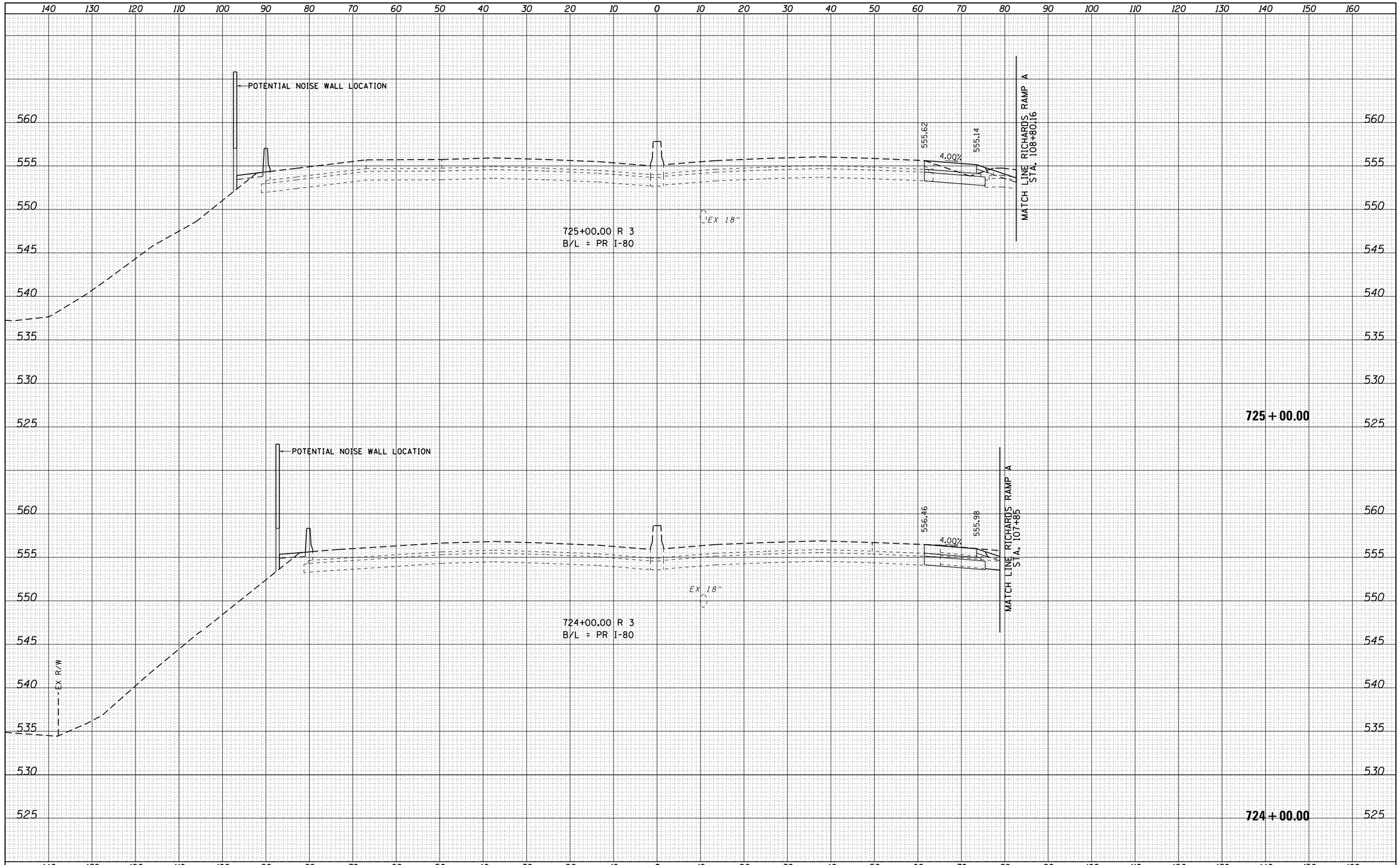
FILE NAME = d146314-sht-ILR-I80-XSect.dgn	USER NAME = dkangrga	DESIGNED - BAJ	REVISED -
		DRAWN - BAJ	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - MAM	REVISED -
	PLOT DATE = 1/9/2020	DATE - 10/11/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ILR – I-80 FROM RIDGE ROAD TO US ROUTE 30
I-80 PROPOSED CROSS SECTIONS

SCALE: 10 H : 5 V | SHEET 252 OF 352 SHEETS | STA. 720+17.83 | TO STA. 722+83.51

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			352	252
		CONTRACT NO.		
	ILLINOIS FED. AID PROJECT			



FINAL SURVEY

NO.	NOTE BOOK	BY	DATE
	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY

NO.	NOTE BOOK	BY	DATE
	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

FILE NAME = d146314-sht-ILR-I80-XSect.dgn	USER NAME = dkangrga	DESIGNED - BAJ	REVISED -
		DRAWN - BAJ	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - MAM	REVISED -
	PLOT DATE = 1/9/2020	DATE - 10/11/2019	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ILR – I-80 FROM RIDGE ROAD TO US ROUTE 30
I-80 PROPOSED CROSS SECTIONS

SCALE: 10 H : 5 V | SHEET 253 OF 352 SHEETS | STA. 724+00.00 TO STA. 725+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			352	253
		CONTRACT NO.		
		ILLINOIS FED. AID PROJECT		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
	TEMPLATE		
NO.	AREAS		
	AREAS CHECKED		

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
	TEMPLATE		
NO.	AREAS		
	AREAS CHECKED		

FILE NAME = d146314-sht-ILR-PRRA-XSect.dgn

USER NAME = mamiller

PLOT SCALE = 20.0000 ' / in.

PLOT DATE = 1/8/2020

DESIGNED -

DRAWN -

CHECKED -

DATE -

REVISED -

REVISED -

REVISED -

REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ILR I-80 FROM RIDGE ROAD TO US ROUTE 30
RICHARDS RAMP A PROPOSED CROSS SECTIONS

SCALE:

SHEET OF SHEETS STA. 106+82.91 TO STA. 108+00.00

F.A. RTE.

SECTION

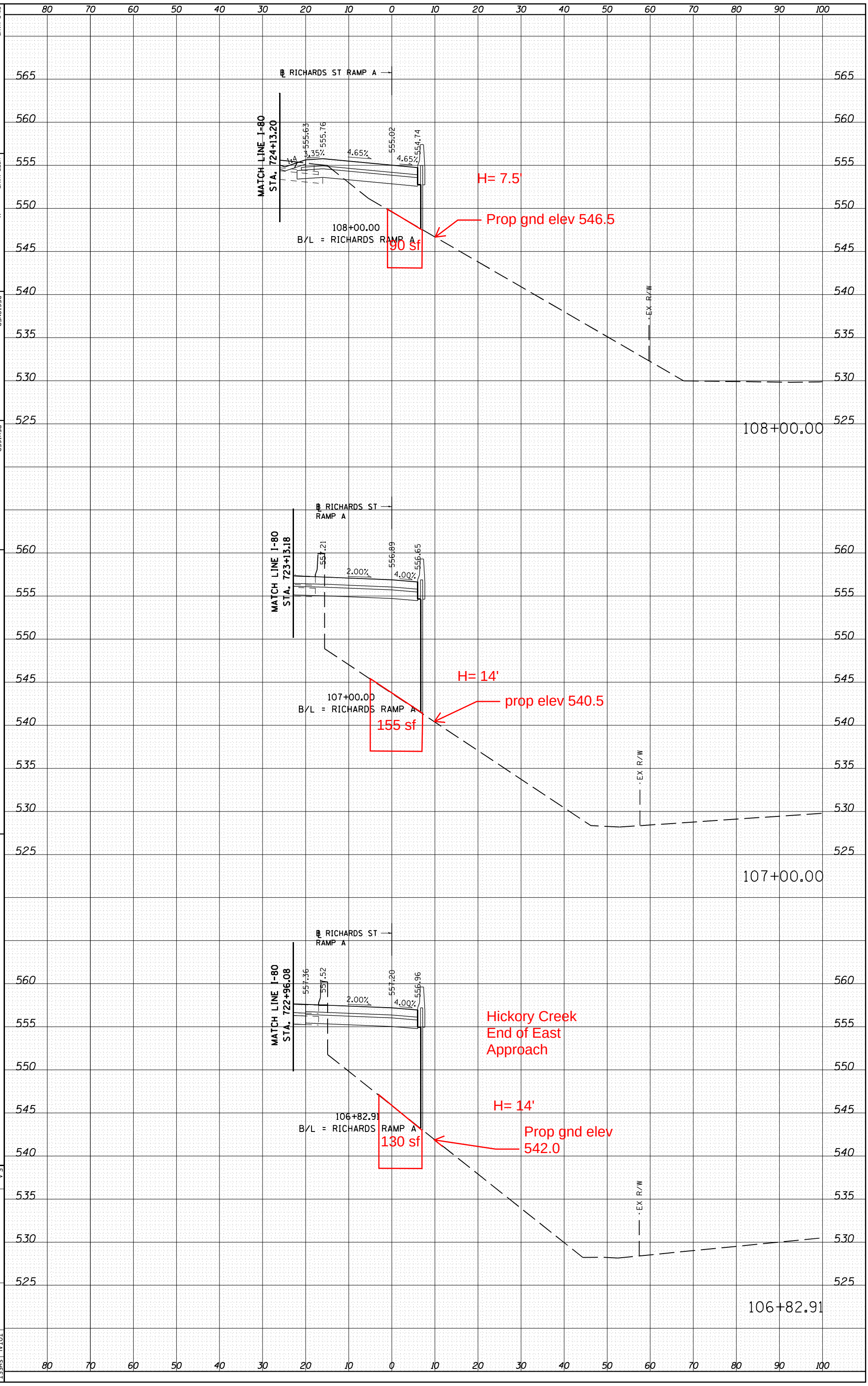
COUNTY

TOTAL SHEETS 113

SHEET NO. 97

ILLINOIS FED. AID PROJECT

CONTRACT NO.



ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

FILE NAME = d146314-sht-ILR-PRRA-XSect.dgn

USER NAME = mamiller

PLOT SCALE = 20.0000 ' / in.

PLOT DATE = 1/8/2020

DESIGNED	-
DRAWN	-
CHECKED	-
DATE	-

REVISED	-
REVISED	-
REVISED	-
REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ILR I-80 FROM RIDGE ROAD TO US ROUTE 30
RICHARDS RAMP A PROPOSED CROSS SECTIONS

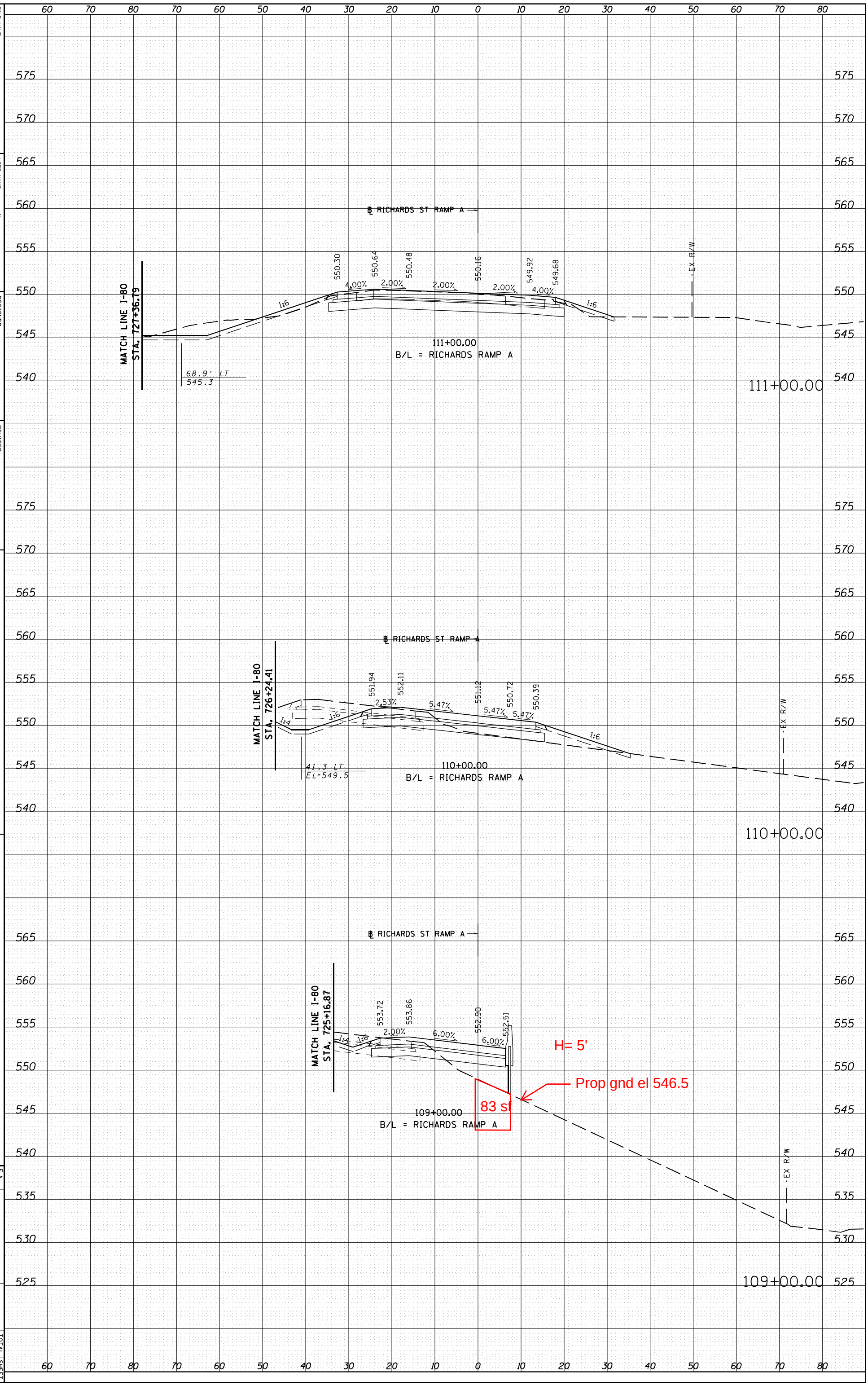
SCALE:

SHEET OF SHEETS STA. 109+00.00 TO STA. 111+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			113	98

ILLINOIS FED. AID PROJECT

CONTRACT NO.



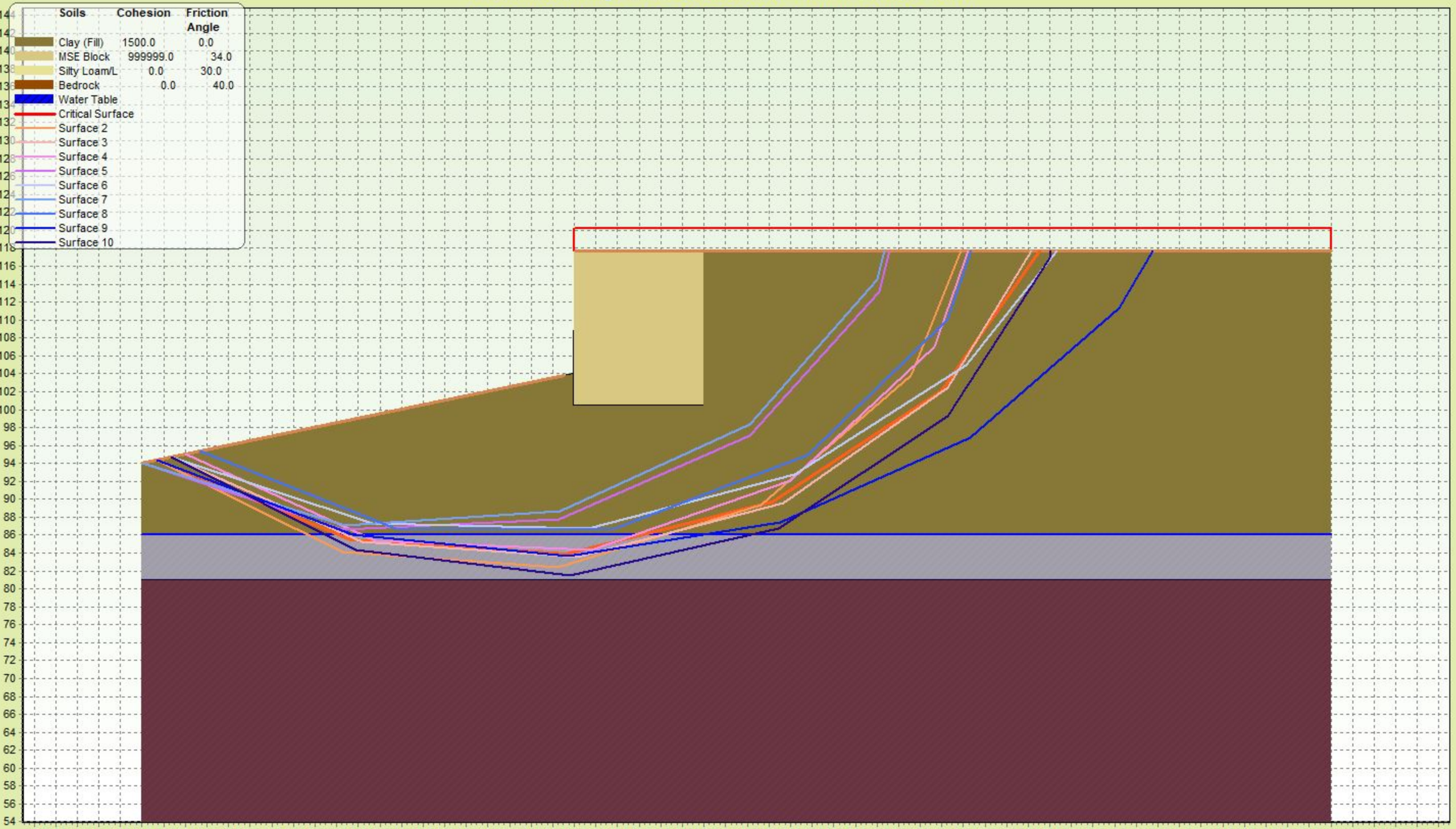
APPENDIX E

SLOPE STABILITY ANALYSIS

Problem: Retaining Wall 2 - UNDRAINED - FS Min- Bishop = 2.881

Soils	Cohesion	Friction Angle
Clay (Fill)	1500.0	0.0
MSE Block	999999.0	34.0
Silty Loam/L	0.0	30.0
Bedrock	0.0	40.0

Water Table
Critical Surface
Surface 2
Surface 3
Surface 4
Surface 5
Surface 6
Surface 7
Surface 8
Surface 9
Surface 10



Problem: Retaining Wall 2 - DRAINED - FS Min- Bishop = 1.844

Soils	Cohesion	Friction Angle
Clay (Fill)	150.0	28.0
MSE Block	999999.0	34.0
Silty Loam/L	0.0	30.0
Bedrock	0.0	40.0
Water Table		
Critical Surface		
Surface 2		
Surface 3		
Surface 4		
Surface 5		
Surface 6		
Surface 7		
Surface 8		
Surface 9		
Surface 10