Roadway Geotechnical Report

Proposed Local Roadway Improvements
Chicago Street – Ramp B
Contract 62F94
IDOT PTB 198-003
(I-80) over Des Plaines River Bridge
Will County, Illinois

Prepared for

Illinois Department of Transportation
Job Number: D-91-204-19

Project Design Engineer
WSP USA

Geotechnical Consultant:

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September 25, 2025

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Mr. David Skaleski, P.E.
Project Manager
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30 N. LaSalle Street, Suite 4200
Chicago, Illinois 60602

Roadway Geotechnical Report
Proposed Local Roadway Improvements
Chicago Street
PTB 198-003
I-80 over Des Plaines River Bridge
Will County, IL

Dear Mr. Skaleski:

Attached is a copy of the Roadway Geotechnical Report for the above-referenced project. The report provides a description of the site investigation, site conditions, and construction recommendations. The site investigation for roadway reconstruction included advancing six (6) subgrade soil borings to a depth of 10 feet each and one (1) overhead sign boring to a depth of 30 feet.

Should you have any questions or require additional information, please call us at 630-994-2600.

Sincerely,

Ahmet Can Korkusuz

Ahmet Can Korkusuz, E.I.T.
Staff Engineer

Dawn Edgell.

Dawn Edgell, P.E.
Sr. Project Engineer

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Appendices

1.0 INTRODUCTION

GSG Consultants, Inc. (GSG) completed a geotechnical investigation for the proposed mainline roadway and Ramp B construction associated with the Interstate 80 (I-80) and U.S. Route 52 (Chicago Street) interchange in the city of Joliet, Will County, Illinois. The purpose of the investigation was to explore the subsurface conditions, to determine engineering properties of the subsurface soil, and to develop design and construction recommendations for the project. The general project limits are shown in **Exhibit 1**.

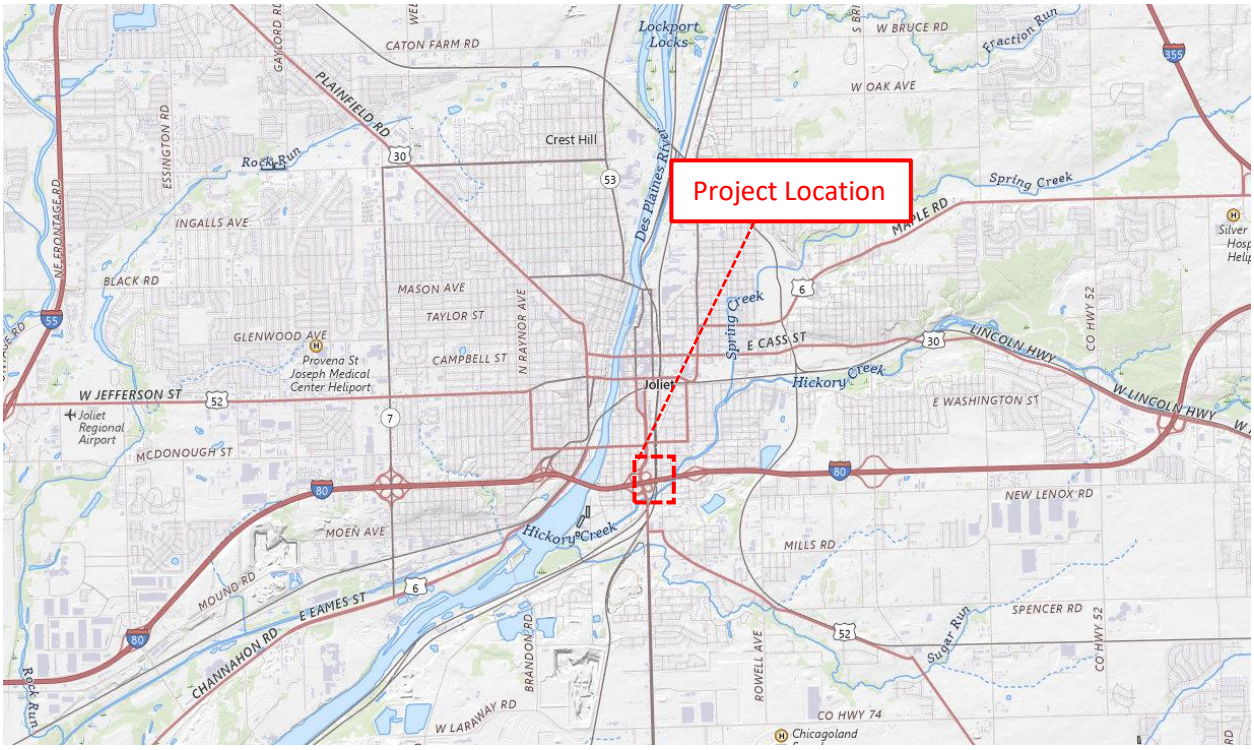


Exhibit 1 – Project Location Map
(Source: USGS Topographic Maps, usgs.gov)

1.1 Proposed Project Information

Based on the plans provided by WSP the proposed project will include roadway and interchange improvements at the Interstate 80 (I-80) and U.S. Route 52 (Chicago Street) interchange in the City of Joliet, Will County, Illinois. The improvements covered in this report (**Appendix A**), include reconstruction of the I-80 mainline roadway east of the interchange and west of Hickory Creek

bridge between I-80 Station 716+00 to 720+00, Chicago Street Ramp B , and associated modifications to traffic operations within the interchange.

The proposed pavement sections will generally consist of Portland Cement Concrete (PCC) pavement over stabilized subbase and aggregate subgrade improvement, with PCC shoulders. Roadway drainage improvements, including curb and gutter sections, storm sewer, and ditches, are anticipated as part of the project.

1.2 Regional Geology

GSG reviewed several published documents to determine the regional geological setting in the area. The site is in central Will County, in Joliet, Illinois. The surficial geologic deposits in this area are typically glacial drift deposited during the Wisconsin Glacial Age and sediments deposited by the various high-level states of the Des Plaines River. The subsurface profile in the area consists of deposits of silty clay, sand, silt, and gravel extending to approximately 5 to 20 feet below ground surface, at which point bedrock is encountered. This is generally consistent with the rock depths encountered in the subsurface investigation. The bedrock consists of the Silurian System, which consists of dolomite that varies from extremely argillaceous, silty and cherty to exceptionally pure.

1.3 Climate Conditions

The geotechnical field exploration was performed on August 4 and August 11, 2025. The climate conditions for the months of February through July are summarized in **Table 1**. The data was obtained from the National Weather Service Forecast Office website for Chicago, Illinois, and the surrounding area (Selected Station: JOLIET BRANDON ROAD LOCK/DAM). The data was evaluated to determine any effects of temperature and precipitation on the water table level and soil moisture content that were encountered at the site at the time the borings were performed.

For the months included in the study, precipitation was below average in February, April, May, and June, and near normal in March and July. Average monthly temperatures were below normal in February and May, and above normal in March, April, June, and July. Snowfall totals were below normal in February and March, and no snowfall was recorded from April through July. It is our opinion that the climatic conditions at the site during this period did not have a direct impact on the soil moisture contents or groundwater levels recorded during the field exploration.

Table 1 – Climate Conditions

Date (M-Y)	Temperature (F°)		Precipitation (in.)		Snowfall (in.)	
	Mean	Departure from Norm.	Total	Departure from Norm.	Total	Departure from Norm.
February – 2025	26.4	-1.1	0.63	-0.94	1.0	-4.8
March – 2025	43.7	3.1	2.24	0.05	0.1	-1.0
April – 2025	50.0	1.2	2.69	-0.86	0.0	0.0
May – 2025	58.5	-1.2	1.19	-3.1	0.0	0.0
June - 2025	72.7	1.2	2.86	-0.93	0.0	0.0
July - 2025	77.1	3.0	4.87	0.12	0.0	0.0

Note: All the field work was completed by August 11, 2025.

2.0 SITE SUBSURFACE EXPLORATION PROGRAM

This section describes the subsurface exploration program and laboratory testing program completed as part of this project. The subsurface exploration program was performed in accordance with applicable IDOT geotechnical manuals and procedures.

2.1 Subsurface Exploration Program

The subsurface soil investigation was conducted on August 4 and August 11, 2025, and included advancing a total of six (6) subgrade soil borings (SGB) to a depth of 10 feet each and one (1) overhead sign soil boring (OSB) to a depth of 30 feet. A SGB boring (SB-1003) was attempted on the shoulder of the mainline, but could not be completed due to the reinforced concrete pavement encountered. The soil boring locations were selected by GSG in coordination with WSP, then completed at locations based on field conditions and site accessibility. The coordinates and existing ground surface elevations shown on the soil boring logs were obtained by GSG using handheld GPS surveying equipment. The as-drilled locations of the soil borings are shown on the Soil Boring Location Plan (**Appendix B**). **Table 2** presents a list of the borings completed along with their location information.

Table 2 – Summary of Subsurface Exploration Borings

Boring ID	Northing	Easting	Depth (ft)	Surface Elevation (ft)
SGB-1001	1764923.821	1054158.53	10	573.16
OSB-06	1765036.190	1054143.200	30	574.00
SGB-1002	1764967.95	1054456.868	10	567.43
SGB-1003	1765107.307	1054457.79	2*	566.26
SGB-1004	1764386.247	1053414.357	10	550.79
SGB-1005	1764648.087	1053550.124	10	566.12
SGB-1006	1765148.327	1053503.001	10	553.57
SGB-1007	1765292.73	1053280.902	10	564.24

* Auger head and teeth were broken while drilling SGB-1003 to 2 feet, encountering rebars at 8 and 16 inches. Boring could not be completed.

The soil borings were drilled using a truck mounted CME-75 (Hamer efficiency 78.8%) and Geoprobe drill rigs (Hamer efficiency 98.8%) equipped with 3¼-inch I.D. hollow stem augers and an automatic hammer. 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 the boring termination depths. 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 and surface patching with asphalt/concrete whichever applied.

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. Moisture content testing (AASHTO T-265) was performed on representative soil samples.

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

2.3 Existing Pavement Conditions

Six (6) roadway (SGB) and one (1) overhead sign (OSB) borings were completed, and **Table 3** summarizes the pavement thickness for each boring.

Table 3 – Pavement Core Summary

Pavement Core ID	Asphalt Thickness (inches)	Concrete Thickness (inches)	Total Thickness (inches)
SGB-1001	N/A	12.0	12.0
OSB-06	12.0	N/A	12.0
SGB-1002	N/A	10.0	10.0
SGB-1004	10.0	N/A	10.0
SGB-1005	4.0	8.0	12.0
SGB-1006	11.0	N/A	11.0
SGB-1007	10.0	N/A	11.0

2.4 Subsurface Conditions

This section provides a brief description of the soils encountered in the borings performed in the vicinity of the proposed improvements. 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. The soil boring logs provide specific conditions encountered at each boring location, including 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.

Borings OSB-06, SGB-1001 and 1002 were drilled on I-80 mainline embankment and had ground surface elevation at 550.79 to 566.12 feet. Boring OSB-6 noted silty clay fill in the top 10 feet under the pavement. The two SGB borings noted gravel fill beneath the pavement to a depth of 4.5 to 6 feet followed by silty clay fill to 10 feet.

The remaining borings were drilled on the existing ramp embankments and had ground surface elevations at 550.79 to 566.12 feet. These borings noted silty clay fill for the full boring depth, except for SGB-1004, which noted 1.5 feet of sandy gravel fill at the end of the boring.

The silty clay fill layer had unconfined compressive strength values ranging between 0.6 and 4.3 tsf with an average of 2.4 tsf. The sandy gravel fill layer had SPT blow count 'N' values ranging between 5 and 35 blows per foot (bpf) with an average of 20 bpf.

2.5 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 either while drilling or after drilling. The borings were not left open for delayed readings and were backfilled upon completion.

Based on the available boring data, no distinct color transition from brown to gray was observed; therefore, the long-term groundwater level is anticipated to be deeper than the soil boring depth. Perched water may also be present within the fill materials observed in the borings. Water level readings were taken in the boreholes at the times and under the conditions specified in the boring logs and stated in this report. However, it should be noted that fluctuations in groundwater level may occur due to variations in the rainfall, other climatic conditions, or other factors not evident at the time measurements were made and reported herein.

3.0 GEOTECHNICAL ANALYSES AND RECOMMENDATIONS

This section provides GSG's geotechnical analysis and recommendations for the design of the proposed roadway improvements based on the results of the field exploration, laboratory testing, and geotechnical analysis.

3.1 Settlement

Based on roadway profile provided by WSP (**Appendix A**), it is anticipated that the proposed profile will be raised approximately 2 feet above existing ground line for I-80 mainline between Station 716+00 and 720+00. A temporary profile raise was constructed in 60W34/60W35. If the proposed roadway is constructed on top of the temporary profile, minimal cut and fill would be required. The anticipated settlement caused by the improvement is expected to be negligible.

For the proposed Ramp B, a maximum of 12 feet of new fill is anticipated at the south end of the ramp, which is part of the grade change for Chicago Street, and was included in the Roadway Geotechnical Report by GSG dated 6/20/2024. The remaining portions of the new ramps (Station 805+50 to 817+00) will constructed by removing the existing mainline embankment, in cut areas. The anticipated settlement caused by the improvement is expected to be negligible.

3.2 Slope Stability

IDOT requires that a slope stability analysis be performed in areas where the cut or fill height will exceed 15 feet. For the proposed improvements, it is anticipated that the proposed grades of I -80 mainline change will be less than 3 feet ; therefore, no slope stability analysis was required. For Ramp B, the cut into the existing ramp embankment could exceed 15 feet. Based on the provided profile (**Appendix A**), Ramp B will extend below two proposed I-80 bridges (SN 099-0902 & 0903); the excavation slope stability are included in the bridge report.

3.3 Drainage Characteristics

The drainage characteristics of the site were evaluated per the IDOT Geotechnical Manual (2020), Section 6.3.4.1, based on the subgrade soil type and moisture condition, depth of water table, project topography, the anticipated profile grade line, and depth and grade of drainage ditch along the roadways.

Based on the information provided and existing conditions, GSG anticipates that the proposed drainage will consist of an enclosed drainage system with curb and gutter and shallow ditches

with slopes greater than 0.5%. GSG utilized Table 6.3.4.1-1, Drainage Classification in the IDOT Geotechnical Manual, to assign drainage classes for the site. The drainage class should be taken as Fair for the existing gravel fill and Poor for existing silty clay fill.

3.4 Frost Susceptibility

The frost susceptibility of the subgrade soils was evaluated per Section 6.3.2.2.3 of the IDOT Geotechnical Manual. The maximum anticipated frost penetration depth below pavement in northern Illinois is 45 to 60 inches for extreme weather conditions. The frost susceptibility was evaluated for the soils encountered that would be within the proposed roadway subgrade. The frost class for the subgrade soils in these areas was assigned using Table 6.3.2.2.3-1, Frost Susceptibility Classification of Soils, in the IDOT Geotechnical Manual. The subgrade soils along the proposed improvement area were found to have a Forst Class of xx for the existing gravel fill and Frost Class of F3 to F4 (High to Very High frost susceptibility) for the existing silty clay fill soils.

Perched water could be present in the upper soil layers and any confined granular layers. Water trapped in the soil layers closer to the pavement section is susceptible to frost action and should be considered when designing the proposed roadway. Treatment measures, such as maintaining proper drainage of the subgrade soils through underdrains could be considered.

3.5 Subgrade Support Rating

The subgrade support rating (SSR) was determined based on the physical properties of in-situ soils present beneath the proposed pavement section. The SSR includes three categories (poor, fair, and granular) and is used to determine the depth of soil treatment to provide a stable working platform that is required to prevent excessive rutting and moisture-related problems during construction activities. Granular soils have the highest rating and provide a stable working platform that may require less than a 12-inch improved subgrade layer, while poor subgrade may require more than 12 inches to provide stable subgrade during construction activities. The anticipated subgrade soils encountered in most of the borings at the proposed roadway grades were generally existing gravel or silty clay fill soils. The existing silty clay soils have a Subgrade Support Rating (SSR) of Poor to Fair. The existing gravel fill soils have a SSR of Granular.

3.6 Illinois Bearing Ratio

The Illinois Bearing Ratio (IBR) is a measure of the support provided by the roadbed soils for the new pavement. Based on typical IBR values for Illinois soils - Table 5.5.16-1 of the IDOT

Geotechnical Manual, it is recommended that an IBR value of three (3) be used for the roadway pavement design where silty clay fill soils are present and an IBR of fifteen (15) for the gravel fill soils.

4.0 GEOTECHNICAL ROADWAY DESIGN RECOMMENDATIONS

This section presents GSG's geotechnical recommendations for the design of the proposed roadway based on the results of field exploration, laboratory testing, and geotechnical analysis. The proposed pavement section should be designed according to the IDOT Mechanistic Pavement Design (MPD). IDOT policy requires providing a minimum of 12 inches of improved subgrade beneath the pavement section to ensure a stable construction platform. Subgrade improvements including any undercuts or compaction of existing soils should be completed with the proposed elevations in the design plan and in accordance with the Subgrade Treatment and Recommendation Section of this report.

4.1 Subgrade Preparation

It is our understanding that the existing roadway sections along Interstate 80 (I-80) and Ramp B at the U.S. Route 52 (Chicago Street) interchange are to be completely reconstructed. It is recommended that all existing pavements be stripped within the limits of the proposed improvements. Based on the pavement thicknesses encountered in the borings and pavement cores, it is anticipated that pavement stripping depths will range from 10 to 12 inches. It is recommended to use an average stripping depth of 11 inches for estimating.

Undercuts of the subgrade soils and backfilling should be based on the recommendations provided in this report, and field evaluation of the materials encountered during construction. Any unstable or unsuitable materials encountered during construction activities should be removed and replaced with compacted structural fill.

4.2 Subgrade Treatment and Recommendations

The suitability of the existing subgrade soils for the area of the proposed project was evaluated in terms of frost susceptibly, stability, settlement, and drainage. The evaluation included determining the presence of unstable, compressible deposits, low-strength soils, and soils with high-moisture content immediately below the proposed pavement section. It is recommended to excavate 12 inches of subgrade soil and replace them with compacted structural fill to satisfy the IDOT policy. At the bottom of the excavation, it is recommended that a layer of geotextile fabric should be placed before placing the structural fill.

The roadway subgrade should be proof-rolled using heavy equipment or heavily loaded tandem axle dump truck with a minimum gross weight of 25 tons to check for deflection or rutting. Areas

with excessive rutting and deflection shall be evaluated using a dynamic cone penetrometer (DCP) and static cone penetrometer (SCP) to determine the depth of required treatment in accordance with Article 301.04 of the SSRBC and the undercut guidelines in the IDOT Subgrade Stability Manual (2005). Poor soil encountered during proof rolling should be removed and replaced with approved structural fill. Approved structural fill includes IDOT Porous Granular Embankment (PGE), or suitable borrow materials, as specified in the Borrow Material and Compaction Requirements section of this report. It is also recommended that a woven geotechnical fabric be placed at the base of any undercuts. The geotextile fabric should consist of a woven material meeting the requirements of Section 1080.02 of the IDOT SSRBC (2022) and should be placed in accordance with Section 210 of the IDOT SSRBC (2022). The geotextile fabric should be placed under the full width of the proposed pavement area.

4.3 Drainage Recommendation

The drainage classification of Fair to Poor should be used for the project design. The overall groundwater depth is assumed to be deeper than the anticipated frost depth of 45 to 60 inches for the northern Illinois region. However, pavement systems could become saturated following periods of precipitation. The proposed subgrade and pavement should have proper surface grading to prevent water from accumulating and ponding. GSG recommends installing lateral and longitudinal underdrain systems as recommended in Section 6.3.4.2 of the IDOT Geotechnical Manual to maintain the subgrade from deteriorating. These underdrains should be installed at undercut areas and low points in the roadway profile, and along the edge of pavement throughout the roadway improvement.

5.0 CONSTRUCTION CONSIDERATIONS

All work performed for the proposed project should conform to the requirements in the IDOT Standard Specifications for Road and Bridge Construction (SSRBC, 2022) and the IDOT Subgrade Stability Manual (2005). The design engineer should approve any deviation from the requirements in the manuals above.

5.1 Site Preparation

GSG recommends removing all existing pavements, concrete, vegetation, topsoil, and any soft or unsuitable/deleterious materials from the proposed construction areas. Significant tree clearing will also be required along the new Ramp B alignment north of I-80 that extends away from the existing ramps. Site preparation in areas where the new pavements will be constructed will require removal of existing asphalt, concrete and surface gravel. The base course aggregate, if any, encountered at the site should be evaluated to determine its suitability for reuse as general fill. Subgrade improvements, including any undercuts or compaction of existing soils should be completed to the proposed elevations in the design plan and in accordance with the recommendations provided herein. The contractor should not mix any existing base course materials with existing subgrade soils during the stripping and stockpiling activities.

The subgrade below the base course should be evaluated in accordance with the Subgrade Preparation section of this report. The possible need for, and extent of, undercutting and/or in-place stabilization required can best be determined by the geotechnical engineer at the time of construction.

5.2 Existing Utilities

Based on the field observations, there are significant utilities that exist along the entire project corridor. Before proceeding with construction, all existing underground utility lines that will interfere with construction should be completely relocated from beneath the proposed construction areas. Where possible, existing utility lines that are to be abandoned in place should be removed and/or plugged with 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.

5.3 Site Excavations

Site excavations are expected to encounter various types of soils as described in the Subsurface Exploration section of this report. The contractor will be responsible for providing 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.

5.4 Borrow Material and Compaction Requirements

If borrow material is to be used for onsite construction, it should conform to Section 204 "Borrow and Furnish Excavations" of the latest IDOT Construction Manual. GSG recommends that subgrade preparation, and structural fill placement and compaction be inspected by a GSG geotechnical engineer to verify the type and strength of soil materials present at the site and their conformance with the geotechnical recommendations in this report.

The fill material should be free of organic matter and debris and should be placed and compacted in accordance with Section 205, Embankment, of the IDOT SSRBC (2022). Earth-moving operations should be avoided during excessively cold or wet weather to avoid freezing of softening subgrade soils. Fill should be placed in lifts and compacted according to Section 205, Embankment (IDOT, 2022). Backfill materials for undercut areas should be placed in 8 inches loose lifts and should be compacted to 95% of the maximum dry density as determined by AASTHO T 99, Standard Proctor Method.

5.5 Groundwater Management

The long-term groundwater level is not anticipated within the upper 10 feet of the subsurface profile. Perched water may be encountered within the existing fill materials encountered across the project corridor. GSG does not anticipate groundwater related issues for the proposed

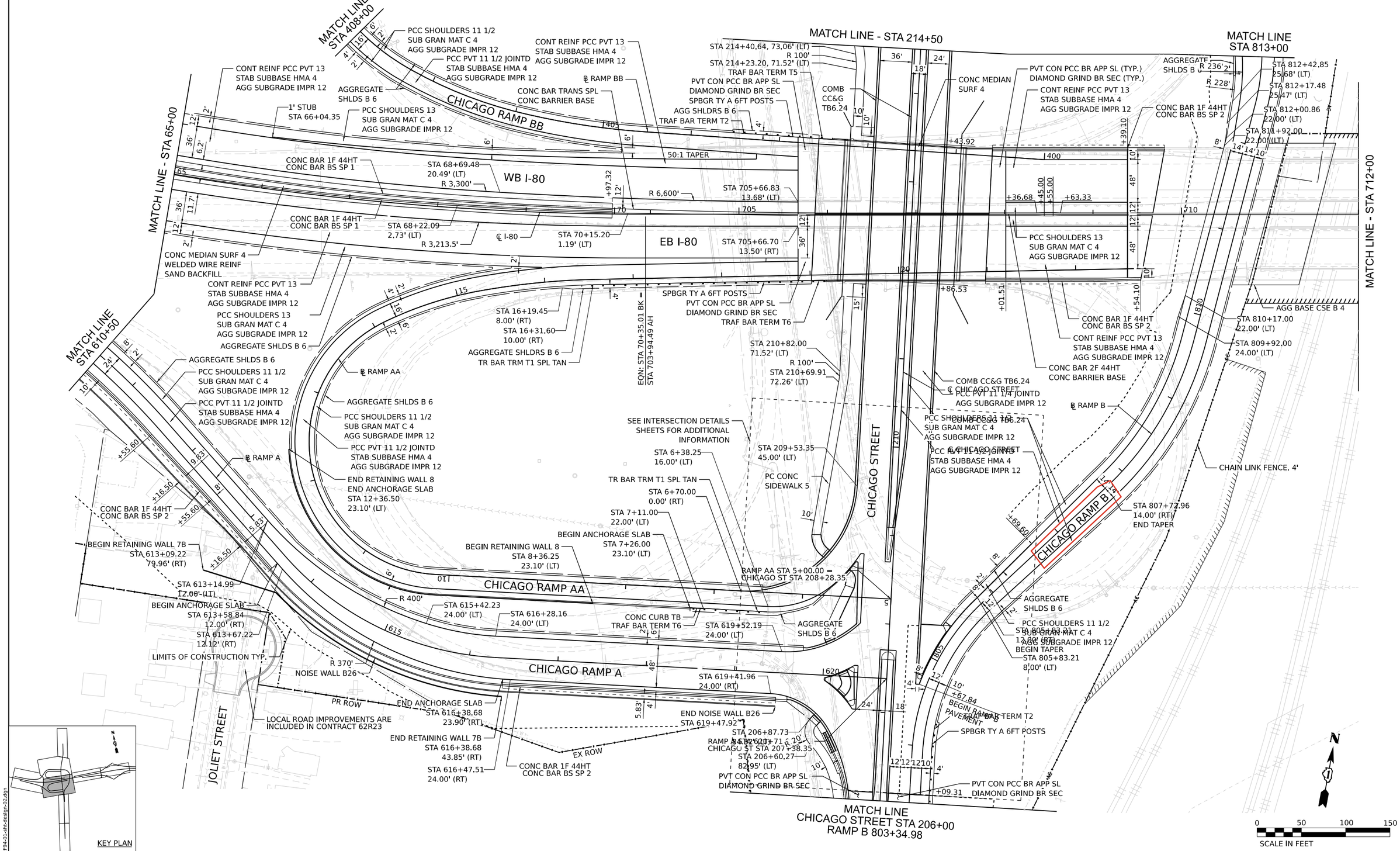
roadway improvements. If rainwater run-off or groundwater is accumulated at the base of excavations, the contractor should remove accumulated water using conventional sump pit and pump procedures and maintain a dry and stable excavation. The location of the sump should be determined by the contractor 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.

6.0 LIMITATIONS

This report has been prepared for the exclusive use of Illinois DOT (IDOT) and its Design Section Engineer (WSP USA). The recommendations provided in the report are specific to the project described herein and are based on the information obtained from the soil borings located within the project limits. The analyses performed and the recommendations provided in this report are based on subsurface conditions determined at the location of the borings. This report does not reflect all the variations that may occur between boring locations or at some other time, the nature and extent of which may not become evident until 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

PRELIMINARY ROADWAY PLAN & PROFILE



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED ROADWAY PLAN
I-80

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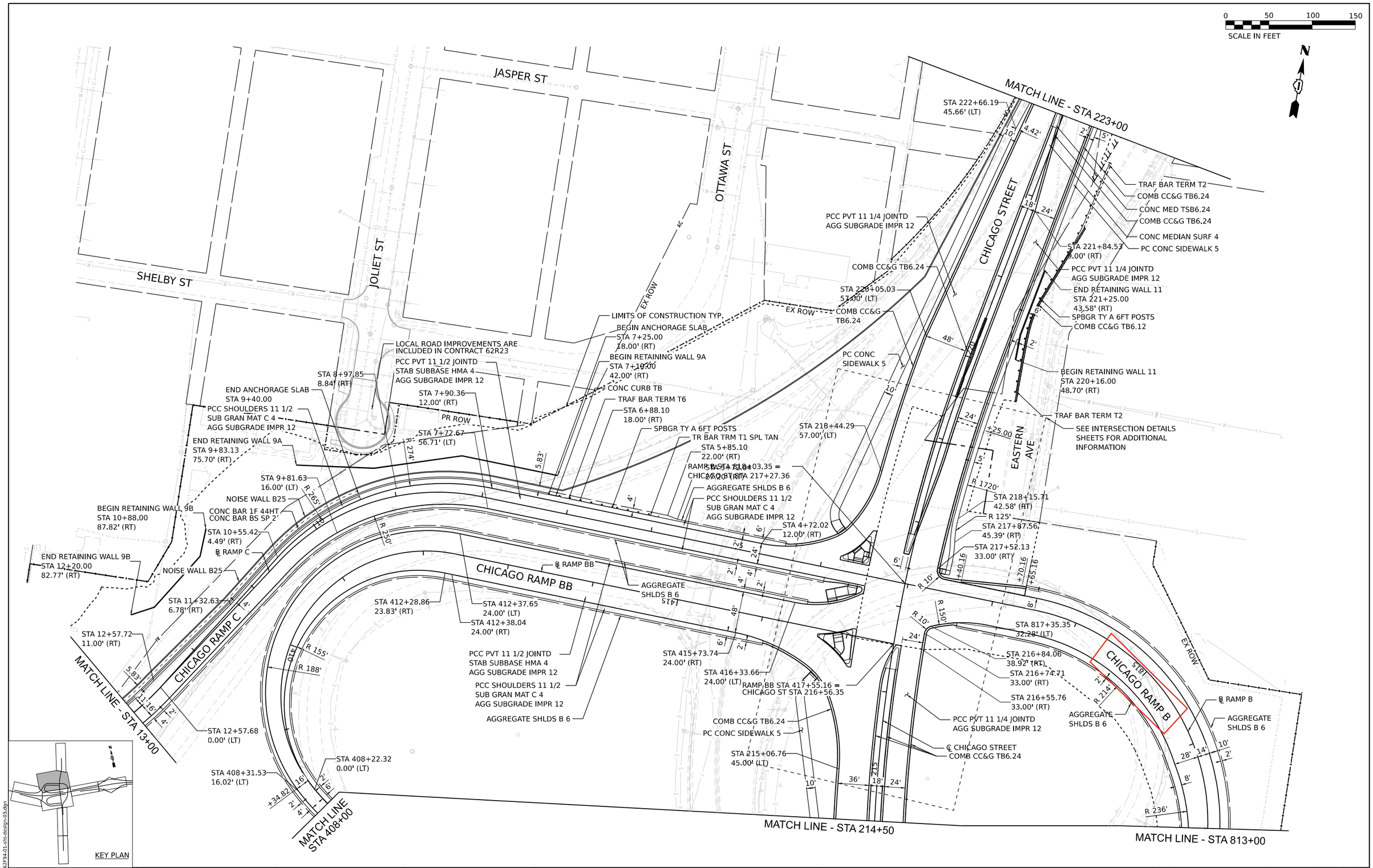

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED ROADWAY PLAN
I-80

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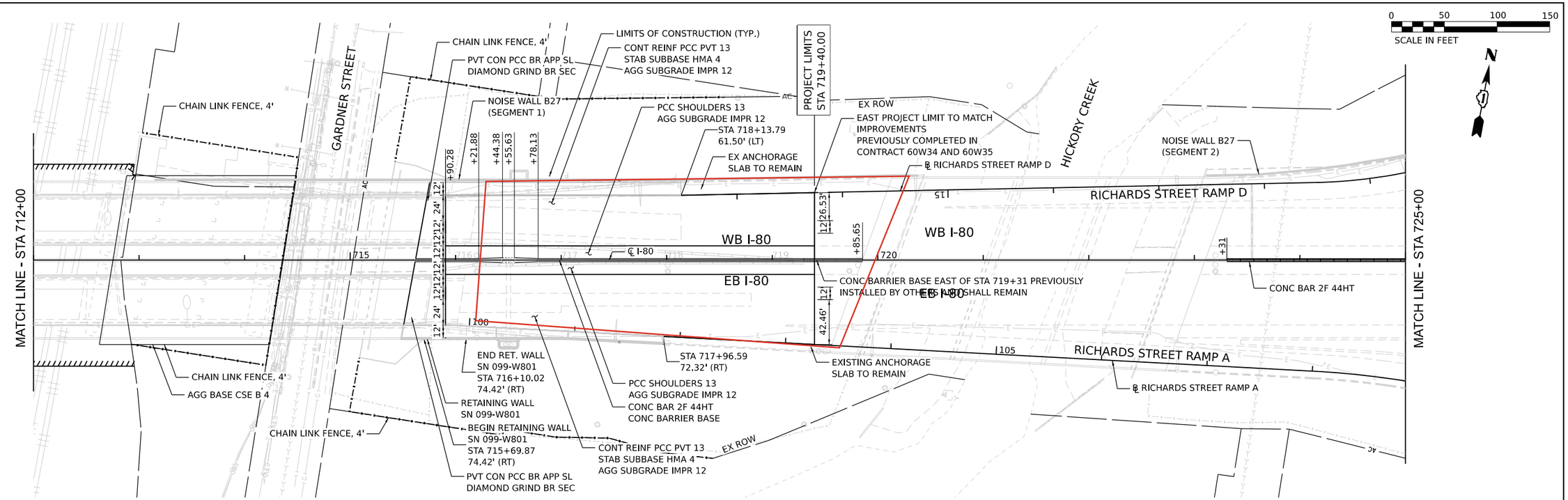

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED ROADWAY PLAN
I-80

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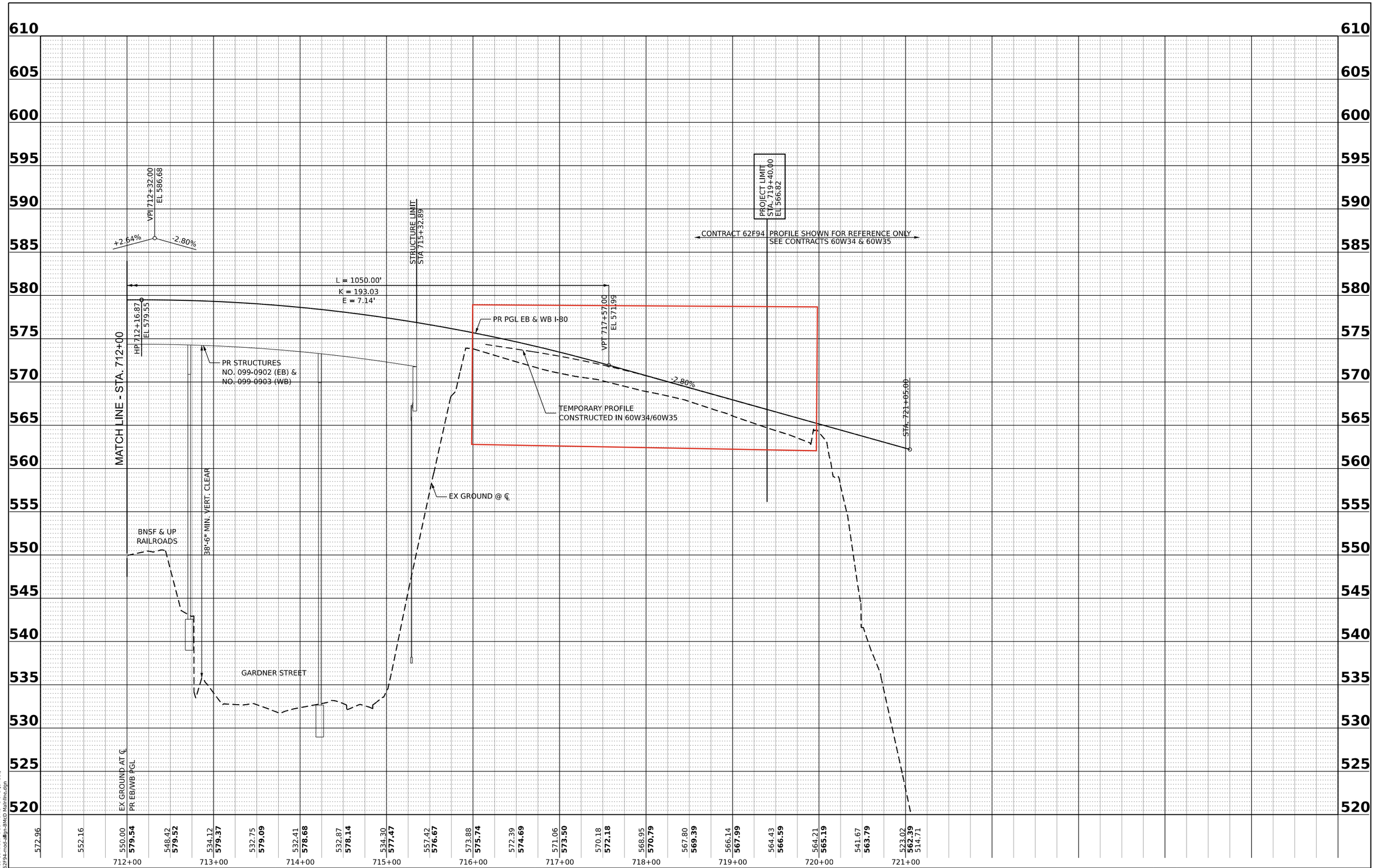

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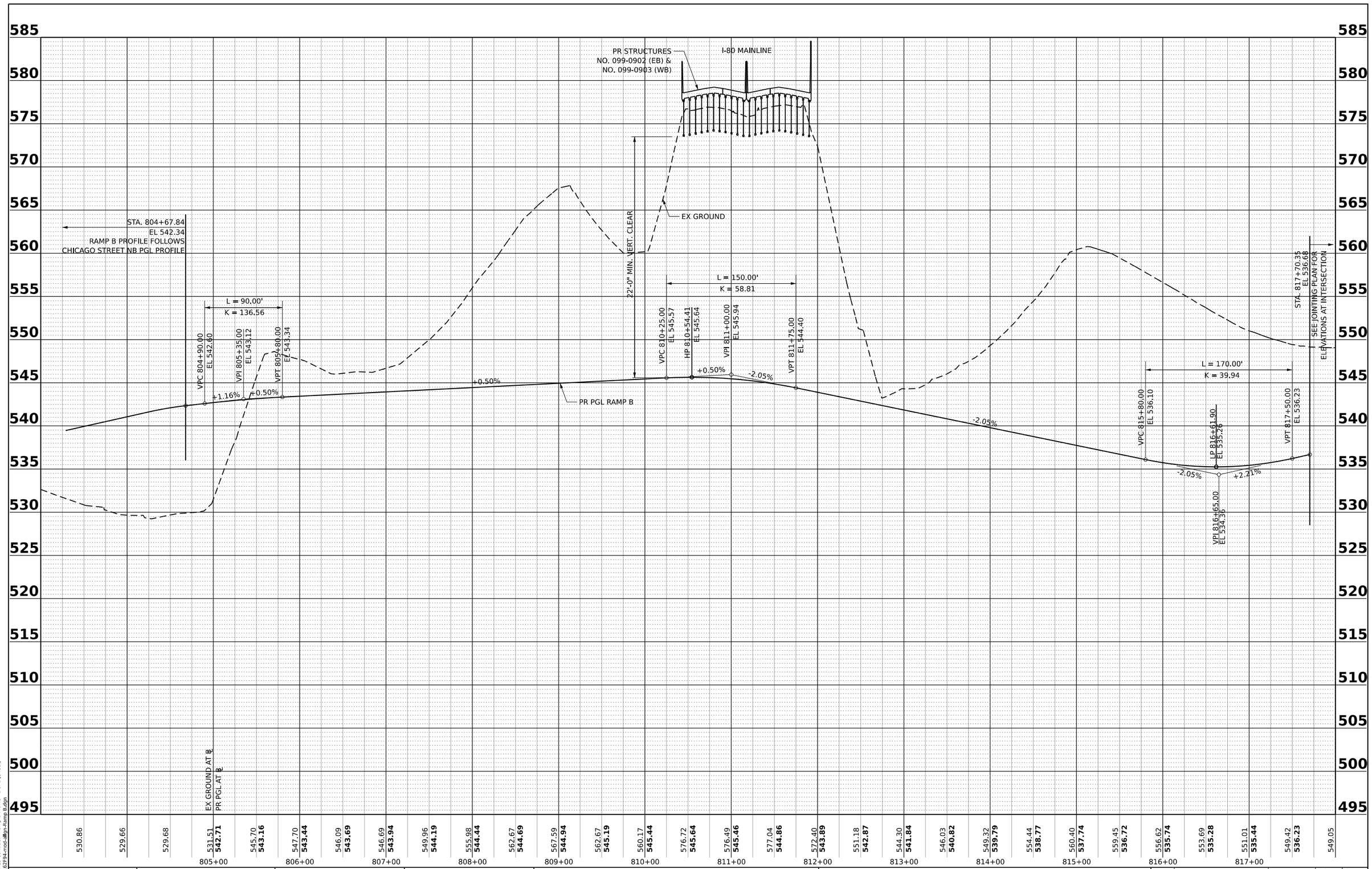
PLOT DATE = 8/21/2025	DATE - 10/31/2025	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	(99-4HB) B-R 24	WILL	236	76
		CONTRACT NO. 62F94		
	ILLINOIS	FED. AID PROJECT		



MODEL: Combined Contract - Ramp B Profile - 1 of 1 [Sheet]
FILE NAME: D162F94-mod-align-Ramp B.dgn

BURNS McDONNELL

USER NAME = cjberliner	DESIGNED - CJB	REVISED -	
	DRAWN - CJB	REVISED -	
PLOT SCALE = 0.16666667 ' / in.	CHECKED - JJR	REVISED -	
PLOT DATE = 8/21/2025	DATE - 10/31/2025	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

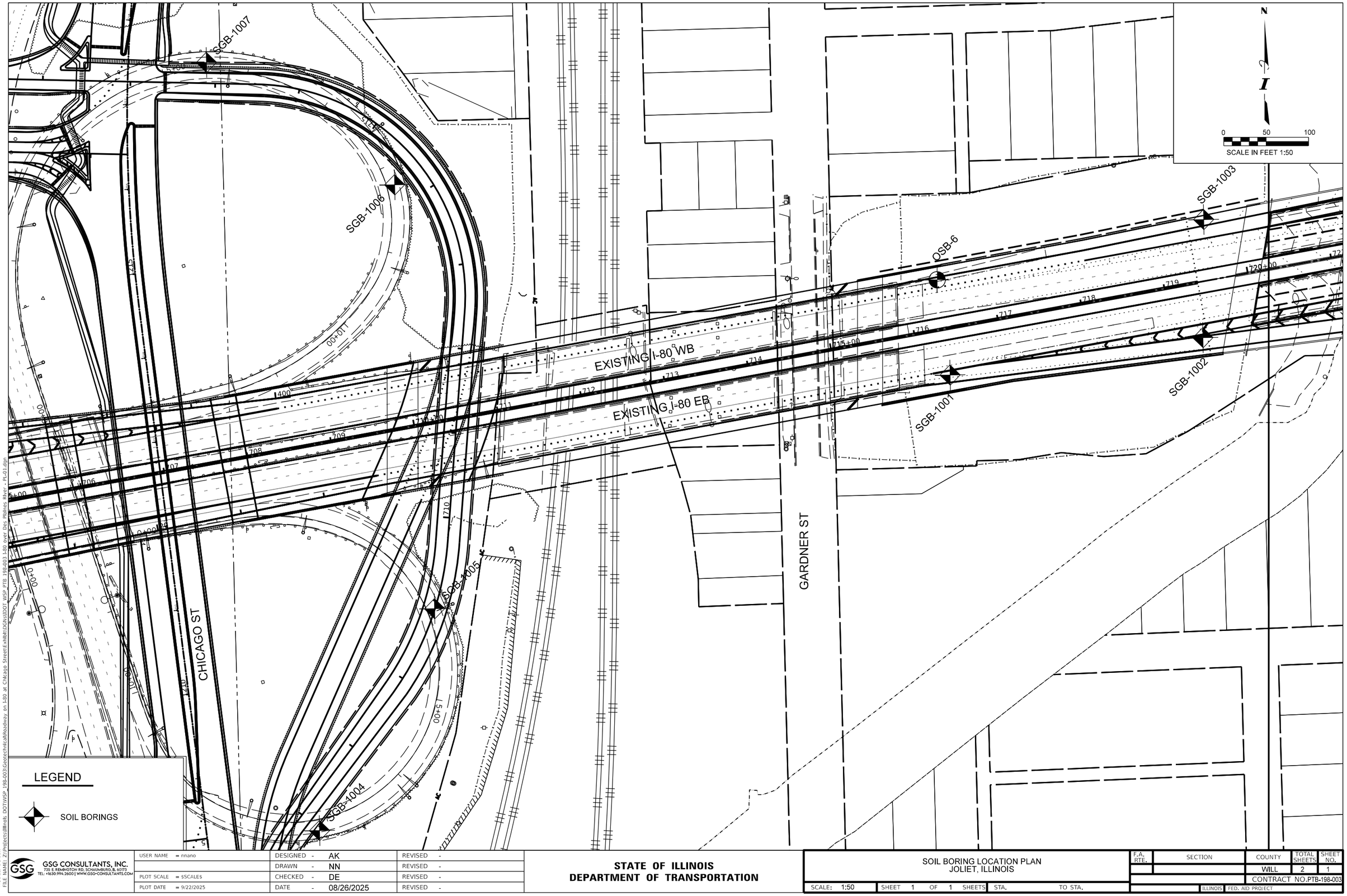
ROADWAY PROFILE
CHICAGO STREET RAMP B

SCALE: 50H:5V | SHEET 7 OF 12 SHEETS | STA. 803+00 | TO STA. 818+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	(99-4HB) B-R 24	WILL	236	80
		CONTRACT NO. 62F94		
	ILLINOIS	FED. AID PROJECT		

APPENDIX B

SOIL BORING LOCATION PLAN



MODEL: Default
FILE NAME: Z:\Projects\Illinois DOT\WSP 198-003\Geotechnical\Roadway on I-80 at Chicago Street\E-Exhibit\DGN\SIDOT WSP PTB 198-003 I-80 over Des Plaines River - PL-01.dgn

GSG CONSULTANTS, INC. 735 E REMINGTON RD. SCHAUMBURG, IL 60173 TEL: +1630.994.2600 | WWW.GSG-CONSULTANTS.COM	USER NAME = nnano	DESIGNED - AK	REVISED -
		DRAWN - NN	REVISED -
	PLOT SCALE = $SCALE$	CHECKED - DE	REVISED -
	PLOT DATE = 9/22/2025	DATE - 08/26/2025	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOCATION PLAN
JOLIET, ILLINOIS

SCALE: 1:50 | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		WILL	2	1
		CONTRACT NO.PTB-198-003		
		ILLINOIS	FED. AID PROJECT	

APPENDIX C

SOIL BORING LOGS

Illinois Department of Transportation
Division of Highways
GSG Consultants, Inc.

SOIL BORING LOG

Date 8/11/25

ROUTE FAI 80 **DESCRIPTION** Roadway Boring - Chicago Street **LOGGED BY** SB

SECTION C-91-109-22 **LOCATION** , **SEC.** , **TWP.** , **RNG.** ,
Latitude , **Longitude**

COUNTY WILL **DRILLING RIG** Geoprobe **HAMMER TYPE** AUTO
DRILLING METHOD HSA **HAMMER EFF (%)** 98.8

STRUCT. NO. N/A
Station N/A

BORING NO. SGB-1001
Station
Offset
Ground Surface Elev. 573.16 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter None **ft**
Upon Completion N/A **ft**
After N/A **Hrs.** N/A **ft**

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
12 inches of Concrete				
572.16				
Light Brown, Dry	10			
FILL: GRAVEL, with sand, trace clay	7 3		2	
569.66				
Light Brown, Moist	6			
FILL: GRAVEL, with sand	5		6	
568.66				
-5 Gray and Brown, Moist	6			
FILL: SILTY CLAY, trace gravel	4			
	4 5	2.1 S	15	
564.66				
Gray, Moist	6			
FILL: SILT, trace clay, trace gravel	7 10		16	
563.16 -10				
End of Boring				
-15				
-20				

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 8/11/25

ROUTE FAI 80 **DESCRIPTION** Roadway Boring - Chicago Street **LOGGED BY** SB

SECTION C-91-109-22 **LOCATION** , **SEC.** , **TWP.** , **RNG.** ,
Latitude , **Longitude**

COUNTY WILL **DRILLING RIG** Geoprobe **HAMMER TYPE** AUTO
DRILLING METHOD HSA **HAMMER EFF (%)** 98.8

STRUCT. NO. N/A
Station N/A

BORING NO. SGB-1002
Station
Offset
Ground Surface Elev. 567.43 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter None **ft**
Upon Completion N/A **ft**
After N/A **Hrs.** N/A **ft**

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
10 inches of Concrete				
566.60				
Light Brown, Dry FILL: GRAVEL, with concrete fragments		15 10 5		3
563.93				
Light Brown, Dry FILL: GRAVEL, with sand		4 2 3		2
	-5			
561.43				
Brown, Moist FILL: SILTY CLAY, trace gravel		2 2 1	2.5 P	21
558.93				
Brown and Gray, Moist FILL: SILTY CLAY, trace gravel		2 5 3	4.0 S	16
557.43	-10			
End of Boring				
	-15			
	-20			

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 8/4/25

ROUTE FAI 80 **DESCRIPTION** Roadway Boring - Chicago Street **LOGGED BY** MP

SECTION C-91-109-22 **LOCATION** , **SEC.** , **TWP.** , **RNG.** ,
Latitude , **Longitude**

COUNTY WILL **DRILLING RIG** CME 75 **HAMMER TYPE** AUTO
DRILLING METHOD HSA **HAMMER EFF (%)** 78.8

STRUCT. NO. N/A
Station N/A

BORING NO. SGB-1004
Station
Offset
Ground Surface Elev. 550.79 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter None **ft**
Upon Completion N/A **ft**
After N/A **Hrs.** N/A **ft**

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
10 inches of Asphalt				
549.96				
Dark Brown and Gray, Moist FILL:SILTY CLAY, some sand, trace gravel, bricks		7		
		6 4	2.5 B	18
		5		
		8 8	3.1 B	18
	-5			
Push crushed limestone rock at 6 feet		39		
		50/1"	2.0 P	11
542.29				
Light Brown, Dry FILL: SANDY GRAVEL, with crushed rocks		5		
		16 19		2
540.79	-10			
End of Boring				
	-15			
	-20			

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 8/4/25

ROUTE FAI 80 **DESCRIPTION** Roadway Boring - Chicago Street **LOGGED BY** MP

SECTION C-91-109-22 **LOCATION** , **SEC.** , **TWP.** , **RNG.** ,
Latitude , **Longitude**

COUNTY WILL **DRILLING RIG** CME 75 **HAMMER TYPE** AUTO
DRILLING METHOD HSA **HAMMER EFF (%)** 78.8

STRUCT. NO. N/A
Station N/A

BORING NO. SGB-1005
Station
Offset
Ground Surface Elev. 566.12 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter None **ft**
Upon Completion N/A **ft**
After N/A **Hrs.** N/A **ft**

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
4 inches of Asphalt 565.79 8 inches of Concrete 565.12				
Light Brown, and Black, Moist FILL: CLAYEY SILT, with sand, trace gravel		5 6 9	2.1 S	13
562.12		6		
Gray and Brown, Moist FILL: SILTY CLAY, trace sand, gravel	-5	5 7 4	2.5 B	14
		4 9 4	2.1 B	17
		7 9	2.7 B	15
556.12	-10			
End of Boring	-15 -20			

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 8/4/25

ROUTE FAI 80 **DESCRIPTION** Roadway Boring - Chicago Street **LOGGED BY** MP

SECTION C-91-109-22 **LOCATION** , **SEC.** , **TWP.** , **RNG.** ,
Latitude , **Longitude**

COUNTY WILL **DRILLING RIG** CME 75 **HAMMER TYPE** AUTO
DRILLING METHOD HSA **HAMMER EFF (%)** 78.8

STRUCT. NO. N/A
Station N/A

BORING NO. SGB-1006
Station
Offset
Ground Surface Elev. 553.57 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter None **ft**
Upon Completion N/A **ft**
After N/A **Hrs.** N/A **ft**

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
11 inches of Asphalt				
552.65				
Brown and Gray, Moist FILL: SILTY CLAY. with sand, little gravel		4		
		3 4	1.9 B	12
550.07				
Brown, Moist FILL: SILTY CLAY, trace sand, little gravel		2		
		2 1	1.9 B	20
	-5			
		2		
		1 2	0.6 B	12
		2		
		3 8	1.9 B	15
543.57	-10			
End of Boring				
	-15			
	-20			

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 8/4/25

ROUTE FAI 80 **DESCRIPTION** Roadway Boring - Chicago Street **LOGGED BY** MP

SECTION C-91-109-22 **LOCATION** , **SEC.** , **TWP.** , **RNG.** ,
Latitude , **Longitude**

COUNTY WILL **DRILLING RIG** CME 75 **HAMMER TYPE** AUTO
DRILLING METHOD HSA **HAMMER EFF (%)** 78.8

STRUCT. NO. N/A
Station N/A

BORING NO. SGB-1007
Station
Offset
Ground Surface Elev. 564.24 **ft**

Surface Water Elev. N/A **ft**
Stream Bed Elev. N/A **ft**

Groundwater Elev.:
First Encounter None **ft**
Upon Completion N/A **ft**
After N/A **Hrs.** N/A **ft**

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
10 inches of Asphalt				
563.41				
Brown and Gray, Moist FILL: SILTY CLAY, little sand, little gravel		4		
		3 7		
		3		
	-5	3 3	4.2 B	19
558.24				
Black and Gray, Moist FILL: SILTY CLAY, some gravel, trace sand		6		
		7 7	1.7 B	15
		4		
		8 7	2.7 B	16
554.24	-10			
End of Boring				
	-15			
	-20			

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 8/24/22

ROUTE I-80 **DESCRIPTION** Overhead Sign (5-WB-029-O) **LOGGED BY** KA

SECTION C-91-109-22 **LOCATION** , **SEC.** 15, **TWP.** 35 N, **RNG.** 10 E,

COUNTY Will **DRILLING RIG** Diedrich D-50 **HAMMER TYPE** Auto
Latitude , **Longitude**
DRILLING METHOD HSA **HAMMER EFF (%)** 98

STRUCT. NO.
Station

BORING NO. OSB-6
Station 716+38.08
Offset 58.46ft LT
Ground Surface Elev. 574.00 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion N/A ft
After Hrs. N/A ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				12 inches of Asphalt
				573.00
	4			Brown, Moist
	3	1.3	18	FILL: CLAY, trace sand and
	4	P		gravel
	3			
	2	4.3	22	
-5	3	P		
	2			
	4	3.0	15	
	7	P		
	6			
	5	2.9	17	
-10	8	B		
	4			
	7	3.5	18	
	5	B		
	4			
	4	2.1	16	
-15	5	B		
				558.00
	4			Brown and Gray, Moist
	5		15	FILL: SANDY LOAM, trace sand
	6			
				555.50
	3			Brown, Moist
	3	2.5	22	FILL: SILTY CLAY, trace sand
-20	4	P		

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				Brown, Moist
				FILL: SILTY CLAY, trace sand
				553.00
	4			*(continued)*
	5	1.7	15	Stiff to Hard
	5	B		Brown, Moist
				SILTY CLAY LOAM, trace gravel
	5			(ML/CL)
	7	4.5	15	
-25	8	P		
				548.00
	6			Medium Dense
	7		13	Brown and Gray, Moist
	8			SILTY LOAM, trace sand (ML)
	7			
	10		12	
	12			544.00
-30				End of Boring
-35				
-40				

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

BBS, form 137 (Rev. 8-99)