

**SECTION 00 90 02
BIDDING AND CONTRACT REQUIREMENTS
ADDENDUM NUMBER 2**

**Demonica Kemper Architects
125 N. Halsted Street, Suite 301
Chicago, IL 60661
312.496.0000**

To: Prospective Bidders

Issued: May 5, 2026

Re: ADDENDUM NUMBER (2) TO THE BIDDING DOCUMENTS FOR

**Fire Tower Replacement
Issued for Bid**

Architect's Project Number: 25-028

This addendum forms a part of the bidding and contract documents and modifies the original bidding documents dated April 21, 2026. Acknowledge receipt of this addendum in the space provided on Bid Form. FAILURE TO DO SO MAY SUBJECT BIDDER TO DISQUALIFICATION.

ADDENDA TO THE PROJECT MANUAL

1. 00 31 32 – GEOTECHNICAL DATA

- A. **ADD** the attached specification section in its entirety for reference.

ADDENDA TO THE DRAWINGS

STRUCTURAL

1. S1.00

- A. **REVISE** embed plate notes in details 2 and 3 to clarify installation scope.
B. **REVISE** foundation plan column grids to show different grids at each building. Refer to civil drawings for each building location.

CLARIFICATIONS

1. Pre-Bid RFI #1 – Please provide soil report for fire tower project.
A. **RESPONSE:** See attached for Geotech report.

This addendum consists of 1 pages, excluding attachments.

END 00 90 02.

Attachments:

1. 00 31 32 – GEOTECHNICAL DATA
2. S1.00

DOCUMENT 00 31 32 - GEOTECHNICAL DATA

PART 1 - GENERAL

1.1 GEOTECHNICAL DATA

- A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of Bidders' own investigations. They are made available for Bidders' convenience and information. This Document and its attachments are not part of the Contract Documents.
- B. Because subsurface conditions indicated by the soil borings are a sampling in relation to the entire construction area, and for other reasons, the Owner, the Architect, the Architect's consultants, and the firm reporting the subsurface conditions do not warranty the conditions below the depths of the borings or that the strata logged from the borings are necessarily typical of the entire site. Any party using the information described in the soil borings and geotechnical report shall accept full responsibility for its use.
- C. A geotechnical investigation report for Project, prepared by Midland Standard Engineering & Testing, Inc., dated February 9, 2026, is available for viewing as appended to this Document.
 - 1. The opinions expressed in this report are those of a geotechnical engineer and represent interpretations of subsoil conditions, tests, and results of analyses conducted by a geotechnical engineer. Owner is not responsible for interpretations or conclusions drawn from the data.
 - 2. Any party using information described in the geotechnical report shall make additional test borings and conduct other exploratory operations that may be required to determine the character of subsurface materials that may be encountered.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF DOCUMENT 00 31 32



www.msetinc.com

MIDLAND STANDARD ENGINEERING & TESTING, INC.

410 Nolen Drive, South Elgin, Illinois 60177

(847) 844-1895 f(847) 844-3875

February 9, 2026

Ms. Sandy Schwendeman
Assistant Vice President of Facilities
McHenry County College
8900 US Highway 14
Crystal Lake, Illinois. 60012

Re: Geotechnical Exploration and Analysis
McHenry County College Fire Tower
Crystal Lake, Illinois
MSET File No. 26210

Dear Ms. Schwendeman:

We have completed the explorations and analyses requested for the referenced project. Our findings and recommendations are presented in the attached report.

The recommendations presented herein are based on the information available at the time of our analysis. After plans and specifications are more complete, we welcome the opportunity to review them with respect to the prevailing soil and groundwater conditions. It may be necessary to conduct further analysis and submit supplemental recommendations at that time. If you have any questions regarding this report, please feel free to call.

Very truly yours,
MIDLAND STANDARD ENGINEERING & TESTING, INC.

Robert L. Gay, P.E.
Sr. Geotechnical Engineer



William D. Prigge, P.E.
Principal

Attachments: Boring Location Map
Site Historical Aerial Photos
Boring Coordinates
Boring Logs
Pavement Core Log
Pavement Core Photo
General Notes

Expins
11/30/27

INTRODUCTION

Scope and Purpose

The purpose of this exploration and analysis was to determine the various soil profile components, the engineering characteristics of the materials, and to provide criteria for use by the design engineers in preparing the project plans.

The scope of this exploration included a geological reconnaissance of the site, a review of previous soil investigations in the area, subsurface exploration, soil testing, analytical lab testing, and an engineering analysis and evaluation of the materials encountered.

General

The exploration and analysis of the subgrade conditions reported herein are considered sufficient in detail and scope to form a reasonable basis for design. This report has been prepared for the exclusive use and specific application to the proposed project.

The recommendations submitted are based on the available soil information and site plan furnished to us. Any revisions in the plans for the proposed structures from those enumerated in this report should be brought to the attention of the Soils Engineer to determine if changes in the recommendations are required. Any deviations from the noted subsurface conditions that are encountered during construction should also be brought to the attention of the Soils Engineer.

The Soils Engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been promulgated after being prepared in accordance with generally accepted professional engineering practice in the fields of foundation engineering, soil mechanics and engineering geology. No other warranties are implied or expressed.

SITE INFORMATION

Project Location and Description

The project consists of construction of two Fire Training Structures and expansion of a Stormwater Infiltration Basin located near the southeast corner of the McHenry County College campus in Crystal Lake, Illinois.

- The proposed Fire Training Structures will be constructed on the east side of Circle Drive at the existing Fire Training Facility. The existing training facility consists of two abutting buildings, one of which will be demolished prior to new construction. A concrete access road is located on the east side of the existing structures. A new 4-story Fire Tower, consisting of an interlocking system of steel container boxes, will be constructed south and abutting the remaining building. A 1-story container structure will be constructed on the east side of the concrete access drive.
- The existing Stormwater Detention Basin is located southeast of the baseball field. Current plans include widening the basin to attain additional infiltration capacity.

Previous Investigation

MSET performed an investigation for a First Responder Training building that is located approximately 600 feet southeast of the proposed Fire Tower. The work also included an investigation for the Stormwater Infiltration Basin referenced above. The results of the

investigation were included in an April 1, 2021 Geotechnical Report. Pertinent data from the investigation is included herein.

FIELD EXPLORATION

Scope

Our exploration program included the following:

- Four (4) structure borings to a depth of 15 feet below ground surface for the Fire Tower structures.
- One boring to a depth of 15 feet at the proposed Stormwater Detention Basin expansion.
- One pavement core in the access road at the Fire Training Facility.

An MSET field crew staked the boring locations using a Trimble® Catalyst GNSS Receiver. Ground surface elevations were also determined using the receiver.

Drilling Equipment

The soil borings were drilled using a truck mounted Geoprobe® 3100GT drill rig equipped with a rotary head. Hollow stem augers were used to advance the boreholes.

Sampling and Standard Penetration Test Procedures

Representative samples were obtained by the use of split-spoon sampling procedures in accordance with ASTM Procedure D1586.

During the split spoon sampling procedures, a standard penetration test was performed in accordance with current ASTM D1586 procedures. At sampling intervals, advancement of the boring was stopped and all loose material removed from the borehole. The sampler was then lowered into the borehole and seated in undisturbed soil by pushing or tapping, taking suitable precautions that the rods were reasonably tight. The sampling spoon was then driven using an automatic drop hammer. During the sampling procedure, the standard penetration value (N) of the soil was determined. The standard penetration value (N) is defined as the number of blows of a one hundred forty-pound (140 lb) hammer required to advance the spoon sampler one foot (12") into the soil.

The results of the standard penetration tests indicate the relative density and comparative consistency of the soils and thereby provide a basis for estimating the relative strength and compressibility of the soil profile components. The results of the standard penetration tests can be found on the attached boring logs.

Pavement Sampling Procedures

The pavement core was made with a 4-inch diameter core barrel/electric drill setup to sample all pavement components. A sample of the granular base and underlying subgrade soil was obtained using hand auger equipment. Strength measurements of the subgrade soils were determined using a dynamic cone penetrometer in accordance with Illinois Test Procedure 501 of the IDOT 'Manual of Test Procedures for Materials'.

Strength Tests

During the field boring operations, samples of the predominantly cohesive soil from the split spoon sampling device were tested using a calibrated soil penetrometer to aid in determining the strength of the soil. Consideration must be given to the manner in which the values of the unconfined compressive strengths were obtained. Split spoon sampling techniques provide a representative, but somewhat disturbed soil sample.

Water Level Measurements

Water level observations were made during and immediately after the boring operations were completed and are noted on the attached boring logs. In relatively pervious (granular) soils, the indicated elevations are considered reliable groundwater levels. In relatively impervious (clay) soils, the accurate determination of the groundwater elevation may not be possible, even after several days of observation. Seasonal variations, temperature and recent rainfall conditions may influence the levels of the groundwater table and volumes of water will depend on the permeability of the soils.

LABORATORY TESTING

Scope

A supplemental testing program was conducted to ascertain additional pertinent engineering characteristics of the subgrade and foundation materials. The soils laboratory work was performed in accordance with applicable ASTM standards. The laboratory-testing program included classification; moisture content determination for each sample obtained, and unconfined compression testing for applicable samples. Atterberg Limit and Grain Size Analysis tests were performed on selected profile samples. The results of testing are provided on the attached boring logs and laboratory test data sheets.

PAVEMENT CONDITIONS

Pavement Section

Core C-105 was located in a concrete access road that separates the two fire training structures. The pavement material encountered in the core is summarized below.

Table 1 – Summary of Pavement Materials

Core No.	Alignment	PC Concrete Thickness (Inches)	Granular Base Thickness (Inches)	Total Section (Inches)	Subgrade Soil
C-105	Access Road	9--3/4"	3-1/4"	13-0"	FILL - Grey Crushed Gravel with Sand, GW Mc = 6%, IBV=42

SUBSURFACE CONDITIONS

Fire Tower

The soil conditions encountered at the Fire Training Structures include the following:

Table 2 – Soil Conditions at Fire Training Structures – Borings B-1 through B-4

Depth	Thickness Range	Soil Description	SPT N-Values (bpf)	Moisture Content (%)	Qu/Qp (tsf)
0.0 – 1.2'	10" – 18"	Dark Brown Clayey TOPSOIL	-	-	-
1.2' – 5.5' ¹	2.3' – 4.7'	Dark Brown to Brown Sandy Lean CLAY, CL	3 – 6	14 – 22	0.35 to 2.3
5.5' – 15.0'	9.5' – 11.5'	Brown SAND with Gravel, SW, SP	22 – 50+	3 - 10	-

¹ Deposit encountered to 3.5 feet in Boring B-102

Stormwater Infiltration Basin

Boring B-106 was made in the northern part of the existing Stormwater Infiltration Basin. The soil conditions include the following:

Table 3 – Soil Conditions at Stormwater Infiltration Basin – Boring B-106

Depth	Elevation	Soil Description	SPT N-Values (bpf)	Moisture Content (%)	Qu/Qp (tsf)
0.0' – 1.3'	916.0 – 914.7	Black Sandy TOPSOIL	-	-	-
1.3' – 3.0'	914.7 – 913.0	FILL – Brown GRAVEL with Sand, GW	8	4	-
3.0 – 7.5	913.0 – 908.5	FILL - Brown Sandy Lean CLAY to Clayey SAND, CL/SC-SM	7 – 12	9 – 25	0.16 – 0.8
7.5 – 11.0	908.5 – 905.0	Brown Silty SAND, SM	21	7	-
11.0 – 15.0	905.0 – 901.0	Brown SAND, SW-SM	21 – 29	8 – 9	-

For reference, the following conditions were encountered in Boring B-6 which was located in the southern part of the basin prior to construction.

Table 4 – Soil Conditions at Stormwater Infiltration Basin – Borings B-6 (2021)

Depth	Elevation	Soil Description	SPT N-Values (bpf)	Moisture Content (%)	Qu/Qp (tsf)
0.0' – 1.2	921.8 - 920.6	Dark Brown CLAY TOPSOIL	-	27	-
1.2' – 3.0'	920.6 - 918.8	Brown Lean CLAY, CL	4	26	1.5
3.0' – 15.0'	918.8 - 906.8	Brown SAND with Gravel, SP-GP	9 – 13	5 - 13	-

Details of the soils encountered at each boring location are presented on the attached Boring Logs.

Groundwater Conditions

Groundwater measurements were made during and immediately after the drilling operations were complete. Groundwater was not encountered at Borings B101 through B-104 during or immediately after drilling. In Boring B-106 at the Stormwater Infiltration Basin, groundwater was encountered at a depth of 11.0 feet (Elev. 905.0) during drilling.

Details of the groundwater conditions at each boring location are presented on the attached Boring Logs.

SITE PREPARATION

General Subgrade Preparation – Fire Training Area

The southwestern project site is currently developed with an existing masonry fire tower that will be demolished in preparation for the new tower. The northeastern area is undeveloped and covered with grass. Minor site grading is anticipated to grade the building pads to design subgrade.

After removal of building debris/foundations, surface vegetation and topsoil, the exposed grade should be roughly leveled and compacted. Once compacted, the grade should be proof rolled and examined for soft, loose, or unstable areas. Proof rolling should be performed with a loaded semi-dump truck, rubber-tired end loader or similar equipment with a wheel load sufficient to locate any soft or unstable areas. Any localized areas of unstable or otherwise unsuitable materials that are not stabilized with compaction should be removed to the depth encountered or treated with a stabilizing layer on which FILL, or base course can be constructed.

Subgrade Considerations

Subgrade soils below the surficial topsoil layer are largely anticipated to include firm to very stiff Brown and Dark Brown Lean CLAY with Sand. Design subgrade (bottom-of-Base Course) for the concrete floor slab is expected to be 18 to 24 inches below existing grade or 6" to 12" below the top of native Dark Brown and Brown CLAY. Disking/drying and recompaction of the exposed subgrade soils should be anticipated. During seasonally wet periods where diskings and drying is not feasible or when construction scheduling dictates, subgrade modification with quicklime or lime kiln dust may be considered for the upper clay soils to provide a stable platform for the Base Course. Alternately, the unstable soil can be removed and replaced with Structural Fill.

Structural/Embankment Fills

Material used as FILL during mass grading should be a cohesive (clay type) material, classified as 'CL' or 'CL-ML', or a granular material such as 'SP/SW', 'GP/GW' or 'SC/GC' in accordance with ASTM D-2487, Classification of Soils for Engineering Purposes.

Structural FILL is utilized in the building pad areas and should be placed in 9-inch maximum lifts loose measure and compacted to 95 percent of the maximum dry density as defined by ASTM D-1557 (Modified Proctor).

FOUNDATION RECOMMENDATIONS

Building Considerations

Construction of the Fire Tower (western structure) will include an interlocking system of steel container boxes that are stacked up to 4 containers high to form the training structure. The overall footprint of the structure is 48 feet by 24 feet. As noted above, the Fire Tower will be located on the southwestern side of the road. On the northeastern side of the road, one ground-mounted container be installed with an overall footprint of 56 feet by 16 feet. The structures will be supported by one of the following two methods:

- A series of drilled concrete piers that are located at each container structural support. Preliminary design includes 15 piers for the 4-story structure and 13mpiers for the 1-story structure.
- A structural slab under the entire structures with holddowns at each structural anchor point.

The applied vertical loads are expected to be small to moderate. Design of the 4-story fire structure may be controlled by uplift loading cased by wind loads. Top-of-floor slab was not available at the time of this exploration program but is assumed to be near or slightly higher than existing grade.

DRILLED PIER FOUNDATION DESIGN

Foundation Support Soil. The following soil types were considered for support of the footings:

- The 10 to 18-inch thick Topsoil layer possesses poor engineering properties and will not provide adequate support for the building or floor slab.
- The underlying Dark Brown to Brown Lean CLAY (CL) possesses modest strength properties ($Q_u=0.35$ to 2.3 tsf). The soil is capable of supporting the structure with a reduced allowable bearing capacity of 2,000 psf and a modest pull-out capacity as presented in the following table.
- The SAND with Gravel deposit encountered below a depth of 3.5 to 5.0 feet below grade possesses adequate engineering properties to support an allowable bearing capacity of 3,000 psf.

The following presents a summary of the depths to adequate bearing soil.

Table 5 – Summary of Depths to Adequate Bearing Soil

		2,000 psf Bearing		3,000 psf	
Boring No.	Surface Elev.	Depth to Bearing Soil (Feet)	Elev. Bearing Soil	Depth to Bearing Soil (Feet)	Elev. Bearing Soil
B-1	928.7	3.5	925.2	5.5	923.2
B-2	929.5	3.5	926.0	3.5	926.0
B-3	928.9	3.5	925.4	5.5	923.4
B-4	928.8	5.5	923.3	5.5	823.3

Drilled Pier Recommendation. The above depth to adequate bearing soil can be used to determine the most economical way to design and construct the foundation system. The bottom-of-piers should be located a minimum of 3-1/2 feet (42 inches) below final exterior grade on suitable bearing material to eliminate the effects of frost action and alleviate the effects of seasonal moisture variation on foundation system behavior. The actual depth should be determined based on the required resistance to lateral and pullout forces created by wind loads.

If unsuitable bearing materials are encountered at or near the design bottom-of-pier elevation, the piers should be extended down to suitable bearing soils. The pier excavations should be free of standing water, soft and loose materials, and inspected prior to concrete placement. All piers should be concreted in a timely manner to prevent accumulation of water and debris in the excavation. Piers founded in the properly prepared, approved profile soils and dimensioned using the suggested bearing pressures at the recommended foundation depths will experience settlements less than 1/2-inch with estimated differential settlements of 1/4-inch.

Allowable Side Friction. Resistance to uplift loads can be developed using the adhesion or friction that is developed between the concrete pier and soil. Resistance to lateral loads can be developed from passive pressure of the soil against the pier. For uplift and lateral load analyses, the following subgrade values can be used for design.

50

Table 6 – Summary of Uplift and Resistance to Lateral Load Design Parameters

Depth From Ground Surface (ft)	Soil Type	Allowable Adhesion for Uplift FS = 2.0 (psf)	Lateral Subgrade Modulus (pci)	Soil Strain Parameter (Σ_{50})
0.0 – 2.5	Topsoil/CLAY, CL	-	-	-
2.5 – 5.5	CLAY, CL	200	100	0.01
5.5 – 10.5	SAND with Gravel, SW	500	90	-
10.5 – 15.0	SAND with Gravel, SW	800	90	-

The upper 2.5 feet of pier should be ignored for piers that could be subject to freezing temperatures. The lateral resistance should be limited by assuming a maximum lateral deflection of 1/4 to 1/2 inches.

Granular Structural Fill. Materials used as Granular Structural FILL should be a crushed stone or concrete product meeting IDOT gradation CA-01 or CA-06 specifications. Well graded materials should be placed in lifts not to exceed nine (9) inches loose measure and compacted to a minimum of 95 percent of the maximum dry density as defined by ASTM D1557. Open graded materials shall be placed in lifts not to exceed twelve (12) inches loose measure and compacted to the satisfaction of the geotechnical engineer.

SLAB SUPPORTED FOUNDATION

Subgrade Preparation. Following Topsoil removal and excavation to design subgrade, the exposed subgrade should be proofrolled and prepared with the procedures as discussed in Site Preparation.

Design Parameters – Slab-on-Grade. The structural slab can be designed with a net allowable bearing capacity of 2,000 psf. Based on the CLAY subgrade soils anticipated at the site, a subgrade modulus (k) of **100 psi/in** may be used for slab design. This value is representative of the design soil type and assumed that the subgrade is properly dried and compacted prior to slab construction. This means all areas disturbed by the structure erection are corrected in accordance with the plans and specifications.

Recommended Base Course. A twelve (12)- inch thick minimum thickness of Granular Base Course comprised of well graded aggregate (IDOT CA-6 or equivalent) should be used over the subgrade and under the slab.

Seismic Design Parameters

The Site Classification is based on the upper 100 feet of the site profile defined by a weighted average value of either shear wave velocity, standard penetration resistance, or undrained shear strength in accordance with ASCE 7-22.

Based on the soil properties encountered at the site and as described on the boring logs, it is our opinion that the Seismic Site Classification is D (Stiff Soil) as detailed in the table below. Subsurface explorations at the site were extended to a depth of 15 feet below existing grade and geologic data was used to determine the soil properties below this depth.

Table 7 – Seismic Design Parameters

Description	Type	Value
Site Classification		D
Risk Category	I, II, III, or IV	II
Seismic Design Category	SDC	B
MCE _R Ground Motion (0.2 Sec Period)	S _s	0.14
MCE _R Ground Motion (1.0 Sec Period)	S ₁	0.066
MCE _R Ground Acceleration	PGA	0.074

STORMWATER DETENTION BASIN RECOMMENDATIONS

Recommendation for Stormwater Detention Basin design will be submitted pending further discussion and design details. Reference Tables 3 and 4 for a summary of the subsurface conditions at the basin.

GENERAL NOTES

Excavation Safety

Shallow depth excavations extending into the existing fill materials will only stay vertical for a short period of time. Please note that OSHA requirements dictate the use of sloping back or shoring and bracing of the excavation during construction. All work should be done in accordance with OSHA and local requirements.

Surface and Groundwater Control

Shallow depth excavations are anticipated to stay above the groundwater elevation. Seasonally perched groundwater may be encountered through exposed silt and sand seams encountered below the surficial clay layer. The contractor should be prepared to control groundwater that enters the excavation with a system of sumps and pumps as needed. Additionally, sloping of the ground away from the excavation should be performed to control surface runoff and maintain dry excavations.

Boring Location Map

McHenry County College
Fire Tower Project
Crystal Lake Illinois
MSET File No. 25610

Legend

◆ Soil Boring



B-101

B-102

C-105

B-103

B-104

Google Earth

Image © 2025 Vexcel Imaging US, Inc.

90 ft



Boring Location Map

McHenry County College
Fire Tower Project
Crystal Lake Illinois
MSET File No. 25610

Legend

- ◆ B-106 2026 Boring/Piezometer
- B-6 2021 Boring/Piezometer



SUMMARY OF BORING LOCATIONS AND GROND SURFACE ELEVATIONS
McHENRY COUNTY COLLEGE
CRYSTAL LAKE, ILLINOIS

Location	Easting	Northing	Latitude	Longtiude	Elevation
B-101	975,616.3	2,037,174.7	42.2595497	-88.365227	928.7
B-102	975,653.6	2,037,132.6	42.2594344	-88.365089	929.5
B-103	975,593.0	2,037,063.1	42.2592437	-88.365312	928.9
B-104	975,645.4	2,037,037.9	42.2591744	-88.365119	928.8
B-106	975,679.4	2,036,204.0	42.2568862	-88.364992	916.0
C-105	975,622.6	2,037,120.3	42.2594006	-88.365203	928.2

BORING LOG B-101

PROJECT: McHenry County College Fire Tower



PROJECT NO.: 26210 Pg. 1 of 1

LOCATION: Crystal Lake, Illinois

LOGGED BY: MM

DRILL RIG: 3100 GT

CLIENT: McHenry County College

GROUNDWATER DURING DRILLING: None

DATE STARTED: 1/21/26 DATE FINISHED: 1/21/26

GROUNDWATER AFTER DRILLING: Dry

LOCATION: _____

DELAYED GROUNDWATER: after _____

COORDS. N: 2037174.7 E: 975616.3

CAVE IN DEPTH: Open BORING METHOD: HSA

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE			TESTS			REMARKS
				TYPE/ INTERVAL	NO.	N-VALUE Blows per ft.	Wc%	Dry Unit Weight, pcf	Unconfined Compressive Strength, tsf	
0		18" Dark Brown Clayey TOPSOIL	928.7							
3		Dark Brown to Brown Sandy Lean CLAY, CL, stiff to firm LL = 26, PL = 11, PI = 15 Sand = 48%, Silt = 33%, Clay = 19%	927.2	SS	1	5	14		1.25 Qp	
				SS	2	4	14	94	0.89	
6		Brown (f-c) SAND with Gravel, SW, medium dense to dense	923.2	SS	3	22	3			
9				SS	4	29	3			
12				SS	5	31	4			
				SS	6	29	3			
		End of Boring at 15.0'	913.7							

BORING LOG B-102

PROJECT: McHenry County College Fire Tower



PROJECT NO.: 26210 Pg. 1 of 1

LOCATION: Crystal Lake, Illinois

LOGGED BY: MM

DRILL RIG: 3100 GT

CLIENT: McHenry County College

GROUNDWATER DURING DRILLING: None

DATE STARTED: 1/21/26 DATE FINISHED: 1/21/26

GROUNDWATER AFTER DRILLING: Dry

LOCATION: _____

DELAYED GROUNDWATER: after _____

COORDS. N: 2037132.6 E: 975653.6

CAVE IN DEPTH: Open BORING METHOD: HSA

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE			TESTS			REMARKS
				TYPE/ INTERVAL	NO.	N-VALUE Blows per ft.	Wc%	Dry Unit Weight, pcf	Unconfined Compressive Strength, tsf	
0		14" Dark Brown Clayey TOPSOIL	929.5							
3		Brown Lean CLAY with Sand, CL, very stiff LL = 34, PL = 13, PI = 21	928.3	SS	1	5	16		2.0 Qp	
6		Brown (f-c) SAND with Gravel, SW, medium dense	926.0	SS	2	24	4			
9		Brown (f-m) SAND, SP, medium dense	923.5	SS	3	12	4			
12		Brown (f-c) SAND with Gravel, SW, medium dense to dense	921.5	SS	4	27	3			
				SS	5	24	3			
				SS	6	32	3			
		End of Boring at 15.0'	914.5							

BORING LOG B-103

PROJECT: McHenry County College Fire Tower



PROJECT NO.: 26210 Pg. 1 of 1

LOCATION: Crystal Lake, Illinois

LOGGED BY: MM

DRILL RIG: 3100 GT

CLIENT: McHenry County College

GROUNDWATER DURING DRILLING: None

DATE STARTED: 1/21/26 DATE FINISHED: 1/21/26

GROUNDWATER AFTER DRILLING: Dry

LOCATION: _____

DELAYED GROUNDWATER: after _____

COORDS. N: 2037063.1 E: 975593.0

CAVE IN DEPTH: Open BORING METHOD: HSA

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE			TESTS			REMARKS
				TYPE/ INTERVAL	NO.	N-VALUE Blows per ft.	Wc%	Dry Unit Weight, pcf	Unconfined Compressive Strength, tsf	
0		10" Dark Brown Clayey TOPSOIL	928.9							
3		Dark Brown and Brown Lean CLAY with (f) Sand, CL, stiff to very stiff	928.1	SS	1	5	20	85	1.67	
6		Brown (f-c) SAND with Gravel, SW, medium dense to dense Brown SP-SM seam at 6.5'	923.4	SS	2	6	22		2.3 Qp	
9				SS	3	23	10			
12				SS	4	27	3			
				SS	5	26	4			
				SS	6	31	3			
		End of Boring at 15.0'	913.9							

BORING LOG B-104

PROJECT: McHenry County College Fire Tower



PROJECT NO.: 26210 Pg. 1 of 1

LOCATION: Crystal Lake, Illinois

LOGGED BY: MM

DRILL RIG: 3100 GT

CLIENT: McHenry County College

GROUNDWATER DURING DRILLING: None

DATE STARTED: 1/21/26 DATE FINISHED: 1/21/26

GROUNDWATER AFTER DRILLING: Dry

LOCATION: _____

DELAYED GROUNDWATER: after _____

COORDS. N: 2037037.9 E: 975645.4

CAVE IN DEPTH: Open BORING METHOD: HSA

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE			TESTS			REMARKS
				TYPE/ INTERVAL	NO.	N-VALUE Blows per ft.	Wc%	Dry Unit Weight, pcf	Unconfined Compressive Strength, tsf	
0		16" Dark Brown Clayey TOPSOIL	928.8							
3		Dark Brown and Brown Lean CLAY with (f) Sand, CL, firm to soft	927.5	SS	1	5	20		0.8 Qp	
6		Brown (f-c) SAND with Gravel, SW, medium dense to very dense	923.3	SS	2	3	22	89	0.35	
9				SS	3	27	3			
12				SS	4	50	3			
				SS	5	48	4			
		Hit Boulder at 13.5'		SS	6	50/ 4"				No Recovery
		End of Boring at 15.0'	913.8							

BORING LOG B-106

PROJECT: McHenry County College Fire Tower



PROJECT NO.: 26210 Pg. 1 of 1

LOCATION: Crystal Lake, Illinois

LOGGED BY: MM

DRILL RIG: 3100 GT

CLIENT: McHenry County College

GROUNDWATER DURING DRILLING: 11.0'

DATE STARTED: 1/21/26 DATE FINISHED: 15.0'

GROUNDWATER AFTER DRILLING: Dry

LOCATION: _____

DELAYED GROUNDWATER: _____ after _____

COORDS. N: 2,036,204.0 E: 975,679.4

CAVE IN DEPTH: Open BORING METHOD: HSA

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE			TESTS			REMARKS
				TYPE/ INTERVAL	NO.	N-VALUE Blows per ft.	Wc%	Dry Unit Weight, pcf	Unconfined Compressive Strength, tsf	
0		15" Black Sandy TOPSOIL	916.0							
		FILL - Brown (f-c) GRAVEL with Sand, GW, slightly dense	914.7	SS	1	8	4			
3		FILL - Brown and Grey Sandy Lean CLAY with Gravel, CL, firm	913.0	SS	2	7	25		0.8 Qp	
6		FILL - Brown (f-c) Silty Clayey SAND with Gravel, SC-SM, medium dense	910.0	SS	3	12	9	123	0.16	
		Brown (f-c) Silty SAND with Gravel, SM, medium dense	908.5							
9				SS	4	21	7			
		Brown (f-c) SAND with Silt and Gravel, SW-SM, medium dense	905.0	SS	5	21	8			
12				SS	6	29	9			
		End of Boring at 15.0'	901.0							

PROJECT: **First Responder Training Building** SITE LOCATION: **Crystal Lake, IL**
 BORING LOCATION: **See Location Map** CLIENT: **McHenry County College**

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE			TESTS			REMARKS
				TYPE/ INTERVAL	NO.	N-VALUE Blows per ft.	Wc%	Dry Unit Weight, pcf	Unconfined Compressive Strength, tsf	
0		Dark Brown CLAY Topsoil (14")	921.8	AU	1		27			
		Brown Lean CLAY with Sand, CL, stiff	920.6	SS	2	4	26		1.5 Qp	
3		Brown SAND with Gravel, SP-GP, medium dense	918.8	SS	3	11	7			
6				SS	4	13	5			
9				SS	5	10	10			
12				SS	6	10	13			
				SS	7	9	10			
		End of Boring at 15 Feet	906.8							




<p>DURING DRILLING: 11.0'</p> <p>IMMEDIATELY AFTER DRILLING: 10.4'</p> <p>DELAYED READING AFTER CAVE IN DEPTH </p>		<p>BORING STARTED: <u>3/10/21</u></p> <p>BORING COMPLETED: <u>3/10/21</u></p> <p>LOGGED BY: <u>MF</u></p> <p>BORING METHOD: <u>HSA</u></p>
---	--	--

PROJECT: McHenry County College Fire Tower
CLIENT: McHenry County College
LOCATION:
DATE DRILLED: 1/21/26
LOGGED BY: MM

WELL INFORMATION
AUGER: 2-1/4" HSA **WELL PACK:** #5 Silica Sand
WELL PIPE: Sch 40 PVC **PLUG:** Bentonite Chips
SCREEN: 5'-0.010" Slotted **BACKFILL:** #5 Silica Sand
RISER: 10.0' **PROCAP (Y/N):** Y

Elevation/ Depth (Ft)	Wc (%)	Dry Unit Weight (pcf)	Unconfined Compressive Strength (tsf)	Sample No.	N-Value (bpf)	Graphic Log	SOIL DESCRIPTION	WELL CONSTRUCTION
0							916 15" Black Sandy TOPSOIL	-0.9
915	4			1	8		914.7 FILL - Brown (f-c) GRAVEL with Sand, GW, slightly dense	0.0
3							913 FILL - Brown and Grey Sandy Lean CLAY with Gravel, CL, firm	4.3
912	25		0.8 Qp	2	7		910 FILL - Brown (f-c) Silty Clayey SAND with Gravel, SC-SM, medium dense	7.0
6	9	123	0.16	3	12		908.5 Brown (f-c) Silty SAND with Gravel, SM, medium dense	10.0
909	7			4	21		905 Brown (f-c) SAND with Silt and Gravel, SW- SM, medium dense	14.1
906	8			5	21			
903	9			6	29			
15							901 End of Boring at 15.0'	
900								
18								
897								
21								

WATER LEVEL OBSERVATIONS, ft.

DURING DRILLING:		11.0'
IMMEDIATELY AFTER DRILLING:		Dry
DELAYED READING AFTER		

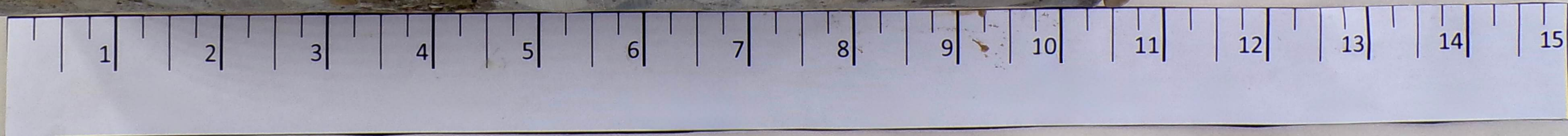
Midland Standard Engineering & Testing, Inc.

410 Nolen Drive
 South Elgin, Illinois 60177
 (847) 844-1895 f(847) 844-3875

PAVEMENT CORE MEASUREMENT LOG
MCHENRY COUNTY COLLEGE FIRE TOWER
CRYSTAL LAKE, ILLINOIS

MSET #26210

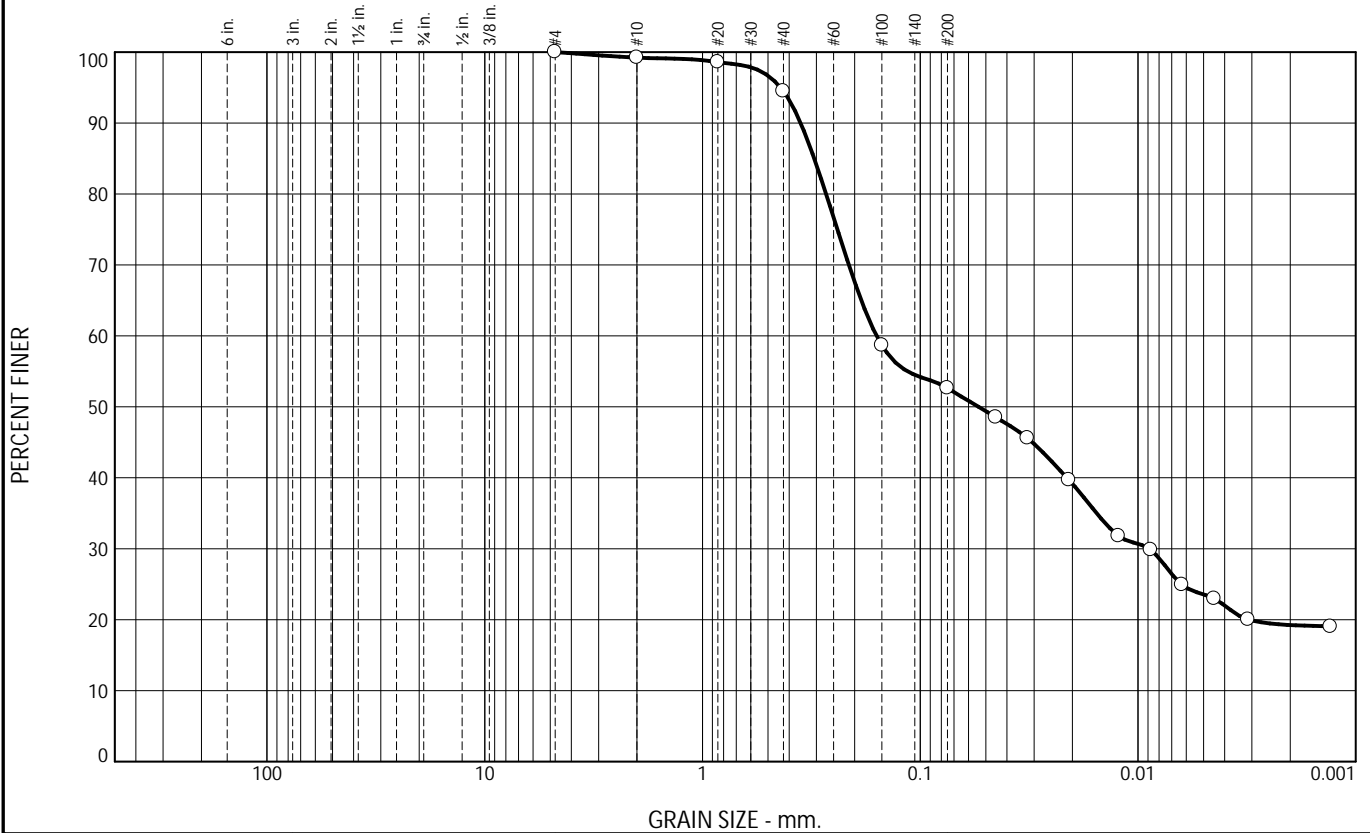
Core No.	C-105					
Location						
Material	Depth (in.)		Thickness (in.)		Remarks/Condition	coeff sn
PCC Concrete PVT	0	to 9- 3/4	9- 3/4		1/4" WWF at 5 1/2"-5 3/4"	0.50 4.88
Granular Base Course	9- 3/4	to 13	3- 1/4		FILL - Grey (f-c) Poorly Graded Crushed Gravel with Sand, GP	0.11 0.36
Subgrade	13				FILL - Grey (f-c) Well Graded Crushed Gravel with Sand, GW Hand Auger Refusal at 17" Mc= 6%, IBV= 42	5.23



McHenry County College Fire Tower	
Crystal Lake, Illinois	
MSET File No. 26210	January 2026

C-105

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.8	4.7	41.9	33.4	19.2

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.2		
#20	98.6		
#40	94.5		
#100	58.7		
#200	52.6		
0.0449 mm.	48.5		
0.0321 mm.	45.6		
0.0207 mm.	39.7		
0.0123 mm.	31.8		
0.0087 mm.	29.8		
0.0063 mm.	24.9		
0.0045 mm.	23.0		
0.0031 mm.	20.0		
0.0013 mm.	19.2		

* (no specification provided)

Soil Description

Sandy Lean CLAY

PL= 11 Atterberg Limits LL= 26 PI= 15

D₉₀= 0.3544 Coefficients D₈₅= 0.3069 D₆₀= 0.1587
 D₅₀= 0.0539 D₃₀= 0.0089 D₁₅=
 D₁₀= C_u= C_c=

USCS= CL Classification AASHTO= A-6(4)

Remarks

Location: Crystal Lake, IL
Sample Number: B-101 SS-1

Depth: 1.0'-2.5'

Date: 1/29/26



MSET

Client: McHenry County College
Project: McHenry County College Fire Tower

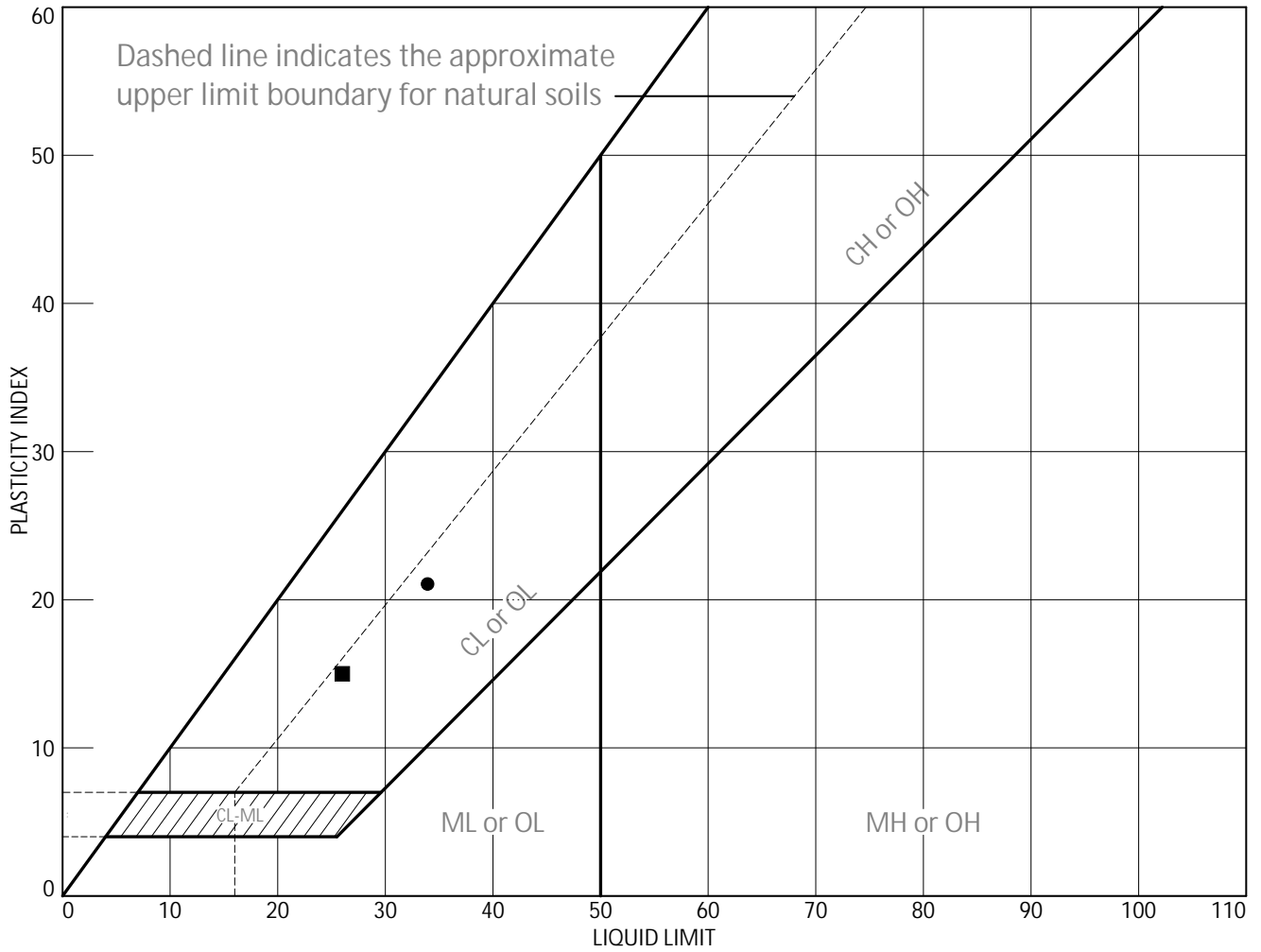
Project No: 26210

Figure

Tested By: HD

Checked By: WDP

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●		B-102 B-104	1.0'-3.0'	18	13	34	21	CL
■		B-101 SS-1	1.0'-2.5'		11	26	15	CL



MSET

Client: McHenry County College
 Project: McHenry County College Fire Tower

Project No.: 26210

Figure

Tested By: HD Checked By: WDP

GENERAL NOTES

PARTICLE SIZE DESCRIPTION & TERMINOLOGY

Coarse Grained or Granular Soils have more than 50% of their dry weight retained on a #200 sieve; they are described as: boulders, cobbles, gravel or sand. Fine Grained soils have less than 50% of their dry weight retained on a #200 sieve; they are described as: clays or clayey silts if they are cohesive and silts if they are non-cohesive. In addition to gradation, granular soils are defined on the basis of their relative in-place density and the fine grained soils on the basis of their strength or consistency and their plasticity.

Major Component of Sample	Size Range	Descriptive Term of Component	Approximate Quantity (Percent)
		Also Present in Sample	
Boulders	Over 8 in. (200 mm)		
Cobbles	8 inches to 3 inches (200 mm to 75mm)	Trace	1 - 9
Gravel	3 inches to #4 sieve (75mm to 4.75mm)	Little	10 - 19
Sand	#4 to #200 sieve (4.75mm to 0.075mm)	Some	20 - 34
Silt	Passing #200 sieve (0.075mm to 0.002mm)	And	35 - 50
Clay	Smaller than 0.002mm		

RELATIVE DENSITY AND CONSISTENCY CLASSIFICATION

GRANULAR SOILS

DENSITY CLASSIFICATION	APPROXIMATE RANGE OF N *
Very Loose	0 - 3
Slightly Dense	4 - 9
Medium Dense	10 - 29
Dense	30 - 49
Very Dense	50 - 80
Extremely Dense	80 +

COHESIVE SOILS

CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH, Qu - TSF	APPROXIMATE RANGE OF N *
Very Soft	0.25	0 - 2
Soft	0.25 - 0.49	3 - 4
Firm	0.50 - 0.99	5 - 8
Stiff	1.00 - 1.99	9 - 15
Very Stiff	2.00 - 3.99	16 - 30
Hard	4.00 - 8.00	31 - 50
Very Hard	8.00 +	Over 50

STANDARD PENETRATION TEST (ASTM D1586) - A 2.0" outside-diameter, split barrel sampler is driven into undisturbed soil by means of a 140 pound weight falling freely through a vertical distance of 30 inches. The sampler is normally driven 3 successive 6 inch increments. The total number of blows required

GENERAL FOUNDATION SHEET NOTES:

- TOP OF PIER ELEVATION OF (929.57) BASED ON CIVIL DRAWINGS. COORDINATE WITH CIVIL DRAWINGS.
- SEE GENERAL NOTES SECTIONS FOR ADDITIONAL INFORMATION.
- CONTRACTOR VERIFY ALL DIMENSIONS WITH ARCH DRAWINGS.



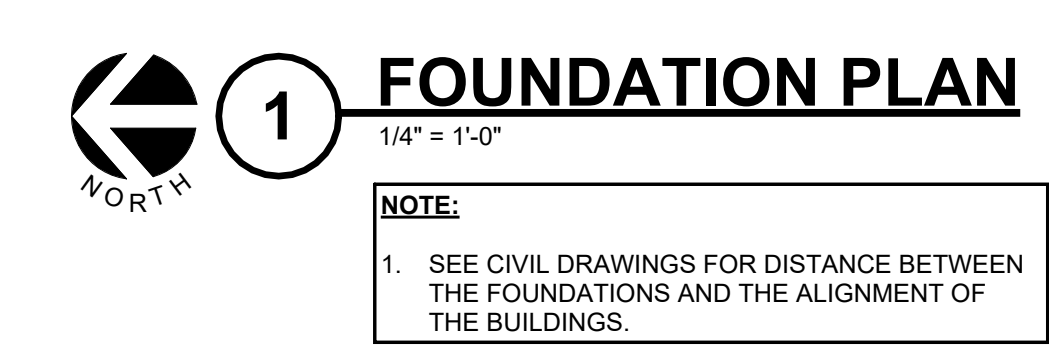
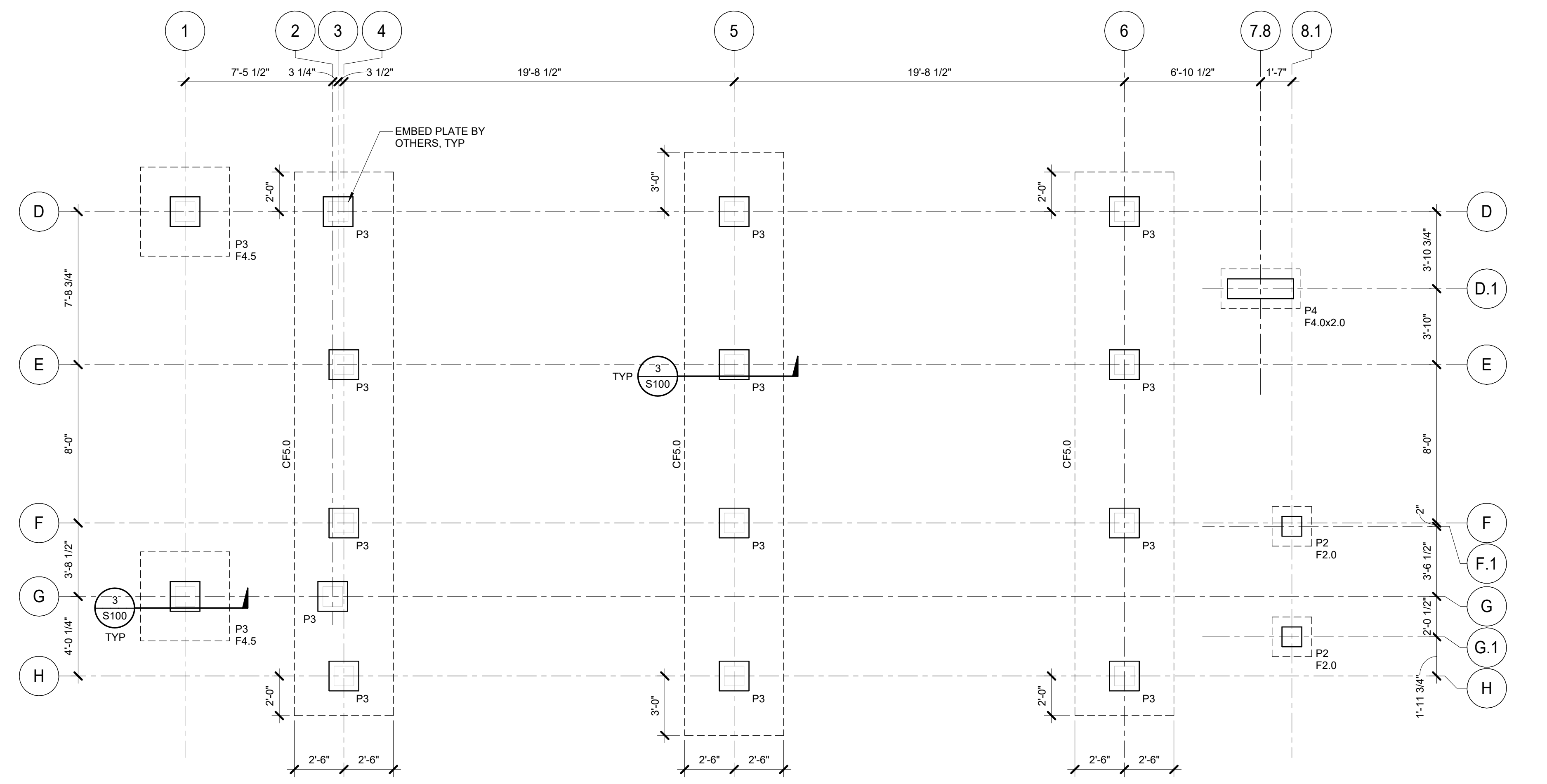
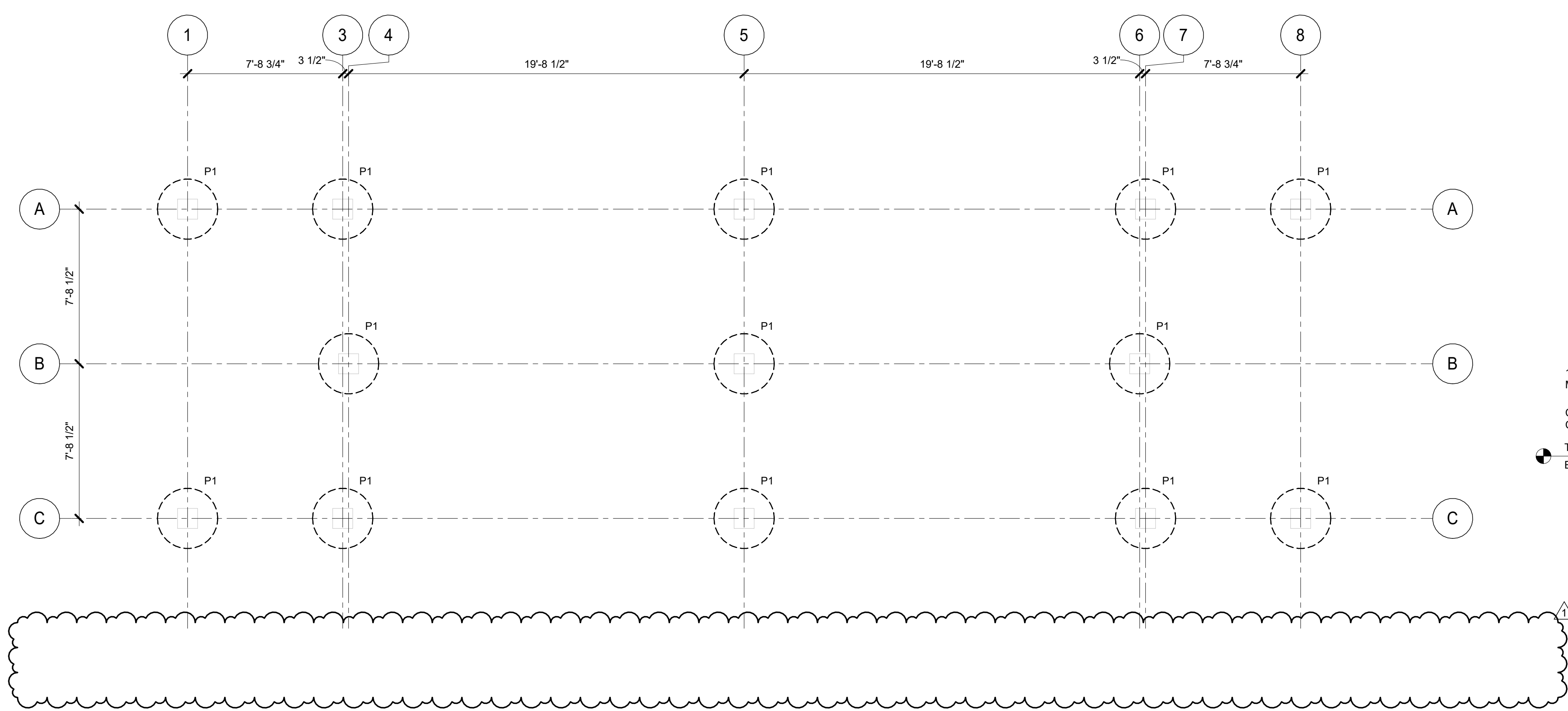
ARCHITECT:
DEMONICA KEMPER ARCHITECTS
 125 N. HALSTED STREET, SUITE 301
 CHICAGO, IL 60661
 P: 312.496.0000

STRUCTURAL ENGINEER:
IMEG CORP
 263 SHUMAN BLVD, SUITE 550
 NAPERVILLE, IL, 60563
 P: 630.527.2320

CIVIL ENGINEER:
HR GREEN
 1391 CORPORATE DRIVE, SUITE 203
 MCHENRY, IL, 60050
 P: 815.385.1778

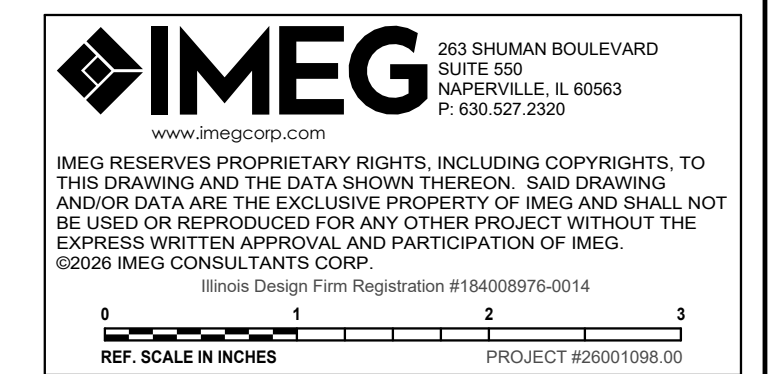
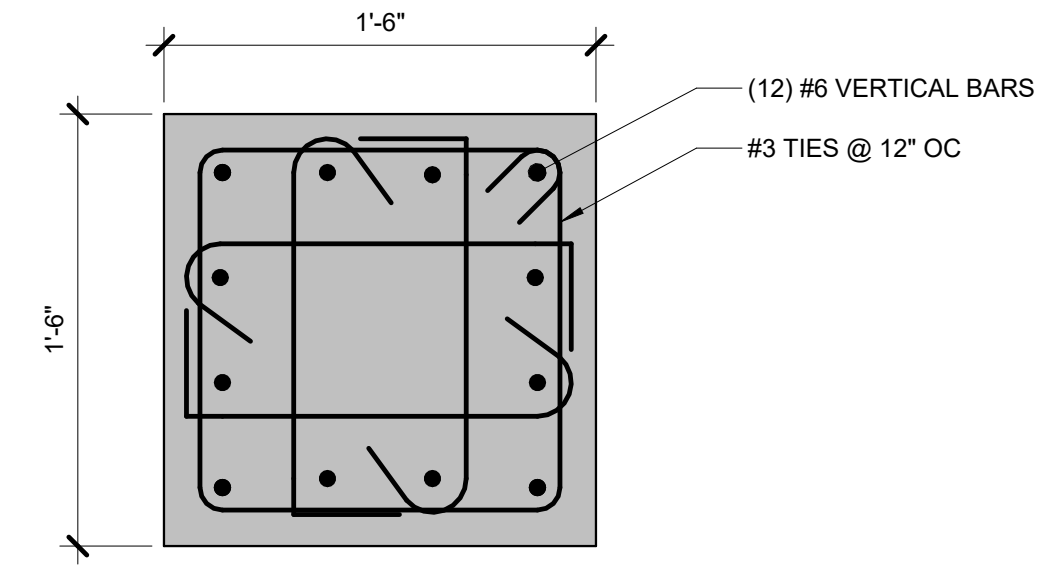
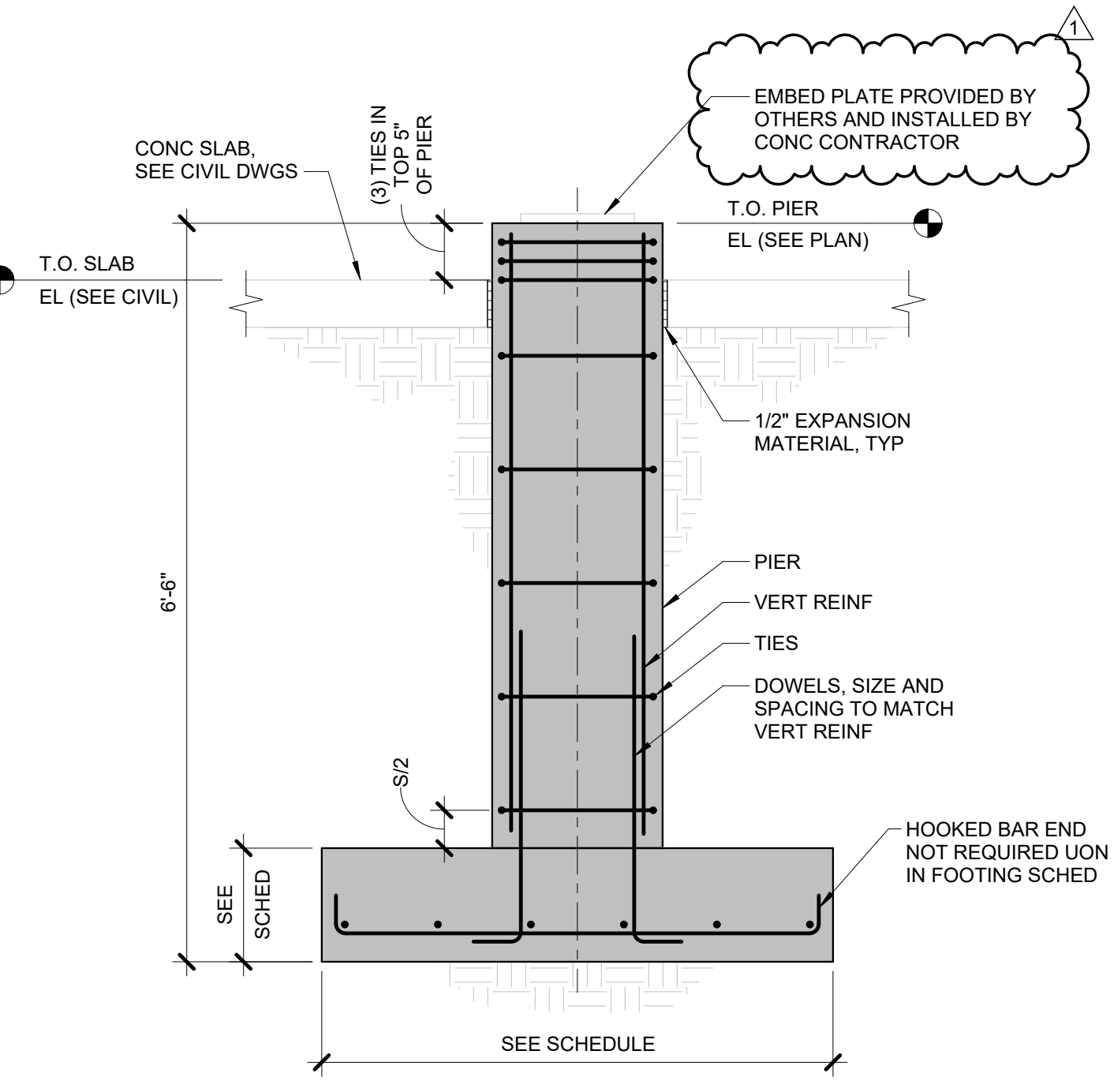
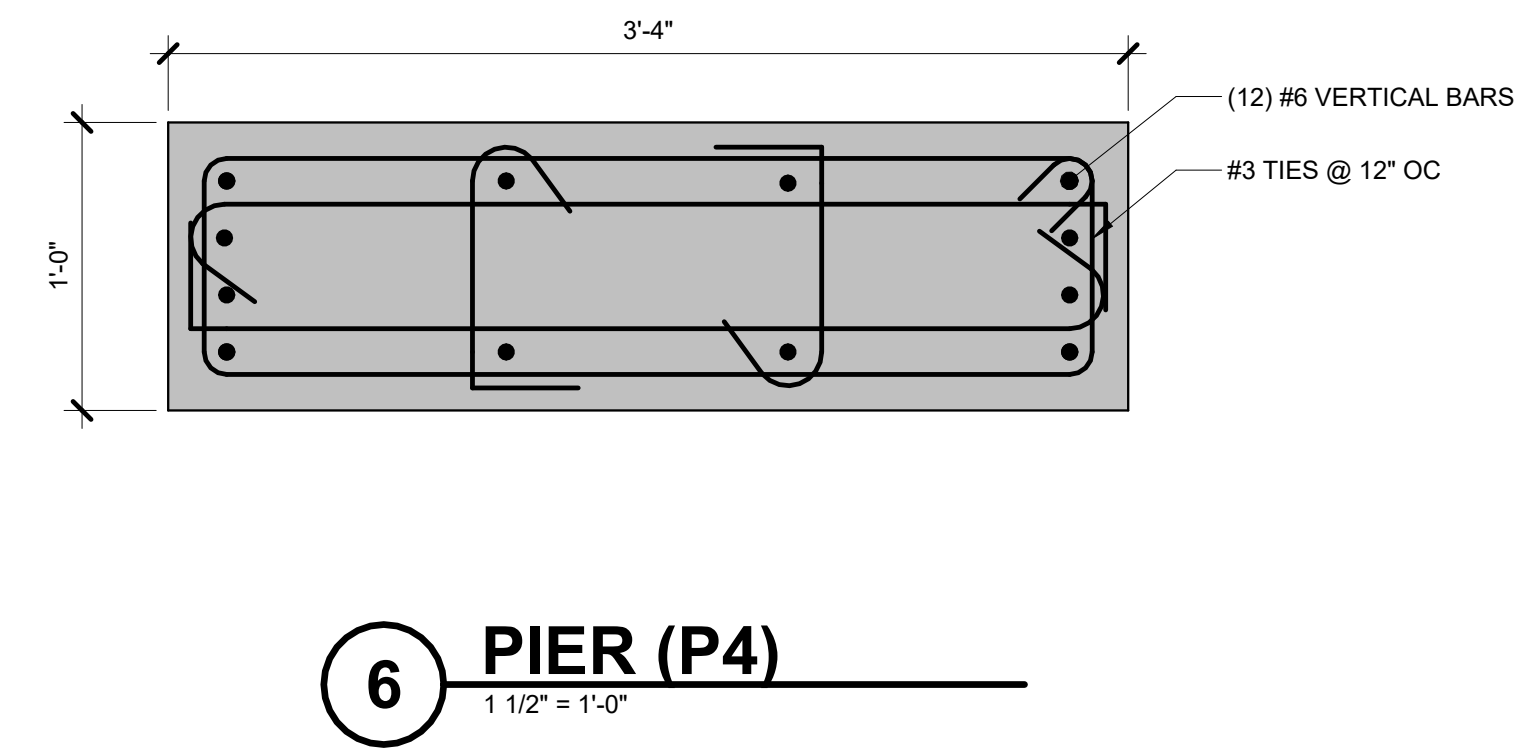
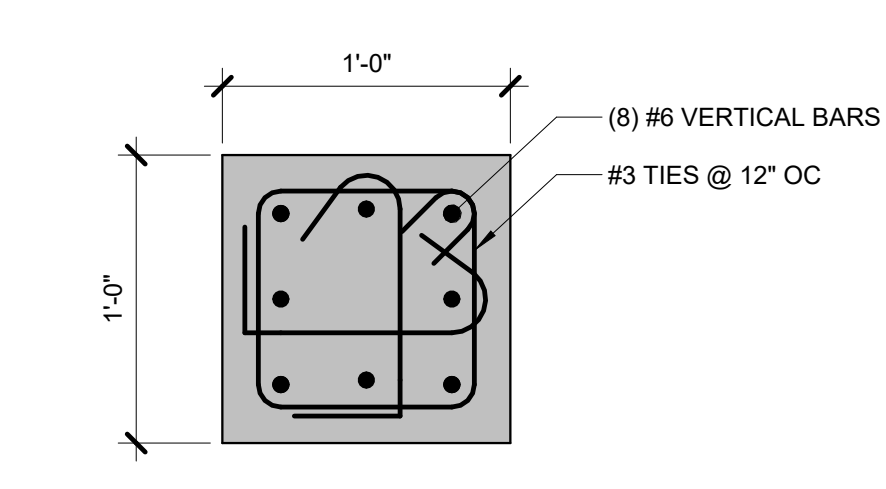
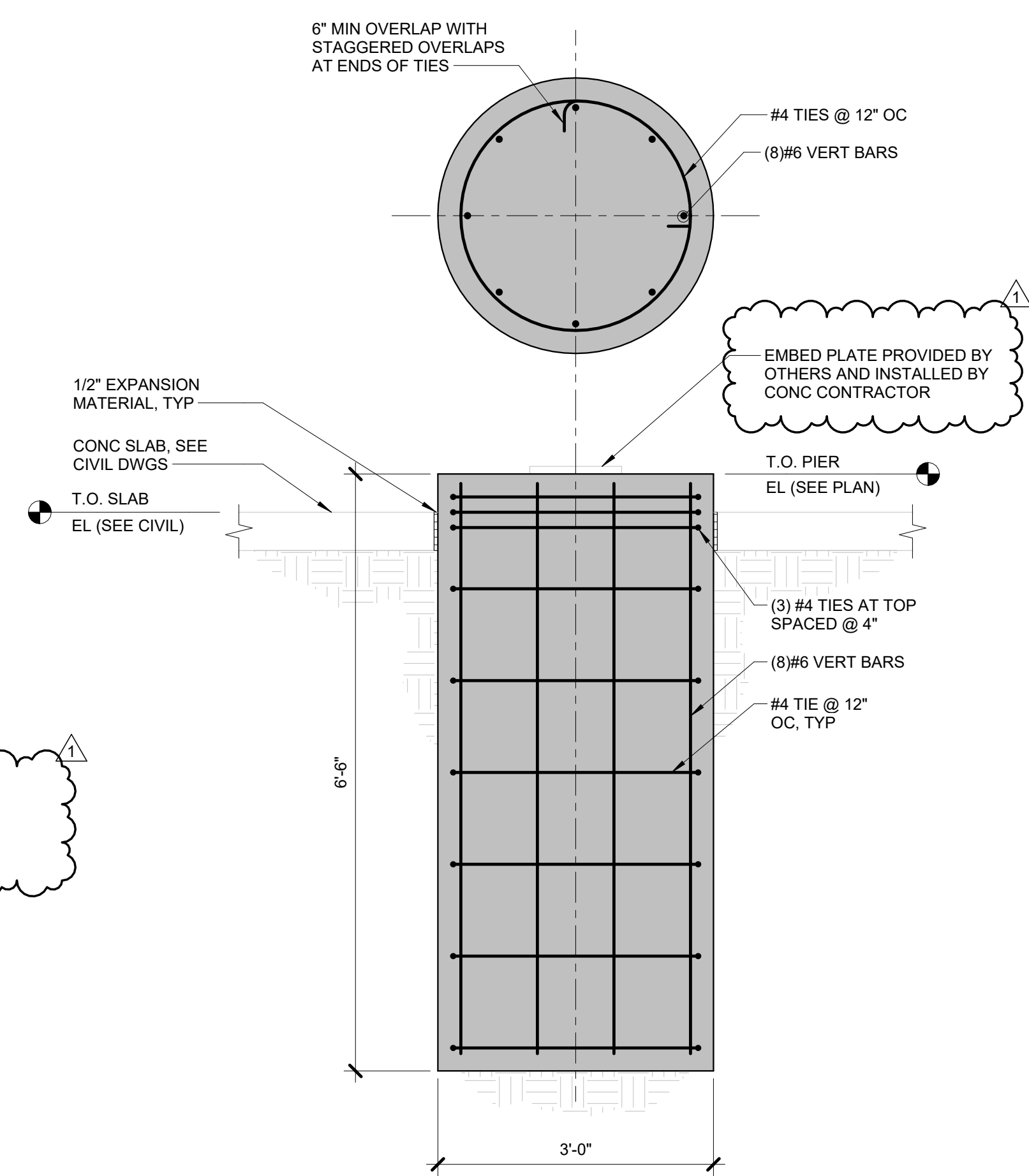
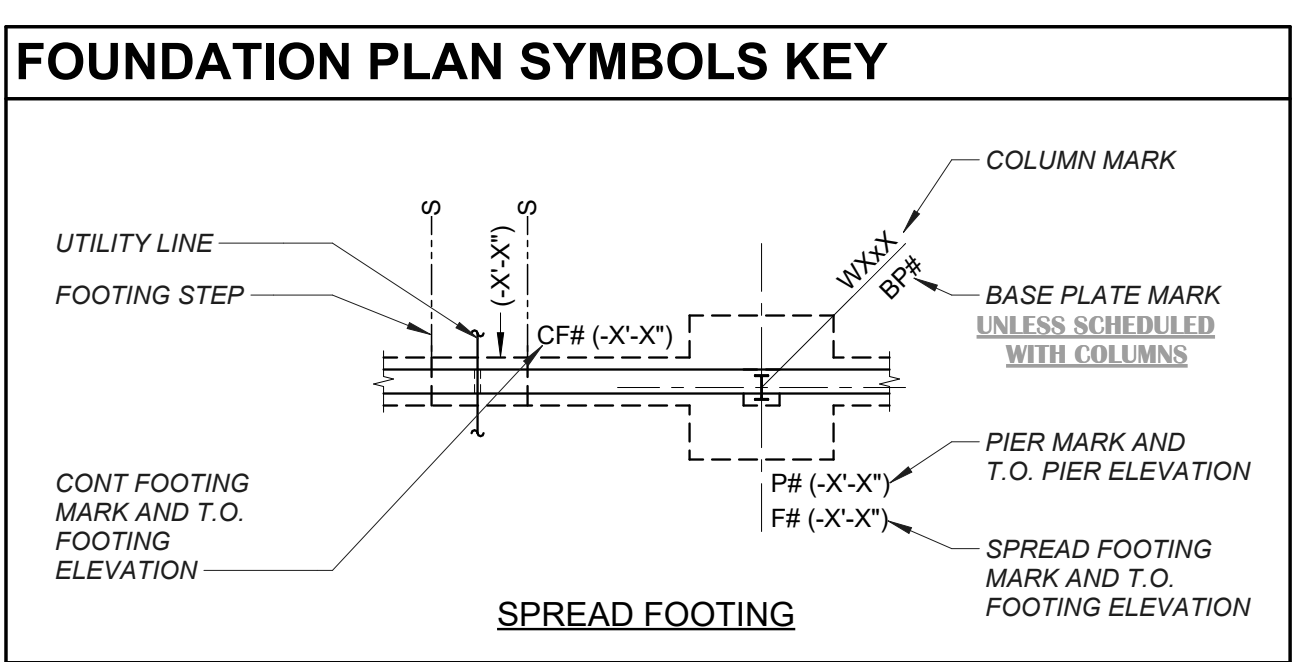
ELECTRICAL ENGINEER:
20/10 ENGINEERING
 1216 TOWER ROAD,
 SCHAUMBURG, IL 60173
 P: 847.882.2010

McHenry County College
Fire Tower Replacement
 8900 Northwest Hwy #14, Crystal Lake, IL 60012
 DKA PROJECT NO: 25-028



SPREAD FOOTING SCHEDULE					
MARK	LENGTH	WIDTH	DEPTH	REINFORCEMENT (EW BOT, UON)	REMARKS
F2.0	2'-0"	2'-0"	1'-0"	(3)#6	
F4.0x2.0	4'-0"	2'-0"	1'-0"	(4)#6 SHORT, (3)#6 LONG	
F4.5	4'-6"	4'-6"	1'-0"	(5)#6	

CONTINUOUS FOOTING SCHEDULE						
MARK	WIDTH	DEPTH	REINFORCEMENT (BOT, UON)	LONG	SHORT	REMARKS
CF5.0	5'-0"	1'-0"	(6)#6	(6)#6	#6 @ 12" OC	



KEY PLAN:

SHEET STATUS: 04/21/2026
ISSUED FOR BID - NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE
1	ADDENDUM #1	05/05/2026

SHEET TITLE:
FOUNDATION PLAN AND DETAILS

SHEET NUMBER:
S100