ELEVATUS
ARCHITECTURE

A D D E N D U M

Project No.: 2301109
Project: New Castle CSC Athletic Facilities

Addendum No: 2
Date: 04-02-2024

TO: ALL BIDDERS OF RECORD

ADDENDUM NO. 2, to Drawings and Specifications dated 03-13-2024, for the New Castle CSC Athletic Facilities for New Castle Community Schools; as prepared by ELEVATUS Architecture, 111 E. Wayne Street, Suite 555, Fort Wayne, IN 46802

This ADDENDUM shall hereby be and become a part of the Contract Documents the same as if originally bound thereto.

The following clarifications, amendments, additions, revisions, changes, and modifications change the original Contract Documents only in the amount and to the extent hereinafter specified and set forth in this ADDENDUM.

Each Bidder shall acknowledge receipt of this ADDENDUM on the Bid Form.

GENERAL INFORMATION:

ITEM NO. 1.01 – Geotechnical Report

A. See supporting documents for Geotechnical Report

PROJECT MANUAL:

ITEM NO. 1.02 - PROJECT MANUAL, 00 01 10, Table of Contents

A. Re-issue specification section in its entirety to include specifications changed below.

ITEM NO. 1.03- PROJECT MANUAL, 09 29 00, Gypsum Board

A. Issue new specification section in its entirety.

DRAWINGS:

ITEM NO. 1.04 – DRAWING NO. A-121 Reflected Ceiling Plan

A. Addition of Ceiling plan note #4 and its implementation on drawing 1/A-121

ITEM NO. 1.05 – DRAWING NO. A-311 Wall Sections & Details

A. Revision to drawing 3/A-311

Submitted By:

Samuel R. Schaust, AIA

ELEVATUS
ARCHITECTURE

cc: ☐ File: G:\002023\2301109 New Castle CSC Athletic Facilities\0800 Bidding\0810 Addenda\Addendum #2\Support\2024-04-02_New Castle Athletic Facilities_Addendum #2.docx

- ☐ Owner:
- ☐ Contractor:
- ☐ Consultant:
- ☐ Consultant:

GME TESTING

Geotechnical Report

GME Project No. G24-022222

Proposed New Castle High School Improvements

801 Parkview Drive
New Castle, IN

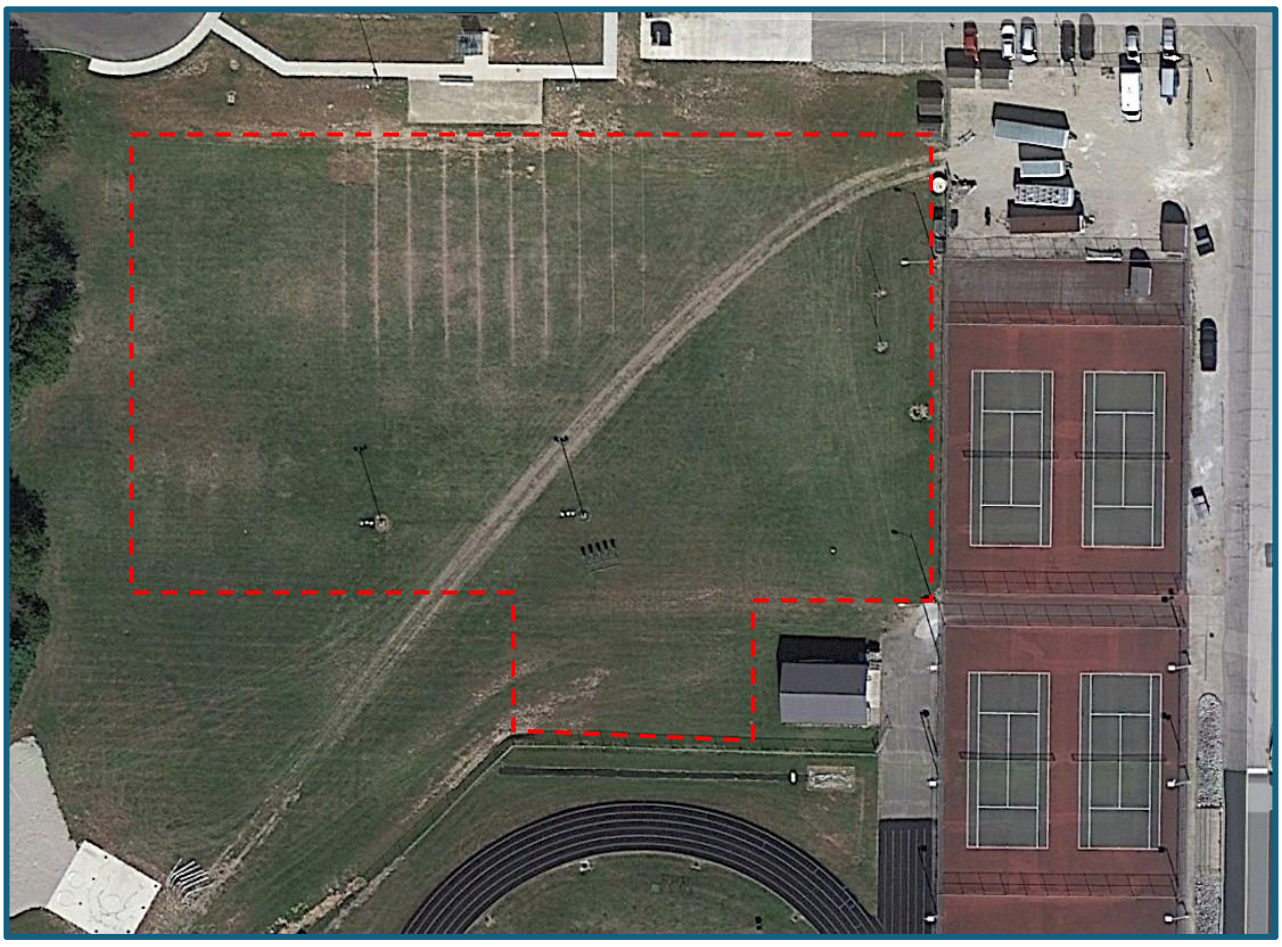
March 8, 2024

Prepared For:

New Castle Community School Corporation
322 Elliot Avenue
New Castle, IN 47362

Prepared By:

GME Testing
3517 Focus Dr
Fort Wayne, IN 46818



GME TESTING

March 8, 2024
G24-022222

New Castle Community School Corporation
322 Elliot Avenue
New Castle, IN 47362
Attn: Adam McDaniel, Assistant Superintendent

REF: SUBSURFACE EXPLORATION AND RECOMMENDATIONS
Proposed New Castle High School Improvements
801 Parkview Drive
New Castle, IN

Dear Sir/Madam:

In compliance with your request and authorization, ***GME Testing*** is pleased to submit this report on our subsurface exploration and recommendations for the above-referenced project.

We appreciate the opportunity to be of service on this project. Please get in touch with us if you have any questions or require additional services.

Sincerely,
GME Testing

Rami M. Anabtawi, P.E., BC.GE

RAMI M. ANABTAWI
920294
REGISTERED
PROFESSIONAL
ENGINEER
STATE OF INDIANA

Moe Kyaw, E.I.

CC: Justin Howard, PE – Engineering Resources, Inc.
Emily Hower, AIA, LEED Green Associate – Elevatus Architects

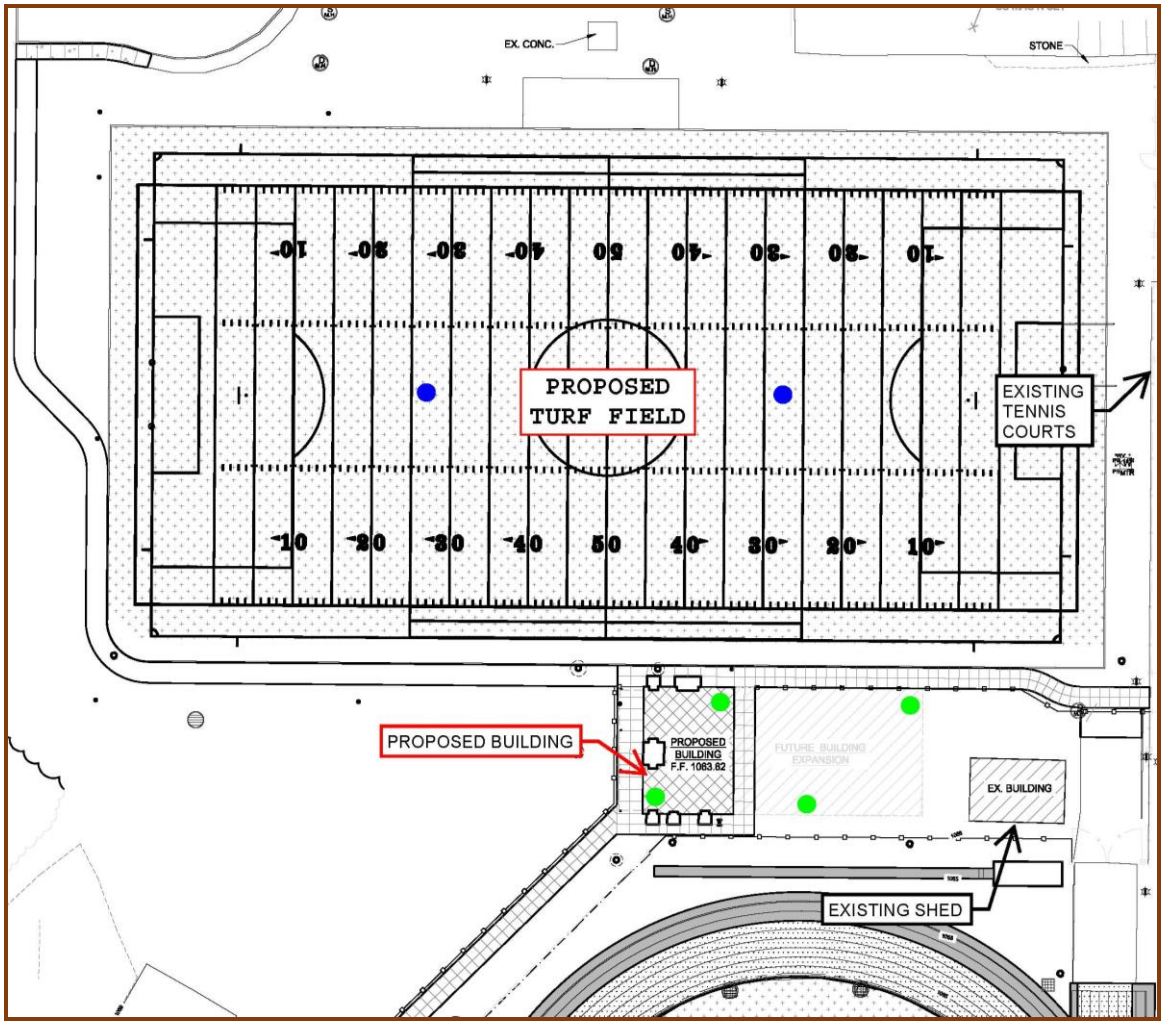
TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Site Location

New Castle Community School Corporation (NCCSC) in collaboration with Engineering Resources, Inc. (ERI) and Elevatus Architects are considering the design and construction of a new building and turf field. The project "Site" is located at 801 Parkview Drive in New Castle, Indiana. The proposed plan is shown in Exhibit A below.

Exhibit A (Site Plan)



Provided by ERI as part of RFP, dated February 5, 2024

1.2 Authorization and Field Coordination

Our services were performed according to our proposal (GMEP 24-020050) dated February 7, 2024, authorized by NCCSC's Assistant Superintendent on February 12, 2024.

GME Testing coordinated their fieldwork logistics, site access, utilities marking, and the geotechnical drilling program schedule with a client representative to conduct this geotechnical engineering investigation.

GME Testing engaged the services of a private utility locating company (Blood Hound LLC) to identify existing private utilities within the proposed boring areas on February 21, 2024 (before our mobilization to the project site).

1.3 Purpose of Work

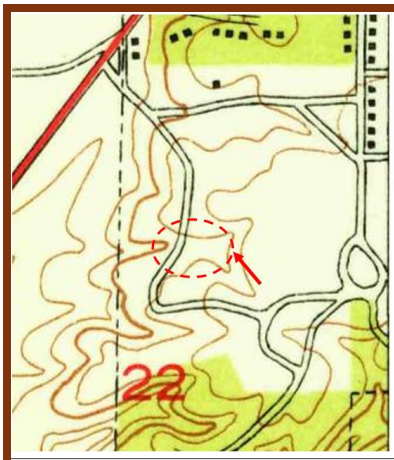
The purpose of our geotechnical investigation was to evaluate the subsurface conditions and to develop geotechnical recommendations for use by the owner's architects and design engineers in preparing the project plans and bid documents for the proposed construction.

2.0 SITE CHARACTERISTICS

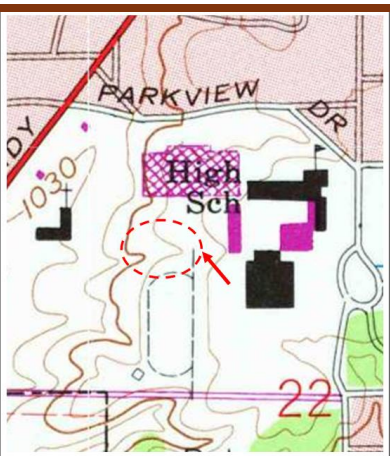
2.1 Site History

We researched various historical aerial photographs and topographic maps. Exhibit B presents excerpts from 1949, 1960 (photo-revised 1982), and 2022 USGS topographic quadrangle maps for New Castle West, with the location of the Site indicated. A comparison of these images reveals that the Site had been filled and leveled sometime after 1949. The contour interval in these maps is 10 feet.

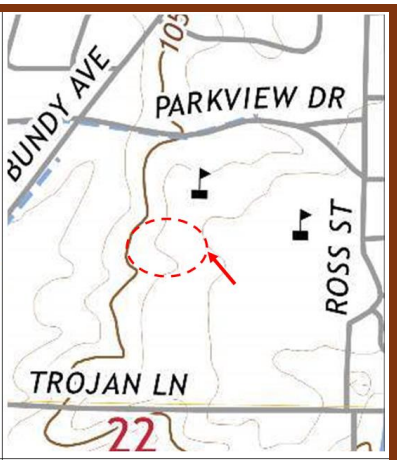
Exhibit B (USGS Topographic Maps)



1949



1960 (photo-revised 1982)



2022

2.2 Existing Site Features

At the time of our field investigation, the Site surface was grass-covered and relatively level. Two existing overhead lights were observed on site.

GME Testing researched Henry County GIS maps of the site vicinity. Based on these maps, the approximate existing surface elevation within the proposed Site is presented below.

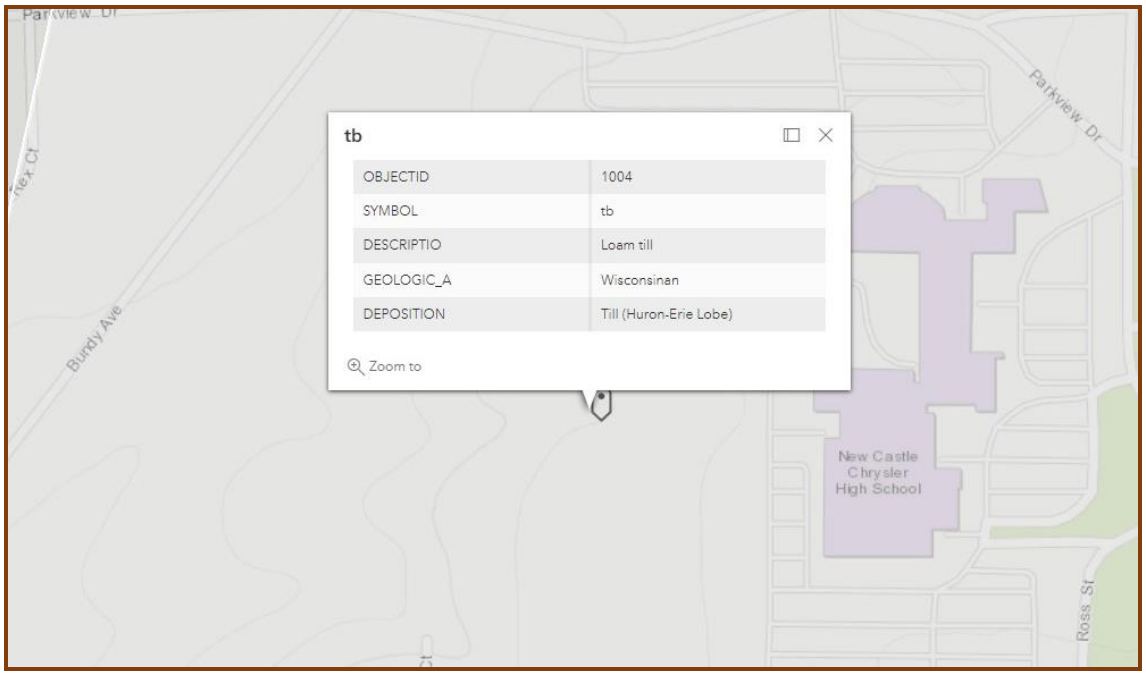
- El. 1064 to El. 1065……Proposed Locker Room Building
- El. 1062 to El. 1065……Proposed Artificial Turf Field

The approximate existing surface elevations were extracted and are included on the bore logs, in Appendix B, for reference only. GME Testing recommends that a professional surveyor determine and confirm the existing site surface elevations.

2.3 Site Soil Survey

According to the *Quaternary Geologic Map of Indiana, Indiana Geological Survey Miscellaneous Map 49*, the soils are loam till deposited from the Huron-Ere lobe of the Wisconsinan glacial age as indicated in Exhibit C.

Exhibit C



Based on the USDA *Web Soil Survey*, the existing soil groups of the Site consisted of Orthents and Aquents, and Losantville silt loam. A copy of the *Custom Soil Resource Report of Henry County, Indiana* is included in Appendix A of this report.

3.0 PROJECT DETAILS

The preliminary information and plan presented to our office by ERI indicate that the proposed project will consist of a ±1,800 sq. feet locker room building, future building expansion and an artificial turf field.

It is anticipated that the immediate proposed building will be a slab-on-grade, single-story, masonry (CMU) construction supported over conventional spread footings (if possible) with an exterior façade of brick veneer, metal panel and glazing.

Based on the preliminary information provided, the anticipated structural loadings for maximum column and wall loadings are approximately 50 kips/column and 3 kips per linear foot, respectively. The anticipated floor load was not known but it is estimated to be generally light (e.g., 125 psf or less).

The locker room building will have a finished floor elevation set at about El. 1063.5 based on the available plan. Therefore, very little (one foot or less) grade change will be required to establish the finished floor elevation.

The structural engineer will design and detail the building slabs (i.e., thickness design, jointing, reinforcement). The design, layout, and installation of new turf in fields will be the responsibility of the turf contractor. Very little grade change is anticipated in the turf field at this time.

We realize that final plans may differ from the initial understandings and available preliminary information reported. If significant changes occur or our assumptions are inaccurate, our office should be contacted to determine if any changes to our recommendations will be necessary after our review.

4.0 FIELD INVESTIGATION

4.1 Boring Locations

Our field exploration program consisted of drilling six (6) vertical soil test borings to depths of approximately 10 to 20 feet below the existing ground surface (bgs) as shown on the borehole logs. The boring locations were based on a site plan provided by ERI as shown in Figure 1 and included in Appendix A of this report. Logs of our borings are provided in Appendix B.

Table 1 summarizes the boring locations and depths.

Table 1: Summary of Borings				
Designation	**Boring Number**	**Latitude**	**Longitude**	**Ground Elevation (El.), feet**
Proposed Turf Field	B-1	39.912125	-85.379517	±1062
	B-2	39.912117	-85.379036	±1064
Proposed Locker Room Building	B-3	39.911800	-85.379117	±1064
	B-4	39.911694	-85.379206	±1064
Future Building Expansion	B-5	39.911794	-85.378864	±1065
	B-6	39.911686	-85.379003	±1064

4.2 Laboratory Testing Program

Representative soils collected using a split spoon sampler were subjected to laboratory testing according to ASTM and/or AASHTO standard specifications. The results of all laboratory tests are included on the respective plots in Appendix B. Our laboratory testing program included performing **a)** visual soil classifications according to ASTM D-2487 and ASTM D-2488, **b)** natural moisture content tests according to ASTM D-2216 on all samples, and **c)** unconfined compressive strength tests with calibrated spring hand penetration tests in general accordance with ASTM D-2166.

4.3 Boring Results

The following is a summary of encountered materials in the test borings. A more detailed description and data for each test boring can be found on the individual Borehole Logs in Appendix B of this report.

Surficial Materials: Topsoil thickness disclosed in test borings ranged between approximately 4 to 7 inches.

Artificial Turf Test Borings (B-1 and B-2): The existing soils disclosed in these borings were primarily brown and gray sandy silty clay and silty clays of generally stiff to very stiff consistencies and extended through the termination depth of 10-feet. In B-2, the clay fill was underlain by remnant zone of dark clayey topsoil between depths of 5 and 6-feet as shown on the boring log.

Proposed and Future Building Borings (B-3 through B-6): The existing soil conditions consisting of brown and dark brown clay-type fill soils between approximately 3 and 8 feet beneath the existing ground surface as described on the boring logs included in Appendix B of this report.

The entire conditions of existing fill on site are not known at this time. Therefore, any existing fill materials that are deemed to be unsuitable by GME Testing at time of construction should be undercut and replaced with compacted engineered fill.

Native soils disclosed in these test borings primarily consisted of brown, brown and gray, sandy silty clays, and mottled clays that extended through the explored depths of the borings. These soils were generally medium stiff to very stiff.

The consistencies of existing clay soil materials are based on the results of the SPT, N-values according to ASTM D-1586.

Groundwater Measurements: Groundwater measurements were taken during our field operations by noting the depth of water on the rods and in open boreholes following the withdrawal of the drilling augers after the completion of drilling activities in test borings.

No groundwater was encountered at the time of our field operations. The groundwater depths shown on the boring logs reflect groundwater levels **only** for the date on which the borings were drilled. Fluctuations in the level and rate of seepage of groundwater will occur due to variations in rainfall, water level, and other factors.

In our opinion, no groundwater-related difficulties should be expected with the anticipated depths of excavations. Surface water that ponds on and saturates the existing near-surface clay subgrade should be pumped and removed immediately if encountered during construction.

5.0 GEOTECHNICAL RECOMMENDATIONS

5.1 Site Subgrade Preparation

After existing vegetation, topsoil, and underlying unsuitable materials, including any old fill containing organics or compressible soils, are removed, the subgrade areas should be subject to inspection by GME Testing.

It is considered more likely than not that there is undocumented fill that will require correction and/or removal below footings. The depths and locations of existing undocumented fill are shown on the boring logs. Therefore, it is strongly recommended that the footing excavations be thoroughly inspected and evaluated at the time of excavation.

The existing fill materials that are satisfactorily proof rolled and observed by GME Testing to be suitable, may support lightly loaded slab and artificial turf areas. However, where footing excavations encounter undocumented, unsuitable fill, such materials should be removed to reduce settlements.

Care must be exercised during grading and fill placement operations. Repeated and uncontrolled heavy construction traffic over the subgrade could cause the subgrade to pump, yield, and weak areas to develop and, therefore should be avoided. Heavy construction traffic should use designated areas as directed by the contractor.

The materials removed during site preparation activities will generally not be suitable for reuse as structural fill and should be disposed offsite.

5.2 Engineered Fill

All engineered fill needed to replace undercut materials or as a grade-raise fill should be approved by GME Testing before placement on-site and should consist of INDOT No. 53. All fills shall be compacted to 95 percent of the maximum density obtained in accordance with ASTM D-1557.

To achieve the recommended compaction limit of the structural fill, the fill material should be placed and compacted in layers not exceeding 8 inches in loose thickness (the loose lift thickness should be reduced to 6 inches when utilizing small hand compactors) and within the range of ±2 percentage (%) of the optimum moisture content value. All fill placements should be monitored by a GME Testing representative.

5.3 Foundations Design Recommendations

Based on subsurface soil conditions in the test borings, conventional (column “square” type and continuous “strip” wall) footings may be used to support the proposed locker room building.

We recommend that all footings bear on native approved soils below existing undocumented fill and underlying weak materials. Footing excavations that do not meet the above recommended approach, can be replaced with engineered fill and/or lean concrete mix (i.e., 2,000 psi compressive strength after 28 days) to re-establish the bottom of footings. Figure 2, included in Appendix A of this report, provides this illustration.

Soil Bearing Capacity and Settlement

Provided that our entire recommendations are followed, conventional foundations bearing on approved suitable soils as discussed above can be designed for a maximum net allowable soil bearing pressure of **1,500 pounds per square foot (psf)** for column (square type) and wall (strip type) footings.

The provided soil-bearing capacity value must be confirmed by performing continuous quality control inspections. Therefore, GME Testing should be retained for this purpose.

It may be necessary to perform additional borings and/or exploration in the future building footprint. GME Testing should be provided with the opportunity to review new detailed information and final building plans in this area. After our review, additional recommendations if warranted can be provided.

When using net pressures, the weight of the footing and backfill over the footing, including the weight of the floor slab, need not be considered. Hence, only loads applied at or above the finished floor must be used to dimension the footings.

New fill soil below, above, and surrounding footings shall consist of approved materials, then placed and compacted per this report.

Provided our recommendations in this report and project specifications are followed, total foundation settlements are not expected to exceed about (1) inch with differential settlements of up to (½) inch. Therefore, field control and proper footing proportions will substantially minimize total and differential settlements.

Foundation Frost Depth

All approved foundations resting on competent-bearing soils will need to be protected during and post-construction. All exterior footings and footings in unheated areas should be located at a depth of 3.5 feet below the final exterior grade for frost protection.

Foundation Inspection

The soil at the base of each footing excavation must be evaluated and observed during construction by GME Testing to check that the bearing soils are consistent with those upon which the recommendations are based. Test pits may be required.

GME Testing urges the owner and the contractor to perform continuous inspections during the installation of all foundations and slabs to check that our recommendations discussed in this report are properly followed.

To reduce bearing disturbance, foundation excavations should be concreted immediately following satisfactory evaluation by GME Testing. If this is not practical, the foundation excavation should be adequately protected. Soils exposed in the bases of all excavations must be protected against any detrimental change in conditions such as from disturbance, rain, and freezing.

All excavations should be monitored by a “Competent Person, " as defined by the OSHA standard, and appropriate shoring or sloping techniques should be used to prevent cave-ins.

5.4 Seismicity Classification

The seismic design requirements for buildings and other structures are based on the seismic design category. A seismic site class “D” may be used for this project, and a seismic report is included in Appendix B of this report. The parameters presented in Table 2 below can be used for design.

Table 2: Seismicity Classification Parameters

Description	Value
2012 International Building Code Site Classification (IBC)	**D**[1]
Site Latitude	39.911799
Site Longitude	-85.379117
Ss	0.137g
S_1	0.076g
S_{DS}	0.146
S_{D1}	0.122

1. The 2012 IBC uses a site profile extending to a depth of 100 feet for seismic site classification. Borings at this site were extended to a maximum depth of 20 feet. The site properties below the boring depth of 100 feet were estimated based on our experience and knowledge of the geologic conditions of the general area.

5.5 Ground-Supported Slabs Recommendations

After the building area has been prepared and evaluated as described in **Section 5.1**, and approved for placement of new engineered fill, ground-supported slabs may be used.

Lightly loaded floor slabs should be underlain by a 4 to 5 inches approved crushed limestone aggregate such as INDOT No. 53. This layer is necessary to provide a leveling surface for the construction of the slab and a moisture capillary break between the slab and the underlying soils.

Special attention should be paid to the backfill placement against the building foundations and walls as inadequate compaction of these locations may cause cracking of the slab edges and corners due to subsidence of the backfill.

Depending on the choice of floor finishes, it may be appropriate to incorporate a moisture barrier below the floor slab. This decision should be evaluated by the architect and structural engineer based on the intended floor usage, planned finishes, and in accordance with ACI recommendations.

We recommend the slab-on-grade subgrade soils be protected from frost during winter construction. If frozen soils are observed, they must be thawed and compacted or removed and replaced before slab-on-grade construction.

5.6 Surface Water and Drainage

Positive drainage of surface water, including downspout discharge, should be maintained away from structure foundations and toward the designated outfall (usually towards the street). A transverse slope of 2 percent away from the foundation and a longitudinal slope of 1 percent in surface swales conducting water towards the designated outfall will be adequate.

Surface water must not be allowed to pond on flatwork or adjacent to the structure. Also, the owner should maintain the slopes and grades to minimize ponding of water and erosion.

5.7 Artificial Turf Field

Based on the test boring results, the existing clays should provide suitable support from a geotechnical perspective. It is recommended that the subgrade be prepared as discussed in Site Preparation Section 5.1 of this report.

A suitable drainage system design below the artificial turf field should be provided to always allow for positive drainage on site. The subgrade surface should be uniformly sloped to facilitate drainage through the granular base to appropriate drainage structures to avoid any ponding of water beneath the turf. This area may include underdrains as determined by the turf designer.

6.0 LIMITATIONS

This field evaluation, laboratory testing, and geotechnical analyses presented in this geotechnical investigation report have been conducted in general accordance with current practice and the standard of care exercised by geotechnical consultants performing similar tasks in the project area. Although individual test borings are representative of the subsurface conditions at the boring locations on the dates drilled, they are not necessarily representative of the subsurface conditions between boring locations or subsurface conditions during other seasons of the year.

The lines of demarcation shown on the logs represent approximate boundaries between the various classifications. The stratification of soils, as shown on the accompanying test borehole logs, represents the soil conditions at the drilled borehole locations, and variations may occur between the boreholes. In-situ strata changes could occur gradually or at different levels. Also, it should be noted that the boreholes depict conditions at the particular locations and times indicated.

The report was prepared by GME Testing solely for the use of the Client in accordance with an executed contract. The Client's use of or reliance on this report is limited by the terms and conditions of the contract and by the qualifications and limitations stated in the report. It is also acknowledged that the Client's use of and reliance on this report is limited for reasons that include actual site conditions that may change with time; hidden conditions, not discoverable within the scope of the assessment may exist at the site; and the scope of the investigation may have been limited by time, budget and other constraints imposed by the client.

Neither the report nor its contents, conclusions, or recommendations are intended for the use of any party other than the Client. GME Testing and the Client assume no liability for any reliance placed on this report by such party. The rights of the client under contract may not be assigned to any person or entity, without the consent of GME Testing which shall not be unreasonably withheld.

Our services have been provided consistent with its professional standards of care. No other warranties are made, either expressed or implied.

APPENDIX A

I. FIELD EXPLORATION

Drilling and Sampling Procedures

The test borings were drilled using conventional augers to advance the holes and representative samples of the soils were obtained employing split-barrel sampling techniques in accordance with ASTM procedures D-1586-84. After completion of the borings and water level readings, the auger holes were backfilled with auger cuttings.

The description and depths of soil strata encountered and levels at which samples were recovered are indicated on the accompanying borehole log sheets in Appendix B. In the column “Soil/Material Description” on the drill borehole log, the horizontal lines represent stratum changes. A solid line represents an observed change, and a dashed line represents an estimated change. An explanation of the symbols and terms used on the boring log sheets is given in Appendix B of this report.

Field Tests and Measurements

Standard Penetration Test: During the sampling procedures, Standard Penetration Test (SPT) was performed at regular intervals through the depth of the borings. The SPT value (“N”-value) is defined as the number of blows required to advance a 2-inch O.D., split-barrel sampler a distance of one foot by a 140-pound hammer falling 30-inches. These values provide a useful preliminary indication of the consistency or relative density of most soil deposits and are included on the Borehole Logs in Appendix B.

Water Level Measurements: Groundwater level observations were made in the boring holes during and upon completion of the boring operations. The groundwater level measurements are noted on the boring logs presented herein.

All recovered samples were returned to GME Testing laboratory for visual examination and subsequent laboratory testing.

II. LABORATORY TESTING

Selected soil samples obtained from the drilling and sampling program were tested in the laboratory to evaluate additional pertinent engineering characteristics of the foundation materials necessary in estimating the engineering properties of these materials.

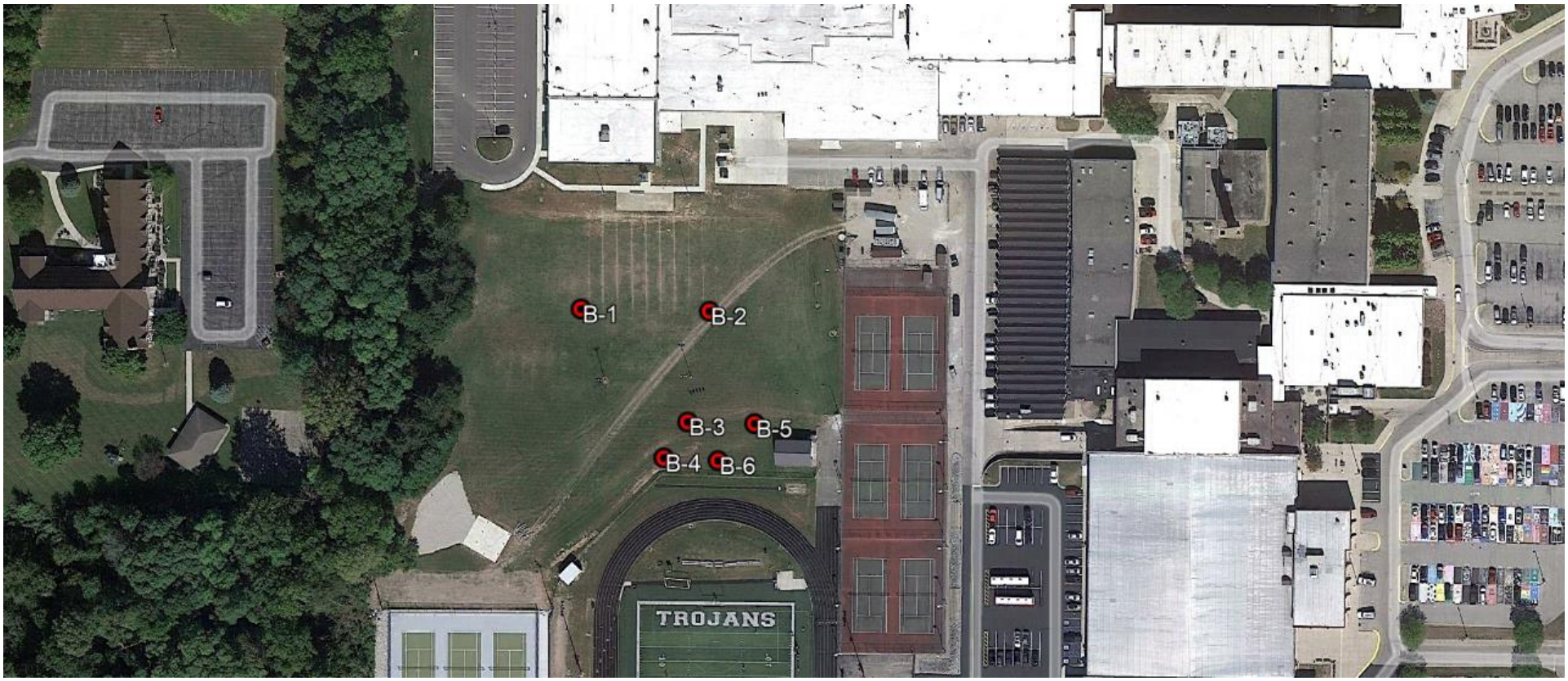
Soil Laboratory Tests and Measurements

Visual Classification: All samples were visually classified by a geotechnical engineer in general accordance with ASTM D-2488, and on the Borehole Logs, which are located in Appendix B of this report.

Moisture Content Tests: The natural moisture content of selected samples was determined by ASTM method D-2216 and is recorded on the Borehole Logs as a percentage of dry weight of soil under the “MC”.

Hand Penetration Tests: Samples of cohesive soils obtained from the split spoon sampler were tested with a calibrated hand penetrometer to aid in evaluating the soil strength characteristics. The results from this testing are tabulated on the Borehole Logs under the heading “Q_P”.

Unconfined Compressive Strength Tests: The undrained shear strengths of the cohesive soils were evaluated utilizing unconfined compressive tests on specimens obtained from the split-barrel and/or thin wall tube sampler. The values of strength tests performed on soil samples obtained from the split-barrel sampler are considered approximate recognizing that the sampler provides a representative but somewhat disturbed sample. The test results are tabulated on the Borehole Logs under the heading “Q_u”.



VICINITY MAP (NOT TO SCALE)

NOTES

1. All boring locations are approximate.
2. Vicinity map generated using imagery from google.com/maps.

N

LEGEND

B-1
Test Boring Location and Designation

FIGURE 1 – APPROXIMATE BORING LOCATION MAP

Project Name: Proposed New Castle High School Improvements

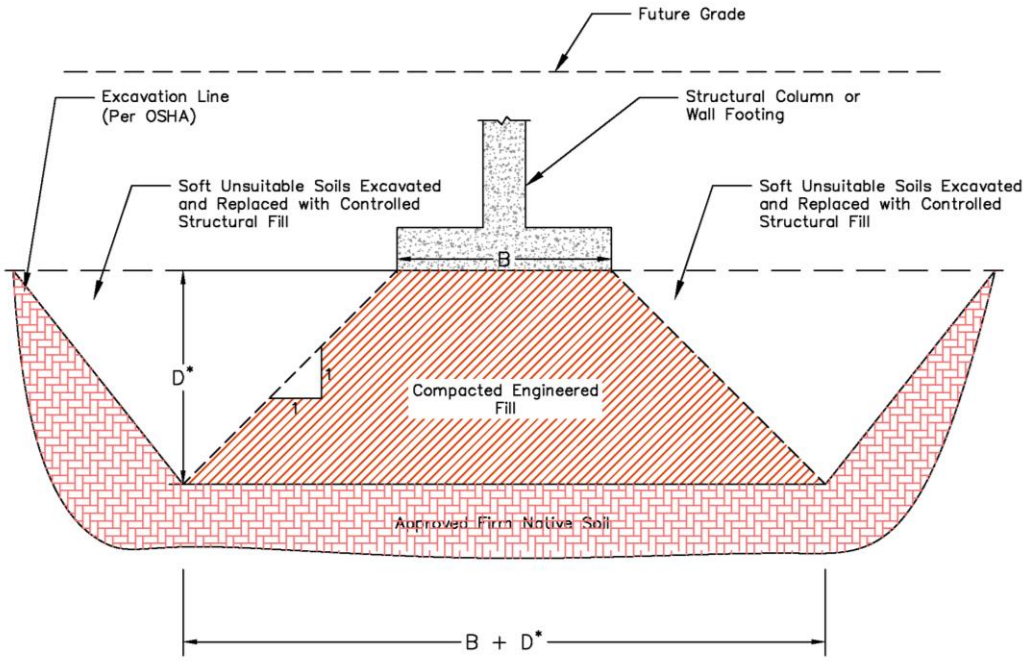
Location: 801 Parkview Drive, New Castle, IN

Client Name: New Castle Community School Corporation

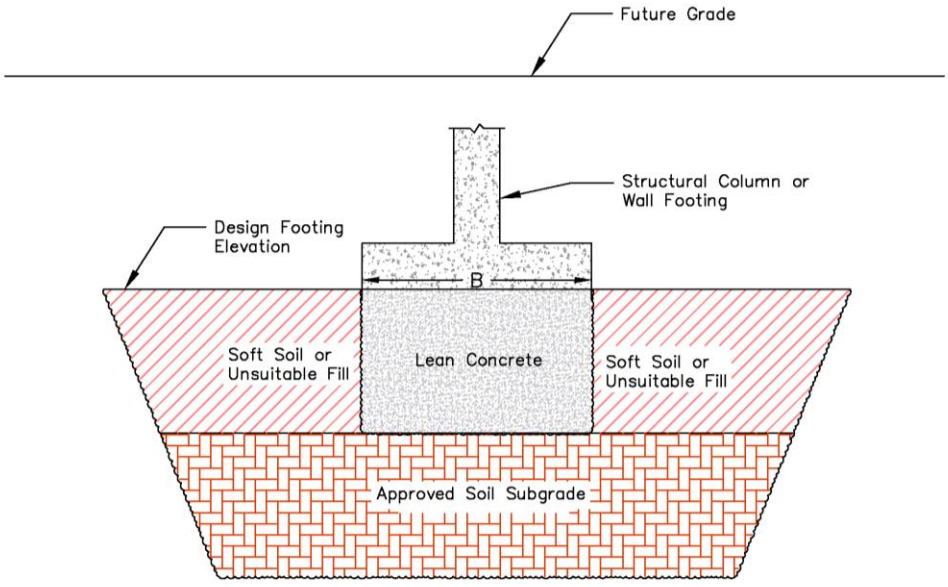
GME Project Number: G24-022222

GME TESTING

UNDERCUT EXCAVATION FOR FOOTINGS IN UNSUITABLE MATERIALS REPLACED WITH COMPACTED STRUCTURAL FILL



UNDERCUT EXCAVATION FOR FOOTINGS IN UNSUITABLE MATERIALS REPLACED WITH LEAN CONCRETE



GME TESTING

FIGURE 2 - UNDERCUT EXCAVATION BELOW FOOTINGS

GME PROJECT NO.
G24-022222

APPENDIX B

GME TESTING

TEST BORING LOG

BORING NO.: **B-1**
SHEET 1 OF 1
GME PROJECT NO: G24-022222
STRUCTURE
DATUM :
DATE STARTED : 02-26-24
DRILLER/INSP : JS/ML

CLIENT: New Castle Community School Corporation
PROJECT TYPE : Proposed New Castle High School Improvements
LOCATION : 801 Parkview Drive, New Castle, IN

ELEVATION	: 1062.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 39.912125
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -85.379517
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 10.0 ft				

GROUNDWATER: ▽ Encountered at Dry ▼ At completion Dry

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
1061.4		±7" Dark Brown, Sandy Clayey TOPSOIL. 0.6							
	2.5	Brown, Moist, SANDY SILTY CLAY, Trace Fine Gravel.	SS 1	6-8-7 (15)	100	11.7	5.3	4.5	
	5.0		SS 2	4-5-5 (10)	100	13.2	3.9	3.5	
1056.5		5.5							
	7.5	Gray and Brown, Moist, SILTY CLAY.	SS 3	5-7-6 (13)	100	20.5		4.0	
1052.0	10.0	10.0	SS 4	7-9-9 (18)	100	21.0	3.5	4.5+	
		Bottom of Boring at 10.0 ft							
	12.5								
	15.0								
	17.5								
	20.0								
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-2**
SHEET 1 OF 1
GME PROJECT NO: G24-022222
STRUCTURE
DATUM :
DATE STARTED : 02-26-24
DRILLER/INSP : JS/ML

CLIENT: New Castle Community School Corporation
PROJECT TYPE : Proposed New Castle High School Improvements
LOCATION : 801 Parkview Drive, New Castle, IN

ELEVATION	: 1064.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 39.912117
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -85.379036
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 10.0 ft				

GROUNDWATER: ▽ Encountered at Dry ▼ At completion Dry

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
1063.5		±6.5" Dark Brown, Clayey TOPSOIL. 0.5							
	2.5	FILL: Brown, Moist, Sandy Silty Clay, Trace Gravel.	SS 1	5-8-9 (17)	100	12.0	4.3	4.5+	
1059.0	5.0	5.0	SS 2	6-6-7 (13)	100	9.5		4.5+	
1058.0		Black, Clayey TOPSOIL and Straw. 6.0							
	7.5	Gray, Moist, SILTY CLAY, Trace Gravel.	SS 3	5-7-7 (14)	100	21.7		2.5	
1054.0	10.0	10.0	SS 4	6-8-12 (20)	100	20.2	2.9	2.5	
		Bottom of Boring at 10.0 ft							
	12.5								
	15.0								
	17.5								
	20.0								
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-3**
SHEET 1 OF 1
GME PROJECT NO: G24-022222
STRUCTURE
DATUM :
DATE STARTED : 02-26-24
DRILLER/INSP : JS/ML

CLIENT: New Castle Community School Corporation
PROJECT TYPE : Proposed New Castle High School Improvements
LOCATION : 801 Parkview Drive, New Castle, IN

ELEVATION	: 1064.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 39.9118
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -85.379117
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 20.0 ft				

GROUNDWATER: ▽ Encountered at Dry ▼ At completion Dry

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
1063.5		±5.5" Dark Brown, Clayey TOPSOIL. 0.5							
	2.5	POSSIBLE FILL: Brown, Moist, Silty Sandy Clay, Trace Gravel and Fine Roots.	SS 1	12-10-6 (16)	100	7.2		4.5	
1061.0		3.0							
	5.0		SS 2	5-5-6 (11)	100	12.8	3.5	3.0	
	7.5		NR 3	5-6-7 (13)	0				No Sample Recovery
	10.0		SS 4	8-8-8 (16)	100	21.8		2.0	
	12.5	Brown and Dark Brown, SANDY SILTY CLAY, Trace Gravel.							
	15.0		SS 5	6-8-8 (16)	100	10.0		2.5	
	17.5								
1044.0	20.0	20.0	SS 6	8-10-10 (20)	100	9.9		3.0	
		Bottom of Boring at 20.0 ft							
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-4**
SHEET 1 OF 1
GME PROJECT NO: G24-022222
STRUCTURE
DATUM :
DATE STARTED : 02-26-24
DRILLER/INSP : JS/ML

CLIENT: New Castle Community School Corporation
PROJECT TYPE : Proposed New Castle High School Improvements
LOCATION : 801 Parkview Drive, New Castle, IN

ELEVATION	: 1064.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 39.911694
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -85.379206
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 20.0 ft				

GROUNDWATER: ▽ Encountered at Dry ▼ At completion Dry

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
1063.6		±5" Sandy Clayey TOPSOIL. 0.4							
	2.5	FILL: Brown, Moist, Sandy Clay, Trace Gravel and Concrete Fragments.	SS 1	12-9-10 (19)	100	9.2			
1061.0		3.0							
	5.0	Gray and Brown, Moist, Mottled SILTY CLAY, Trace Gravel and Sand.	SS 2	8-14-15 (29)	100	8.3		4.0	
	7.5		SS 3	8-9-13 (22)	100	13.7	2.0	1.5	
1056.0		8.0							
	10.0		SS 4	6-6-7 (13)	100	24.0	1.6	1.0	
	12.5								
	15.0	Brown, Moist, SILTY CLAY, Trace Gravel.	SS 5	6-6-7 (13)	100	23.1		1.0	
	17.5								
1044.0	20.0	20.0	SS 6	7-7-6 (13)	100	22.4		1.5	
		Bottom of Boring at 20.0 ft							
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-5**
SHEET 1 OF 1
GME PROJECT NO: G24-022222
STRUCTURE
DATUM :
DATE STARTED : 02-26-24
DRILLER/INSP : JS/ML

CLIENT: New Castle Community School Corporation
PROJECT TYPE : Proposed New Castle High School Improvements
LOCATION : 801 Parkview Drive, New Castle, IN

ELEVATION	: 1065.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 39.911794
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -85.378864
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 20.0 ft				

GROUNDWATER: ▽ Encountered at Dry ▼ At completion Dry

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
1064.6		±5" Dark Brown, Clayey TOPSOIL. 0.4							
	2.5		SS 1	5-7-7 (14)	100	10.8		2.5	
	5.0	Brown, Moist, SANDY SILTY CLAY, Trace Gravel.	SS 2	7-10-12 (22)	100	14.5		3.5	
	7.5		SS 3	5-5-5 (10)	100	19.2		2.5	
1055.5		9.5							
	10.0		SS 4	6-7-8 (15)	100	22.7		3.0	
	12.5								
	15.0	Brown, Moist, SANDY CLAY, Trace Gravel.	SS 5	9-11-13 (24)	100	8.7	3.1	3.0	
	17.5								
1045.0	20.0	20.0	SS 6	13-13-13 (26)	100	9.8	3.3	4.5	
		Bottom of Boring at 20.0 ft							
	22.5								
	25.0								

GME TESTING

TEST BORING LOG

BORING NO.: **B-6**
SHEET 1 OF 1
GME PROJECT NO: G24-022222
STRUCTURE
DATUM :
DATE STARTED : 02-26-24
DRILLER/INSP : JS/ML

CLIENT: New Castle Community School Corporation
PROJECT TYPE : Proposed New Castle High School Improvements
LOCATION : 801 Parkview Drive, New Castle, IN

ELEVATION	: 1064.0	BORING METHOD	: ASTM D-1586	LATITUDE	: 39.911686
STATION	:	RIG TYPE	: Skid	LONGITUDE	: -85.379003
OFFSET	:	CASING DIA.	: 3.3 in		
LINE	:	HAMMER	: Auto		
DEPTH	: 20.0 ft				

GROUNDWATER: ▽ Encountered at Dry ▼ At completion Dry

STRATUM ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6" (N)	% RECOVERY	% MOISTURE CONTENT	UNCONF. COMP., tsf	Qp (tsf)	REMARKS
1063.7		±4" Dark Brown, Sandy Clayey TOPSOIL. 0.3							
	2.5		SS 1	4-6-9 (15)	100	22.4	3.1	2.0	
	5.0	POSSIBLE FILL: Dark Brown, Moist, Silty Clay, Trace Gravel and Sand.	SS 2	5-6-9 (15)	100	17.3		2.5	
	7.5		SS 3	5-6-7 (13)	100	14.8		3.0	
1056.0		8.0							
	10.0	Brown and Gray, Moist, Mottled CLAY.	SS 4	5-7-8 (15)	100	25.4	2.2	1.5	
1052.0		12.0							
	12.5								
	15.0		SS 5	4-8-10 (18)	100	20.3	3.3	3.0	
	17.5	Brown, Moist, SILTY CLAY.							
1044.0	20.0	20.0	SS 6	5-10-11 (21)	100	21.5		4.5+	
		Bottom of Boring at 20.0 ft							
	22.5								
	25.0								

GENERAL NOTES

SAMPLE IDENTIFICATION

Visual soil classifications are made in general accordance with the United States Soil Classification System on the basis of textural and particle size categorization, and various soil behavior and characteristics. Visual classifications should be made by appropriate laboratory testing when more exact soil identification is required to satisfy specific project applications criteria.

RELATIVE PROPORTIONS OF COHESIONLESS SOILS

Term	Defining Range by % of Weight
Trace	1-10 %
Little	11-20 %
Some	21-35 %
And	36-50 %

WATER LEVEL MEASUREMENT

NE	No Water Encountered
BF	Backfilled upon Completion

ORGANIC CONTENT BY COMBUSTION METHOD

Soil Description	LOI
w/ organic matter	4-15 %
Organic Soil (A-8)	16-30 %
Peat (A-8)	More than 30%

LABORATORY TESTS

Qp	Penetrometer Reading, tsf
Qu	Unconfined Strength, tsf
MC	Moisture Content, %
LL	Liquid Limit, %
PL	Plastic Limit, %
PI	Plastic Index
SL	Shrinkage Limit, %
pH	Measure of Soil Alkalinity/Acidity
γ	Dry Unit Weight, pcf
LOI	Loss of Ignition, %

DRILLING AND SAMPLING SYMBOLS

AS	Auger Sample
BS	Bag Sample
PID	Photo ionization Detector (Hnu meter) volatile vapor level,(PPM)
COA	Clean-Out Auger
CS	Continuous Sampling
FA	Flight Auger
HA	Hand Auger
HAS	Hollow Stem Auger
NR	No Recovery
PT	3” O.D. Piston Tube Sample
RB	Rock Bit
RC	Rock Coring
REC	Recovery
RQD	Rock Quality Designation
RS	Rock Sounding
S	Soil Sounding
SS	2”O.D. Split-Barrel Sample
2ST	2”O.D. Tin-Walled Tube Sample
3ST	3” O.D. Thin-Walled Tube Sample
VS	Vane Shear Test
DB	Diamond Bit
WS	Wash Sample
RB	Roller Bit
ST	Shelby Tube, 2” O.D. or 3” O.D.
CB	Carbide Bit
WOH	Weight of the Hammer

GRAIN SIZE TERMINOLOGY

Soil fraction	Particle size	Us standard sieve size
Boulders	larger than 75 mm	Larger than 3”
Gravel	2mm to 75 mm	#10 to 75 mm
Coarse Sand	0.425 mm to 2 mm	#40 to #10
Fine Sand	0.075mm to 0.425 mm	#200 to #40
Silt	0.002 mm to 0.075 mm	Smaller than #200
Clay	Smaller than 0.002 mm	Smaller than #200

RELATIVE DENSITY

Term	“N” Value
Very Loose	0-5
Loose	6-10
Medium Dense	11-30
Dense	31-50
Very Dense	51+

CONSISTENCY

Term	“N” Value
Very Soft	0-3
Soft	4-5
Medium Stiff	6-10
Stiff	11-15
Very Stiff	16-30
Hard	31+

PLASTICITY

Term	Plastic Index
None to Slight	0-4
Slight	5-7
Medium	8-22
High/Very High	Over 22

Note(s):
The penetration resistance, “N” Value, is the summation of the number of blows required to effect two successive 6-inch penetrations of the 2-inch split-barrel sampler. The sampler is driven with a 140-lb. weight falling 30-inches and is seated to a depth of 6-inches before commencing the standard penetration test.
Water level measurements shown on the boring logs represent conditions at the time indicated and may not reflect static levels, especially in cohesive soils

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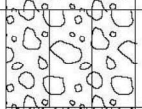
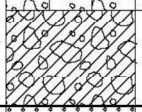
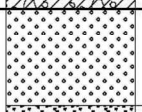
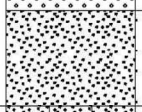
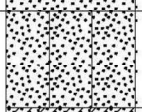
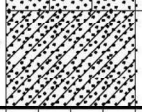
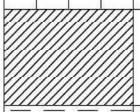
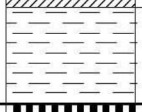
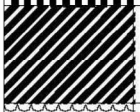
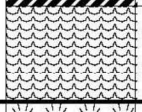
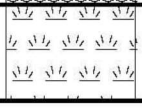
SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		(LITTLE OR NO FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		(LITTLE OR NO FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES		SM	SILTY SANDS, SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

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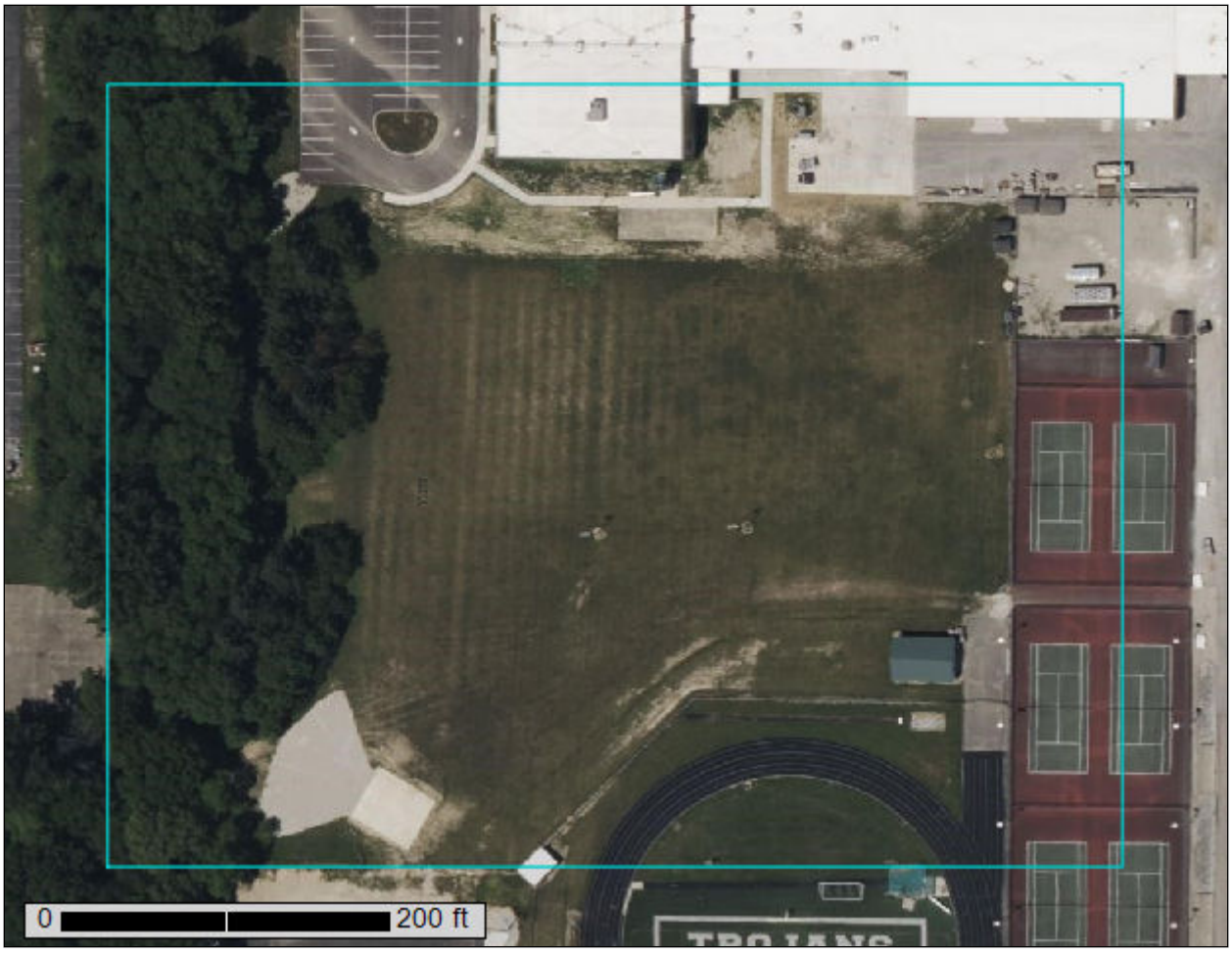
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Henry County, Indiana



March 5, 2024

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:1,220 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Henry County, Indiana
Survey Area Data: Version 25, Sep 1, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 19, 2022—Jun 21, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
EdA	Eldean silt loam, 0 to 2 percent slopes	0.0	0.7%
LeC2	Losantville silt loam, 6 to 12 percent slopes, eroded	2.6	38.7%
Ot	Orthents and aquents, loamy	4.1	60.6%
Totals for Area of Interest		**6.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Henry County, Indiana

EdA—Eldean silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2vzcs
Elevation: 670 to 1,160 feet
Mean annual precipitation: 37 to 46 inches
Mean annual air temperature: 48 to 55 degrees F
Frost-free period: 145 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Eldean and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eldean

Setting

Landform: Outwash terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy outwash

Typical profile

Ap - 0 to 10 inches: silt loam
Bt - 10 to 31 inches: clay
BC - 31 to 38 inches: very gravelly loam
C - 38 to 79 inches: stratified sand to extremely gravelly coarse sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 65 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: B
Ecological site: F111XA015IN - Dry Outwash Upland, R111XA017IN - Dry Outwash Mollisol
Hydric soil rating: No

Minor Components

Westland

Percent of map unit: 5 percent
Landform: Depressions, swales, outwash terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave, linear
Ecological site: R111XA016IN - Outwash Mollisol
Hydric soil rating: Yes

Ockley

Percent of map unit: 5 percent
Landform: Outwash terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F111XA015IN - Dry Outwash Upland
Hydric soil rating: No

Sleeth

Percent of map unit: 3 percent
Landform: Stream terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F111XA014IN - Outwash Upland
Hydric soil rating: No

Thackery

Percent of map unit: 2 percent
Landform: Outwash terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F111XA014IN - Outwash Upland
Hydric soil rating: No

LeC2—Losantville silt loam, 6 to 12 percent slopes, eroded

Map Unit Setting

National map unit symbol: 5jz6
Elevation: 680 to 1,250 feet
Mean annual precipitation: 36 to 42 inches
Mean annual air temperature: 49 to 53 degrees F
Frost-free period: 175 to 185 days

Farmland classification: Not prime farmland

Map Unit Composition

Losantville and similar soils: 97 percent
Minor components: 3 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Losantville

Setting

Landform: Moraines, till plains
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

A - 0 to 5 inches: silt loam
B - 5 to 18 inches: clay
C - 18 to 60 inches: loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: 12 to 20 inches to densic material
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 50 percent
Available water supply, 0 to 60 inches: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: F111XA009IN - Till Ridge
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Minor Components

Treaty

Percent of map unit: 3 percent
Landform: Drainageways
Ecological site: F111XA007IN - Till Depression Flatwood
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Ot—Orthents and aquents, loamy

Map Unit Setting

National map unit symbol: 5jzr
Elevation: 680 to 1,250 feet
Mean annual precipitation: 36 to 42 inches
Mean annual air temperature: 49 to 53 degrees F
Frost-free period: 175 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Orthents and similar soils: 71 percent
Aquents and similar soils: 20 percent
Minor components: 9 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Orthents

Setting

Landform: Till plains
Landform position (two-dimensional): Footslope, toeslope
Down-slope shape: Linear
Across-slope shape: Linear

Properties and qualities

Slope: 0 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Interpretive groups

Land capability classification (irrigated): None specified
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: No

Description of Aquents

Setting

Landform: Till plains
Landform position (two-dimensional): Footslope, toeslope
Down-slope shape: Linear
Across-slope shape: Linear

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None

Interpretive groups

Land capability classification (irrigated): None specified
Ecological site: F111XA021IN - Sandy Interdune
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: No

Minor Components

Westland

Percent of map unit: 3 percent
Landform: Depressions
Ecological site: R111XA016IN - Outwash Mollisol
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Treaty

Percent of map unit: 3 percent
Landform: Depressions
Ecological site: F111XA007IN - Till Depression Flatwood
Other vegetative classification: Mixed/Transitional (Mixed Native Vegetation)
Hydric soil rating: Yes

Millgrove

Percent of map unit: 3 percent
Landform: Depressions
Ecological site: R111XA016IN - Outwash Mollisol
Other vegetative classification: Trees/Timber (Woody Vegetation)
Hydric soil rating: Yes

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USGS web services were down for some period of time and as a result this tool wasn't operational, resulting in *timeout* error.
USGS web services are now operational so this tool should work as expected.

OSHPD

Latitude, Longitude: 39.911799, -85.379117

Date	3/5/2024, 11:00:17 AM
Design Code Reference Document	IBC-2012
Risk Category	III
Site Class	D - Stiff Soil

Type	Value	Description
S_S	0.137	MCE_R ground motion. (for 0.2 second period)
S_1	0.076	MCE_R ground motion. (for 1.0s period)
S_{MS}	0.22	Site-modified spectral acceleration value
S_{M1}	0.182	Site-modified spectral acceleration value
S_{DS}	0.146	Numeric seismic design value at 0.2 second SA
S_{D1}	0.122	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	B	Seismic design category
F_a	1.6	Site amplification factor at 0.2 second
F_v	2.4	Site amplification factor at 1.0 second
PGA	0.063	MCE_G peak ground acceleration
F_{PGA}	1.6	Site amplification factor at PGA
PGA_M	0.101	Site modified peak ground acceleration
T_L	12	Long-period transition period in seconds
SsRT	0.137	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	0.15	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.076	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.087	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.6	Factored deterministic acceleration value. (Peak Ground Acceleration)
PGA_{UH}	0.063	Uniform-hazard (2% probability of exceedance in 50 years) Peak Ground Acceleration
C_{RS}	0.914	Mapped value of the risk coefficient at short periods
C_{R1}	0.869	Mapped value of the risk coefficient at a period of 1 s
C_V		Vertical coefficient

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00 01 10 - TABLE OF CONTENTS

DIVISION 22: PLUMBIING

DIVISION 23: HEATING, VENTILATING AND AIR CONDITIONING

DIVISION 24 & 25: (NOT USED)

DIVISION 26: ELECTRICAL

END OF TOC

SECTION 09 29 00 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Non-load-bearing steel framing members.
2. Gypsum board

1.2 DEFINITIONS

A. Gypsum Board Construction Terminology: Refer to ASTM C11 and GA-505 for definitions of terms related to gypsum board assemblies not defined in this Section or in other referenced standards.

1.3 ASSEMBLY PERFORMANCE REQUIREMENTS

A. Sound Transmission Characteristics: For gypsum board assemblies indicated to have STC ratings, provide materials and construction identical to those of assemblies whose STC ratings were determined per ASTM E 90 and classified per ASTM E 413 by a qualified independent testing agency.

1.4 SUBMITTALS

A. All gypsum board products and accessories specified in this Section shall be submitted as a single package as practicable. Separate submittals for each system or product may not be acceptable.

B. Do not submit MSDS or SDS sheets with product data submittal. Architect is not responsible for review of this information as practicable. Submittals that include MSDS or SDS data sheets may be returned as rejected.

C. Product certificates signed by manufacturers of gypsum board assembly components certifying that their products comply with specified requirements.

D. Product data for each type of product specified, including wall boards, metal studs, deflection track, and other shapes, fasteners, and finishing materials.

1.5 QUALITY ASSURANCE

A. Materials or operations specified by reference to the published specifications of a manufacturer or other published standards shall comply with the requirements of the standards listed.

1. Standards include ASTM C840 and GA216.

B. Refer to "Recommended Specification on Levels of Gypsum Board Finish" as published by the Gypsum Association (and AWCI/CISCA/PDCA) for finish levels required herein.

C. Fire-Test-Response Characteristics: Where fire-rated gypsum board assemblies are indicated, provide materials and construction identical to those of assemblies tested for fire resistance per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

1. Fire Resistance Ratings: As indicated by reference to GA File Numbers in GA-600 "Fire Resistance Design Manual" or to design designations in UL "Fire Resistance Directory" or in the listing of another testing and inspecting agency acceptable to authorities having jurisdiction.

D. Single-Source Responsibility for Steel Framing: Obtain steel framing members for gypsum board assemblies from a single manufacturer.

E. Single-Source Responsibility for Panel Products: Obtain each type of gypsum board and other panel products from a single manufacturer.

F. Single-Source Responsibility for Finishing Materials: Obtain finishing materials from either the same manufacturer that supplies gypsum board and other panel products or from a manufacturer acceptable to gypsum board manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer or supplier.

B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Neatly stack gypsum panels flat to prevent sagging.

C. Handle gypsum board to prevent damage to edges, ends, and surfaces. Do not bend or otherwise damage metal corner beads and trim.

1.7 PROJECT CONDITIONS

A. Environmental Conditions: Establish and maintain environmental conditions for applying and finishing gypsum board to comply with ASTM C 840 and with gypsum board manufacturer's recommendations.

B. Room Temperatures: For non-adhesive attachment of gypsum board to framing, maintain not less than 40 deg F For adhesive attachment and finishing of gypsum board, maintain not less than 50 deg F for 48 hours prior to application and continuously after until dry. Do not exceed 95 deg F when using temporary heat sources.

C. Ventilation: Ventilate building spaces, as required, for drying joint treatment materials. Avoid drafts during hot dry weather to prevent finishing materials from drying too rapidly.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Steel Framing and Furring:

a. Clark Dietrich Metal Framing, Inc., Westchester, OH

b. Telling Industries, Willoughby, OH
c. Craco Manufacturing, York, SC
d. MRI Steel Framing, LLC, Hinsdale, IL
e. Marino\Ware, East Chicago, IN
f. MBA Metal Framing, Libertyville, IL
g. The Steel Network, Inc., Durham, NC

2. Gypsum Board and Related Products:

a. Georgia-Pacific Corp. Atlanta, GA
b. CertainTeed Gypsum, Valley Forge, PA
c. Fry Reglet; Alpharetta, GA
d. Pittcon Industries, Riverdale, MD
e. United States Gypsum Company, Chicago, IL
f. National Gypsum Co., Charlotte, NC

3. Non-Rated Deflection Track:

a. "Max-Track" by Clark Dietrich, Westchester, OH
b. "True-Action Slotted Track" by Telling Industries, Willoughby, OH
c. "Slotted Slip Track" by Craco Mfg, York, SC
d. "Slotted Track" by MRI Steel Framing, LLC, Hinsdale, IL

2.2 FRAMING COMPONENTS FOR SUSPENDED CEILINGS

A. Provide components of sizes indicated but not less than that required to comply with ASTM C 754 for conditions indicated.

B. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper.

1. Tie wire shall be 18 gauge galvanized annealed wire.
2. Hanger wire shall be 8 gauge galvanized annealed wire.

C. Hanger Rods: Mild steel and zinc-coated or protected with rust-inhibitive paint.

D. Flat Hangers: Mild steel and zinc-coated or protected with rust-inhibitive paint.

E. Angle-Type Hangers: Angles with legs not less than 7/8 inch wide, formed from 0.0635-inch-thick galvanized steel sheet complying with ASTM A 446 Coating Designation G90, with bolted connections and 5/16-inch-diameter bolts.

F. Channels: Cold-rolled steel, 0.05980-inch-minimum thickness of base (uncoated) metal and 7/16-inch-wide flanges, and as follows:

1. Carrying Channels: 1-1/2 inch deep, 475 lb per 1000 feet, unless otherwise indicated.
2. Furring Channels: 7/8 inch deep, 325 lb per 1000 feet, unless otherwise indicated.
3. Finish: G-90 hot-dip galvanized coating per ASTM A 525 for framing for exterior soffits and where indicated.

G. Steel Rigid Furring Channels: ASTM C 645, hat-shaped, depth of 7/8 inch, and minimum thickness of base (uncoated) metal as follows:

1. Thickness: 0.0329 inch, unless otherwise indicated.
2. Protective Coating: G40 hot-dip galvanized coating per ASTM A 525.

H. **CONTRACTOR'S OPTION** (DRYWALL GRID):

1. Steel framing components for suspended gypsum board ceilings may be drywall grid as follows in lieu of the carrying and furring channels as specified above:

    a. "Frameall Flat Drywall Grid" by Armstrong World Industries
    b. or equal by USG.

2. Consists of pre-engineered drywall main beams and drywall cross tees as required for room, ceiling height and configuration.
3. Provide all items and accessories as required for a complete installation in every respect.
4. This system is preferred over the carrying channels, furring channels and other hangers as specified above.

2.3 GYPSUM BOARD PRODUCTS

A. Provide gypsum board of types indicated in maximum lengths available to minimize end-to-end butt joints.

1. Thickness: Provide gypsum board 5/8 inch thick to comply with ASTM C 840 for application system and support spacing indicated.

B. Gypsum Wallboard: ASTM C 36 and as follows:

1. Type: Type X at all locations. (Provide Type C at ceilings).
2. Edges: Tapered.
3. Thickness: 5/8 inch, unless otherwise noted.
4. Type: WR or MR gypsum board as may be indicated.

“““““““

2.4 JOINT TREATMENT MATERIALS

A. Provide joint treatment materials complying with ASTM C 475 and the recommendations of both the manufacturers of sheet products and of joint treatment materials for each application indicated.

B. Joint Tape for Gypsum Board: Paper reinforcing tape, unless otherwise indicated.

C. Setting-Type Joint Compounds for Gypsum Board: Factory-packaged, job-mixed, chemical-hardening powder products formulated for uses indicated.

1. There setting-type joint compounds are indicated as a taping compound only or for taping and filling only, use formulation that is compatible with other joint compounds applied over it.
2. For prefilling gypsum board joints, use formulation recommended by gypsum board manufacturer for this purpose.
3. For filling joints and treating fasteners of water-resistant gypsum backing board behind base for ceramic tile, use formulation recommended by the gypsum board manufacturer for this purpose.
4. For topping compound, use sandable formulation.

2.5 MISCELLANEOUS MATERIALS

A. Provide auxiliary materials for gypsum board construction that comply with referenced standards and recommendations of gypsum board manufacturer.

B. Steel drill screws complying with ASTM C 1002 for the following applications:

1. Fastening gypsum board to steel members less than 0.03 inch thick.
2. Fastening gypsum board to gypsum board.

C. Steel drill screws complying with ASTM C 954 for fastening gypsum board to steel members from 0.033 to 0.112 inch thick.

D. Corrosion-resistant-coated steel drill screws of size and type recommended by board manufacturer for fastening cementitious backer units.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates to which gypsum board assemblies attach or abut, installed hollow metal frames, cast-in-anchors, and structural framing with Installer present for compliance with requirements for installation tolerances and other conditions affecting performance of assemblies specified in this Section. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Ceiling Anchorages: Coordinate installation of ceiling suspension systems with installation of overhead structural assemblies to ensure that inserts and other provisions for anchorages to building structure have been installed to receive ceiling hangers that will develop their full strength and at spacing required to support ceilings.

1. Furnish concrete inserts and other devices indicated to other trades for installation well in advance of time needed for coordination with other construction.

3.3 INSTALLING STEEL FRAMING, GENERAL

A. Steel Framing Installation Standard: Install steel framing to comply with ASTM C 754 and with ASTM C 840 requirements that apply to framing installation.

B. Install supplementary framing, blocking, and bracing at terminations in gypsum board assemblies to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction. Comply with details indicated and with recommendations of gypsum board manufacturer.

C. Isolate steel framing from building structure to prevent transfer of loading imposed by structural movement. Comply with details shown on Drawings, or if not shown, use vertical sliding slide clip application or use of deflection track and plate track two-piece system, or slip-joint with U-channel.

1. There building structure abuts ceiling perimeter or penetrates ceiling.
2. There partition framing and wall furring abut structure, including steel beams, steel joists, at bottom of roof decks and floor decks, except at floor.

    a. Provide slip-type joints as detailed to attain lateral support and avoid axial loading.

3. Rated Deflection Track: Top runner manufactured to allow partition heads to expand and contract with movement of the structure while maintaining continuity of fire-resistance-rated assembly indicated.

    a. SLP-TRK by Slip Track Systems
    b. Snap Track by Totle Steel Solutions
    c. Slotted Stud by Steeler Inc.

D. Do not bridge building expansion and control joints with steel framing or furring members. Independently frame both sides of joints with framing or furring members as indicated.

E. Provide all required accessories for a complete installation in every respect.

3.4 INSTALLING STEEL FRAMING FOR SUSPENDED CEILINGS

A. Suspend ceiling hangers from building structural members and as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
2. There width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with the location of hangers required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
3. Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eyescrews, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause them to deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
4. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eyescrews, or other devices and fasteners that are secure and appropriate for structure as well as for type of hanger involved, and in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
5. Do not support ceilings directly from permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
6. Do not attach hangers to steel deck tabs.
7. Do not attach hangers to steel roof deck. Attach hangers to structural members.
8. Do not connect or suspend steel framing from ducts, pipes or conduit.

B. Sway-brace suspended steel framing with hangers used for support.

C. Install suspended steel framing components in sizes and at spacings indicated but not less than that required by the referenced steel framing installation standard.

1. Wire Hangers: 0.1620-inch (8-gage) diameter, 4 feet o.c.
2. Carrying Channels (Main Runners): 1-1/2 inch, 4 feet o.c.
3. Rigid Furring Channels (Furring Members): 16 inches o.c.

D. Installation Tolerances: Install steel framing components for suspended ceilings so that cross-furring members or grid suspension members are level to within 1/8 inch in 12 feet as measured both lengthwise on each member and transversely between parallel members.

E. Wire-tie or clip furring members to main runners and to other structural supports as indicated.

F. For exterior soffits, install cross-bracing and additional framing to resist wind uplift according to details on Drawings.

3.5 APPLYING AND FINISHING GYPSUM BOARD, GENERAL

A. Gypsum Board Application and Finishing Standards: Install and finish gypsum panels to comply with ASTM C 840 and GA-216.

B. Install ceiling board panels across framing to minimize the number of abutting end joints and avoid abutting end joints in the central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

C. Install gypsum panels with face side out. Do not install imperfect, damaged, or damp panels. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.

D. Locate both edge or end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Position adjoining panels so that tapered edges abut tapered edges, and field-cut edges abut field-cut edges and ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions. Avoid joints at corners of framed openings where possible.

E. Attach gypsum panels to steel studs so that the leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

F. Attach gypsum panels to framing provided at openings and cutouts.

G. Do not attach gypsum panels across the flat grain of wide-dimension lumber including floor joists and headers. Instead, float gypsum panels over these members using resilient channels or provide control joints to counteract wood shrinkage.

H. Form control joints and expansion joints at locations indicated and as detailed, with space between edges of adjoining gypsum panels, as well as supporting framing behind gypsum panels. Provide control joints spread not more than 30 feet on center in partitions. Not more than 50 feet on center in gypsum board ceilings.

1. Control Joint: Apply over face of gypsum board where specified. Cut to length with a fine-toothed hacksaw (32 teeth per inch). Cut end joints square, butt together and align to provide neat fit. Attach control joint to gypsum board with fasteners spaced 6 inches o.c. maximum along each flange. Remove plastic tape after finishing with joint compound or veneer finish.

    a. Leave a ½ inch continuous opening between gypsum boards for insertion of surface-mounted joint.
    b. Interrupt wood floor and ceiling plates with a ½ inch gap, wherever there is a control joint in the structure.
    c. Do not attach gypsum board to steel studs on one side of control joint.
    d. Provide separate supports for each control joint flange.
    e. Provide an adequate seal and an additional layer of Type "X" gypsum board behind control joints where sound or fire ratings are prime considerations.

I. Cover both faces of steel stud partition framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chase walls that are braced internally.

1. Except where concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
2. Fit gypsum panels around ducts, pipes, and conduits.
3. Where partitions intersect open concrete coffers, concrete joists, and other structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by coffers, joists, and other structural members; allow ¼ to ½ inch-wide joints to install sealant.

J. Isolate perimeter of non-load-bearing gypsum board partitions at structural abutments, except floors, as detailed. Provide ¼ inch to ½ inch-wide spaces at these locations and trim edges with U-bead edge trim where edges of gypsum panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

K. Space fasteners in gypsum panels according to referenced gypsum board application and finishing standard and manufacturer's recommendations.

3.6 GYPSUM BOARD APPLICATION METHODS

A. Single-Layer Application: Install gypsum wallboard panels as follows:

1. On ceilings, apply gypsum panels prior to wall/partition board application to the greatest extent possible and at right angles to framing, unless otherwise indicated.
2. On partitions/walls, apply gypsum panels vertically (parallel to framing), unless otherwise indicated, and provide panel lengths that will minimize end joints.
3. On partitions/walls, apply gypsum panels horizontally (perpendicular to framing), unless parallel application is required for fire-resistive-rated assemblies. Use maximum-length panels to minimize end joints.

B. Single-Layer Fastening Methods: Apply gypsum panels to supports as follows: Fasten with screws.

3.7 FINISHING GYPSUM BOARD ASSEMBLIES

A. Apply joint treatment at gypsum board joints (both directions); flanges of corner bead, edge trim, and control joints; penetrations; fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration and levels of gypsum board finish indicated.

B. Prefill open joints, rounded or beveled edges, and damaged areas using setting-type joint compound.

C. Apply joint tape over gypsum board joints and to trim accessories with concealed face flanges as recommended by trim accessory manufacturer and as required to prevent cracks from developing in joint compound at flange edges.

D. Levels of Gypsum Board Finish: Provide the following levels of gypsum board finish per GA-214.

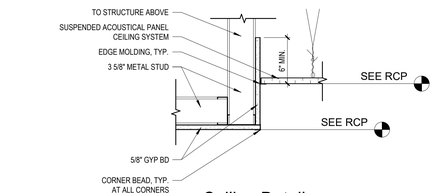
1. Level 4: Joints and interior angles shall have tape embedded in joint compound and three separate coats of joint compound applied over joints, angles, fastener heads, and accessories. Joint compound shall be smooth and free of tool marks and ridges. Note: Prepare surface to be coated with a primer/sealer prior to the application of final finishes. This finish level shall be used where textured finishes, wall coverings, and painted finishes are to be applied.

3.8 CLEANING AND PROTECTION

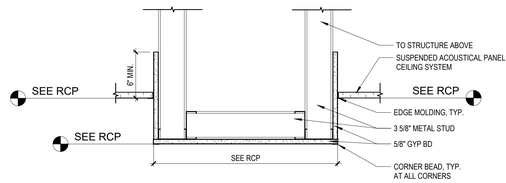
A. Promptly remove any residual joint compound from adjacent surfaces.

B. Provide final protection and maintain conditions, in a manner suitable to Installer that ensures gypsum board assemblies remain without damage or deterioration at time of Substantial Completion.

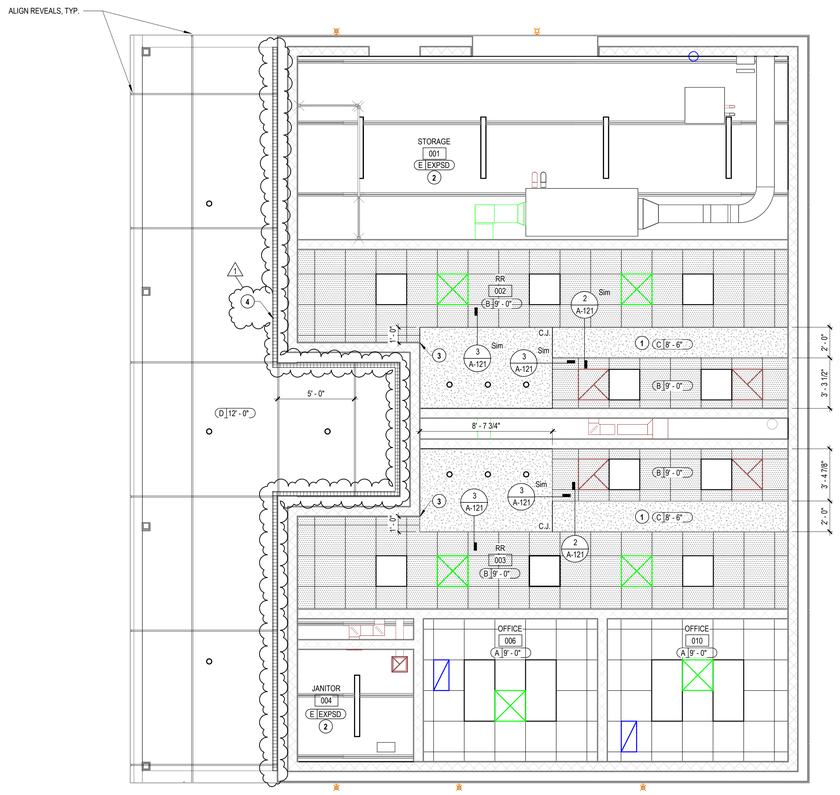
END OF SECTION



3 Ceiling Detail
1 1/2" = 1'-0"



2 Ceiling Detail
1 1/2" = 1'-0"



PLAN NORTH

1 First Floor Reflected Ceiling Plan
1/4" = 1'-0"

REFLECTED CEILING PLAN LEGEND AND GENERAL NOTES

CEILING MATERIAL LEGEND

TYPE		DESCRIPTION
A APC-1		24" x 24" ACOUSTICAL CEILING SYSTEM W/ SUSPENDED GRID. SEE SPECIFICATIONS FOR TYPE.
B APC-2		24" x 24" WASHABLE ACOUSTICAL CEILING SYSTEM W/ SUSPENDED GRID. SEE SPECIFICATIONS FOR TYPE.
C		GYPSUM BOARD CEILING, PAINT
D		COMPOSITE BUILDING PANEL SOFFIT
E EXPSD		EXPOSED TO STRUCTURE

FIXTURE LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	2'x2' LIGHT FIXTURE. SEE ELECTRICAL FOR TYPE.		SUPPLY GRILLE. SEE MECHANICAL FOR TYPE.
	2'x4' LIGHT FIXTURE. SEE ELECTRICAL FOR TYPE.		RETURN GRILLE. SEE MECHANICAL FOR TYPE.
	RECESSED DOWNLIGHT. SEE ELECTRICAL FOR TYPE.		EXHAUST GRILLE. SEE MECHANICAL FOR TYPE.
	LINEAR PENDANT FIXTURE. SEE ELECTRICAL FOR TYPE.		EXHAUST GRILLE. SEE MECHANICAL FOR TYPE.

CEILING GENERAL NOTES

1. ALL CEILING HEIGHTS ARE TO THE FINISHED FACE OF THE CEILING PLANE.
2. ALL DIMENSIONS ARE TO THE CENTERLINE OF DEVICE, TYPICAL.
3. ALIGN DEVICES AS INDICATED WITH CENTERLINES.
4. ALL SOFFITS/CASED OPENINGS TO ALIGN WITH THE FINISHED FACE OF ADJACENT WALLS, UNLESS NOTED OTHERWISE.
5. ALL DEVICES TO BE CENTERED IN CEILING TILES WHERE APPLICABLE, UNLESS NOTED OTHERWISE.
6. SEE CONSULTANT DOCUMENTS FOR THE LOCATIONS OF ALL WALL MOUNTED DEVICES. COORDINATE ALIGNMENT OF WALL DEVICES WITH EACH OTHER AND CEILING DEVICES WHERE POSSIBLE.
7. PROVIDE ADDITIONAL FRAMING AND SUPPORT ON ALL SIDES OF LIGHT FIXTURES, GRILLES, ETC. MOUNTED IN SUSPENDED GYPSUM BOARD CEILINGS & BULKHEADS.
8. REFER TO ENGINEERING DRAWINGS FOR ADDITIONAL REQUIRED ACCESS PANELS.
9. ARCHITECTURAL REFLECTED CEILING PLANS DO NOT INDICATE ALL DEVICES IN THE CEILING/PROJECT. REFER TO ENGINEERING DOCUMENTS FOR ADDITIONAL DEVICES.
10. WHERE GYPSUM BOARD ABUTS CMU OR CONCRETE CONSTRUCTION, PROVIDE CONTINUOUS "J" MOLD AND SEALANT AT JOINT.
11. PROVIDE CONTROL JOINTS IN GYPSUM BOARD CEILINGS AND BULKHEADS WHERE INDICATED OR MAX. 30'-0" O.C. WHERE NOT INDICATED. COORDINATE LOCATION WITH ARCHITECT IF PLAN LOCATIONS EXCEED SPACING RECOMMENDATIONS OF MANUFACTURER OR INDUSTRY STANDARD.
12. C.J. = CONTROL JOINT. DO NOT BRIDGE BUILDING EXPANSION AND CONTROL JOINTS WITH FRAMING OR FURRING MEMBERS. INDEPENDENTLY FRAME BOTH SIDES OF JOINTS.

1 CEILING PLAN NOTES

TAG	DESCRIPTION
1	PAINT UNDERSIDE AND ALL FACES OF BULKHEAD (P-2)
2	EXPOSED CEILING NOT TO BE PAINTED.
3	ALIGN BULKHEAD WITH ADJACENT WALL.
4	EXTENT OF COMPOSITE BUILDING PANEL INTEGRAL VENT

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260 424-9080 ElevatusArchitecture.com

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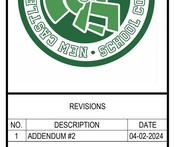

New Castle CSC Athletic Facilities
801 Parkview Dr.
New Castle, IN 47362

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDENDUM #2	04-02-2024

PROJECT NO. 2301109
ISSUE DATE 03-13-2024
SUBMITTAL Issue for Bids, Permits, and Construction

Reflected Ceiling Plan - First Floor

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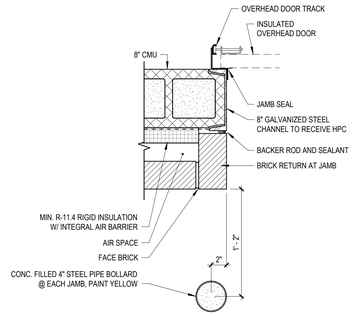
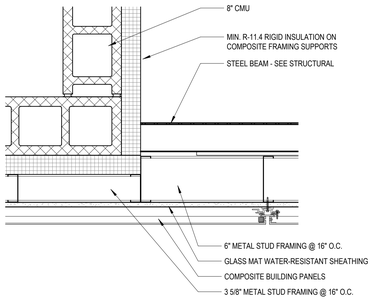
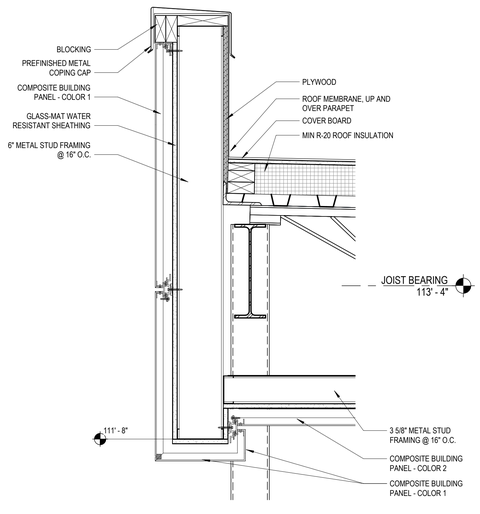


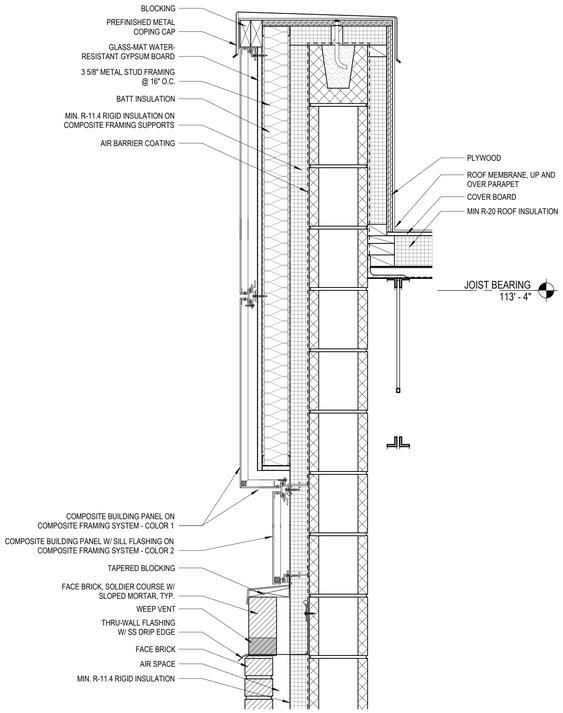
9 Jamb Detail @ OH Door
1 1/2" = 1'-0"



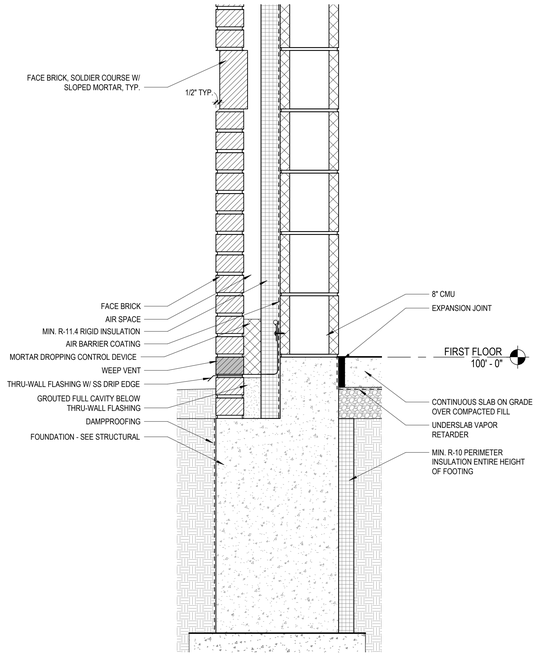
8 Plan Detail @ Canopy
1 1/2" = 1'-0"



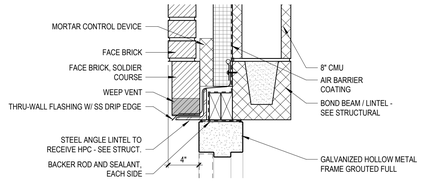
7 Typ. Detail @ Canopy - West
1 1/2" = 1'-0"



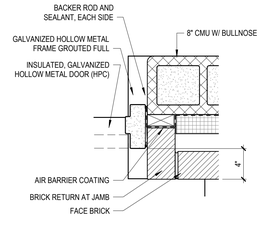
6 Typ. Detail @ T.O. Wall
1 1/2" = 1'-0"



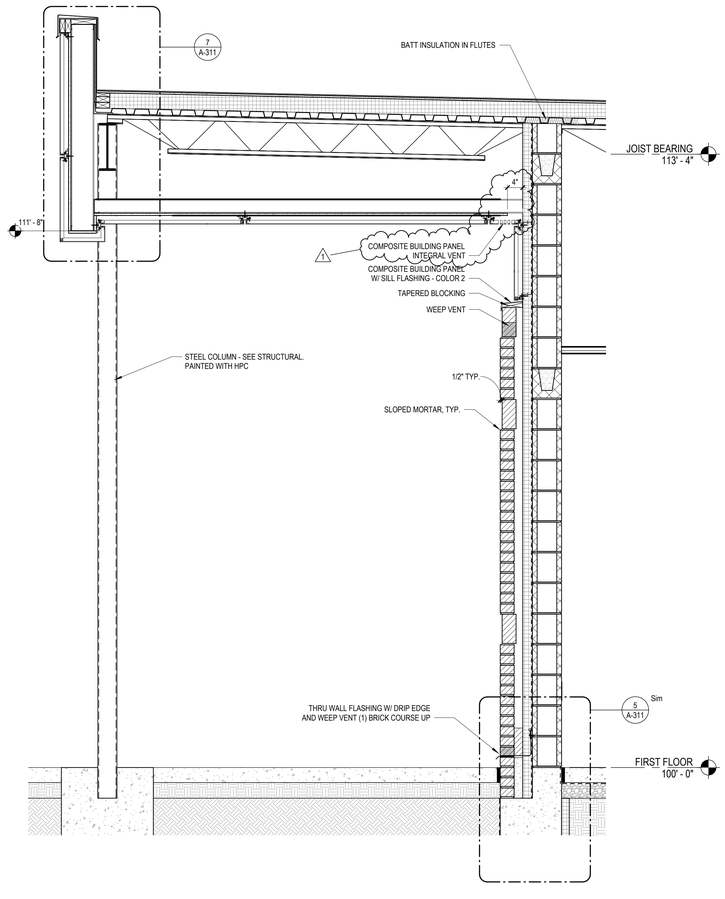
5 Typ. Detail @ B.O. Wall
1 1/2" = 1'-0"



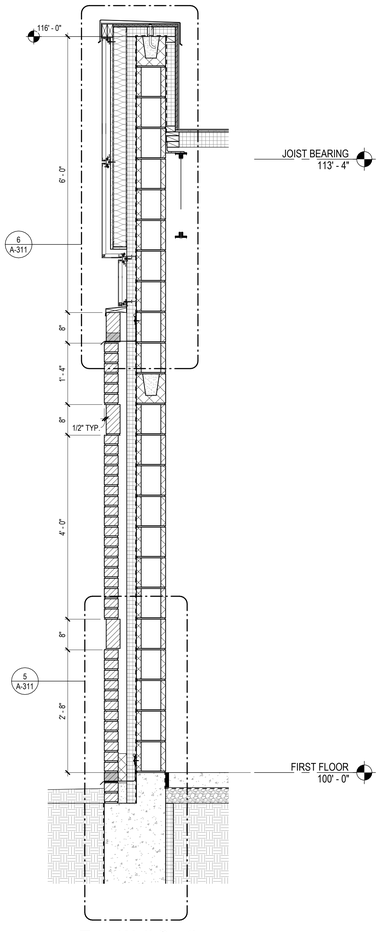
4 Typ. HM Door Head
1 1/2" = 1'-0"



2 Typ. HM Door Jamb
1 1/2" = 1'-0"



3 Typ. Wall Section @ Canopy
3/4" = 1'-0"



1 Typ. Wall Section
3/4" = 1'-0"

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ElevatusArchitecture.com

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NO.	DESCRIPTION	DATE
1	ADDENDUM #2	04-02-2024

PROJECT NO. 2301109
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Issue for Bids, Permits, and Construction

Wall Sections & Details

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