BALL STATE
UNIVERSITY

BUSINESS AFFAIRS
FACILITIES PLANNING AND MANAGEMENT

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ADDENDUM 2– December 18, 2025

Project: **Baseball & Softball Locker Room Buildings**
Project Number: **2024-008.01 A2/A9**

The following Addendum contains clarifications and revisions to the construction documents issued for bid 11/26/2025 for the above-mentioned project. This addendum forms a part of the Contract Documents and modifies all previously issued specifications and drawings. Bidders shall update their Bidding Documents with the information contained in this Addendum. Where new Drawings are enclosed with this Addendum, discard the old Drawing and insert the new. Where Supplemental drawings (Sketches) are enclosed with this Addendum, attach the Supplemental drawing to the documents as noted. Where only written modifications are given, copy the information onto the appropriate Documents and note the Addendum number. All items contained herein shall be included with the Bid. Acknowledge receipt of this addendum by inserting the number and date on the bid form.

Note: This addendum ☐ does ☒ does not modify the bid due date.

Specifications

2.A Specification Section: 00 06 00 Subsoil Investigations
- a. Add this specification section.

2.B Specification Section: 07 54 19 Polyvinyl-Chloride PVC Roofing
- a. Add this specification section.

2.C Specification Section: 07 54 23 Thermoplastic-Polyolefin (TPO) Roofing
- a. Delete this specification section in its' entirety.

2.D Specification Section: 10 50 00 Solid Phenolic Lockers
- a. Add this specification section.

2.E Specification Section: 10 51 23 Plastic Laminate Clad Lockers
- a. Delete this specification section in its' entirety.

Drawings

2.F Sheet: G0.00 - Cover Sheet
- a. Sheet A2.10A Alternate 1 - Baseball & Softball Connection added to Sheet Index.

2.G Sheet: C1.01S - Existing Topography and Demolition Plan - Softball
- a. Per contractor request, the proposed background linework has been removed.

2.H Sheet: C1.02B - Existing Topography and Demolition Plan - Baseball
- a. Per contractor request, the proposed background linework has been removed.

2.I Sheet: C2.01S - Site Plan - Softball
- a. Note callout E has been shifted to point to the edge of the pavement.

2.J Sheet: C2.02B - Site Plan - Baseball
- a. Fence linework has been added to the concrete area at the NW corner of the building.

2.K Sheet: C4.01S - Utility Plan - Softball

Miscellaneous revisions, Including water service line re-routing, downspouts and footing drain connections to each building. The contractor should take care to review the revised utility sheets carefully to ensure all revisions are accounted for.

2.L Sheet: C4.02B - Utility Plan - Baseball
- a. Miscellaneous revisions, Including water service line re-routing, downspouts and footing drain connections to each building. The contractor should take care to review the revised utility sheets carefully to ensure all revisions are accounted for.

2.M Sheet: A0.10 - Reference Site Plan
- a. Added Brick Paver Detail.

2.N Sheet: A2.00B - Construction Plan - Baseball Building
- a. Updated Covered walkway enclosure (Alternate 1).
- b. Updated coaches' lockers.
- c. Added tag for Brick Paver Detail.

2.O Sheet: A2.00S - Construction Plan – Softball Building
- a. Updated Covered walkway enclosure (Alternate 1).
- b. Updated coaches' lockers.
- c. Added tag for Brick Paver Detail.

2.P Sheet: A2.10A - Alternate 1 - Baseball and Softball Connection
- a. Added sheet to Include detail of Alternate 1.

2.Q Sheet: A3.00B - Exterior Elevations - Baseball Building
- a. Updated Levels. Refer to Note "Drawings Reference FFE: 100'-0" for each building. Actual Civil Elevations are: Baseball FFE = 943.20' & Softball FFE= 943.20'

2.R Sheet: A3.00S - Exterior Elevations - Softball Building

a. Updated Levels. Refer to Note "Drawings Reference FFE: 100'-0" for each building. Actual Civil Elevations are: Baseball FFE = 943.20' & Softball FFE= 943.20'

2.S Sheet: A3.50S - Building Sections - Baseball Building
a. Updated Levels. Refer to Note "Drawings Reference FFE: 100'-0" for each building. Actual Civil Elevations are: Baseball FFE = 943.20' & Softball FFE= 943.20'

2.T Sheet: A3.50S - Building Sections - Softball Building
a. Updated Updated Levels. Refer to Note "Drawings Reference FFE: 100'-0" for each building. Actual Civil Elevations are: Baseball FFE = 943.20' & Softball FFE= 943.20'

2.U Sheet: A4.00 - Wall Sections
a. Updated note " 3" rigid Insulation".

2.V Sheet: A4.01 - Section Details
a. Updated note " Fully adhered white PVC roofing membrane over 1/2" coverboard, typ."

2.W Sheet: A6.01 - Door Schedule & Storefront Elevations
a. Updated curtain wall elevations, CCw-5 & CW-6, to show correct glazing.

2.X Sheet: A8.00 - Finish Plans
a. Updated coaches' lockers.

2.Y Sheet: A10.00 - Locker Details
a. Updated all notes on sheet to call out for a "wood look phenolic material".

Contractor Questions

2.Z Question: [Pridemark Construction, December 1st, 2025]
Q: This project requires the steel fabricator to be AISC certified. Can this be waived? SMI is not AISC certified but is a member and implements a quality program that is equal to or exceeds the requirements in the AISC certification program. We are also an IDOA Certified facility and have a successful history of projects of similar size and scope.
A: JCA - Refer to specification section 051200 item 1.3B, which refer to acceptable alternatives to the AISC Certification.

2.AA Question: [Pridemark Construction, December 1st, 2025]
Q: Do we need to include landscaping in our quote? Other project that we have done for BSU they do all their own topsoil and landscaping.
A: MSA - Refer to Civil Drawings "All grassed areas shall be left 6" below shown grade. Topsoil and seeding to be placed at finished grade by owner."

2.BB Question: [Pridemark Construction, December 2nd, 2025]
Q: Substitution Request from Elite Storage Products for MFG PLAM Lockers. Document provided.
A: MSA - Not equivalent locker spec changing to phenolic.

2.CC Question: [RL Turner, December 2nd, 2025]
Q: The Sanitary Sewer is calling for 8" RCP in places. Is it meaning 8" PVC?

A: ETICA - All sanitary sewers should be PVC pipe.

2.DDQuestion: [Myers Construction, December 3rd, 2025]
Q: Can we get revised sheets C1.02S and C1.02B that do not show the new construction so we have a better idea the extents of the asphalt and concrete that have to be removed?
A: ETICA - Updated sheets will be issued, per this request.

2.EE Question: [Myers Construction, December 3rd, 2025]
Q: I don't see much detail for the brick pavers. Can we get a cut section through the pavers so we can see how they are to be installed? Does it require a concrete base? Stone only?
A: ETICA - Please refer to detail on A0.20.

2.FF Question: [Myers Construction, December 3rd, 2025]
Q: Page C2.01S has a note E on the southeast corner of the building pointing to the asphalt area. Does that note apply to this project? If so, where does the matching fence stop and start?
A: ETICA - The note E label was intended to point to the proposed fence at the west edge of the pavement in that area.

2.GG Question: [Myers Construction, December 3rd, 2025]
Q: Page C2.01S has a note E on the northeast corner of the building that appears to be pointing to an existing fence (see below). Does this area get new fence? If so, where is the starting/stopping point?
A: ETICA - This proposed fence is intended to run between the new bldg and the existing fence in this area

2.HH Question: [Myers Construction, December 3rd, 2025]
Q: Page C2.01B has a note G on the northwest corner of the building, but there isn't a fence type line shown. I do see what appears to be a fence shown on page C1.02B. Can you please confirm the scope of this new fence?
A: ETICA - There is supposed to be a fence shown in this area. The plans will be revised.

2.II Question: [Myers Construction, December 3rd, 2025]
Q: Page C2.01B has a note E south of the building that doesn't really point to anything in particular (see below). Can you please clarify where this new fence to match existing needs to start/stop? Is it safe to assume this should be in the location of the new decorative 6' fence per note 2.19 on page A2.00B?
A: ETICA - Yes, please coordinate the proposed fence style and location with the Arch drawings.

2.JJ Question: [Myers Construction, December 3rd, 2025]
Q: Note 2.10 on page A2.00B says to "refer to interior elevations" for the 24" phenolic lockers. Note 8.04 on page A8.00 says to "see millwork details" for these same lockers. The only locker details/elevations I can find on the drawings are for the athletic lockers. Can we get details/specs for these coaches lockers?
A: MSA - Drawings and specifications corrected to show phenolic lockers. Lockers do not incorporate any PLAM or solid surface components.

2.KK Question: [Myers Construction, December 3rd, 2025]
Q: Detail 6/A4.00 notes 2" rigid insulation between the brick and the block.
A: MSA - Updated drawings show the accurate thickness for the rigid insulation of 3".

2.LL Question: [Myers Construction, December 3rd, 2025]
Q: The details on page A10.00 call for a "wood look plastic laminate over black solid surface back locker panel." I can understand this laminate over solid surface at the cubbies if the inside needs to be black, but do we need solid surface on the sides and back of the lockers if the solid surface isn't seen?
A: MSA - Drawings and specifications corrected to show phenolic lockers. Lockers do not incorporate any PLAM or solid surface components. Refer to new spec section 10 50 00 Solid Phenolic Lockers.

2.MM Question: [Myers Construction, December 3rd, 2025]

Q: The logo on the bottom of the locker calls for "1/4" thick full color powder-coated metal 'cardinal' dimensional logo." My experience with powder-coat is this won't look very good. Can we use an acrylic logo at this location? See attached examples of acrylic logos used on lockers.

A: MSA - Architect will work with locker approved manufacturer per specifications to finalize component details. Logo could be powder coat or acrylic.

2.NN Question: [Myers Construction, December 3rd, 2025]

Q: Can we get more detail on how these custom stainless steel garment hooks are to look with concealed fasteners and cardinal logo? Does the logo have to have color? If it does not have to have color, can the logo be etched on the hook instead?

A: MSA - Hooks are to match existing Ball State Athletic Lockers.

2.OO Question: [RL Turner, December 3rd, 2025]

Q: Can the AISC Certification requirements for fabricator and erector be waived on this project?

A: JCA - Refer to specification section 051200 item 1.3B, which refer to acceptable alternatives to the AISC Certification.

2.PP Question: [Pridemark Construction, December 5th, 2025]

Q: On page E2.02BB systems plan note 1 say to refer to sheet E2.00B for additional information on access control but I do not see a page E2.00B. Please advise.

A: LOFTUS - Plan note shall be changed to "NOT USED". This applies to systems plan note 1 on sheet E2.01SB as well.

2.QQ Question: [Pridemark Construction, December 8th, 2025]

Q: Can I get some additional Wall section details of the soft ball building as well as more information on sheet 3.50S the elevation heights are different on a few of the cuts. What is right and what is not?

A: MSA - Wall section details are typical for both baseball and softabll buildings. Additional wall section callouts have been added to softball building sections. Softball elevation heights on A3.50S have been corrected, refer to sheet note regarding drawing reference elevations.

2.RR Question: [ICP Building Solutions Group, December 8th, 2025]

Q: Substitution Request for a PliDek product waterproof coating system used for both plywood and concrete surfaces. Document provided.

A: MSA - Provide reference spec section for intended substitution request.

2.SS Question: [Hagerman, December 10th, 2025]

Q: The drawings contradict themselves on what the roof is. The details call it a TPO roof while the roofing plans have it as a PVC roof. It is also called a TPO roof in the specs. Which is correct?

A: MSA - White PVC roof is accurate. Roof plan's keynote is updated to reflect, and roofing membrane spec section has been replaced with PVC product.

2.TT Question: [Terrazzo & Marble, December 10th, 2025]

Q: Substitution Request for a BABA Certified (Chicago mfg) material that is comparable to SW Deco Flake. Documents provided.

A: MSA - In order to be an approved substitution, flooring provider must be able to match custom color noted in finish legend.

2.UU Question: [Hagerman, December 11th, 2025]

Q: The pull they spec'd for this project are significantly more expensive than a standard 4" pull. Is the spec'd pull the one they want to use?

A: MSA - Provide as noted.

2.VV Question: [Hagerman, December 11th, 2025]
Q: The quartz that is spec'd (Aurora Q2003) is said to be discontinued on the website. Is there somewhere else this is manufactured or is there another selection on quartz material for pricing? See below for what the website showed:
[Q2003 , Aurora]
This design was discontinued on "08/04/2025". Please see below for alternate designs.
Aurora is a black terrazzo style quartz countertop design with pure black particulates and bits of sparkle.
A: MSA - Provide bid based on the cost of the originally specified quartz. Alternate selections will be made once the project is awarded.

2.WW Question: [RL Turner, December 12th, 2025]
Q: Please confirm whether or not there is any AESS for the project regarding the steel. I see that there is a spec for it and I have went thru the drawings and I do not see anywhere where it may be necessary.
A: JCA - Refer to specification section 051200 item 1.3B, which refer to acceptable alternatives to the AISC Certification.

2.XX Question: [Hagerman, December 11th, 2025]
Q: Is there a finish schedule that calls out the specified phenolic material? Manufacture? Color?
A: MSA - Refer To updated locker detail notes on Sheet A10.0. List of approved manufacturers in updated phenolic locker spec section.

2.YY Question: [Big Ben Builders, December 11th, 2025]
Q: On the drawings, specifically in the keynotes - construction section for both baseball (A2.50B) and softball (A2.50S), a fully adhered PVC roof membrane is specified. However, beginning on page 23 of Section 07 in the project manual, the specification calls for a TPO roof membrane..
A: MSA - White PVC roof is accurate. Roof plan's keynote is updated to reflect and roofing membrane spec section has been replaced with PVC product..

2.ZZ Question: [TD Construction, December 12th, 2025]
Q: Is this a union project with a wage scale requirement?
A: State of Indiana does not do a wage scale.

2.AAA Question: [TD Construction, December 12th, 2025]
Q: I did not see any allowances noted, is that correct?
A: Correct, there are no listed allowances.

2.BBB Question: [TD Construction, December 12th, 2025]
Q: Is this a tax exempt project?
A: Ball State University is tax exempt.

2.CCC Question: [TD Construction, December 12th, 2025]
Q: Are there any special Ball State prequalification requirements? I have not seen any, just want to verify please.
A: Refer to Addendum 01 and Pre-Bid Conference Agenda, Document 00 45 00, Appendix 6. Contractors Certification of Pre-Qualification Compliance. This project is over $300,000 and the State of Indiana requires contractors to be prequalified by IDOA. Any subcontractor who has a contract with the GC over $300,00 will also need to prequalified with IDOA.

2.DDD Question: [TD Construction, December 12th, 2025]
Q: Is this project funded for sure and moving forward?

A: Yes, the project is funded.

2.EEE Question: [Apogee, December 14th, 2025]

Q: Substitution Request: Currently we are not an approved manufacturer in your storefront/entrances (84113) or curtain wall (84413) specifications. Please review and advise with any questions or further needs you may have for Tubelite to be considered and hopefully approved. Thank you in advance.

A: MSA - Revise Spec Section 08 44 13, Part 2.3 A to add 4. Tubelite. Revise Spec Section 08 41 13, Part 2.3 A to add 4. Tubelite.

Summary of Attachments

Drawings

G0.00 - Cover Sheet	
C1.01S - Existing Topography and Demolition Plan - Softball	
C1.02B - Existing Topography and Demolition Plan - Baseball	
C2.01S - Site Plan - Softball	
C2.02B - Site Plan - Baseball	
C4.01S - Utility Plan - Softball	
C4.02B - Utility Plan - Baseball	
A0.10 – Reference Site Plan	
A2.00B – Construction Plan – Baseball Building	
A2.00S – Construction Plan – Softball Building	
A2.10A - Alternate 1 - Baseball and Softball Connection	Sheet Added
A3.00B - Exterior Elevations - Baseball Building	
A3.00S - Exterior Elevations - Softball Building	
A3.50S - Building Sections - Baseball Building	
A3.50S - Building Sections - Softball Building	
A4.00 - Wall Sections	
A4.01 - Section Details	
A6.01 - Door Schedule & Storefront Elevations	
A8.00 - Finish Plans	
A10.00 - Locker Details	

Project Manual/Specification Sections

00 06 00 - Subsoil Investigations	Section Added
07 54 19 - Polyvinyl-Chloride PVC Roofing	Section Added
07 54 23 Thermoplastic-Polyolefin (TPO) Roofing	Section Deleted
10 50 00 - Solid Phenolic Lockers	Section Added
10 51 23 Plastic Laminate Clad Lockers	Section Deleted

END OF ADDENDUM

SECTION 00 06 00 - SUBSOIL INVESTIGATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
Drawings and general provisions of Contract, including General and Special Conditions and Division 1 Specification Sections apply to work of this Section.

1.2 GENERAL

1. The “Report of Geotechnical Engineering Exploration,” dated July 15, 2024 and prepared by Patriot Engineering and Environmental, Inc. is included herein for reference only.

The geotechnical report has been prepared and have been included for the Contractor’s review and information only. Data on indicated subsurface are not intended as representations or warranties or accuracy of continuity between soil borings.

It is expressly understood that neither the Owner nor the Architect will be responsible for any interpretations or conclusions drawn there from by the Contractor and accept no liability for the accuracy of the information contained therein.

END OF SECTION 00 06 00

REPORT OF GEOTECHNICAL ENGINEERING EXPLORATION

BALL STATE LOCKER ROOM ADDITION
MUNCIE, INDIANA

PREPARED FOR:

MSA DESIGN
316 WEST FOURTH STREET
CINCINNATI, OHIO 45202

Patriot Engineering and Environmental, Inc.
6150 East 75th Street
Indianapolis, Indiana 46250

July 15, 2024

PATRIOT
ENGINEERING AND ENVIRONMENTAL, INC.

July 15, 2024

Ms. Tricia Gargari
MSA Design
316 West Fourth Street
Cincinnati, Ohio 45202

Re: Report of Geotechnical Engineering Exploration
Ball State Locker Room Additions
North Everett Road
Muncie, Indiana
Patriot Project No.: 24-0816-01G

Dear Tricia:

Attached is the report of our geotechnical engineering exploration for the above referenced project. This exploration was completed in general accordance with our Proposal No. P24-0868-01G dated April 18, 2024.

This report includes graphic logs of five (5) soil borings drilled at the proposed project site. Also included in the report are the results of laboratory tests performed on samples obtained from the site, and geotechnical recommendations pertinent to the site development, foundation design, and construction.

We appreciate the opportunity to perform this geotechnical engineering exploration and are looking forward to working with you during the construction phase of the project. If you have any questions regarding this report or if we may be of any additional assistance regarding any geotechnical aspect of the project, please do not hesitate to contact our office.

Respectfully submitted,
Patriot Engineering and Environmental, Inc.

Ian Grafe, E.I.
Geotechnical Engineer

William D. Dubois, P.E.
Senior Principal Engineer

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TABLE OF CONTENTS

REPORT OF GEOTECHNICAL ENGINEERING EXPLORATION

Ball State Locker Room Additions
North Everett Road
Muncie, Indiana
Patriot Project No.: 24-0816-01G

1.0 INTRODUCTION

1.1 General

Ball State University, in cooperation with MSA Design, is planning the construction of two locker rooms for the softball and baseball fields located along North Everett Road in Muncie, Indiana. The results of our geotechnical engineering exploration for the project are presented in this report.

1.2 Purpose and Scope

The purpose of this exploration is to determine the general near surface and subsurface conditions within the project area and to develop the geotechnical engineering recommendations necessary for the design and construction of the proposed structures. This was achieved by drilling soil borings, and by conducting laboratory tests on samples taken from the borings. This report contains the results of our findings, geotechnical engineering interpretation of these results with respect to the available project information, and recommendations to aid in the design and construction of the proposed structures.

2.0 PROJECT INFORMATION

The proposed project is located along North Everett Road in Muncie, Indiana. The project consists of two single-story structures of slab-on-grade construction, with the locker room by the softball field having a footprint of approximately 4,700 square feet in the plan dimension with the locker room by First Merchants Ball Park having a footprint of approximately 6,200 square feet. The softball field is located approximately 500 feet west of First Merchants Ballpark.

No structural loading information is available to us at the time of this report. Therefore, we estimate that the proposed structures will have wall loads not exceeding 2,000 pounds per lineal feet (plf), isolated column loads not exceeding 60 kips, and that floor loads will not exceed 150 pounds per square foot (psf). Additionally, based on visual observations of the existing site, it is assumed that any grade raise fill to complete the construction of building

pads, finished pavement subgrades, etc., will not exceed 2 feet above the existing ground surface.

3.0 SITE AND SUBSURFACE CONDITIONS

3.1 Site Conditions

The project site is presently two sports fields, a softball field and a baseball field. The surrounding area is generally an area of residential and commercial development. The topography in the area proposed for construction is generally flat.

3.2 General Subsurface Conditions

Our interpretation of the subsurface conditions is based upon five (5) soil borings drilled at the approximate locations shown on the Boring Location Map (Figure No. 2) in Appendix "A". All depths discussed below refer to depths below the existing ground surface. Based on the results of the soil borings completed at the site, the following subsurface profile is presented. A description of each general soil unit has been identified and is described below:

Topsoil – Topsoil, a surficial layer of material that is a blend of silts, sands, and clays, with varying amounts of organic matter, was encountered at the ground surface at four (4) of the five (5) boring locations. The topsoil layer was about 12 inches thick in the borings.

Silty and/or Sandy Clay (CL) - The topsoil layer is generally underlain by soft to hard silty and/or sandy clay. The silty and/or sandy clay layers typically extend to the termination of the borings at 20 feet below the existing ground surface. The natural moisture content of this material ranges from 11 to 49 percent (%). The silty and/or sandy clay layers have hand penetrometer values of 1.0 to greater than 6.0 tons per square foot (tsf). Standard Penetration Test N-values (blow counts) in this material varied from 3 to 43 blows per foot (bpf).

Sand (SP-SM) – Beneath the silty and/or sandy clay layers, medium dense sand was encountered from 18.5 to 20 feet below existing grade in Boring B-2. The Standard Penetration Test N-value in this sand was 25 bpf.

As previously mentioned, unsuitable soft clays were encountered in three (3) of the five (5) borings, at depths up to 13.5 feet below the existing ground surface. The following table presents the extent of the unsuitable soils encountered in the borings:

Table No. 1: Summary of Unsuitable Soils Encountered in Borings

Boring Number	Soil Classification	Approximate Depth of Unsuitable Soils (feet)[1]
B-3	Soft Silty Clay (CL)	0 to 4
B-4	Soft Silty Clay (CL)	0 to 13.5
B-5	Soft Silty Clay (CL)	6 to 13.5

[1] Represents depth below existing ground surface.

The soil conditions described above are general, and some variations in the descriptions should be expected; for more specific information, please refer to the boring logs presented in Appendix "A". It should be noted that the dashed stratification lines shown on the soil boring logs indicate approximate transitions between soil types. In-situ stratification changes could occur gradually or at different depths.

3.3 Groundwater Conditions

The term groundwater pertains to any water that percolates through the soil found on site. This includes any overland flow that permeates through a given depth of soil, perched water, and water that occurs below the "water table", a zone that remains saturated and water-bearing year-round.

Groundwater was observed during drilling in three (3) of the five (5) soil borings performed at the site at depths between 8 and 18 feet below the existing ground surface. Groundwater was not observed in the remaining borings during drilling. Immediately after the borings were completed and the augers were removed from the boreholes, groundwater was observed at depths between 5 and 14 feet below the existing ground surface in two (2) of the five (5) soil borings. The remaining borings were dry at the cave-in depths shown on the boring logs.

It should be recognized that fluctuations in the groundwater level should be expected over time due to variations in rainfall and other environmental or physical factors. ***The true static groundwater level can only be determined through observations made in cased holes over a long period of time, the installation of which was beyond the scope of this exploration.***

4.0 DESIGN RECOMMENDATIONS

4.1 Basis

Our recommendations are based on data presented in this report, which include soil borings, laboratory testing, and our experience with similar projects. Subsurface variations that may not be indicated by a dispersive exploratory boring program can exist on any site. If such variations or unexpected conditions are encountered during construction, or if the project information is incorrect or changed, we should be informed immediately since the validity of our recommendations may be affected.

4.2 Foundations

As previously mentioned, soft clays were encountered in the borings extending to depths between 4 and 13.5 feet below existing grade. ***If soft clays, very loose sands, existing fill materials, or other unsuitable materials are encountered at the footing level or below, they must be undercut and replaced with well-compacted and tested structural fill prior to construction of foundations or the footings can be extended to suitable natural soils.*** Following the excavation of the footing areas, the foundations subgrade should be visually observed and probed by a *Patriot* representative at the direction of a geotechnical engineer at multiple locations at isolated footings and at every 10 feet (maximum) along wall footings to a depth of 3 to 5 feet. Any unsuitable soils encountered at the footing subgrade or below should be removed and replaced with well-compacted and tested structural fill.

First Merchants Ballpark Locker Room (Borings B-1, B-2. and B-3)

Provided the above recommendations are followed, the proposed structures can be supported on spread footings bearing on the native undisturbed medium stiff to very stiff clays encountered at shallow depths or on new well-compacted and tested structural fill overlying the same. These footings should be proportioned using a net allowable soil bearing pressure not exceeding 2,000 pounds per square foot (psf) for column footings or 1,500 psf for wall (strip) footings. For proper performance at the recommended design bearing pressure, foundations must be constructed in compliance with the recommendations for footing excavation inspection that are discussed in Section 5.0 *"Construction Considerations"*.

We estimate that the total foundation settlement should not exceed approximately 1 inch and that differential settlement should not exceed about ¾ inch. Careful field control during construction is necessary to minimize the actual settlement that will occur.

Softball Field Locker Room (Borings B-4. and B-5)

Provided the above recommendations are followed, the proposed structures can be supported on spread footings bearing on the native undisturbed medium stiff to very stiff clays encountered at shallow depths or on new well-compacted and tested structural fill overlying the same. These footings should be proportioned using a net allowable soil bearing pressure not exceeding 3,000 pounds per square foot (psf) for column footings or 2,500 psf for wall (strip) footings. For proper performance at the recommended design bearing pressure, foundations must be constructed in compliance with the recommendations for footing excavation inspection that are discussed in Section 5.0 *"Construction Considerations"*.

Alternatively, if the client would like to avoid significant undercuts, it is possible to use a ground improvement system such as Geopiers® Rammed Aggregate Piers to support the footings. Based on the existing soil conditions at this site, properly installed Geopier Rammed Aggregate Piers™ (open holes with compacted crushed stone layers) could be considered to support the project structures. This option will minimize potential deeper undercuts. The Rammed Aggregate Pier System not only allows for the use of a shallow spread footing foundation using conventional construction methods, but also allows for some improvement of the soils within the project area due to the construction methods involved in placing the Rammed Aggregate Piers.

Rammed Aggregate Piers are constructed by drilling 24 to 30 inch diameter holes within the shallow foundation footprint, and then compacting the holes with crushed stone to form a dense aggregate pier. The footings are then constructed directly on the Geopier reinforced subgrade using conventional construction methods. The Geopier Foundation Company retains the responsibility for the final pier designs and can estimated settlements, along with warranting the performance of the footings supported by Geopier elements. The ground improvement contractor should review the soil conditions at the site and make sure that the proposed ground improvement system is suitable for the site soil conditions.

Patriot recommends that the Geopiers should be installed and extended adequately into the stiff to hard clays or medium dense sands encountered on the order of 14 feet below the existing ground surface. Additionally, we recommend that Patriot be retained to observe the installation process. Although the Geopier Foundation Company or the ground improvement contractor warrants the performance of their work, it is their

standard practice to have quality assurance during installation of the Geopiers or suitable vibratory stone columns.

Based on our past experience with similar projects, it is estimated that by reinforcing the fills and weaker clay layers with Geopier elements, an allowable soil bearing pressure on the order of 3,000 to 5,000 pounds per square foot (psf) could be utilized for the design of the spread footing foundations. ***However, the actual allowable bearing capacity and settlement can only be determined by the Geopier Foundation Company and our estimates should only be considered as a guide for preliminary design.***

General Foundation Recommendations

In using the above net allowable soil bearing pressures, the weight of the foundation and backfill over the foundation need not be considered. Hence, only loads applied at or above the minimum finished grade adjacent to the footing need to be used for dimensioning the foundations. Each new foundation should be positioned so it does not induce significant pressure on adjacent foundations; otherwise the stress overlap must be considered in the design.

All exterior foundations and foundations in unheated areas should be located at a depth of at least 30 inches below final exterior grade for frost protection. However, interior foundations in heated areas can bear at depths of approximately 24 inches below the finished floor. We recommend that wall (strip) footings be at least 18 inches wide and column footings be at least 24 inches wide for bearing capacity considerations.

Positive drainage of surface water, including downspout discharge, should be maintained away from structure foundations to avoid wetting and weakening of the foundation soils both during construction and after construction is complete.

4.3 Floor Slabs

The near surface or shallow subgrade soils encountered within the proposed building footprints generally consist of soft to very stiff clays, which are not suitable for floor slab support. ***Soft clays and other unsuitable materials must be removed and replaced with well-compacted structural fill. Alternatively, if Geopiers are used to support the foundations, they should also be used to support the slab.***

Depending on the weather conditions at the time of construction, scarifying and drying and/or chemical modification (Refer to Section 5.4 "Chemical Modification Considerations") may be necessary to manage moisture contents in the clays in order to achieve the necessary subgrade soil support prior to the placement of floor slabs or any grade raise fill.

We recommend that all floor slabs be designed as "floating", that is, fully ground supported and not structurally connected to walls or foundations. This is to minimize the possibility of cracking and displacement of the floor slabs because of differential movements between the slab and the foundation. Although the movements are estimated to be within the tolerable limits for the structural safety, such movements could be detrimental to the slabs if they were rigidly connected to the foundations. Additionally, we recommend that all slabs should be liberally jointed and designed with the appropriate reinforcement for the anticipated loading conditions.

The building floor slabs should be supported on a minimum 6 inch thick well-compacted granular base course (i.e. Indiana Department of Transportation (INDOT) No. 53 crushed stone) bearing on a suitably prepared subgrade (Refer to Section 5.0 *"Construction Considerations"*). The granular base course is expected to help distribute loads and equalize moisture conditions beneath the slab.

Provided that the recommendations above for floor slab design and construction are followed, a modulus of subgrade reaction, "K_{30}" value of 85 pounds per cubic inch (pci), is recommended for the design of ground supported floor slabs. It should be noted that the "K_{30}" modulus is based on a 30 inch diameter plate load empirical relationship.

4.4 Seismic Considerations

For structural design purposes, we recommend using a ***Site Classification of "C"*** as defined by the 2014 Indiana Building Code (modified 2012 International Building Code (IBC)). Furthermore, along with using a Site Classification of "C", we recommend the use of the maximum considered spectral response acceleration and design spectral response acceleration coefficients provided in Table No. 2 below. Refer to Appendix "B" for *"Seismic Site Class Evaluation"* report summary.

Table No. 2: Seismic Design Spectral Response Acceleration Coefficients

Period (seconds)	Maximum Considered Spectral Response Acceleration Coefficient	Soil Factor	Design Spectral Response Acceleration Coefficient
0.2	S_S = 0.133 g	1.20	S_{DS} = 0.107 g
1.0	S_1 = 0.073 g	1.70	S_{D1} = 0.082 g

These values were obtained from the *"Earthquake Ground Motion Parameters"* program for seismic design, developed by the United States Geological Survey (USGS) Earthquake Hazard Program, utilizing latitude 40.4227° (degree) north and longitude 85.2178° (degree) west as the designation for identifying the location of the parcel. Other earthquake resistant design parameters should be applied consistent with the minimum requirements of the 2014 Indiana Building Code.

5.0 CONSTRUCTION CONSIDERATIONS

5.1 Site Preparation

All areas that will support foundations, floors, pavements, or newly placed structural fill must be properly prepared. All loose surficial soil or "topsoil" and other unsuitable materials must be removed. Unsuitable materials include frozen soil, relatively soft material, relatively wet soils, deleterious material, or soils that exhibit a high organic content.

Approximately one (1) inches of loose surficial topsoil was encountered in the borings. The topsoil was measured at discrete locations as shown on the Boring Location Map (Figure No. 2) in Appendix "A". The topsoil thickness measured at the boring locations may or may not be representative of the overall average topsoil thickness at the site. Therefore, it is possible that the actual stripping depth could significantly vary from this data. The data presented should be viewed only as a guide to the minimum stripping depth that will be required to remove organic material at the surface. Additional field exploration by *Patriot* would be required to provide an accurate estimate of the stripping depth. This limited data indicates that a minimum stripping depth will be required to remove the organic material at the surface, followed by the potential for additional stripping and/or scarification and recompaction as may be required to achieve suitable subgrade support. ***Additionally, if***

saturated conditions exist with the surface soils, light tracked equipment could be required to avoid pushing organics deeper into the suitable subgrade soils. A *Patriot* representative should verify the stripping depth at the time grading operations occur.

Prior to construction of floor slabs, pavements or the placement of new structural fill, the exposed subgrade must be evaluated by a Patriot representative, which will include proofrolling of the subgrade. Proofrolling should consist of repeated passes of a loaded, pneumatic-tired vehicle such as a tandem-axle dump-truck or scraper. The proofrolling operations should be observed by a *Patriot* representative, and the proofrolling vehicle should be loaded as directed by *Patriot*. Any area found to rut, pump, or deflect excessively should be compacted in-place or, if necessary, undercut and replaced with structural fill, compacted as specified in Section 5.3 *"Structural Fill and Fill Placement Control"*.

Care must be exercised during grading and fill placement operations. ***The combination of heavy construction equipment traffic and excess surface moisture can cause pumping and deterioration of the near surface soils. The severity of this potential problem depends to a great extent on the weather conditions prevailing during construction.*** The contractor must exercise discretion when selecting equipment sizes and also make a concerted effort to control construction traffic and surface water while the subgrade soils are exposed. We recommend that heavy construction equipment (i.e. dump trucks, scrapers, etc.) be rerouted away from the building and pavement areas. If such problems do arise, the operations in the affected area should be halted and the *Patriot* representative contacted to evaluate the condition.

5.2 Foundation Excavations

Upon completion of the foundation excavations and prior to the placement of reinforcing steel, a *Patriot* representative should check the exposed subgrade to confirm that a bearing surface of adequate strength has been reached. Any localized soft soil zones encountered at the bearing elevations should be further excavated until adequate support soils are encountered. The cavity should be backfilled with structural fill as defined below, or the footing can be poured at the excavated depth. Structural fill used as backfill beneath footings should be limited to lean concrete, well-graded sand and gravel, or crushed stone placed and compacted in accordance with Section 5.3 *"Structural Fill and Fill Placement Control"*.

If it is necessary to support spread footings on structural fill, the fill pad must extend laterally a minimum distance beyond the edge of the footing. The minimum structural pad width would correspond with a point at which an imaginary line extending downward from the outside edge of the footing at a 1H:2V (horizontal: vertical) slope intersects the surface of the natural soils. For example, if the depth to the bottom of excavation is 4 feet below the bottom of the foundation, the excavation would need to extend laterally beyond the edge of the footing at least 2 feet, as shown in Illustration "A" found at the conclusion of this report.

Excavation slopes should be maintained within all requirements set-forth by the Occupational Safety and Health Standards (OSHA), but specifically Section 1926 Subpart "P" – *"Excavations"*. We recommend that any surcharge fill or heavy equipment be kept at least 5 feet away from the edge of the excavation.

In addition, excavations that occur near existing in-use foundations should be carefully performed making a conscious effort not to undermine the support of the in-use foundations. If it is necessary to excavate soil adjacent to and below the bearing elevation of any in-use foundations, *Patriot* should be contacted to make further recommendations regarding these excavations. Please refer to Illustration "B" at the end of this report for further details.

Construction traffic on the exposed surface of the bearing soil will potentially cause some disturbance of the subgrade and consequently loss of bearing capacity. However, the degree of disturbance can be minimized by proper protection of the exposed surface.

5.3 Structural Fill and Fill Placement Control

Structural fill, defined as any fill which will support structural loads, should be clean and free of organic material, debris, deleterious materials, and frozen soils. Samples of the proposed fill materials should be tested prior to initiating the earthwork and backfilling operations to determine the classification, the natural and optimum moisture contents and maximum dry density and overall suitability as a structural fill. ***Structural fill should have a liquid limit less than 40 and a plasticity index less than 20.***

All structural fill beneath floor slabs, adjacent to foundations and over foundations, should be compacted to at least 95 percent (%) of its maximum Standard Proctor dry density (ASTM D-698). This minimum compaction requirement should be increased to 100 percent (%) of the maximum Standard Proctor dry density for fill supporting

footings, provided these are designed as outlined Section 4.0 *"Design Recommendations"*.

Structural fill supporting, around and over utilities should be compacted to at least 95 percent (%) of its maximum Standard Proctor dry density (ASTM D-698) for utilities underlying structural areas (i.e. buildings, pavements, sidewalks, etc.). However, the minimum compaction requirement can be reduced for backfill around and over the utilities to 90 percent (%) of the maximum Standard Proctor dry density where utilities underlie greenbelt areas (i.e. grassy lawns, landscaping, etc.). It is recommended that a clean well-grade granular material be utilized as the bedding material, as well as the backfill material around and over the utility lines.

In cut areas, where pavement sections are planned, the upper 10 inches of subgrade should be scarified and compacted to a dry density of at least 100 percent (%) of the Standard Proctor maximum dry density (ASTM D-698). Any grade-raise fill placed within 1 foot of the base of the pavement section should also be compacted to at least 100 percent (%) of the Standard Proctor maximum dry density. This can be reduced to 95 percent (%) for structural fill placed more than 1 foot below the base of the pavement section.

To achieve the recommended compaction of the structural fill, we suggest that the fill 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 (%) points below or above the optimum moisture content value. All fill placement should be monitored by a *Patriot* representative. ***Each lift should be tested for proper compaction at a frequency of at least one (1) test every 2,500 square feet (ft^2) per lift for the building areas, at least one (1) test every 10,000 square feet (ft^2) per lift for the parking and roadway areas, and at a frequency of at least one (1) test for every 50 lineal feet of utility installation*.**

5.4 Chemical Modification Considerations

The addition of lime or lime kiln dust (LKD) to clay soils of moderate to high plasticity generally results in the reduction of the plasticity properties of the soil, reduction in moisture holding capacity, swell reduction, and increased soil strength. Prior to the application of the lime or lime kiln dust (LKD), a number of representative samples of soils should be obtained from the final graded subgrade soils to determine the lime or lime kiln dust (LKD) reactivity and percentage (%) of lime or lime kiln dust (LKD) needed for modification of the soils (usually 5 to 8 percent (%)). A specialty contractor experienced in

lime modification should apply and determine the rate at which hydrated lime or lime kiln dust (LKD) is mixed into the existing soils. Mixing depths of 12 to 18 inches is typical. A *Patriot* representative should monitor the mixing and compaction processes.

It should be noted that in areas where chemical modification of the natural subgrade soil is completed prior to the placement of grade raise fill and the grade raise fill is less than 18 inches in thickness, we recommend that any cohesive grade raise fill be modified similar to the natural subgrade. It has been our experience that untreated cohesive structural fill, in less than 18 inches in thickness, placed on top of chemically modified soil may become unstable over time due to excessive moisture accumulation. The underlying chemically modified soil may act as a barrier to natural water seepage into the soil profile, thereby trapping the water within the structural fill to the point of saturation.

5.5 Groundwater Considerations

Groundwater was observed during our field activities at depths between about 5 and 18 feet below the existing ground surface; which is expected to be below the anticipated foundation excavation depths, though the groundwater observations could potentially be within trench excavation depths for subsurface utilities. Therefore, groundwater infiltration should be expected into subsurface utility excavations, and depending on seasonal conditions, localized and sporadic groundwater infiltration may occur into the building foundation excavations on this site.

Groundwater inflow into shallow excavations **above** the groundwater table is expected to be adequately controlled by conventional methods such as gravity drainage and/or pumping from sumps. More significant inflow can be expected in deeper excavations **below** the groundwater table requiring more aggressive dewatering techniques, such as well or wellpoint systems. For groundwater to have minimal effects on the construction, foundation excavations should be constructed and poured in the same day, if possible.

6.0 EXPLORATIONAL PROCEDURES

6.1 Field Work

A total of five (5) soil borings were drilled, sampled, and tested at the project site on June 6, 2024, at the approximate locations shown on the Boring Location Map (Figure No. 2) in Appendix "A". The depths that the soil borings were advanced to are shown on the Boring Logs in Appendix "A". All depths are given as feet below the existing ground surface.

The borings were advanced using 3¼ inch inside diameter hollow-stem augers. Samples were recovered in the undisturbed material below the bottom of the augers using the standard drive sample technique in accordance with ASTM D 1586-74. A 2 inch outside diameter by 1$^{3}/_{8}$ inch inside diameter split-spoon sampler was driven a total of 18 inches with the number of blows of a 140-pound hammer falling 30 inches recorded for each 6 inches of penetration. The sum of blows for the final 12 inches of penetration is the Standard Penetration Test result commonly referred to as the N-value (or blow-count). Split-spoon samples were recovered at 2.5 feet intervals, beginning at a depth of 1 foot below the existing surface grade, extending to a depth of 10 feet, and at 5 feet intervals thereafter to the termination of the boring.

Water levels were monitored at each borehole location during drilling and upon completion of the boring. The boreholes were backfilled with auger cuttings prior to demobilization for safety considerations.

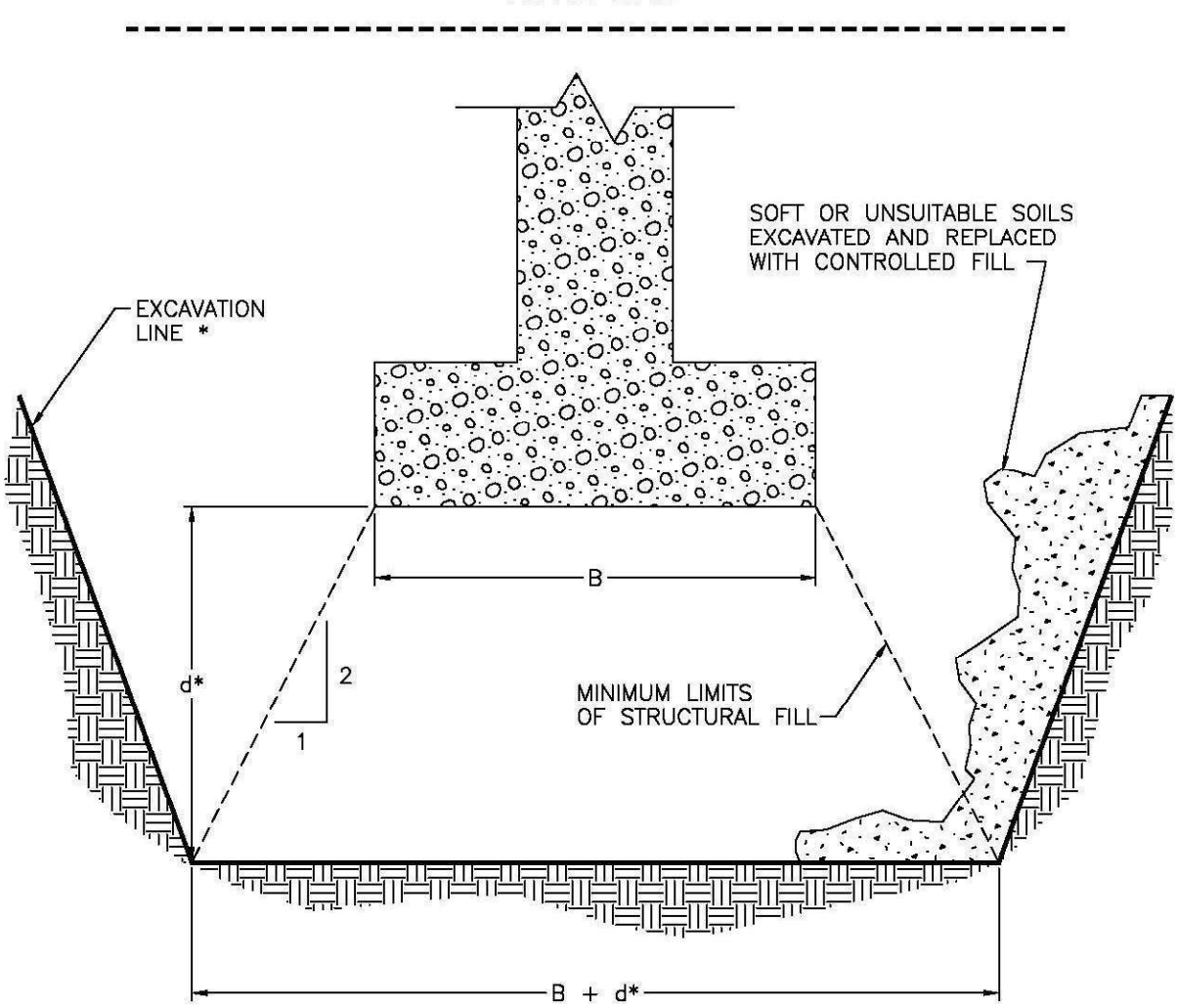
Upon completion of the boring program, of the samples retrieved during drilling were returned to *Patriot*'s soil testing laboratory where they were visually examined and classified. A laboratory-generated log of each boring was prepared based upon the driller's field log, laboratory test results, and our visual examination. Test boring logs and a description of the classification system are included in Appendix "A" in this report. Indicated on each log are the primary strata encountered, the depth of each stratum change, the depth of each sample, the Standard Penetration Test results, groundwater conditions, and selected laboratory test data. The laboratory logs were prepared for each boring giving the appropriate sample data and the textural description and classification.

6.2 Laboratory Testing

Representative samples recovered in the borings were selected for testing in the laboratory to evaluate their physical properties and engineering characteristics. Laboratory analysis included natural moisture content determinations (ASTM D 2216) and an estimate of the cohesive soil strength was determined utilizing a hand penetrometer (q_p). The results of laboratory tests are summarized in Section 3.2 *"General Subsurface Conditions"*. Soil descriptions on the boring logs are in accordance with the Unified Soil Classification System (USCS).

7.0 ILLUSTRATIONS

See Illustrations "A" and "B" on the following pages. These illustrations are presented to further visually clarify several of the construction considerations presented in Section 5.2 *"Foundation Excavations"*.



*d IS DEPTH TO SUITABLE SOILS

* IN COMPLIANCE WITH OSHA STANDARDS

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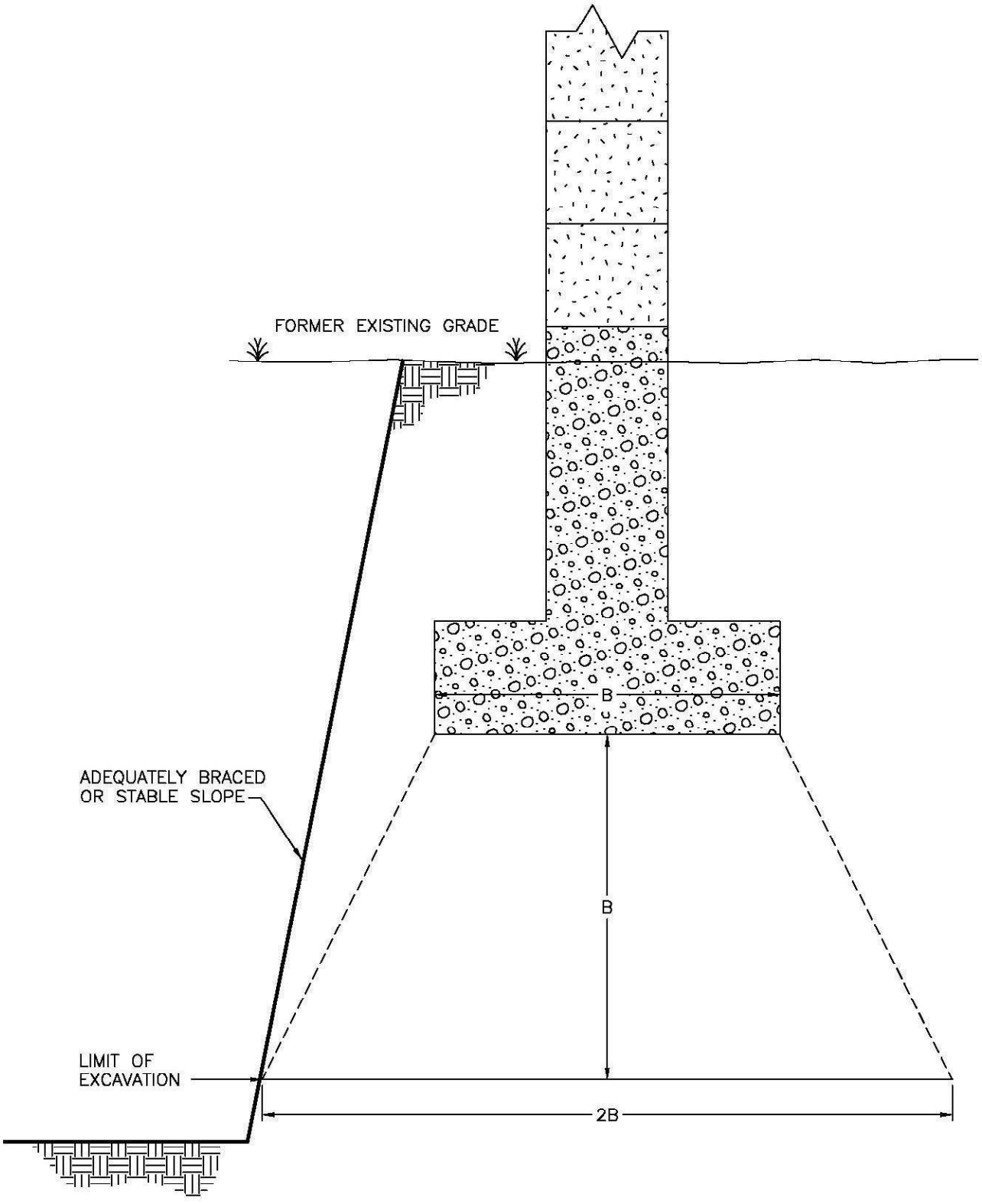
Excavation for Footings In an Area of Fill ILLUSTRATION A

job. no.:

figure:



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Excavation Near Existing In Use Foundations
ILLUSTRATION B

job. no.:

figure:

APPENDIX A

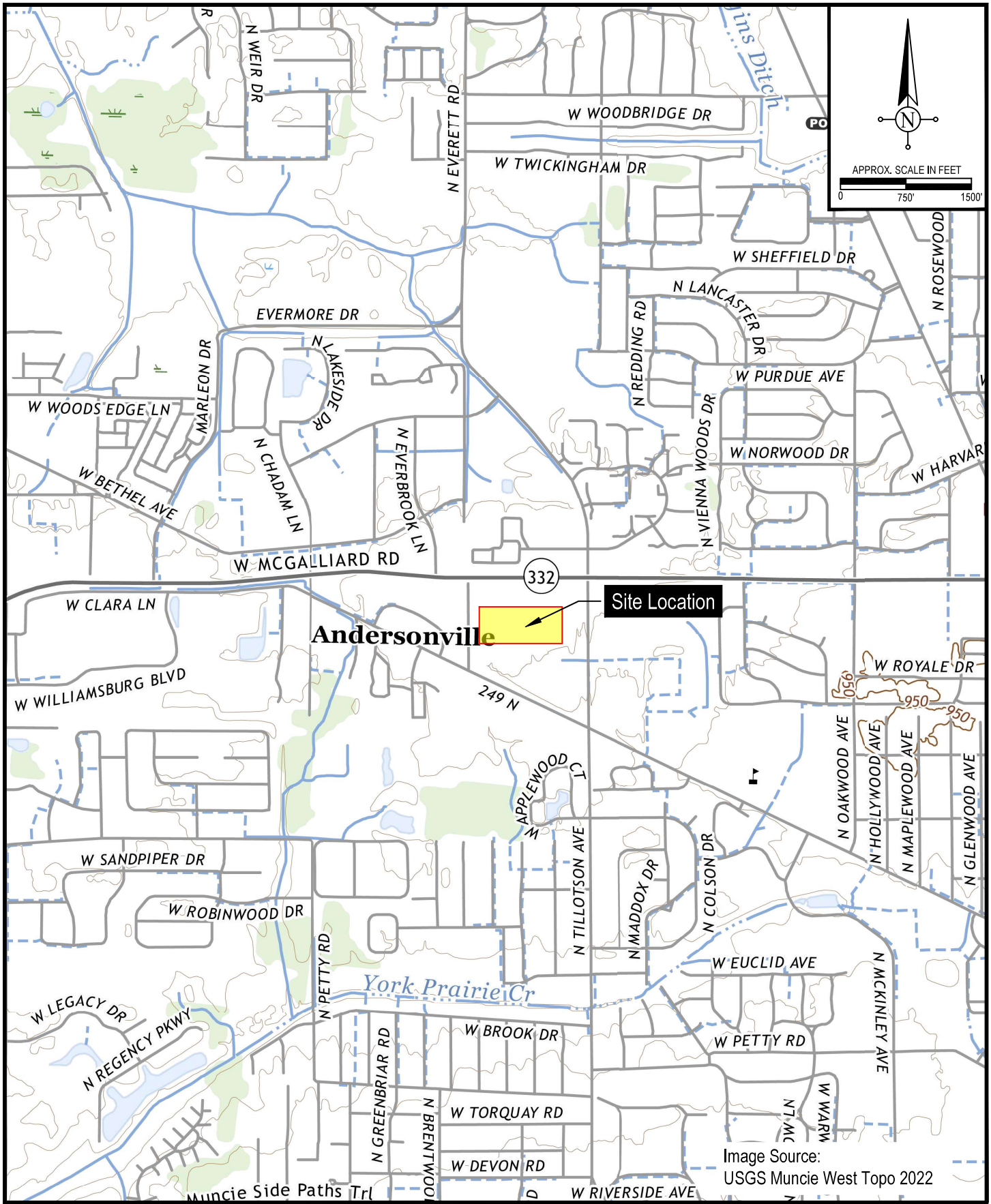
SITE VICINITY MAP (FIGURE NO. 1)

BORING LOCATION MAP (FIGURE NO. 2)

BORING LOGS

BORING LOG KEY

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

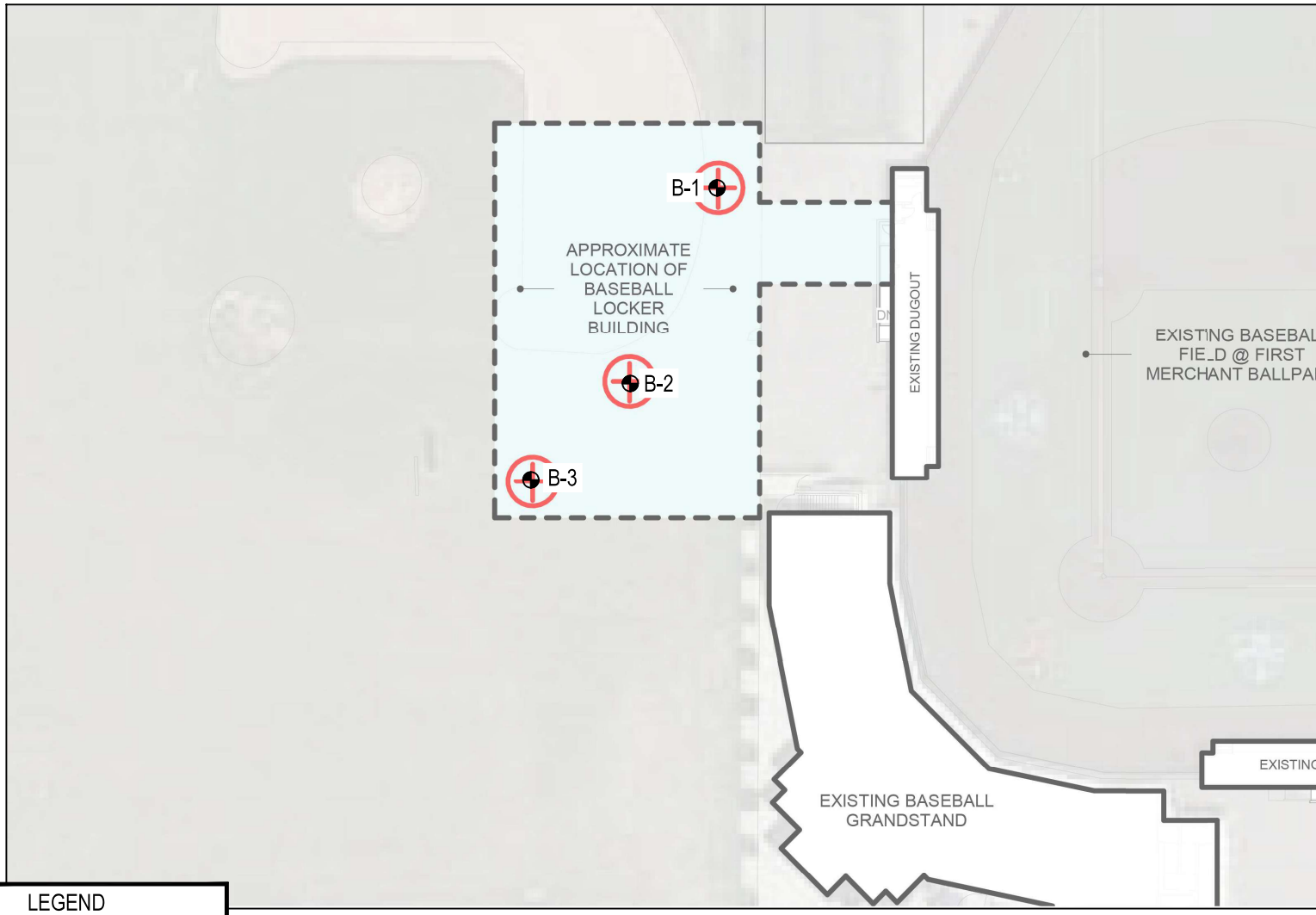


Patriot Engineering & Environmental, Inc.

Project: Ball State Locker Room Additions North Everett Road Muncie, Indiana	
	Drawn By: J. DuMond
Project Number:24-0816-01	Approved: I. Grafe
Date: July 3, 2024	DWG: 24-0816-01_geo

Figure 1

Site Vicinity Map



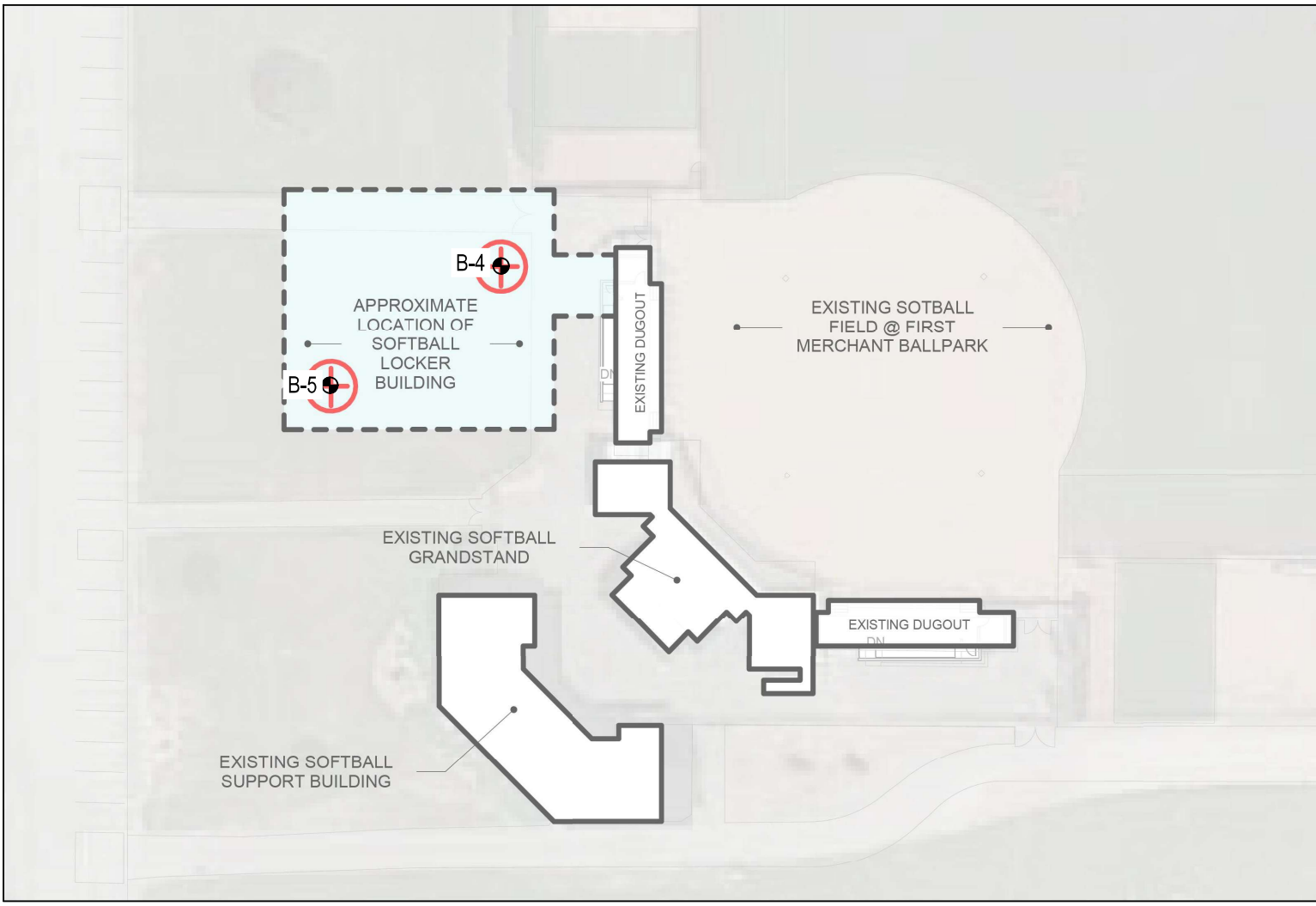
LEGEND
PATRIOT Soil Boring
B-1 Soil Boring ID

Patriot Engineering & Environmental, Inc.

NOTES:
1. Boring locations were staked by PATRIOT. All locations are shown as approximate.
2. All locations were determined in the field with references to existing landmarks.
3. Image Source: MSA Sport
4. Scale as shown.

Project: Ball State Locker Room Additions
North Everett Road
Muncie, Indiana

	Drawn By: J. DuMond
Project Number: 24-0816-01	Approved: I. Grafe
Date: July 3, 2024	DWG: 24-0816-01_geo



LEGEND
PATRIOT Soil Boring
B-1 Soil Boring ID

Patriot Engineering & Environmental, Inc.

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3. Image Source: MSA Sport
4. Scale as shown.

Project: Ball State Locker Room Additions
North Everett Road
Muncie, Indiana

	Drawn By: J. DuMond
Project Number: 24-0816-01	Approved: I. Grafe
Date: July 3, 2024	DWG: 24-0816-01_geo

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LOG OF BORING B-1

Ball State Locker Room Additions
North Everett Road
Muncie Indiana

Client Name	: MSA Design	Driller	: C. Leming
Project Number	: 24-0816-01G	Sampling	: Splitspoon
Logged By	: C. Moreno	Approx. Elevation	: +/- 943 feet
Start Date	: 06/06/2024	Latitude	: 40°13'4.61"N
Drilling Method	: HSA	Longitude	: 85°25'19.61"W

Water Levels
- During Drilling - Dry
- After Completion - Dry
- After 24 Hours - N/A

Depth (Feet)	Elevation (Feet) 943	Water Level	USCS	GRAPHIC	DESCRIPTION	Samples	Rec %	SPT Results	qp tsf	w %	REMARKS
0					Brown and gray, moist to slightly moist, very stiff to hard, SANDY CLAY with trace gravel	1	56	10/13/16	5.4	17	
	940					2	100	8/17/18	5.8	15	
5			CL			3	100	10/20/23	5.5	17	
	935					4	100	8/18/19	4.4	14	
10											
	930										
15			CL		Gray, moist, very stiff, SANDY CLAY with trace gravel and interbedded sand seams	5	56	2/14/9	1.3	16	Boring caved to 15 feet upon auger removal.
	925										
20			CL		Gray, slightly moist, hard, SANDY CLAY with trace gravel	6	100	14/19/22	5.0	11	
	920				Boring terminated at 20 feet.						Groundwater was not encountered during drilling, nor upon completion.
25											

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LOG OF BORING B-2

Ball State Locker Room Additions
North Everett Road
Muncie Indiana

Client Name	: MSA Design	Driller	: C. Leming
Project Number	: 24-0816-01G	Sampling	: Splitspoon
Logged By	: C. Moreno	Approx. Elevation	: +/- 943 feet
Start Date	: 06/06/2024	Latitude	: 40°13'4.04"N
Drilling Method	: HSA	Longitude	: 85°25'19.97"W

Water Levels
- During Drilling - Dry
- After Completion - Dry
- After 24 Hours - N/A

Depth (Feet)	Elevation (Feet) 943	Water Level	USCS	GRAPHIC	DESCRIPTION	Samples	Rec %	SPT Results	qp tsf	w %	REMARKS
0					TOPSOIL (12")						
			CL		Brown and gray, moist, medium stiff, SANDY CLAY with trace gravel	1	100	3/4/4	4.6	16	
	940										
			CL		Brown, moist, stiff, SANDY CLAY with trace gravel	2	100	3/4/6	5.1	16	
5											
					Brown and gray, slightly moist to moist, stiff to very stiff, SANDY CLAY with trace gravel	3	100	4/6/9	>6.0	15	
	935										
						4	100	5/10/14	>6.0	15	
10			CL								
	930										
						5	56	7/7/8	3.0	16	
15											Boring caved to 16 feet upon auger removal.
	925										
			SP-SM		Gray, slightly moist, medium dense, fine to medium grained, SAND with trace silt and trace to little gravel	6	67	4/11/14			
20					Boring terminated at 20 feet.						Groundwater was not encountered during drilling, nor upon completion.
	920										
25											

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LOG OF BORING B-3

Ball State Locker Room Additions
North Everett Road
Muncie Indiana

Client Name	: MSA Design	Driller	: C. Leming
Project Number	: 24-0816-01G	Sampling	: Splitspoon
Logged By	: C. Moreno	Approx. Elevation	: +/- 943 feet
Start Date	: 06/06/2024	Latitude	: 40°13'3.75"N
Drilling Method	: HSA	Longitude	: 85°25'20.35"W

Water Levels
- During Drilling - 18.0 feet
- After Completion - 14.0 feet
- After 24 Hours - N/A

Depth (Feet)	Elevation (Feet) 943	Water Level	USCS	GRAPHIC	DESCRIPTION	Samples	Rec %	SPT Results	qp tsf	w %	REMARKS
0					TOPSOIL (12")						
			CL		Dark brown and brown, very moist, soft, SILTY CLAY with trace sand	1	100	2/2/2	1.9	27	
	940										
					Brown and gray, moist to slightly moist, medium stiff to stiff, SANDY CLAY with trace gravel	2	100	1/3/3	2.3	20	
5						3	100	3/5/6	5.8	14	
	935		CL			4	100	3/6/9	5.8	15	
10											
	930	▽									
					Gray and brown, slightly moist, very stiff, SANDY CLAY with trace gravel	5	100	8/9/8	2.7	10	
15			CL								Boring caved to 17 feet upon auger removal.
	925	▼									
						6	100	8/11/16	4.4	12	
20	920				Boring terminated at 20 feet.						
25											

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LOG OF BORING B-4

Ball State Locker Room Additions
North Everett Road
Muncie Indiana

Client Name	: MSA Design	Driller	: C. Leming
Project Number	: 24-0816-01G	Sampling	: Splitspoon
Logged By	: C. Moreno	Approx. Elevation	: +/- 945 feet
Start Date	: 06/06/2024	Latitude	: 40°13'3.70"N
Drilling Method	: HSA	Longitude	: 85°25'26.85"W

Water Levels
- During Drilling - 8.0 feet
- After Completion - 5.0 feet
- After 24 Hours - N/A

Depth (Feet)	Elevation (Feet) 945	USCS	DESCRIPTION	Samples	Rec %	SPT Results	qp tsf	w %	REMARKS
0			TOPSOIL (12")						
		CL	Gray and brown, moist, soft, SILTY CLAY with trace sand and trace gravel	1	78	2/1/2	3.2	23	
		CL	Gray and brown, very moist, soft, SILTY CLAY with trace sand and trace plant matter	2	33	1/1/2	1.4	29	
5	940								
		CL	Brown and gray, moist to very moist, soft, SILTY CLAY with trace sand	3	67	1/2/2	1.7	24	
				4	100	1/2/2	0.5	41	
10	935								
		CL	Gray and brown, slightly moist, very stiff, SILTY CLAY with trace sand and trace gravel	5	100	4/7/9	3.0	14	Boring caved to 16 feet upon auger removal.
15	930								
		CL	Gray and brown, slightly moist, stiff, SANDY CLAY with trace gravel and interbedded silt seams	6	100	4/5/9	1.0	14	
20	925								
			Boring terminated at 20 feet.						
25	920								

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LOG OF BORING B-5

Ball State Locker Room Additions
North Everett Road
Muncie Indiana

Client Name	: MSA Design	Driller	: C. Leming
Project Number	: 24-0816-01G	Sampling	: Splitspoon
Logged By	: C. Moreno	Approx. Elevation	: +/- 944 feet
Start Date	: 06/06/2024	Latitude	: 40°13'3.34"N
Drilling Method	: HSA	Longitude	: 85°25'27.56"W

Water Levels
- During Drilling - 13.0 feet
- After Completion - Dry
- After 24 Hours - N/A

Depth (Feet)	Elevation (Feet) 944	USCS	DESCRIPTION	Samples	Rec %	SPT Results	qp tsf	w %	REMARKS
0			TOPSOIL (12")						
		CL	Brown and gray, moist, stiff, SANDY CLAY with trace gravel	1	89	2/4/5		16	
	940		Dark brown, brown, and gray, very moist to moist, medium stiff to soft, SILTY CLAY with trace sand	2	100	2/2/4	2.3	27	
5				3	100	2/2/2	1.5	24	
		CL							
	935			4	100	1/2/2	2.1	49	
10									
	930		Brown and gray, very moist, very stiff to stiff, SILTY CLAY with trace sand and trace gravel	5	67	11/13/14	2.6	30	
15		CL							Boring caved to 16 feet upon auger removal.
	925			6	56	3/6/7	2.0	29	
20			Boring terminated at 20 feet.						
	920								
25									

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BORING LOG KEY

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)
FIELD CLASSIFICATION SYSTEM
FOR SOIL EXPLORATION

NON-COHESIVE SOILS
(Silt, Sand, Gravel, and Combinations)

Density	Field Identification (SPT Blows/ft)
Very Loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 51

Grain Size Terminology

Soil Fraction	Particle Size	US Standard Sieve Size
Boulders	> 12 inches	> 12 inches
Cobbles	3 - 12 inches	3 - 12 inches
Gravel: Coarse	¾ - 3 inches	¾ - 3 inches
Small	4.76 mm - ¾ inch	No. 4 - ¾ inches
Sand: Coarse	2.00 - 4.76 mm	No. 10 - No. 4
Medium	0.42 - 2.00 mm	No. 40 - No. 10
Fine	0.074 - 0.42 mm	No. 200 – No. 40
Silt	0.005 - 0.074 mm	< No. 200
Clay	< 0.005 mm	< No. 200

RELATIVE PROPORTIONS FOR SOILS

Descriptive Term	Percent
Trace	1 - 10
Little	11 - 20
Some	21 - 35
And	36 - 50

COHESIVE SOILS
(Clay, Silt and Combinations)

Consistency	Unconfined Compressive Strength (tons/ft^2)	Field Identification (SPT Blows/ft)
Very Soft	Less than 0.25	0 - 2
Soft	0.25 – < 0.5	3 - 4
Medium Stiff	0.5 - < 1.0	5 - 8
Stiff	1.0 - < 2.0	9 -15
Very Stiff	2.0 - < 4.0	16 - 30
Hard	Over 4.0	> 30

Classification: Provided on Boring Logs are made by visual inspection.

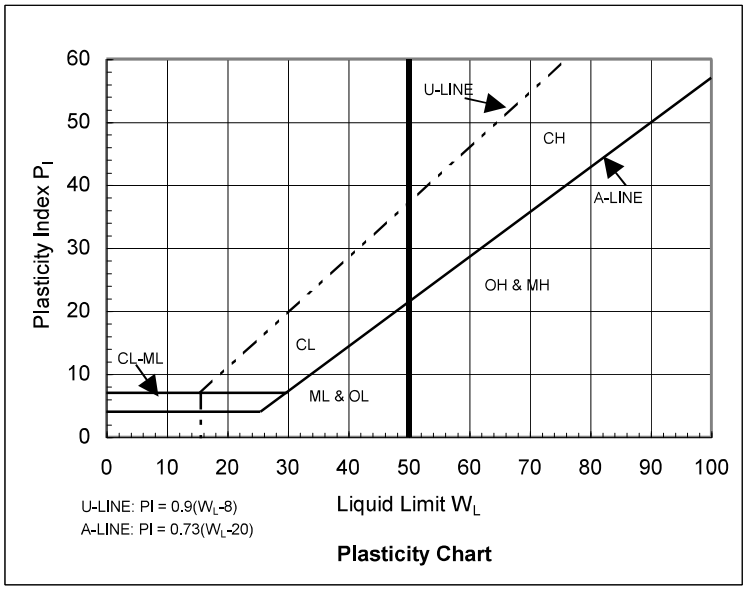
Standard Penetration Test: Driving a 2 inch outer-diameter (O.D.) by 1⅜ inch inner-diameter (I.D.) split-spoon sampler a total of 18 inches into undisturbed soil with the number of blows of a 140 pound hammer free-falling a distance of 30 inches recorded for each 6 inches of penetration. The sum of blows for the final 12 inches of penetration is the Standard Penetration Test result commonly referred to as the "N"-value (or blow-count).

Strata Changes: In the column "Descriptions" on the Boring Logs the horizontal lines represent strata changes. A solid line (———) represents an observed change, a dashed line (- - - - - -) represents an estimated change.

Groundwater: Observations were made at the times indicated on the Boring Logs. Fluctuations in the groundwater level should be expected over time due to variations in rainfall and other environmental or physical factors. *Groundwater symbols*: (▼)-observed groundwater level and/or elevation during drilling; (∇)-observed groundwater level and/or elevation upon completion of boring.

Unified Soil Classification System (USCS)

Major Divisions			Group Symbol	Typical Names	Classification Criteria for Coarse-Grained Soils		
Coarse-grained soils (more than half of material is larger than No. 200)	Gravels (more than half of coarse fraction is larger than No. 4 sieve size)	Clean gravels (little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines	$C_U \geq 4$ $1 \leq C_C \leq 3$	$C_U = \frac{D_{60}}{D_{10}}$	$C_C = \frac{D^2_{30}}{D_{10} D_{60}}$
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines	Not meeting all gradation requirements for GW ($C_U < 4$ or $1 > C_C > 3$)		
		Gravels with fines (appreciable amount of fines)	GM (d u a l)	Silty gravels, gravel-sand-silt mixtures	Atterberg limits below A line or $P_I < 4$	Above A line with $4 < P_I < 7$ are borderline cases requiring use of dual symbols	
			GC	Clayey gravels, gravel-sand-clay mixtures	Atterberg limits above A line or $P_I > 7$		
	Sands (more than half of coarse fraction is smaller than No. 4 sieve size)	Clean sands (little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines	$C_U \geq 6$ $1 \leq C_C \leq 3$	$C_U = \frac{D_{60}}{D_{10}}$	$C_C = \frac{(D_{30})^2}{D_{10} D_{60}}$
			SP	Poorly graded sands, gravelly sands, little or no fines	Not meeting all gradation requirements for SW ($C_U < 6$ or $1 > C_c > 3$)		
		Sands with fines (appreciable amount of fines)	SM (d u a l)	Silty sands, sand-silt mixtures	Atterberg limits below A line or $P_I < 4$	Limits plotting in hatched zone with $4 \leq P_I \leq 7$ are borderline cases requiring use of dual symbols	
			SC	Clayey sands, sand-clay mixtures	Atterberg limits above A line with $P_I > 7$		
Fine-grained soils (more than half of material is smaller than No. 200)	Silt and clays (liquid limit <50)		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts with slight plasticity	1. Determine percentages of sand and gravel from grain size curve. 2. Depending on percentages of fines (fraction smaller than 200 sieve size), coarse-grained soils are classified as follows: Less than 5% - GW, GP, SW, SP More than 12% - GM, GC, SM, SC 5-12% - Borderline cases requiring dual symbols		
			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			
	Silts and clays (liquid limit >50)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts			
			CH	Inorganic clays or high plasticity, fat clays			
			OH	Organic clays of medium to high plasticity, organic silts			
	Highly organic soils		PT	Peat and other highly organic soils			



Plasticity Chart

APPENDIX B

SEISMIC SITE CLASS EVALUATION

This is a beta release of the new ATC Hazards by Location website. Please contact us with feedback.

The ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.

Hazards by Location

Search Information

Coordinates: 40.2177614336155, -85.4226731020996

Elevation: 944 ft

Timestamp: 2024-07-09T17:52:09.733Z

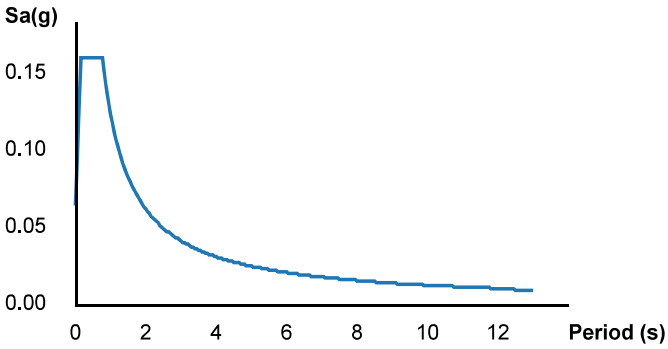
Hazard Type: Seismic

Reference Document: IBC-2012

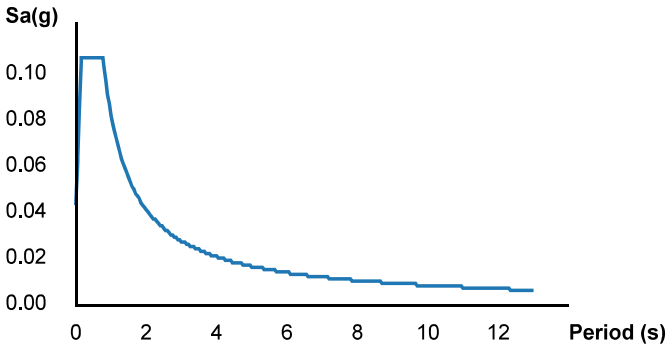
Risk Category: III

Site Class: C

MCER Horizontal Response Spectrum



Design Horizontal Response Spectrum



Basic Parameters

Name	Value	Description
S_S	0.133	MCE_R ground motion (period=0.2s)
S_1	0.073	MCE_R ground motion (period=1.0s)
S_{MS}	0.16	Site-modified spectral acceleration value
S_{M1}	0.123	Site-modified spectral acceleration value
S_{DS}	0.107	Numeric seismic design value at 0.2s SA
S_{D1}	0.082	Numeric seismic design value at 1.0s SA

Additional Information

Name	Value	Description
SDC	B	Seismic design category
F_a	1.2	Site amplification factor at 0.2s
F_v	1.7	Site amplification factor at 1.0s
CR_S	0.915	Coefficient of risk (0.2s)
CR_1	0.868	Coefficient of risk (1.0s)

PGA	0.062	MCE_G peak ground acceleration
F_{PGA}	1.2	Site amplification factor at PGA
PGA_M	0.074	Site modified peak ground acceleration
T_L	12	Long-period transition period (s)
SsRT	0.133	Probabilistic risk-targeted ground motion (0.2s)
SsUH	0.145	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
SsD	1.5	Factored deterministic acceleration value (0.2s)
S1RT	0.073	Probabilistic risk-targeted ground motion (1.0s)
S1UH	0.084	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	0.6	Factored deterministic acceleration value (1.0s)
PGAd	0.6	Factored deterministic acceleration value (PGA)

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Please note that the ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.

Disclaimer

Hazard loads are provided by the U.S. Geological Survey Seismic Design Web Services.

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APPENDIX C

GENERAL QUALIFICATIONS

STANDARD CLAUSE FOR UNANTICIPATED SUBSURFACE CONDITIONS

GENERAL QUALIFICATIONS

of Patriot Engineering's Geotechnical Engineering Investigation

This report has been prepared at the request of our client for his use on this project. Our professional services have been performed, findings obtained, and recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. This warranty is in lieu of all other warranties either expressed or implied.

The scope of our services did not include any environmental assessment or investigation for the presence or absence of wetlands, hazardous or toxic materials in the soil, groundwater, or surface water within or beyond the site studied. Any statements in this report or on the test borings logs regarding vegetation types, odors or staining of soils, or other unusual conditions observed are strictly for the information of our client and the owner.

This report may not contain sufficient information for purposes of other parties or other uses. This company is not responsible for the independent conclusions, opinions or recommendations made by others based on the field and laboratory data presented in this report. Should there be any significant differences in structural arrangement, loading or location of the structure, our analysis should be reviewed.

The recommendations provided herein were developed from the information obtained in the test borings, which depict subsurface conditions only at specific locations. The analysis, conclusions, and recommendations contained in our report are based on site conditions as they existed at the time of our exploration. Subsurface conditions at other locations may differ from those occurring at the specific drill sites. The nature and extent of variations between borings may not become evident until the time of construction. If, after performing on-site observations during construction and noting the characteristics of any variation, substantially different subsurface conditions from those encountered during our explorations are observed or appear to be present beneath excavations, we must be advised promptly so that we can review these conditions and reconsider our recommendations where necessary.

If there is a substantial lapse of time between the submission of our report and the start of work at the site, or if conditions have changed due to natural causes or construction operations at or adjacent to the site, we urge that our report be reviewed to determine the applicability of the conclusions and recommendations considering the changed conditions and time lapse.

We urge that Patriot be retained to review those portions of the plans and specifications that pertain to earthwork and foundations to determine whether they are consistent with our recommendations. In addition, we are available to observe construction, particularly the compaction of structural backfill and preparation of the foundations, and such other field observations as may be necessary.

In order to fairly consider changed or unexpected conditions that might arise during construction, we recommend the following verbiage (Standard Clause for Unanticipated Subsurface Conditions) be included in the project contract.

STANDARD CLAUSE FOR UNANTICIPATED SUBSURFACE CONDITIONS

"The owner has had a subsurface exploration performed by a soils consultant, the results of which are contained in the consultant's report. The consultant's report presents his conclusions on the subsurface conditions based on his interpretation of the data obtained in the exploration. The contractor acknowledges that he has reviewed the consultant's report and any addenda thereto, and that his bid for earthwork operations is based on the subsurface conditions as described in that report. It is recognized that a subsurface exploration may not disclose all conditions as they actually exist and further, conditions may change, particularly groundwater conditions, between the time of a subsurface exploration and the time of earthwork operations. In recognition of these facts, this clause is entered in the contract to provide a means of equitable additional compensation for the contractor if adverse unanticipated conditions are encountered and to provide a means of rebate to the owner if the conditions are more favorable than anticipated.

At any time during construction operations that the contractor encounters conditions that are different than those anticipated by the soils consultant's report, he shall immediately (within 24 hours) bring this fact to the owner's attention. If the owner's representative on the construction site observes subsurface conditions which are different than those anticipated by the consultant's report, he shall immediately (within 24 hours) bring this fact to the contractor's attention. Once a fact of unanticipated conditions has been brought to the attention of either the owner or the contractor, and the consultant has concurred, immediate negotiations will be undertaken between the owner and the contractor to arrive at a change in contract price for additional work or reduction in work because of the unanticipated conditions. The contract agrees that the following unit prices would apply for additional or reduced work under the contract. For changed conditions for which unit prices are not provided, the additional work shall be paid for on a time and materials basis."

Another example of a changed conditions clause can be found in paper No. 4035 by Robert F. Borg, published in ASCE Construction Division Journal, No. CO2, September 1964, page 37.

SECTION 075419 - POLYVINYL-CHLORIDE (PVC) ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Adhered polyvinyl chloride (PVC) roofing system.
2. Roof insulation.
3. Cover board.
4. Walkways.

B. Section includes installation of sound-absorbing insulation strips in ribs of roof deck. Sound-absorbing insulation strips are furnished under Section 053100 "Steel Decking."

C. Related Requirements:

1. Section 061053 "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking; and for wood-based, structural-use roof deck panels.
2. Section 076200 "Sheet Metal Flashing and Trim" for metal roof flashings and counterflashings.
3. Section 077100 "Roof Specialties" for premanufactured copings.
4. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.

1.3 DEFINITIONS

A. Roofing Terminology: Definitions in ASTM D1079 and glossary in NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Roofing Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, Contractor and Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, air barrier Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. For insulation and roof system component fasteners, include copy of FM Approvals' RoofNav listing.

B. Shop Drawings: Include roof plans, sections, details, and attachments to other work, prepared, submitted and approved prior to installation, including the following:

1. Layout and thickness of insulation.
2. Base flashings and membrane terminations.
3. Flashing details at penetrations.
4. Tapered insulation thickness and slopes.
5. Sequence of finished roof.
6. Roof plan showing orientation of steel roof deck and orientation of roof membrane, seams.
7. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
8. Tie-in with air barrier.

C. Samples for Verification: For the following products:

1. Roof membrane and flashing, of color required.
2. Coverboard
3. Walkway pads or rolls, of color required.

D. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

1. Comply with local, state and other applicable codes.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and manufacturer.

B. Manufacturer Certificates:

1. Performance Requirement Certificate: Signed by roof membrane manufacturer, certifying that roofing system complies with requirements specified in "Performance Requirements" Article.

a. Submit evidence of compliance with performance requirements.

2. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.

C. Product Test Reports: For roof membrane and insulation, tests performed by independent qualified testing agency indicating compliance with specified requirements.

D. Evaluation Reports: For components of roofing system, from ICC-ES.

E. Field Test Reports:

1. Concrete internal relative humidity test reports.
2. Fastener-pullout test results and manufacturer's revised requirements for fastener patterns.

F. Field quality-control reports.

G. Sample Warranties: For manufacturer's special warranties.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For roofing system to include in maintenance manuals.

B. Certified statement from existing roof membrane manufacturer stating that existing roof warranty has not been affected by Work performed under this Section.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is UL listed or listed in FM Approvals' RoofNav for roofing system identical to that used for this Project.

B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

E. Store rolls individually spread across the roof in manufacturer packaging. Do not stack rolls.

1.10 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.11 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.

1. Special warranty includes roof membrane, base flashings, roof insulation, fasteners, cover boards, and other components of roofing system.
2. Warranty Period: 20 years from date of Substantial Completion.

B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of roofing system such as roof membrane, base flashing, roof insulation, fasteners, cover boards, and walkway products, for the following warranty period:

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Installed roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roof system and flashings shall remain watertight.

1. Accelerated Weathering: Roof membrane shall withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.
2. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D3746, ASTM D4272/D4272M, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.

B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.

C. Wind Uplift Resistance: Design roofing system to resist the following wind uplift pressures based on ASCE 7-10 when tested according to FM Approvals 4474, UL 580, or UL 1897:

1. Pressures vary according to size of roof area and orientation. Design pressures are indicated on the structural drawings

D. FM Approvals' RoofNav Listing: Roof membrane, base flashings, and component materials shall comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system, and shall be listed in FM Approvals' RoofNav for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals Certification markings.

1. Fire/Windstorm Classification: Class 1A-75.
2. Hail-Resistance Rating: SH.

E. Energy Performance: Roofing system shall have an initial solar reflectance of not less than 0.65 and an emissivity of not less than 0.75 when tested according to CRRC-1.

F. Exterior Fire-Test Exposure: ASTM E108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

2.2 POLYVINYL CHLORIDE (PVC) ROOFING

A. PVC Sheet: ASTM D4434/D4434M, Type III, fabric reinforced.

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

a. Carlisle SynTec Incorporated; ***Sure-Flex***
b. Sika Sarnafil. ***(Basis of Design)***
c. ***Soprema Inc, Sentinel P150***

2. Thickness: 60 mils minimum.
3. Exposed Face Color: White

B. Source Limitations: Obtain components for roofing system from roof membrane manufacturer.

2.3 AUXILIARY ROOFING MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.

1. Adhesives and Sealants: Comply with VOC limits of authorities having jurisdiction.

B. Vapor Barrier: Basis of Design – Carlisle VapAir Seal 725TR.

C. Thermal Barrier: Gypsum board, ASTM C36, Type X, 5/8 inch thick.

D. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as PVC sheet.

E. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.

F. Roof Vents: As recommended by roof membrane manufacturer.

1. Size: Not less than 4-inch diameter.

G. Bonding Adhesive: Manufacturer's standard.

H. Metal Termination Bars: Manufacturer's standard, predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.

I. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roofing components to substrate, and acceptable to roofing system manufacturer.

J. Miscellaneous Accessories: Provide pourable sealers, liquid flashings, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

2.4 ROOF INSULATION

A. General: Preformed roof insulation boards manufactured or approved by PVC roof membrane manufacturer, approved for use in FM Approvals' RoofNav listed roof assemblies.

B. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 1, Grade 2, felt or glass-fiber mat facer on both major surfaces.

1. Compressive Strength: 20 psi.
2. Size: As recommended by manufacturer for application.
3. Thickness:

    a. Base Layer: 2 inches.
    b. Upper Layer: minimum as required to achieve R values listed on the drawings.

C. Tapered Insulation: Provide factory-tapered insulation boards.

1. Material: Match roof insulation.
2. Minimum Thickness: 1/4 inch.
3. Slope:

    a. Roof Field: 1/4 inch per foot unless otherwise indicated on Drawings.
    b. Saddles and Crickets: 1/2 inch per foot unless otherwise indicated on Drawings.

2.5 INSULATION ACCESSORIES

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with other roofing system components.

B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation to substrate, and acceptable to roofing system manufacturer.

C. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:

1. Bead-applied, low-rise, one-component or multicomponent urethane adhesive.

D. Cover Board: Provide one of the following:
1. Polyisocyanurate Foam Core Board, with inorganic facer, minimum 1/4-inch-thick polyisocyanurate.

2. ASTM C1177 minimum 1/2-inch-thick fiberglass mat faced gypsum board: DensDeck Prime.

2.6 WALKWAYS

A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads or rolls, approximately 3/16 inch thick and acceptable to roofing system manufacturer.

1. Size: Approximately 36 by 60 inches.
2. Color: Contrasting with roof membrane.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Section 053100 "Steel Decking."

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing system installation according to roofing system manufacturer's written instructions. Remove sharp projections.

B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

C. Perform fastener-pullout tests according to roof system manufacturer's written instructions.

1. Submit test result within 24 hours of performing tests.

a. Include manufacturer's requirements for any revision to previously submitted fastener patterns required to achieve specified wind uplift requirements.

3.3 INSTALLATION OF ROOFING, GENERAL

A. Install roofing system according to roofing system manufacturer's written instructions, FM Approvals' RoofNav assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.

B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

~~C. Coordinate installation and transition of roofing system component serving as an air barrier with air barrier specified under Section 072726 "Fluid-Applied Membrane Air Barriers."~~

D. Install vapor retarder over all roof decks, in accordance with the manufacturer's recommended application method. Install vapor retarder over a clean and dry deck. Lap all edges 2 inches and seal with adhesive or tape. Install no more vapor retarder in one day than can be properly covered and capped that day.

E. Over steel decks, install thermal barrier perpendicular to steel roof deck with end joints staggered a minimum of 1 foot and occurring over crests of steel roof deck. Tightly butt substrate boards together.

1. Fasten substrate board to top flanges of steel deck to resist uplift pressure at corners, perimeter, and field of roof according to manufacturer's written instructions and FM Global assembly requirements.

3.4 INSTALLATION OF INSULATION

A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.

B. Remove and replace insulation that is wet or has been wet, including insulation that has been stored for installation.

C. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.

D. Installation Over Metal Decking:

1. Install base layer of insulation with joints staggered not less than 24 inches in adjacent rows and with long joints continuous at right angle to flutes of decking.

a. Locate end joints over crests of decking.
b. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
c. Make joints between adjacent insulation boards not more than 1/4 inch in width.
d. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.

1) Trim insulation so that water flow is unrestricted.

e. Fill gaps exceeding 1/4 inch with insulation.
f. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
g. Loosely lay base layer of insulation units over substrate.
h. Mechanically attach base layer of insulation using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to metal decks.

1) Fasten insulation to resist specified uplift pressure at corners, perimeter, and field of roof.

2. Install upper layers of insulation and tapered insulation with joints of each layer offset not less than 12 inches from previous layer of insulation.

    a. Staggered end joints within each layer not less than 24 inches in adjacent rows.
    b. Install with long joints continuous and with end joints staggered not less than 12 inches in adjacent rows.
    c. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
    d. Make joints between adjacent insulation boards not more than 1/4 inch in width.
    e. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.

        1) Trim insulation so that water flow is unrestricted.

    f. Fill gaps exceeding 1/4 inch with insulation.
    g. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
    h. Adhere each layer of insulation to substrate using adhesive according to FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:

        1) Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

3.5 INSTALLATION OF COVER BOARDS

A. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction.

1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
2. At internal roof drains, conform to slope of drain sump.

    a. Trim cover board so that water flow is unrestricted.

3. Cut and fit cover board tight to nailers, projections, and penetrations.
4. Adhere cover board to substrate using adhesive according to FM Approvals' RoofNav assembly requirements and FM Global Property Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification, as follows:

    a. Set cover board in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

3.6 INSTALLATION OF ADHERED ROOFING

A. Adhere roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.

B. Unroll roof membrane and allow to relax before installing.

C. Start installation of roofing in presence of roofing system manufacturer's technical personnel.

D. Accurately align roof membrane, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

E. Bonding Adhesive: Apply to substrate and underside of roof membrane at rate required by manufacturer, and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.

F. In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeter of roofing.

G. Apply roof membrane with side laps shingled with slope of roof deck where possible.

H. Seams: Clean seam areas, overlap roofing, and hot-air weld side and end laps of roof membrane and sheet flashings to ensure a watertight seam installation.

1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roof membrane and sheet flashings.
2. Apply cut edge sealant to edges of membrane cut in the field.
3. Record dates and tests of welds and submit to Architect.
4. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
5. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.

I. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

3.7 INSTALLATION OF BASE FLASHING

A. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.

B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.

C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.

E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.8 INSTALLATION OF WALKWAYS

A. Flexible Walkways: Install walkway products according to manufacturer's written instructions.

1. Install flexible walkways at the following locations:

a. Perimeter of each rooftop unit.
b. Between each rooftop unit location, creating a continuous path connecting rooftop unit locations.

c. Between each roof hatch and each rooftop unit location or path connecting rooftop unit locations.
d. Top and bottom of each roof access ladder.
e. Between each roof access ladder and each rooftop unit location or path connecting rooftop unit locations.
f. Locations indicated on Drawings.
g. As required by roof membrane manufacturer's warranty requirements.

2. Provide 6-inch clearance between adjoining pads.
3. Do not cover seams of membrane. Seams are to be left open for inspection.
4. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

3.9 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to inspect substrate conditions, surface preparation, roof membrane application, sheet flashings, protection, and drainage components, and to furnish reports to Architect.

B. Perform the following tests:

1. Flood Testing: Flood test each roofing area for leaks, per manufacturer's recommendations and requirements, after completing roofing and flashing but before overlying construction is placed. Install temporary containment assemblies, plug or dam drains, and flood with potable water.

a. Perform tests before overlying construction is placed.
b. Flood to an average depth of 2-1/2 inches with a minimum depth of 1 inch and not exceeding a depth of 4 inches. Maintain 2 inches of clearance from top of base flashing.
c. After flood testing, repair leaks, repeat flood tests, and make further repairs until roofing and flashing installations are watertight.

1) Cost of retesting is Contractor's responsibility.

d. Testing agency shall prepare survey report indicating locations of initial leaks, if any, and final survey report.

2. Infrared Thermography: (Testing required if flood tests reveal multiple leaks or if leaks are suspected of causing wet areas of insulation) Testing agency shall survey entire roof area using infrared color thermography according to ASTM C1153.

a. Perform tests before overlying construction is placed.
b. After infrared scan, locate specific areas of leaks by electrical capacitance/impedance testing or nuclear hydrogen detection tests.
c. After testing, repair leaks, repeat tests, and make further repairs until roofing and flashing installations are watertight.

1) Cost of retesting is Contractor's responsibility.

d. Testing agency shall prepare survey report of initial scan indicating locations of entrapped moisture, if any.

3. Electrical Capacitance/Impedance Testing: (Testing used in conjunction with Infrared testing) Testing agency shall survey entire roof area for entrapped water within roof assembly according to ASTM D7954/D7954M.

    a. Perform tests before overlying construction is placed.
    b. After testing, repair leaks, repeat tests, and make further repairs until roofing and flashing installations are watertight.

        1) Cost of retesting is Contractor's responsibility.

    c. Testing agency shall prepare survey report indicating locations of entrapped moisture, if any.

4. Low-Voltage Electrical Conductance Testing: (Testing used in conjunction with Infrared testing) Testing agency shall survey entire roof area and flashings to locate discontinuity in the roof membrane using an exposed metal electrical loop to create an electrical field tested with handheld probes or a scanning platform with integral perimeter electrical loops creating a complete electrical field.

    a. Perform tests before overlying construction is placed.
    b. After testing, repair areas of discontinuities, repeat tests, and make further repairs until roofing and flashing installations are contiguous.

        1) Cost of retesting is Contractor's responsibility.

    c. Testing agency shall prepare survey report indicating locations of discontinuities, if any.

5. Testing agency shall prepare survey report indicating locations of discontinuities, if any.

C. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion, in presence of Architect, and to prepare inspection report.

D. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.

E. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.10 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. Utilize sacrificial layer of membrane over all areas requiring roof access during construction. Use insulation covered with plywood if areas are large or impact risk to the roof is high. Provide weights to keep sacrificial layer or plywood and insulation in place. When remaining construction does not affect or endanger roofing, remove protection, and inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.11 ROOFING INSTALLER'S WARRANTY

A. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:

1. Owner: <**Insert name of Owner**>.
2. Address: <**Insert address**>.
3. Building Name/Type: <**Insert information**>.
4. Address: <**Insert address**>.
5. Area of Work: <**Insert information**>.
6. Acceptance Date: _____.
7. Warranty Period: <**Insert time**>.
8. Expiration Date: _____.

B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,

C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period Roofing Installer will, at Roofing Installer's own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.

D. This Warranty is made subject to the following terms and conditions:

1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:

    a. lightning;
    b. peak gust wind speed exceeding 90 mph;
    c. fire;
    d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
    e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
    f. vapor condensation on bottom of roofing; and
    g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.

2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become

null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.

5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this _____ day of _____, _____.

1. Authorized Signature: _____.
2. Name: _____.
3. Title: _____.

END OF SECTION 07 54 19

SECTION 105000 – SOLID PHENOLIC LOCKERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes athletic lockers as follows:

1. Type: Solid phenolic lockers.

1.3 SUBMITTALS

A. Product Data: For each type and style of locker specified. Include details of construction relative to materials, fabrication, and installation. Include details of anchors, hardware, and fastenings.

B. Shop Drawings: Submit shop drawings indicating room sizes, layout, locker dimensions, material thickness, trim, hardware, finishes, locks, base, doors, accessories, and installation details.

C. Samples for Initial Selection: Manufacturer's color charts consisting of sections of actual units showing the full range of colors, textures, and patterns available for each type of compartment or screen indicated.

D. Samples for Verification: Of each compartment or screen color and finish required, prepared on 6-inch- square Samples of same thickness and material indicated for Work.

E. Full Size Mock-up: One full size mock-up of player locker for final review prior to final fabrication and installation.

F. Warranty: Submit manufacturer’s standard warranty.

1.4 QUALITY ASSURANCE

A. Qualifications:
1. Fabricator shall have 10 years or more experience in fabrication of solid phenolic materials and shall be experienced in performing work of similar size and scope.
2. Fabricator shall be capable of providing field service representation.
3. Installer shall be approved by the manufacturer and be experienced in performing work of similar size and scope.
4. Pre-Installation Meeting: Convene a preinstallation meeting two weeks before start of installation of lockers. Require attendance of parties directly affecting work of this section, including Contractor, Architect, installer, and manufacturer's representative. Review installation and coordination with other work

1.5 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
B. Storage: Store materials in a clean, dry area in accordance with manufacturer's instructions.
C. Handling: Protect materials and finishes during handling and installation to prevent damage.

1.6 WARRANTY

A. Lockers shall not rust, warp, or suffer hinge separation from panel for 10 years, and shall be free of defects in materials and workmanship for 2 years.

1.7 PROJECT CONDITIONS

A. Field Measurements: Verify dimensions in areas of installation by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
   1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating units without field measurements. Coordinate supports, adjacent construction, and fixture locations to ensure actual dimensions correspond to established dimensions.

PART 2 - PART - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

   1. PSISC - Columbia Lockers
   2. Hollman Lockers
   3. Summit Lockers
   4. Shield Lockers
   5. B Sport Custom Lockers

2.2 MATERIALS

A. Panel Material:

   1. Decorative papers impregnated with melamine resin on faces with a clear protective overcoat and integrally compression molded with a core of solid phenolic impregnated kraft papers utilizing a Trespa proprietary process.
   2. Panel Material shall meet fire resistance per ASTM E84 Class A
   3. Colors:
      a. Core: Black
      b. Locker Interior: Manufacturer’s full range of finish options
      c. Doors and Ancillary Panels: Manufacturer’s full range of finish options

B. Doors:

   1. Material: 1/2 inch thick solid phenolic composite panels.

2. Corners: Rounded.
3. Edges: Chamfered.
4. Restraining Bar: Stainless steel, to allow a maximum opening of 90 degrees.
5. Door Fastening: Through bolted

C. Locker Bodies – refer to drawings for specifics:

1. Exposed edges: Straight profile; eased edges to remove sharpness; machine polished and free from tooling imperfections.
2. Tops and intermediate shelves: 1/2" (13mm) thick solid phenolic composite material.
3. Locker backs: ¼" (6mm) thick solid phenolic composite material.
4. Locker Sides: 1/2" (13mm) thick solid phenolic composite material.
5. Bench Lid: 1/2" (13mm) thick solid phenolic composite material base with upholstered top, per drawings.
6. Lower Storage Bottom and Front: 1/2" (13mm) thick solid phenolic composite material with ventilation holes, refer to drawings for hole pattern.

D. Ancillary Panels: Finished end panels and closures shall be ½" thick solid phenolic composite panels.

E. Hardware:

1. Hinges:
   a. Material: 304-grade stainless steel.
   b. Through-bolting at doors with stainless steel fasteners.
   c. Mounted to inside, invisible from outside of locker.
   d. Quantity: Three (3) for full height doors and two (2) for multi-tier units.

2. Interior Hooks:
   a. Material: Custom stamped stainless steel garment hooks with concealed fasteners, include stamped "cardinal" logo.
   b. Quantity and Location: Refer to drawings.
3. Restraining Bar: Stainless steel, to allow a maximum opening of 90 degrees.
4. Fasteners: Exposed fasteners shall be 304-grade stainless steel.
5. Fastener Application: Apply directly into or through material.
6. Other Reinforcement: Aluminum or metal profiles for reinforcements shall not be permitted.
7. Bench Lid Dampener: One (1) hydraulic dampener per bench lid.

2.3 SIZE

1. Refer to drawings for locker sizes and quantities.

2.4 ACCESSORIES

A. Locking System:
   1. Player Locker Rooms: Locking System: Digital lockset; Basis of design: Digilock Axis
B. End Panels: ½ inch thick solid phenolic composite panels.
C. Filler Panels: ½ inch thick solid phenolic composite panels, verify per layouts
   1. Lockers in Locker Rooms shall have filler panels above lockers, scribe to soffit above (refer to drawings for dimensions). Provide vertical seams to align with locker separations below.
D. Locker Top:
   1. Top shall be flat of ½ inch thick solid phenolic composite panels.
E. Door Identification:

1. Refer to drawings for details. Provide magnetic connector to receive personalized name panel.

F. Hang Rod: Stainless steel.
G. Ventilation: Provide 3/8 inch diameter ventilation holes on locker back panel and lower storage front and back panel.

2.5 FABRICATION

A. Fabricate locker components square, rigid, with finish free of scratches and chips.
B. Assemble lockers together with Type 304 stainless steel fasteners directly into solid phenolic composite panels. Aluminum or other metal profiles or reinforcements are not acceptable.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to receive lockers. Notify Architect if areas are not acceptable. Do not begin installation until unacceptable conditions have been corrected.

3.2 INSTALLATION

A. General: Install lockers at locations indicated on the drawings and in accordance with manufacturer's written installation instructions. Install units rigid, straight, plumb, and level with flush installation. Install all required trim, fillers, end panels, and closures per manufacturer's instructions.

B. Hardware: Use manufacturer's supplied hardware.

C. Provide flush hairline joints against adjacent surfaces.

D. Attach number plates to doors after lockers are in place. Attach number plates in sequence as indicated on drawings.

E. Replace defective or damaged doors or other components as directed by Architect.

3.3 ADJUSTING AND CLEANING

A. Adjust doors and locks for smooth operation without binding.
B. Lubricate door hinges and locks per manufacturer's instructions.

C. Clean surfaces in accordance with manufacturer's instructions.

D. Do not use abrasive cleaners.

END OF SECTION 10500