FANNING HOWEY

Project Manual

South Putnam Middle School/High School Fieldhouse Addition

South Putnam Community School Corporation
Greencastle, Indiana

MKS
MICHAEL KINDER & SONS
PLAN | DESIGN | BUILD

Project No. 222152.03
Book 1 of 3
Divisions 00 – 01
May 23, 2024

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SOUTH PUTNAM HIGH SCHOOL FIELDHOUSE ADDITION

NOTICE TO BIDDERS

Notice is hereby given that the South Putnam Community School Corporation and Michael Kinder & Sons, Inc, (CMa) have entered into a contract pursuant to which Michael Kinder & Sons, Inc. will be providing all of the Construction Manager as advisor services in connection with the South Putnam High School Fieldhouse Addition Project. Accordingly, Michael Kinder and Sons, Inc. will be receiving sealed bids from qualified contractors, as determined by Michael Kinder and Sons, Inc., in its sole and complete discretion, for the work and supply of materials for the South Putnam High School Fieldhouse Addition Project.

South Putnam High School Fieldhouse Addition prime contractor bids will be accepted at the South Putnam Community School Corporation Administration Office, 3999 South US Hwy 231, Greencastle, IN 46135 until 2:00 p.m. (local time) on June 27, 2024. Bids received prior to 2:00 p.m. (local time) on June 27, 2024 must be mailed and/or delivered to the South Putnam Community School Corporation administration office for and on behalf of Michael Kinder and Sons, Inc. Bids will be opened and read aloud immediately after 2:00 p.m.

Bid Package is as follows:

- Bid Package 06a – SPHS Fieldhouse General Trades.

A Pre-Bid Conference will be held on June 6th at 11:00 a.m at SP High School. Enter through the Administration Office entrance on the northside. Room TBD.

All bidding and construction shall be in accordance with construction documents prepared by Fanning Howey all of the terms and conditions of which are incorporated herein by reference. Bidders desiring digital access to construction and bidding documents shall email Larry Easterday of Michael Kinder and Sons, Inc. at leasterday@kinderandsons.com to receive digital access at no costs. Bidders desiring printed documents shall pay for their own cost of printing, shipping, and handling.

Each bid shall include, with such bid, a certified check or bid bond made payable to South Putnam Community School Corporation for an amount not less than five percent (5%) of the maximum bid. Should a successful bidder withdraw its bid or fail to execute a satisfactory contract with South Putnam Community School Corporation, South Putnam Community School Corporation may then declare the bid deposit or bid bond to be forfeited as liquidated damages.

Each successful bidder shall enter into a contract with South Putnam Community School Corporation.

Each successful bidder will be required to furnish Performance & Payment Bonds which cover faithful performance of the contract and the payment of all obligations arising thereunder. Said bonds shall remain in full force and effect for one year from the substantial completion of the Work. The bonds will be made out to South Putnam Community School Corporation.

The contract will be awarded to the lowest responsive and responsible bidder complying with the conditions for bidding, provided the bid is reasonable and it is to the best interest of South Putnam Community School Corporation.

Bids may be hand delivered and/or delivered by delivery service at the location listed above. Bids not reaching said location by 2:00 p.m. (local time), on June 27, 2024 will be returned unopened to the original bidder.

South Putnam Community School Corporation reserves the right to reject any and all bids or waive any or all informalities, irregularities and/or inconsistencies in, or with respect to, any or all bids.

END OF NOTICE TO BIDDERS

SECTION 00 11 16 - INVITATION TO BID

PART 1 - GENERAL

1.1 PROJECT INFORMATION

A. Notice to Bidders: Qualified bidders are invited to submit bids for Project as described in this Document according to the Instructions to Bidders.

B. Project Identification: SOUTH PUTNAM HIGH SCHOOL FIELD HOUSE ADDITION.

1. Project Location: South Putnam High School, 1780 East U.S. Hwy 40, Greencastle, IN 46135

C. Owner: South Putnam Community School Corporation

1. Owner's Representative: Corey Smith, Superintendent.

D. Architect: Fanning Howey Associates, David Roan.

E. Construction Manager: Michael Kinder and Sons, Inc. Doug Kinder & Larry Easterday

F. Project Description: Project consists of construction of a 30,000 square foot fieldhouse including renovations to SP HS Pool and Parking Improvements at Central Elementary School.

G. Construction Contract: Bids will be received for the following Work:

1. Single Prime Contract for all scope of work items on all contract documents.

1.2 BID SUBMITTAL AND OPENING

A. Owner will receive sealed bids(original + one copy) until the bid time and date at the location indicated below. Owner will consider bids prepared in compliance with the Instructions to Bidders issued by Owner, and delivered as follows:
1. Bid Date: June 27, 2024
2. Bid Time: 2:00 p.m., local time.
3. Location: South Putnam Community School Corporation Administration Office, 3999 South US Hwy 231, Greencastle, IN 46135

B. Bids will be thereafter publicly opened and read aloud.

1.3 BID SECURITY

A. Bid security shall be submitted with each bid in the amount of 5 percent of the bid amount. No bids may be withdrawn for a period of 60 days after opening of bids. Owner reserves the right to reject any and all bids and to waive informalities and irregularities.

1.4 PREBID CONFERENCE

A. A prebid conference for all bidders will be held at South Putnam High School on June 6, 2024, starting at 11:00 a.m.. Prospective bidders are requested to attend. Bidders will be allowed to walk through the existing building.

1.5 DOCUMENTS

A. Online Procurement of Contract Documents will be provided to **prospective prime bidders only**. Only electronic sets of documents will be issued. Contact the Construction Manager representative, Larry Easterday, via email, leasterday@kinderandsons.com to request documents.

B. Documents will also be available through Eastern Engineering, Construct Connect, Builders Exchange and The Dodge Room.

C. Bidders desiring printed documents shall pay for their own cost of printing, shipping and handling.

1.6 TIME OF COMPLETION

A. Bidders shall begin the Work on receipt of the Notice to Proceed and shall complete the Work within the Contract Time.

1.7 BIDDER'S QUALIFICATIONS

A. Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work. A Performance Bond, a separate Labor and Material Payment Bond, and Insurance in a form acceptable to Owner will be required of the successful Bidder.

END OF SECTION 00 11 16

DOCUMENT 00 26 00.00 - PROCUREMENT SUBSTITUTION PROCEDURES

1.1 DEFINITIONS

A. Procurement Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Procurement and Contracting Documents, submitted prior to receipt of bids.

B. Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Contract Documents, submitted following Contract award. See Section 012500 "Substitution Procedures" for conditions under which Substitution requests will be considered following Contract award.

1.2 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.3 PROCUREMENT SUBSTITUTIONS

A. Procurement Substitutions, General: By submitting a bid, the Bidder represents that its bid is based on materials and equipment described in the Procurement and Contracting Documents, including Addenda. Bidders are encouraged to request approval of qualifying substitute materials and equipment when the Specifications Sections list materials and equipment by product or manufacturer name.

B. Procurement Substitution Requests will be received and considered by Owner when the following conditions are satisfied, as determined by A/E; otherwise requests will be returned without action:
   1. Extensive revisions to the Contract Documents are not required.
   2. Proposed changes are in keeping with the general intent of the Contract Documents, including the level of quality of the Work represented by the requirements therein.
   3. The request is fully documented and properly submitted.

1.4 SUBMITTALS

A. Procurement Substitution Request: Submit to Construction Manager and A/E. Procurement Substitution Request must be made in writing in compliance with the following requirements:
   1. Requests for substitution of materials and equipment will be considered if received no later than 10 days prior to date of bid opening.
   2. Submittal Format: Electronically submit each written Procurement Substitution Request, using form bound in Project Manual in accordance with Division 00 Section “Instructions to Bidders”.
      a. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specifications Sections and drawing numbers.
      b. Provide complete documentation on both the product specified and the proposed substitute, including the following information as appropriate:
         1) Point-by-point comparison of specified and proposed substitute product data, fabrication drawings, and installation procedures.
         2) Copies of current, independent third-party test data of salient product or system characteristics.
         3) Samples where applicable or when requested by A/E.
         4) Detailed comparison of significant qualities of the proposed substitute with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.

5) Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.

6) Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, which will become necessary to accommodate the proposed substitute.

c. Provide certification by manufacturer that the substitute proposed is equal to or superior to that required by the Procurement and Contracting Documents, and that its in-place performance will be equal to or superior to the product or equipment specified in the application indicated.

d. Bidder, in submitting the Procurement Substitution Request, waives the right to additional payment or an extension of Contract Time because of the failure of the substitute to perform as represented in the Procurement Substitution Request.

B. A/E's Action:

1. A/E may request additional information or documentation necessary for evaluation of the Procurement Substitution Request. A/E will notify all bidders of acceptance of the proposed substitute by means of an Addendum to the Procurement and Contracting Documents.

C. A/E's approval of a substitute during bidding does not relieve Contractor of the responsibility to submit required shop drawings and to comply with all other requirements of the Contract Documents.

END OF DOCUMENT 00 26 00

DOCUMENT 00 26 00.01 - SUBSTITUTION REQUEST FORM
(During Procurement)

To _____ Date: _____

Project _____

We hereby submit for your consideration the following product instead of the specified item(s) for the above project:

Section	Article/Paragraph (Page)	Specified Item

Proposed
Substitution: _____ Model: _____

Manufacturer: _____ Phone: _____

Attach complete technical data including laboratory tests if applicable.

Include complete information changes to Drawings and/or Specifications which proposed substitution require for proper installation.

Fill in Blanks Below, use additional sheets if necessary:

A. Does the substitution affect dimensions shown on Drawings?

_____

B. Will the undersigned pay for changes to building design, including engineering and detailing costs caused by substitution, if any?

_____

C. What effect does substitution have on other trades? _____

_____

D. Differences between proposed substitution and specified item?

_____

E. Manufacturer's guarantees of proposed and specified items are:

_____Same _____Different (explain on attachment)

The undersigned certifies that the function, appearance and quality are equivalent or superior to the specified item.

Submitted By:

_____
Signature

_____
Firm _____
Address _____
_____
Telephone _____
Fax _____
Email _____

For Use by Design Consultant:

Accepted Accepted as Noted
Not Accepted Received too Late
PM _____
Specifier _____
Date _____
Remarks _____
Telephone _____

END OF SECTION 00 26 00.01

DOCUMENT 00 31 00 - AVAILABLE PROJECT INFORMATION

1.1 AVAILABLE PROJECT INFORMATION

A. This Document with its referenced attachments is part of the Procurement and Contracting (Bidding) Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of Bidders' own investigations. They are made available for Bidder's convenience and information. This Document and its attachments are not part of the Contract Documents.

B. Because subsurface conditions indicated by the soils borings are a sampling in relation to the entire construction area, and for other reasons, the Owner, the A/E, the A/E's consultants, and the firm reporting the subsurface conditions do not warranty the conditions below the depths of the borings or that the strata logged from the borings are necessarily typical of the entire site. Any party using the information described in the soil borings and geotechnical report shall accept full responsibility for its use.

C. The Soils Exploration Report and Soil Boring Logs were prepared for the Owner by Atlas Technical Consultants, LLC, 7988 Centerpoint Dr., Suite 100, Indianapolis, Indiana 46256 for use in design. The following Subsurface Investigation Report is not a part of the construction Contract Documents and is enclosed within this document for informational use only.
   1. The opinions expressed in this report are those of a geotechnical engineer and represent interpretations of subsoil conditions, tests, and results of analyses conducted by geotechnical engineer.
   2. The enclosed report and Log of Borings, and any interpolations of conditions between test borings is not a warrant or guarantee by the Owner or Architect/Engineer of subsurface conditions.
   3. The Contractor should visit the site and acquaint himself with all existing conditions. Prior to bidding, bidders may make their own subsurface investigations to satisfy themselves as to the site and subsurface conditions, but such subsurface investigations shall be performed only under the time schedules and arrangements approved in advance by the Owner. Any additional information, needed by the Contractor, shall be obtained by the Contractor at no cost to the Owner.
   4. Structural design has been based on the report and assumes that existing soils are clean and can be compacted and will achieve the densities specified in the earthwork section. It shall be the Contractor's responsibility to determine for himself existing Site and or soil conditions.

D. Existing Site Survey Information: A Site survey can be found within the construction drawings. It is not however, part of the Construction Contract Documents and is for informational use only. Information found is not a warrant or guarantee by the Owner or Project Consultant. The Contractor should visit the Site and acquaint himself with all existing conditions.

END OF DOCUMENT 00 31 00

GEOTECHNICAL ENGINEERING INVESTIGATION

PROPOSED FIELDHOUSE BUILDING – NORTH SIDE
SOUTH PUTNAM HIGH SCHOOL
1780 U.S. ROUTE 40
GREENCASTLE, INDIANA

ATLAS PROJECT NO. 170GC01720

MARCH 8, 2024

PREPARED FOR:

SOUTH PUTNAM COMMUNITY SCHOOL CORPORATION
3999 SOUTH U.S. HIGHWAY 231
GREENCASTLE, IN 46135

ATTENTION: DR. COREY SMITH
SUPERINTENDENT

March 8, 2024

Atlas Technical
Consultants LLC

7988 Centerpoint Dr.
Suite 100
Indianapolis, IN 46256

Phone +1 317 849 4990

www.oneatlas.com

Dr. Corey Smith
Superintendent
South Putnam Community School Corporation
3999 South U.S. Highway 231
Greencastle, IN 46135

Re: **Geotechnical Engineering Investigation**
Proposed Fieldhouse Building – North Side
South Putnam High School
1780 U.S. Route 40
Greencastle, Indiana
Atlas Project No. 170GC01720

Dear Dr. Smith:

Submitted herewith is the report of the geotechnical engineering investigation performed by Atlas Technical Consultants LLC (Atlas) for the referenced project. This study was authorized in accordance with Atlas Proposal-Agreement No. 23-13851a dated February 7, 2024.

This report contains the results of the field and laboratory testing program, an engineering interpretation of this data with respect to the available project characteristics, and recommendations to aid design and construction of the foundations and other earth-connected phases of this project. We wish to remind you that we will store the samples for 30 days, after which time they will be discarded unless you request otherwise.

We appreciate the opportunity to be of service to you on this project. If we can be of any further assistance, or if you have any questions regarding this report, please do not hesitate to contact either of the undersigned.

Sincerely,

David McIlwaine, P.E.
Senior Project Engineer

ROY D. MCILWAINE
No. PE11200315
REGISTERED STATE OF INDIANA
PROFESSIONAL ENGINEER

Thomas J. Struewing, P.E.
Principal Engineer

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1 PURPOSE AND SCOPE

The purpose of this study was to characterize the general subsurface conditions at the project site by drilling nine soil test borings and to evaluate this data with respect to foundation concept and design for the proposed fieldhouse building. Also included is an evaluation of the site with respect to potential construction problems and recommendations dealing with earthwork and quality control during construction.

2 PROJECT CHARACTERISTICS

South Putnam Community School Corporation is planning the construction of a new fieldhouse building adjacent to the existing South Putnam High School at 1780 U.S. Route 40 south of Greencastle, Indiana. The general location of the project site is shown on the Vicinity Map (Figure 1 in the Appendix), which is taken from a map made prior to the current level of development in the area surrounding the project site. The topography in the proposed project area slopes slightly downward to the north and east, with overall relief of approximately 3 ft, ranging from about El 770 at the south side of the project site near the existing school building to about El 767 in the northeast corner.

The proposed fieldhouse building will be on the north side of the existing eastern portion of the school building in an area that is currently asphalt pavement. The proposed building will be a single-story, pre-engineered metal structure that will have a slab-on-grade floor, no basement or pits, and a plan area of approximately 30,000 sq.ft. It is assumed that the finish floor elevation for the new fieldhouse building will match the finish floor of the existing school building at approximately El 770. The existing ground surface in the area of the proposed fieldhouse building ranges from about El 767 to El 770 and thus it is anticipated that up to approximately 3 ft of grade-raise fill will be required in the proposed fieldhouse building area to establish the finish grade. Existing pavement areas around the proposed fieldhouse building will be reconstructed. The proposed location of the fieldhouse building, as well as the approximate “as-drilled” test boring locations, are shown on the Boring Plan (Figure 2 in the Appendix).

The maximum column and wall loads for the proposed fieldhouse building will reportedly be approximately 60 kips/column and 2 kips/lin.ft, respectively. For the purpose of this study, it has been assumed that the maximum floor loads will not exceed about 100 lbs/sq.ft. No unusual loading conditions or settlement restrictions have been specified.

3 GENERAL SUBSURFACE CONDITIONS

The general subsurface conditions were investigated by drilling nine test borings, which included six test borings within the proposed fieldhouse building to depths ranging from 20 ft to 30 ft, and three test borings in the proposed reconstructed pavement areas to depths ranging from 4.8 ft to 5.0 ft, at the approximate locations shown on the Boring Plan (Figure 2 in the Appendix). The subsurface conditions disclosed by the field investigation are summarized in the following paragraphs. Detailed descriptions of the subsurface conditions encountered in each test boring are presented on the "Test Boring Logs" in the Appendix. The letters in parentheses following the soil descriptions are the soil classifications in general accordance with the Unified Soil Classification System (ASTM D2488 "Standard Practice for Description and Identification of Soils by Visual-Manual Procedures"). It should be noted that the stratification lines shown on the test boring logs represent approximate transitions between material types. In-situ stratum changes could occur gradually or at slightly different depths.

3.1 Subsurface Soil Conditions

The test borings revealed asphalt pavement overlying aggregate base at the existing ground surface with overall section thicknesses ranging from about 9 inches to 12 inches. Underlying the asphalt section, Borings B-2, B-5, B-6, C-1 and C-2 encountered existing silty clay fill materials containing varying amounts of sand and gravel to depths of approximately 1.8 ft to 3.5 ft below the existing ground surface. Boring B-2 also encountered trace amounts of roots and organics within the silty clay fill. These soils were classified as "fill" due to the unusual texture and/or stratification of the soil samples; however, no unnatural constituents (except those revealed in Boring B-2) were encountered in the soil samples that would positively identify these materials as fill.

Underlying the existing asphalt section and/or fill soils described above, the test borings revealed very soft to soft silty clay (CL) and/or clay (CH) with varying amounts of sand and gravel to depths ranging from about 8.5 ft to 28.5 ft below the existing ground surface. There were sporadic layers of medium stiff to stiff silty clay (CL) soils within the softer soils. Approximately half of the soil samples obtained contained trace to little amounts of organics and marl. Borings B-1, B-2 and B-5 revealed organic silty clay (OL) generally at a depth of about 17 ft, with thicknesses ranging from about 2.5 ft to 5.0 ft. Some of the soils containing marl also had trace shell fragments. Borings B-1 and B-6 revealed layers of medium dense sand (SP-SM) and silty sand (SM).

The qualitative strengths or consistencies of the cohesive soils and the qualitative densities of the granular soils as described above and on the test boring logs were estimated based on the results of the standard penetration test (ASTM D1586) and the definitions described on the "Field Classification System for Soil Exploration" contained in the Appendix of this report.

3.2 Ground Water

Ground water observations were made during drilling operations by noting the depth of free water (if any) on the drilling tools and in open boreholes immediately after withdrawal of the drilling augers. Free ground water was noted during drilling in the test borings for the proposed fieldhouse building at depths ranging from about 5.0 ft to 21.0 ft below the existing ground surface.

It must be noted that short-term ground water level observations made in test borings are not necessarily a reliable indication of the current ground water level or future ground water levels. Shallow ground water in cohesive soils is typically contained (or "perched") within discontinuous sand seams within the clayey soils such as those that underlie this site, and the amount of ground water that is encountered in a test boring or excavation is often dependent upon the depth, thickness, lateral extent, and saturation of granular zones that are intersected by the test boring or excavation. It is also possible that “perched” ground water may be encountered at various depths and locations across the site above the hydrostatic ground water level due to water that is trapped within old miscellaneous fill materials, abandoned utilities, utility trenches, etc. Although the amount of such water is usually not significant, it is important to recognize that such ground water may be encountered. Therefore, ground water may be encountered at varying depths and locations across the site, and fluctuations in the level of the ground water should be expected due to variations in rainfall and other factors not evident at the time of the field investigation.

4 DESIGN RECOMMENDATIONS

The following design recommendations have been developed on the basis of the previously described project characteristics (Section 2) and subsurface conditions (Section 3). If there are any changes in the project criteria, including the location or size of the proposed fieldhouse building, proposed loading conditions, proposed grading, etc., a review should be made by this office.

The design recommendations presented herein are based on the assumption that all earth-related elements of the project will be carefully and continuously observed, tested, and evaluated by a geotechnical engineer, or a qualified geotechnical technician working under the direction of a geotechnical engineer, to confirm that the earth-related elements of the project are compatible and consistent with the conditions upon which the design recommendations are based. The careful and thorough field testing and observation of the soil-related aspects of the project are critical and essential components of the design recommendations.

4.1 Seismic Parameters

Based on geologic mapping and the results of the test borings, it is our opinion that the subsurface conditions at this site meet the criteria for Site Class D based on Section 1613.3.2 of the 2012 International Building Code (Chapter 20 of ASCE 7-10 “Minimum Design Loads for Buildings and Other Structures”). The recommended seismic design parameters are summarized in the following table:

Table No. 1 – Recommended Seismic Design Parameters

Seismic Design Parameter	Recommended Class/Value
Seismic Site Class*	D
Site Modified Peak Ground Acceleration, PGA_M	0.16g
Design Spectral Response Acceleration at Short Periods, S_{DS}**	0.22g
Design Spectral Response Acceleration at 1-Second Period, S_{D1}**	0.16g

*Based upon Chapter 20 of ASCE 7-10 "Minimum Design Loads for Buildings and Other Structures"
**Based upon Section 1613 of the 2012 International Building Code

There is virtually no probability of "liquefaction" (a phenomenon whereby ground shaking causes a severe loss of soil strength in granular soil) or cyclic softening (significant weakening of cohesive soils) of the natural soils at the project site under any reasonably anticipated earthquake event.

4.2 General Foundation Concepts

Based upon the results of the test borings that were drilled for this project, the majority of the proposed fieldhouse building area appears to be underlain by various types of weaker natural cohesive soils including silty clay and clay as well as very soft cohesive soils containing organics and marl (CL and OL). The weaker soils typically extend to depths varying from about 8.5 ft to as deep as about 28.5 ft below the existing ground surface. These upper soils are generally considered to be unsuitable for reliable support of the proposed building without the risk of excessive settlement.

Based upon the test boring data, the laboratory test data and our experience with similar soil conditions; the softer, compressible organic and marl soils are unsuitable for support of building foundations and floor slabs, and special ground improvement measures should be utilized in areas where these soils exist, or may exist. The types of soils described in Section 3.1 can be problematic and the settlement characteristics of these soils can be erratic. This can result in greater than normal settlement due to increase in loading from grade-raise fill, the building loads and even without any significant increase in loading due to potential changes in moisture conditions, such as from desiccation and resaturation and changes in ground water conditions due to the new construction, as well as degradation of organic materials.

In addition to the settlement that could occur due to loading imparted by building foundations and floor slabs, the unsuitable soils described above may undergo consolidation and settlement under the weight of the earth fill that will be required to raise the grade to the proposed final grade elevation of the building. Furthermore, our experience indicates that soils of the type described above can consolidate and settle without regard to loading due to potential changes in ground water conditions over time, including partial desiccation of the soils, changes in surface water drainage, changes in precipitation patterns, etc. and also resaturation of the soils after desiccation. The settlement that can occur will likely be variable in magnitude due to the variability in thickness of the unsuitable soils and the variability in the composition and characteristics of the unsuitable soils. It should be noted that

these soils could extend deeper at some locations and could be encountered at other locations on-site. Furthermore, if these soils are left in-place beneath pavements, without any type of remedial measures or special preparation measures, it is expected that greater than normal settlement of the pavement could occur over a long period of time due to the weight of the new fill that may be placed to establish proposed pavement grades.

The weaker natural soils encountered in the test borings drilled for this project do not have strength and compressibility characteristics that are compatible with the reliable support of the proposed building using conventional spread footings bearing at nominal depths without the risk of unacceptable settlement. Therefore, in order to reliably use spread footings for the proposed building, it will first be necessary to implement special measures to improve the subsurface conditions. This could include removing all of the existing fill materials, the weaker natural soils and any soils containing organics and marl from beneath the spread footings in order to reach the firm, natural soils that are suitable for bearing using conventional spread footings and to backfill the undercut excavations with lean concrete or well compacted engineered fill. However, due to the variable depths of the unsuitable soils, this method does not appear to be practical or economically feasible. The use of a proprietary intermediate foundation system or in-place ground improvement technique such as aggregate columns, rammed aggregate piers or rigid inclusions at the proposed spread footing locations appears to be an appropriate and economical method for reliable support of the foundations.

Table No. 2 summarizes the estimated depths and estimated elevations at which soils that are judged to be suitable for support of conventional spread footings were encountered in the test borings. It is important to note that the depths to suitable bearing soils should be expected to vary significantly across the site and suitable bearing soils may be deeper at other locations.

Table No. 2 – Estimated Depths and Elevations of Suitable Bearing Soils

Boring No.	Estimated Ground Surface Elevation, ft*	Estimated Depth Below Existing Ground Surface to Suitable Bearing Soils, ft	Estimated Elevation of Suitable Bearing Soils, ft*
B-1	769	28.5	740
B-2	768	19.5	748
B-3	767	28.5	738
B-4	768	8.5	759
B-5	769	23.5	745
B-6	768	8.5	759

*Ground surface elevation estimated from provided topographic mapping.

It appears that the most effective method to provide reliable support of spread footings is to use a proprietary design-build, intermediate foundation system or in-place ground improvement technique such as aggregate columns, rammed aggregate piers or rigid inclusions to modify and improve the existing soils in-place. This would allow for the use of conventional spread footings without the need to undercut and replace the existing soils. A specialty geotechnical design-build contractor should be

consulted regarding applicability of specific ground improvement systems and installation methods for this project. The specialty ground improvement contractor shall be entirely responsible for the design, installation, performance and warranty of the ground improvement system. Due to the proximity of the existing school facilities; rammed aggregate piers or rigid inclusions should not be used if the specialty geotechnical contractor cannot provide assurance that the existing facilities can be protected without disturbance. The ground improvement system selected must be able to suitably improve the existing subsurface materials within the depth zone required for proper bearing of foundations and to control settlement within the prescribed project criteria. Of particular note are the soft cohesive soils containing organics and marl, and in some cases organic silty clay, encountered in some of the test borings (e.g., Borings B-1, B-2 and B-5). Since aggregate columns, rammed aggregate piers and rigid inclusions are proprietary specialty design-build geotechnical systems that result in modified subsurface materials, the ground improvement plan and final foundation design criteria shall be developed and prepared by an engineer registered in the State of Indiana retained by or working for the specialty geotechnical contractor who shall be entirely responsible for the design, installation, performance and warranty of the system as well as preservation of the existing structure. Additional information regarding ground improvement measures for spread footings are provided in Section 4.3.

Alternatively, it may also be possible to support the proposed building on deep foundations, such as auger-cast concrete piles that extend through the unsuitable soils to develop capacity below the unsuitable soils. If auger-cast concrete piles appear to be desirable, detailed recommendations for the use in the design and construction of auger-cast concrete piles to support the proposed structure can be provided based upon additional test borings drilled to deeper depths.

4.3 Ground Improvement

It appears that it is feasible to use a proprietary intermediate foundation system, in-place soil modification or ground improvement technique such as aggregate columns, rammed aggregate piers or rigid inclusions to modify and improve the existing subsurface materials such that spread footings can be used reliably without the need for undercutting and replacement of the unsuitable fill materials, soft organic and marl soils and the soft/loose natural soils as described in Section 4.2. It is recommended that a specialty geotechnical contractor be consulted to confirm the compatibility of the potential proprietary ground improvement system with the subsurface conditions and the project requirements (e.g., loading conditions and settlement criteria). Due to the variability in the characteristics and condition of the existing subsurface materials at this site, which includes fill materials, as well as softer natural soils containing organics and marl that generally extend to depths of about 8.5 ft to 28.5 ft below the existing ground surface; the ground improvement system selected must be able to suitably improve the existing subsurface materials within the depth zone required for proper bearing and settlement control of spread footings.

Aggregate columns and rammed aggregate piers are proprietary specialty geotechnical techniques whereby dense-graded crushed limestone is placed in holes in thin lifts and densified using a specially designed dynamic energy source. The result is a pre-stressing of the existing material around the aggregate “columns” or “piers”, inclusion of stiff reinforcement elements within the existing matrix soils and a partial transfer of foundation loads to the deeper, more competent stratum. Rigid inclusions are proprietary specialty geotechnical techniques whereby plain concrete, aggregate and grout mixtures or cement-treated aggregate ground improvement elements are used to transfer loads through weak soils to more competent bearing soils. After the “in-place” modification or improvement, spread

footings can be used without the need for undercutting and replacement of the existing unsuitable materials.

Ground improvement techniques such as aggregate columns, rammed aggregate piers or rigid inclusions are proprietary specialty geotechnical design/build procedures that are designed by a registered engineer with the specialty geotechnical foundation contractor and installed by a specialty geotechnical contractor. Therefore, the specialty geotechnical contractor should be contacted regarding specific applicability to this project and development of the specific program to meet the project requirements (i.e., bearing capacity and settlement limitations). Spread footings that bear on modified and improved foundations soils as described above can usually be designed for an allowable bearing pressure in the range of about 4,000 to 6,000 lbs/sq.ft while limiting settlement within required project tolerances without the need for undercutting and replacing the existing soils or the use of deep foundations. The actual design bearing pressure must be determined by the specialty geotechnical contractor based on the specific criteria of the ground improvement system, the expected loading conditions and required settlement tolerances. It is recommended that the ground improvement system be designed to develop an allowable soil bearing capacity of at least 4,000 lbs/sq.ft and to limit the maximum total foundation settlement to 1 in., or less, unless more stringent settlement criteria is desired. Since aggregate column, rammed aggregate piers and rigid inclusion systems are proprietary specialty geotechnical systems that result in modified subsurface soils, the ground improvement plan and final spread footing design criteria shall be developed and prepared by an engineer registered in the State of Indiana retained by or working for the specialty geotechnical contractor who shall be entirely responsible for the design, installation, performance and warranty of the ground improvement system.

4.4 General Spread Footing Recommendations

In using net pressure, the weight of the foundation and backfill over the foundation, including the weight of the floor slab, need not be considered; hence, only loads applied at or above the finished floor need to be used for dimensioning the foundations. Wall footings should be at least 2 ft wide, and column footings should be at least 3 ft wide for bearing capacity considerations.

All exterior footings and footings in unheated areas should be located at a depth of at least 3 ft below the final exterior grade for frost protection. Although the Indiana Building Code requires only 2.5 ft of foundation embedment below the exterior grade in Putnam County, our experience indicates that the actual frost depths in this region can occur deeper. Interior footings can be located at nominal depths below the finished floor, provided all undesirable materials (i.e., old fill, softer or looser natural soils, soils containing organics and/or marl, etc.) are removed at the footing locations.

Care must be exercised when excavating near the existing buildings, driveways, equipment, etc. to protect the integrity of the existing facilities, etc. Bracing or underpinning will likely be required where it is necessary to excavate below the bottom elevation of the existing footings or floor slabs. Measures shall be taken by the contractor to preserve the integrity of the existing foundations and floor slabs and the soils that support the existing buildings and nearby facilities that are to remain in place.

Uplift forces on the spread footings can be resisted by the weight of the footings and the soil backfill material that is placed over the footings. It is recommended that the soil backfill weight considered to resist uplift loads be limited to that immediately above and within the perimeter of the footings, unless a much higher factor of safety is used. A total soil unit weight of 110 lbs/cu.ft can be used for the backfill material placed above the footings, provided it is compacted as recommended in Section 5.2. It is also recommended that a factor of safety of at least 1.3 be used for calculating uplift resistance from the footings, provided only the weight of the footing and the soil immediately above it are used to resist uplift forces.

Lateral loads imparted upon shallow spread footings can be resisted by the passive lateral earth pressure against the sides of the footings and by friction between the foundation soils and the bases of the footings. If passive lateral earth pressure is to be used to resist lateral loads imparted on the spread footings, it is essential that the soil that is relied upon to provide the passive lateral earth pressure resistance will not be excavated or otherwise disturbed at any time in the future. If it is possible that disturbance or an excavation could be made in any portion of the passive zone (including not only soils immediately beside the spread footings but also the soils that exist above the top of the footing elevations since the passive resistance is dependent upon the weight of the overburden soils), then passive lateral earth pressure resistance should not be considered for resistance of lateral loads. Since significant displacement is required to mobilize passive resistance, a factor of safety of 3 has been used to determine the allowable equivalent fluid pressure for the passive condition in order to minimize the potential for excessive displacement. Based upon the soils encountered at this site, an allowable passive lateral earth pressure (allowable “equivalent fluid pressure”) of 110 lbs/sq.ft per foot of depth below the ground surface can be used for that portion of the footing that is below a depth of 2.5 ft below the final exterior grade, or below a depth of 2.0 ft below the interior floor slab (no portion of the footing above these depths should be used for lateral resistance). An allowable coefficient of friction between the base of the footing and the underlying soil of 0.2 (based on a factor of safety of 1.5) can be used in conjunction with the minimum downward load on the base of the footing.

4.5 Floor Slabs

Based upon the test boring data, the laboratory test data and our experience with similar soil conditions; the softer clayey soils and compressible organic and marl soils are unsuitable for support of building floor slabs. Unless the owner can tolerate the risk of greater than normal floor slab settlement the unsuitable materials should be completely removed or special ground improvement measures be taken where these soils exist, or may exist. The types of soils described in Section 3.1 have been problematic in the past and the settlement characteristics are erratic. This results in the potential for greater than normal settlement due to increase in loading from grade-raise fill and even without any significant increase in loading due to repeated cyclical saturation and changes in moisture conditions such as from desiccation and changes in ground water conditions due to the new construction, as well as degradation of organic materials. Therefore, it is recommended that the existing unsuitable soils be completely removed and replaced with well-compacted engineered fill, or the ground improved with aggregate columns in a fashion as described in Sections 4.2 and 4.3. The cost of complete removal and replacement of the unsuitable materials or the implementation of ground improvement measures beneath the floor slab areas may not be justified in order to eliminate the risk of greater-than-normal floor slab settlement that could occur. However, in this case the owner must understand that there is risk of greater-than-normal floor slab settlement in this case.

Alternatively, if it is desired to eliminate the risk of greater than normal floor slab settlement, ground improvement measures could be implemented beneath the floor slabs in a fashion similar to those described in Section 4.3.

If a special proprietary ground improvement technique is to be used to improve the existing subsurface soil conditions in-place beneath floor slabs, it is recommended that a specialty geotechnical contractor be engaged in a similar fashion as described in Sections 4.2 and 4.3 to develop the appropriate in-place ground improvement program to limit the floor slab settlement. In addition to the ground improvement elements, a load transfer platform consisting of a thick layer of compacted dense-graded crushed limestone constructed beneath the floor slab and over the ground improvement elements will be required by the specialty geotechnical contractor in this case. The required thickness and characteristics of the crushed limestone layer shall be determined by the specialty geotechnical design-build contractor based upon the specific characteristics of their system.

It is recommended that all slab-on-grade floors be "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.

It is furthermore recommended that the floor slabs be supported on a 6 in. thick (minimum) layer of relatively clean granular material such as sand and gravel or crushed stone. This is to help distribute concentrated loads and equalize moisture conditions beneath the slabs. Provided that a minimum of 6 in. of granular material is placed below the slab-on-grade floor, a modulus of subgrade reaction (k_{30}) of 100 lbs/cu.in. can be used for design of the floor slabs.

4.6 Pavement

It is likely that the pavement subgrade in most, if not all, areas of the site will be wet, soft or yielding at the time of construction, particularly in cut areas. Furthermore, our experience indicates that most subgrade soils beneath existing pavements will be soft or yielding once the existing pavement section is removed, regardless of the presence of the existing pavements and apparently firm soils in the test borings. If at the time of construction the subgrade is found to be excessively wet, soft or yielding, it is recommended that the pavement subgrade soils be stabilized by discing, aerating and recompacting. However, if it is not possible to improve the subgrade soils in this manner because of weather conditions, scheduling or other conditions, which is most often the case, it is recommended that the subgrade soils be improved or modified using either chemical stabilization (i.e., lime or cement stabilization), mechanical stabilization (i.e., a geogrid with additional crushed limestone placed over the subgrade), or removal of the unsuitable soils and replacement with crushed limestone. The best method for stabilizing the pavement subgrade should be determined in the field at the time of construction based upon the actual field conditions in conjunction with the specific soil type encountered at the locations requiring stabilization, the size of the areas requiring stabilization and the construction schedule. Any soft, loose or otherwise unsuitable materials that are identified beneath the pavement subgrade level should be removed and replaced with well-compacted engineered fill material.

Our experience on projects with similar subsurface conditions as those encountered on this project site indicates that settlement can occur due to future consolidation of the soils containing organic and marl soils without regard to loading. Changes in grading, surface water infiltration and ground water conditions can initiate settlement along with degradation or collapse of materials within the fill. Furthermore, our experience indicates that soils containing organics and marl as previously described can consolidate and settle without regard to loading due to changes in ground water conditions over time, including partial desiccation of the soils (which has been known to occur due to construction of building and/or pavements above these types of soils, changes in surface water drainage, changes in precipitation patterns, etc.) and also resaturation of the soils after desiccation.

Therefore, in order to completely eliminate the risk of unacceptable differential settlement of the pavements it would be necessary to completely remove any existing undocumented fill materials and/or soils containing organics and marl that may be encountered and to replace them with well-compacted engineered fill. The cost of complete removal and replacement of the organic soils beneath pavement areas does not appear to be feasible in order to eliminate the risk of greater-than-normal settlement that could occur at some locations if the existing unsuitable materials are not completely removed. However, if the existing soils containing organics and marl are not completely removed and replaced where encountered, the owner must recognize that there is some risk of greater-than-normal settlement.

In any case, it is recommended that the soils exposed at the new pavement subgrade level should be carefully observed, tested and evaluated, including proofroll testing, to determine if there are any materials that need to be improved. Any remnants of previous construction (such as foundations, walls, pits, vaults, etc.) and any unsuitable soils containing organics and marl that are exposed at the pavement subgrade level should be removed to a depth of at least 2 ft below the base or bottom of the proposed pavement section and replaced with well-compacted engineered fill to provide uniform support directly beneath the pavement sections.

The pavement subgrade surface should be uniformly sloped to facilitate drainage through the granular base and to avoid ponding of water beneath the pavement. The storm water catch basins in pavement areas should be designed to allow water to drain from the aggregate base into the catch basins. At a minimum, subsurface trench drains should be included that extend out at least 20 ft from the catchbasins in at least four directions.

Based on the results of the test borings, the classification tests and our experience with similar soils, a resilient modulus value of 4,000 lbs/sq.in. has been estimated for use in pavement design for the clayey subgrade soils encountered at this site. The subgrade soils should be prepared, observed, tested and evaluated as described in Sections 5.1 and 5.2 of this report.

The following report sections outline recommendations for asphalt and concrete pavements for automobile parking areas and truck zones. It is important to note that the recommendations for the automobile parking areas are based on the assumption that these areas will not be subject to any heavy truck traffic. Therefore, in areas where truck traffic cannot be controlled (i.e., driveways), it is suggested that the thicker pavement section be utilized. Since these recommendations are based on estimated traffic loading conditions, it is recommended that they be verified when the actual anticipated traffic conditions become available.

4.6.1 Asphalt Pavement

Based on a resilient modulus value of 4,000 lbs/sq.in., a design period of 15 years, estimated traffic for this type of facility, and the conditions encountered at the site, the following asphalt pavement sections are recommended:

Automobile Parking Areas	3.5 in. of asphaltic concrete over 6 in. of aggregate base
Driveway Areas and Truck Zones	5 in. of asphaltic concrete over 9 in. of aggregate base

The aggregate base should consist of well-compacted, crushed limestone that meets the requirements for coarse aggregate size No. 53 in accordance with Indiana Department of Transportation (INDOT) Standard Specifications. Aggregates that are locally referred to as "commercial grade" No. 53 crushed stone should not be used as pavement base material. The hot mix asphalt (HMA) pavement should be constructed in accordance with the 2024 INDOT Standard Specifications Section 400 – Asphalt Pavements, and the HMA mix design should be in accordance with INDOT Standard Specifications Section 402 – Hot Mix Asphalt, HMA, Pavement.

It should be expected that normal maintenance compatible with asphalt pavement and the design period selected will be required during the life of the pavement. Furthermore, overlaying the pavement surface may be desirable at an intermediate time period to extend the life of the pavement and improve serviceability.

4.6.2 Concrete Pavement

Concrete pavement thicknesses were determined from methods developed by the American Association of State Highway and Transportation Officials (AASHTO). These methods are based on the subgrade being firm, well-compacted, and non-pumping and all joints being properly designed, located, and sealed to minimize moisture seepage into the subgrade. It is also important that proper concrete curing practices be employed and that traffic will not be allowed on concrete that has had insufficient time to cure.

For design calculation purposes, the compressive strength of the concrete was assumed to be at least 4,000 lbs/sq.in. (or have a modulus of rupture of at least 600 lbs/sq.in.), and the modulus of subgrade reaction (k_{30}) was estimated to be 125 lbs/cu.in.

Based on the above information, the following concrete pavement sections are recommended:

Automobile Parking Areas	5 in. of concrete over 6 in. of crushed stone over a well-compacted, non-pumping subgrade
Driveway Areas and Truck Zones	8 in. of concrete over 6 in. of crushed stone over a well-compacted, non-pumping subgrade

The performance of the concrete paving section is highly dependent on controlling the pumping of the subgrade soils. Although no wet surface soils were noted at the time of this study, it is important that surface drainage be controlled to prevent water from ponding in pavement areas.

4.7 Site Grading and Drainage

Proper surface drainage should be provided at the site to minimize any increase in moisture content of the foundation soils. The exterior grade should be sloped away from the new building and the existing buildings to prevent ponding of water around the structures. Any downspouts or roof drains should be piped to locations well away from the structures.

While minimal alteration to the current grade in the proposed fieldhouse building area is anticipated, it is recommended that final cut and fill slopes be no steeper than 3 (horizontal) to 1 (vertical). Flatter cut slopes may be required in cases where the foundation soils are particularly poor or where ground water seepage may occur. Where new fill is placed against existing slopes that are steeper than 6 (horizontal) to 1 (vertical), it will be necessary to "bench" the new fill into the existing slope in order to provide a good bond between the existing soil and the new fill and to prevent the development of a zone of weak soil at the interface.

5 GENERAL CONSTRUCTION PROCEDURES AND RECOMMENDATIONS

Since this investigation identified actual subsurface conditions only at the test boring locations, it was necessary to extrapolate these conditions in order to characterize the entire project site. Even under the best of circumstances, the conditions encountered during construction can be expected to vary somewhat from the test boring results and may, in the extreme case, differ to the extent that modifications to the foundation recommendations become necessary. Therefore, we recommend that Atlas be retained as geotechnical consultant through the earth-related phases of this project to correlate actual soil conditions with test boring data, identify variations, conduct additional tests that may be needed, and recommend solutions to earth-related problems that may develop.

5.1 Site Preparation

All areas that will support the proposed fieldhouse building and new pavements should be properly prepared. After rough grade has been established in cut areas and prior to placement of fill in all fill areas, the exposed soils should be carefully observed and evaluated by the geotechnical engineer, or a qualified soils technician working under the direction of the geotechnical engineer, by probing and testing as needed. All existing surficial materials (i.e., topsoil, existing pavements); organic material in place; frozen, wet, or weak soil; softer or looser soil; and other undesirable materials should be removed from beneath the proposed building and pavement areas. The exposed subgrade should furthermore be tested and evaluated by proofrolling with suitable equipment to detect for pockets of softer/looser material hidden beneath a thin crust of better soil. Any unsuitable materials thus exposed should be removed and replaced with well-compacted, engineered fill or, if determined to be appropriate by the geotechnical engineer, stabilized in-place using mechanical stabilization techniques, as described below. We further recommend that any higher-plasticity clays within the upper 12 inches of the floor slab subgrade be undercut and replaced with lean clays or granular material or that the higher-plasticity clays be chemically stabilized to reduce concerns with shrinking and swelling of the subgrade soils.

Depending upon grading requirements, seasonal conditions and other factors, it is likely that the subgrade in most, if not all, areas will be wet, soft, or yielding at the time of construction, particularly if the construction will be done during seasons when heavy precipitation and cooler temperatures typically occur (such as late fall, winter, and spring). Our experience also indicates that most subgrade soils beneath existing pavements, such as those at this site, will be soft or yielding regardless of the presence of the existing pavements and any apparently firmer soils encountered in the test borings. While the extent to which yielding subgrades may be a problem is difficult to predict beforehand since it is dependent upon several factors, some of which are controllable and some of which are not (e.g., seasonal conditions, precipitation, cut depths, sequencing and scheduling of earthwork, surface and subsurface drainage measures, the weight and traffic patterns of construction equipment, etc.), it is probable that modification or stabilization of subgrade soils will be required in most areas at this site. In order to cope with constructability problems and avoid schedule delays associated with these types of soil conditions, it would be prudent to develop a contingency plan for subgrade stabilization so that it can be implemented where deemed necessary by the geotechnical engineer at the time of construction based on the specific field conditions encountered.

It may be possible to stabilize the subgrade soils in areas that are found to be excessively wet, soft, or yielding at the time of construction, by discing, aerating, and recompacting the soils. However, if it is not possible to improve the subgrade soils in this manner, which is most often the case, because of weather conditions, scheduling, or other site conditions or constraints, it is recommended that the subgrade soils be improved or modified using either mechanical stabilization (i.e., a geogrid with additional crushed limestone placed over the subgrade) or removal of the unsuitable soils and replacement with crushed limestone and/or suitable fill soils determined to be appropriate by the geotechnical engineer. The best method for stabilizing the subgrade should be determined in the field at the time of construction based upon the actual field conditions in conjunction with the specific soil type(s) encountered at the locations requiring stabilization, the sizes of the areas requiring stabilization, and the construction schedule. It is important that the geotechnical consultant provide continuous inspection during the earthwork operations to identify areas where stabilization will be required while limiting the stabilization to only those areas where it is necessary. Refer to Section 4.7 of this report for further details and recommendations regarding subgrade modification/stabilization.

Care must be exercised during the grading operations at the site. Due to the silty and clayey nature of the near-surface soils, the traffic of construction equipment will tend to create pumping and general deterioration of the shallower soils, especially if excess surface water is present. Therefore, the grading should be done during a dry season, if at all possible. It is important that positive surface drainage be established at the beginning of the earthwork operations and be maintained throughout the project. Surface water must not be allowed to pond. Furthermore, compaction and sealing of the subgrade surface is important when precipitation is expected. The site storm drainage elements (i.e., catch basins, pipes, manholes, etc.) should be installed as early as possible, which will aid in control of surface water and ground water.

5.2 Fill Compaction

All engineered fill should be compacted to a dry density of at least 98 percent of the standard Proctor maximum dry density (ASTM D698). The compaction should be accomplished by placing the fill in about 8-inch thick (or less), loose lifts and mechanically compacting each lift to at least the specified minimum dry density. The moisture content of the fill soil should be within a range of approximately 2 percent below the optimum moisture content to 1 percent above the optimum moisture content. Field density tests should be performed on each lift as necessary to verify that adequate moisture conditioning and compaction are being achieved.

All soils encountered in the test borings made at this site are considered suitable as general fill material with the exception of any miscellaneous, uncontrolled fill materials that may contain debris, organic material or any rock fragments larger than 3 inches in diameter, and any soils containing organics and marl, or any like materials and any silts or low-plasticity silty clays (CL-ML). The need for some aeration or stabilization of the higher-plasticity clayey soils should be expected before they can be placed and compacted to the specified density. It is not recommended that any higher-plasticity clays be used within the upper 12 inches of the floor slab subgrade, as they may be prone to shrinking and swelling unless they are chemically stabilized.

Any off-site fill materials required for general site filling purposes should consist of natural soil, sand and gravel, or crushed limestone with the following characteristics:

- Organic content less than 5 percent by dry weight of soil;
- Liquid Limit less than 50 and Plasticity Index less than 25 and greater than 7;
- Free of large rock fragments (particles larger than 3 inches in diameter), debris, rubble, wood, and any other deleterious materials;
- Amount retained on the ¾ inch sieve less than 30 percent;
- Maximum dry density (ASTM D698) of at least 105 lbs/cu.ft;
- Soils should meet the requirements of the Unified Soil Classification System (USCS) ASTM D2487 for CL, SM, SC, SP, SW, SP-SM, SC-SM, SP-SC, SW-SM, SW-SC;
- Not an essentially one-size material (e.g., “pea gravel”, etc.).

It is also recommended that only dense-graded granular material, such as “pit-run” sand and gravel or INDOT No. 53 crushed limestone, be used to fill undercut excavations beneath footings and other excavations of limited lateral dimensions where proper compaction of cohesive materials is difficult and compaction can only be accomplished with small vibratory equipment. Alternatively, lean concrete (compressive strength of at least 2,000 lbs/sq.in.) may be used to fill excavations beneath footings and other excavations of limited lateral dimensions.

5.3 Construction Dewatering

Free ground water was noted in the test borings at a depth as shallow as approximately 5 ft below the existing ground surface at the time of the field investigation. Depending on the seasonal conditions and the specific locations and depths of the excavations, seepage of ground water into some excavations will likely be experienced and should be expected. Such seepage can often be handled by conventional dewatering methods such as by pumping from sumps. However, if a saturated sand or silt layer is encountered in the base of the excavation, it will not be possible to pump water directly from the base of the excavation without causing deterioration of the foundation soil. In this case, it will be necessary to pump from a sump located adjacent to the excavation or to depress the ground water using wells or well points. The best dewatering system for each case must be determined at the time of construction based upon actual field conditions.

6 FIELD INVESTIGATION

Nine test borings were drilled at the approximate locations shown on the Boring Plan (Figure 2 in the Appendix). The proposed fieldhouse building test borings were extended to depths ranging from 20 ft to 30 ft below the existing grade and split-barrel samples were obtained by the Standard Penetration Test procedures (ASTM D1586) at 2.5 ft and 5.0 ft intervals. The pavement test borings were extended to depths ranging from 4.8 ft to 5.0 ft below the existing grade and split-barrel samples were obtained continuously by the Standard Penetration Test procedures.

Logs of all test borings, which show visual descriptions of all soil strata encountered using the Unified Soil Classification System (ASTM D2488 “Standard Practice for Description and Identification of Soils by Visual-Manual Procedures”), have been included in numerical order in the Appendix. Ground water observations, sampling information, and other pertinent field data and observations are also included. In addition, a "Field Classification System for Soil Exploration" document defining the terms and symbols used on the logs and explaining the Standard Penetration Test procedure is provided immediately following the test boring logs.

7 LABORATORY INVESTIGATION

The soil samples were inspected and classified by a geotechnical engineer in general accordance with the Unified Soil Classification System (ASTM D2488 “Standard Practice for Description and Identification of Soils by Visual-Manual Procedures”), and the test boring logs were edited as deemed necessary based upon the visual inspection, field logs, and laboratory test results. To aid in classifying the soils and to determine general soil characteristics, laboratory tests were performed on selected samples. The laboratory tests performed on the selected soil samples are summarized in the following table, and the results of these tests are included on the “Test Boring Logs” and report summary sheets in the Appendix.

Table No. 3 – Laboratory Testing Program

Laboratory Test Description	Test Method Designation
"Standard Practice for Description and Identification of Soils by Visual-Manual Procedures"	ASTM D2488
Moisture Content Test of Soils	ASTM D2216
Atterberg Limits Tests	ASTM D4318
Unconfined Compressive Strength of Soil	ASTM D2166
Natural Dry Density Tests	ASTM D7263
Organic Content (Loss-on-Ignition Test)	ASTM D2974
Marl Content ($CaCO_3$/$MgCO_3$ Content)	ITM 507
Calibrated Hand Penetrometer Test ("Pocket Penetrometer Test")	NA

NA – No standardized test method available.

8 LIMITATIONS OF STUDY

An inherent limitation of any geotechnical engineering study is that conclusions must be drawn on the basis of data collected at a limited number of discrete locations. The recommendations provided in this report were developed from the information obtained from the test borings that depict subsurface conditions only at these specific locations and at the particular times designated on the test boring logs. Soil and ground water conditions at other locations may differ from conditions occurring at these boring locations, and ground water conditions will vary over time. The nature and extent of variations between the borings may not become evident until the course of construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations of this report after performing on-site observations during the excavation period and noting the characteristics of any variations.

Any comments or recommendations made herein regarding construction-related issues or temporary conditions are solely for the purpose of planning the design of the proposed facilities. The scope of this investigation is not sufficient to identify all potential construction-related issues, variations, anomalies, etc. or all factors that may affect construction means, methods, and costs.

Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with customary principles and practices in the field of geotechnical engineering at the time when the services were performed and at the location where the services were performed. This warranty is in lieu of all other warranties either express or implied. This company is not responsible for the independent conclusions, opinions, or recommendations made by others based on the field exploration and laboratory test data presented in this report.

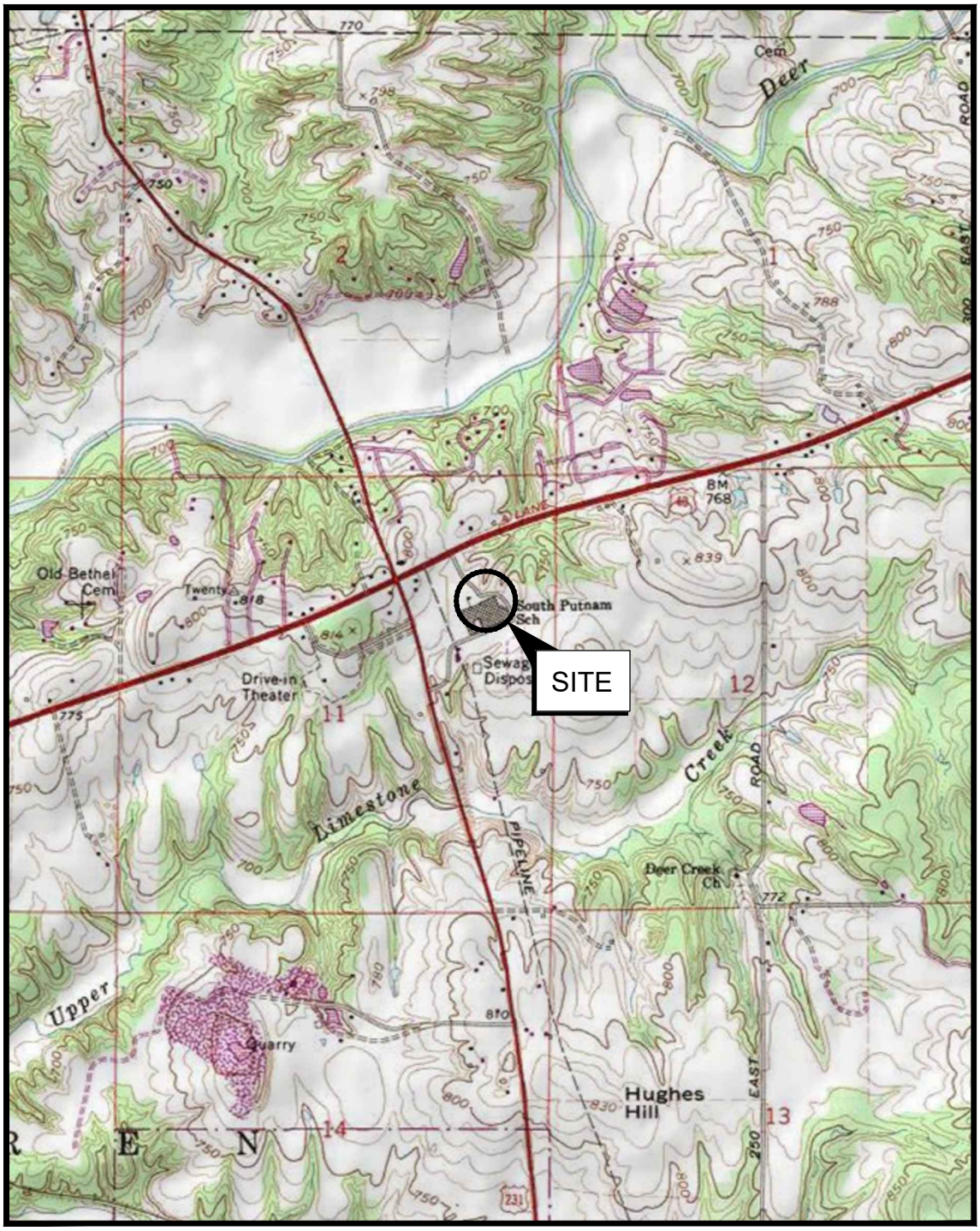
The scope of our services does not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in the soil, ground water, or surface water within or beyond the site studied.

Atlas Technical Consultants LLC (Atlas) assumes no responsibility for any construction procedures, temporary excavations (including utility trenches), temporary dewatering, or site safety during or after construction. Any recommendations, discussions, or comments provided herein regarding temporary conditions during construction are solely for use in the planning and design of the project. Under no circumstances shall the information provided herein be interpreted to mean that Atlas is responsible for construction site safety or contractor means and methods, and no responsibility is implied or inferred. The contractor shall be solely responsible for all construction procedures, construction means and methods, construction sequencing, and safety measures during construction, as well as the protection of all existing facilities. All applicable federal, state, and local laws and regulations regarding construction safety must be followed, including current Occupational Safety and Health Administration (OSHA) Regulations, including OSHA 29 CFR Part 1926 “Safety and Health Regulations for Construction”, Subpart P “Excavations”, and/or successor regulations. The contractor shall be solely responsible for designing and constructing stable, temporary excavations and should brace, shore, slope, or bench the sides of the excavations as necessary to maintain stability of the excavation sides and bottom and to protect the integrity of all existing facilities (i.e., existing foundations, floor slabs, structures, equipment, utilities, pavements, etc.) that are to remain in place.

Appendix

Figure 1: Vicinity Map
Figure 2: Boring Plan

Test Boring Logs (9)
“Field Classification System for Soil Exploration”
Unconfined Compressive Strength Test Results (6)
“Important Information About This Geotechnical Engineering Report”



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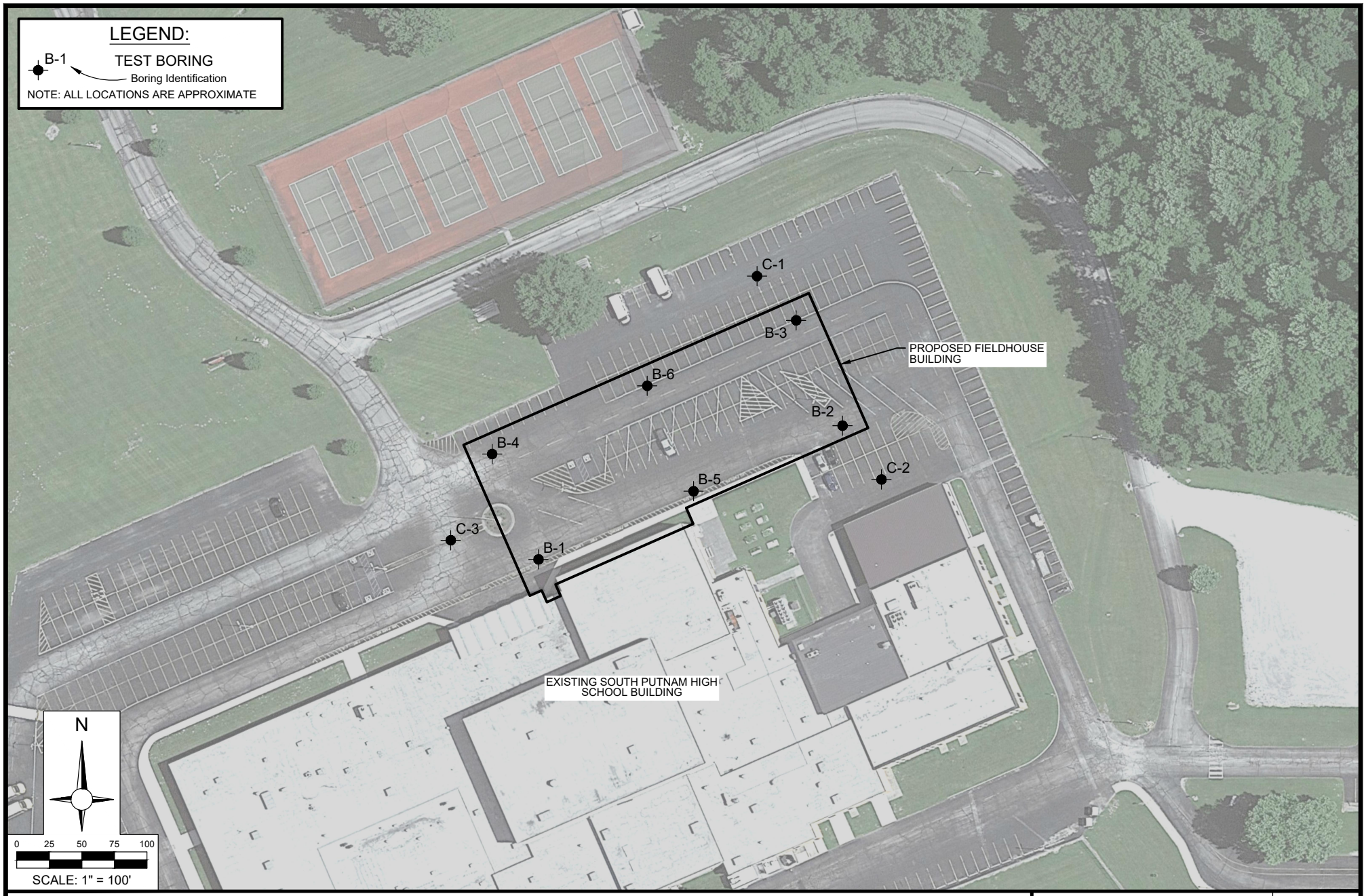
VICINITY MAP

PROPOSED FIELDHOUSE BUILDING - NORTH SIDE
SOUTH PUTNAM HIGH SCHOOL
1780 U.S. ROUTE 40
GREENCASTLE, INDIANA

Project Number: 170GC01720		Drn. By: AK
Date: 02/08/2024	Scale: 1":2,000'	Ckd. By: DM
ATLAS		1

C:\USERS\ADAM.KAIRY\ONEATLAS\DIGITAL SERVICES - FILE SERVER\2024\CAD DEPARTMENT\SOUTH PUTNAM COMMUNITY SCHOOL\SPHS FIELDHOUSE BLDG-NORTH\170GC01720-VIC.DWG, FIG1

C:\USERS\JACK.GOSE\ONEATLAS\DIGITAL SERVICES - FILE SERVER\2024\CAD DEPARTMENT\SOUTH PUTNAM COMMUNITY SCHOOL\SPHS FIELDHOUSE BLDG-NORTH\170GC01720-BPLAN.DWG, FIG2



BORING PLAN

PROPOSED FIELDHOUSE BUILDING - NORTH SIDE
SOUTH PUTNAM HIGH SCHOOL
1780 U.S. ROUTE 40
GREENCASTLE, INDIANA

Project Number: 170GC01720		Drn. By: AK
Date: 03/07/2024	Scale: AS SHOWN	Ckd. By: DM

ATLAS

2

ATLAS
7988 Centerpoint Drive, Suite 100
Indianapolis, IN 46256
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Fax (317) 849-4278

TEST BORING LOG

CLIENT **South Putnam Community School Corporation** BORING # **B-1**
PROJECT NAME **Proposed Fieldhouse Building - North Side** JOB # **170GC01720**
PROJECT LOCATION **South Putnam High School**
1780 U.S. Route 40, Greencastle, Indiana

DRILLING and SAMPLING INFORMATION

Date Started	2/22/24	Hammer Wt.	140 lbs.
Date Completed	2/22/24	Hammer Drop	30 in.
Drill Foreman	G. Lauber	Spoon Sampler OD	2.0 in.
Inspector	D. McIlwaine	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION SURFACE ELEVATION 769	Stratum Elevation	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
4 in. Asphalt over 7 in. Aggregate Base	768.1	0.9									Ground surface elevation estimated from topographic survey provided by HWC, completed by CSC dated 9-21-2021
Gray, moist, medium stiff, SILTY CLAY (CL)				1	SS			4-4-6	23.7	1.75	
	766.0	3.0									
Brown, moist, soft, SILTY CLAY (CL) with some sand				2	SS			3-2-2	24.6	0.75	
	763.0	6.0	5								
Brown, moist, very soft, SILTY CLAY (CL) with little sand and trace gravel				3	SS			2-1-2	17.7	1.0	
	760.5	8.5									
Brown, moist, very soft, SILTY CLAY (CL) with trace sand and gravel				4	SS			1-2-1	21.3	0.25	
	758.0	11.0	10								
Gray, moist, medium stiff to soft, MARLY SILTY CLAY (OL) with trace shell fragments				5	SS			2-3-3	27.2	1.5	**Sample No. 6:** Atterberg Limits: LL=24 PL=16 PI=8 Unconfined Compressive Strength = 0.8 tsf Dry Density = 114.9 pcf Organic Content = 1.9% Marl Content = 23%
				6	SS			2-2-3	17.3	1.0	
	752.0	17.0	15								
Brown, moist, stiff, ORGANIC SILTY CLAY (OL)				7	SS		▽	3-5-6	44.0 51.3	1.25	**Sample No. 7:** Organic Content = 11.8% Dry Density = 64.5 pcf
			20				●				
	745.5	23.5									
Bluish gray, moist, soft. SILTY CLAY (CL) with trace sand, gravel, and organics				8	SS		▨	2-2-2	22.0	1.0	**Sample No. 8:** Atterberg Limits: LL=37 PL=14 PI=23 Organic Content = 1.8% Marl Content = 4%
			25								
	740.5	28.5									
Tan, wet, medium dense, SAND (SP-SM) with trace silt	739.0	30.0		9	SS			3-9-16			
			30								
Bottom of Test Boring at 30.0 ft.											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater
● Noted on Drilling Tools 23.0 ft.
▽ At Completion 21.0 ft.
▼ After -- hours -- ft.
▨ Cave Depth 26.0 ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

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TEST BORING LOG

CLIENT **South Putnam Community School Corporation** BORING # **B-2**
PROJECT NAME **Proposed Fieldhouse Building - North Side** JOB # **170GC01720**
PROJECT LOCATION **South Putnam High School**
1780 U.S. Route 40, Greencastle, Indiana

DRILLING and SAMPLING INFORMATION

Date Started	2/22/24	Hammer Wt.	140 lbs.
Date Completed	2/22/24	Hammer Drop	30 in.
Drill Foreman	G. Lauber	Spoon Sampler OD	2.0 in.
Inspector	D. McIlwaine	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION SURFACE ELEVATION 768	Stratum Elevation	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
5 in. Asphalt over 5 in. Aggregate Base	767.2	0.8									Ground surface elevation estimated from topographic survey provided by HWC, completed by CSC dated 9-21-2021
Gray and brown, moist, silty clay with trace sand, gravel, roots, and organics (FILL)	764.5	3.5		1	SS			4-4-3	23.3		
Brown and gray, moist, medium stiff, CLAY (CH) with trace organics and sand	762.5	5.5	5	2	SS			3-3-4	26.1	2.0	**Sample No. 2:** Atterberg Limits: LL=63 PL=20 PI=43 Organic Content = 2.6% Marl Content = 3%
Gray and brown, moist, soft, SILTY CLAY (CL) with little sand, trace gravel, and trace roots	759.5	8.5		3	SS			2-2-2	27.0	1.0	
Brown, moist, soft, SILTY CLAY (CL) with little sand and trace gravel	757.0	11.0	10	4	SS			2-1-4	17.3	3.5	
Gray, moist, medium stiff, SILTY CLAY (CL) with little sand and trace gravel - with marl below 13 ft.				5	SS			4-4-5	14.1	2.0	
				6	SS		● ▽	2-3-4	15.2	1.5	**Sample No. 6:** Organic Content = 1.9% Marl Content = 21%
Brown, moist, medium stiff, ORGANIC SILTY CLAY (OL)	751.0	17.0	15				▨		37.3		**Sample No. 7a:** Dry Density = 79.7 pcf
Dark gray, moist, medium stiff, SILTY CLAY (CL) with trace sand	748.5 748.0	19.5 20.0	20	7	SS			2-3-5	18.6	1.25	**Sample No. 7b:** Atterberg Limits: LL=39 PL=16 PI=23 Unconfined Compressive Strength = 2.0 tsf Dry Density = 111.2 pcf Organic Content = 3.1% Marl Content = 3%
Bottom of Test Boring at 20.0 ft.											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater
● Noted on Drilling Tools 14.0 ft.
▽ At Completion 16.0 ft.
▼ After -- hours -- ft.
▨ Cave Depth 18.0 ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

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TEST BORING LOG

CLIENT **South Putnam Community School Corporation** BORING # **B-3**
PROJECT NAME **Proposed Fieldhouse Building - North Side** JOB # **170GC01720**
PROJECT LOCATION **South Putnam High School**
1780 U.S. Route 40, Greencastle, Indiana

DRILLING and SAMPLING INFORMATION

Date Started	2/22/24	Hammer Wt.	140 lbs.
Date Completed	2/22/24	Hammer Drop	30 in.
Drill Foreman	G. Lauber	Spoon Sampler OD	2.0 in.
Inspector	D. McIlwaine	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION / SURFACE ELEVATION 767	Stratum Elevation	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
3 in. Asphalt over 8 in. Aggregate Base	766.1	0.9									Ground surface elevation estimated from topographic survey provided by HWC, completed by CSC dated 9-21-2021
Brown, moist, medium stiff, SILTY CLAY (CL)				1	SS			4-3-4	27.4	1.0	
	764.0	3.0									
Brown and gray, moist, medium stiff to soft, SILTY CLAY (CL) with trace organics and roots			5	2	SS			3-4-4	46.2	0.75	**Sample No. 2:** Atterberg Limits: LL=39 PL=26 PI=13 Organic Content = 4.7% Marl Content = 2%
				3	SS			3-2-3	23.8	1.0	**Sample No. 3:** Organic Content = 4.2% Marl Content = 3%
	758.5	8.5									
Gray, moist, medium stiff, SILTY CLAY (CL) with trace organics and sand			10	4	SS			3-3-3	29.5	1.5	**Sample No. 4:** Organic Content = 4.8% Marl Content = 2%
	756.0	11.0									
Brown and gray, moist, medium stiff, SILTY CLAY (CL) with little sand and trace gravel				5	SS			3-3-4	15.1	2.0	
	754.0	13.0									
Gray, slightly moist, medium stiff, SILTY CLAY (CL) with little sand and trace gravel			15	6	SS			4-2-3	15.2	1.5	
	749.0	18.0									
Bluish gray, moist, medium stiff to soft, SILTY CLAY (CL) with little sand, trace gravel, and organics			20	7	SS		▽	3-3-3	17.3	0.75	**Sample No. 7:** Atterberg Limits: LL=29 PL=13 PI=16 Unconfined Compressive Strength = 0.9 tsf Dry Density = 113.4 pcf Organic Content = 2.1% Marl Content = 2%
			25	8	SS		▽ ●	3-2-2	16.5	1.25	
	738.5	28.5									
Brown, slightly moist, hard, SANDY SILTY CLAY (CL) with trace gravel	737.0	30.0	30	9	SS			20-20-15	17.9	1.5	
Bottom of Test Boring at 30.0 ft.											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater
● Noted on Drilling Tools 26.0 ft.
▽ At Completion 20.0 ft.
▼ After -- hours -- ft.
Cave Depth 25.0 ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

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TEST BORING LOG

CLIENT **South Putnam Community School Corporation** BORING # **B-4**
PROJECT NAME **Proposed Fieldhouse Building - North Side** JOB # **170GC01720**
PROJECT LOCATION **South Putnam High School**
1780 U.S. Route 40, Greencastle, Indiana

DRILLING and SAMPLING INFORMATION

Date Started	2/22/24	Hammer Wt.	140 lbs.
Date Completed	2/22/24	Hammer Drop	30 in.
Drill Foreman	G. Lauber	Spoon Sampler OD	2.0 in.
Inspector	D. McIlwaine	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION SURFACE ELEVATION 768	Stratum Elevation	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
3 in. Asphalt over 8 in. Aggregate Base	767.1	0.9									Ground surface elevation estimated from topographic survey provided by HWC, completed by CSC dated 9-21-2021
Brown, moist, medium stiff, SILTY CLAY (CL) with trace organics	765.0	3.0		1	SS			3-4-4	25.3	1.5	**Sample No. 1:** Organic Content = 2.0% Marl Content = 3%
Brown and gray, moist, medium stiff, SILTY CLAY (CL) with trace sand, gravel, and organics	762.5	5.5	5	2	SS			3-3-3	24.9	1.0	**Sample No. 2:** Organic Content = 1.5% Marl Content = 3%
Brown, moist, very soft, SANDY SILTY CLAY (CL) with trace gravel				3	SS			1-2-1	20.6		
Brown, slightly moist, stiff to very stiff, SILTY CLAY (CL) with little sand and trace gravel	759.5	8.5	10	4	SS		▽	4-5-10	10.8		
				5	SS			9-9-11	14.7		
Gray, slightly moist, medium stiff, SILTY CLAY (CL) with some sand and trace gravel	755.0	13.0	15	6	SS		▨	6-6-3	14.4	1.5	
Dark gray, moist, stiff, SILTY CLAY (CL) with little sand	750.0	18.0		7	SS			3-5-7	16.1	2.0	
Bottom of Test Boring at 20.0 ft.	748.0	20.0	20								

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater
● Noted on Drilling Tools **None** ft.
▽ At Completion **9.0** ft.
▼ After -- hours -- ft.
▨ Cave Depth **13.0** ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

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TEST BORING LOG

CLIENT **South Putnam Community School Corporation** BORING # **B-5**
PROJECT NAME **Proposed Fieldhouse Building - North Side** JOB # **170GC01720**
PROJECT LOCATION **South Putnam High School**
1780 U.S. Route 40, Greencastle, Indiana

DRILLING and SAMPLING INFORMATION

Date Started	2/22/24	Hammer Wt.	140 lbs.
Date Completed	2/22/24	Hammer Drop	30 in.
Drill Foreman	G. Lauber	Spoon Sampler OD	2.0 in.
Inspector	D. McIlwaine	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION SURFACE ELEVATION 769	Stratum Elevation	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
4 in. Asphalt over 8 in. Aggregate Base	768.0	1.0									Ground surface elevation estimated from topographic survey provided by HWC, completed by CSC dated 9-21-2021
Brown and gray, moist, silty clay with trace sand and gravel (FILL)	765.5	3.5		1	SS			9-5-4	23.2		
Brown, moist, medium stiff, SILTY CLAY (CL)	763.5	5.5	5	2	SS			3-2-4	24.2	1.0	**Sample No. 2:** Atterberg Limits: LL=47 PL=21 PI=26 Unconfined Compressive Strength = 1.5 tsf Dry Density = 99.8 pcf
Brown and gray, moist, medium stiff, SILTY CLAY (CL) with trace sand, gravel, and organics	760.5	8.5		3	SS			3-4-5	22.6	1.75	
Brown, moist, medium stiff to very soft, SILTY CLAY (CL) with little sand and trace gravel			10	4	SS			4-3-3	18.7		**Sample No. 3:** Organic Content = 1.8% Marl Content = 3%
				5	SS			2-1-2	18.7	1.0	
Gray and dark gray, moist, soft, MARLY SILTY CLAY (CL)	755.5	13.5	15	6	SS		▽ ●	2-3-2	15.7	0.5	**Sample No. 6:** Atterberg Limits: LL=24 PL=15 PI=9 Unconfined Compressive Strength = 0.4 tsf Dry Density = 116.8 pcf Organic Content = 1.7% Marl Content = 22%
Brown, moist, stiff, ORGANIC SILTY CLAY (OL)	752.0	17.0		7	SS		▨	5-5-6	69.3 43.1	1.0	**Sample No. 7:** Organic Content = 15.8% Dry Density = 77.9 pcf
Gray and dark gray, moist, stiff, SILTY CLAY (CL) with trace gravel and sand	745.5	23.5	20	8	SS			4-5-7	21.6	1.5	**Sample No. 8:** Atterberg Limits: LL=43 PL=13 PI=30 Unconfined Compressive Strength = 1.4 tsf Dry Density = 106.5 pcf
Bottom of Test Boring at 25.0 ft.	744.0	25.0	25								

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater
● Noted on Drilling Tools 16.0 ft.
▽ At Completion 14.0 ft.
▼ After -- hours -- ft.
▨ Cave Depth 23.0 ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

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TEST BORING LOG

CLIENT **South Putnam Community School Corporation** BORING # **B-6**
PROJECT NAME **Proposed Fieldhouse Building - North Side** JOB # **170GC01720**
PROJECT LOCATION **South Putnam High School**
1780 U.S. Route 40, Greencastle, Indiana

DRILLING and SAMPLING INFORMATION

Date Started	2/22/24	Hammer Wt.	140 lbs.
Date Completed	2/22/24	Hammer Drop	30 in.
Drill Foreman	G. Lauber	Spoon Sampler OD	2.0 in.
Inspector	D. McIlwaine	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION / SURFACE ELEVATION 768	Stratum Elevation	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
3 in. Asphalt over 8 in. Aggregate Base	767.1	0.9									Ground surface elevation estimated from topographic survey provided by HWC, completed by CSC dated 9-21-2021
Gray and brown, moist, silty clay with trace sand and gravel (FILL)	764.5	3.5		1	SS			4-3-3	26.4		
Brown and gray, moist, soft, SILTY CLAY (CL) with trace organics, sand, and gravel	762.0	6.0	5	2	SS		▽	2-3-2	24.7	1.0	**Sample No. 2:** Atterberg Limits: LL=38 PL=17 PI=21 Organic Content = 2.1% Marl Content = 3%
Brown, moist, soft, SANDY SILTY CLAY (CL) with little gravel	759.5	8.5		3	SS			2-2-3	13.2		
Brown, moist, medium stiff to stiff, SILTY CLAY (CL) with little sand and trace gravel	756.0	12.0	10	4	SS		▽	4-4-4	17.5	1.5	
Brown, wet, medium dense, SILTY SAND (SM)	755.0	13.0		5	SS		●	4-4-11			
Gray, moist, medium stiff, SILTY CLAY (CL) with little sand and trace gravel	750.0	18.0	15	6	SS			5-3-4	15.6	1.0	
Dark gray, moist, stiff, SILTY CLAY (CL) with little sand and trace gravel	748.0	20.0	20	7	SS			3-5-6	20.6	1.5	**Sample No. 7:** Atterberg Limits: LL=47 PL=15 PI=32
Bottom of Test Boring at 20.0 ft.											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater
● Noted on Drilling Tools 12.0 ft.
▽ At Completion 5.0 ft.
▼ After -- hours -- ft.
Cave Depth 9.0 ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

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TEST BORING LOG

CLIENT **South Putnam Community School Corporation** BORING # **C-1**
PROJECT NAME **Proposed Fieldhouse Building - North Side** JOB # **170GC01720**
PROJECT LOCATION **South Putnam High School**
1780 U.S. Route 40, Greencastle, Indiana

DRILLING and SAMPLING INFORMATION

Date Started	2/22/24	Hammer Wt.	140 lbs.
Date Completed	2/22/24	Hammer Drop	30 in.
Drill Foreman	G. Lauber	Spoon Sampler OD	2.0 in.
Inspector	D. McIlwaine	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION / SURFACE ELEVATION 767	Stratum Elevation	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
4 in. Asphalt over 5 in. Aggregate Base	766.2	0.8		1	SS			8-5-4	21.5		Ground surface elevation estimated from topographic survey provided by HWC, completed by CSC dated 9-21-2021
Gray, moist, silty clay with trace sand, gravel, and organics (FILL)	765.2	1.8		2	SS			4-5-5	27.3	1.5	**Sample No. 2:** Organic Content = 1.4% Marl Content = 6%
Brown and gray, moist, medium stiff, SILTY CLAY (CL) with trace marl, organics and sand	763.7	3.3		3	SS			5-5-4	20.1	1.0	**Sample No. 3:** Organic Content = 1.4% Marl Content = 4%
Gray, moist, medium stiff, SILTY CLAY (CL) with trace organics and marl	762.2	4.8									
Bottom of Test Boring at 4.8 ft.											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater
Noted on Drilling Tools **None** ft.
At Completion **None** ft.
After -- hours -- ft.
Cave Depth **3.7** ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

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TEST BORING LOG

CLIENT **South Putnam Community School Corporation** BORING # **C-2**
PROJECT NAME **Proposed Fieldhouse Building - North Side** JOB # **170GC01720**
PROJECT LOCATION **South Putnam High School**
1780 U.S. Route 40, Greencastle, Indiana

DRILLING and SAMPLING INFORMATION

Date Started	2/22/24	Hammer Wt.	140 lbs.
Date Completed	2/22/24	Hammer Drop	30 in.
Drill Foreman	G. Lauber	Spoon Sampler OD	2.0 in.
Inspector	D. McIlwaine	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION SURFACE ELEVATION 768	Stratum Elevation	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
5.5 in. Asphalt over 5 in. Aggregate Base	767.1	0.9									
Gray, moist, silty clay with trace sand (FILL)	766.0	2.0		1	SS			8-4-5	20.3		Ground surface elevation estimated from topographic survey provided by HWC, completed by CSC dated 9-21-2021
Brown, moist, medium stiff, SILTY CLAY (CL) with trace roots, marl and organics	764.5	3.5		2	SS			5-5-5	28.5	1.75	**Sample No. 2:** Organic Content = 2.3% Marl Content = 5%
Brown and gray, moist, stiff, SILTY CLAY (CL) with trace sand	763.0	5.0	5	3	SS		▨	7-7-7	26.8	2.0	
Bottom of Test Boring at 5.0 ft.											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater
● Noted on Drilling Tools **None** ft.
▽ At Completion **None** ft.
▼ After -- hours -- ft.
▨ Cave Depth **4.1** ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

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TEST BORING LOG

CLIENT **South Putnam Community School Corporation** BORING # **C-3**
PROJECT NAME **Proposed Fieldhouse Building - North Side** JOB # **170GC01720**
PROJECT LOCATION **South Putnam High School**
1780 U.S. Route 40, Greencastle, Indiana

DRILLING and SAMPLING INFORMATION

Date Started	2/22/24	Hammer Wt.	140 lbs.
Date Completed	2/22/24	Hammer Drop	30 in.
Drill Foreman	G. Lauber	Spoon Sampler OD	2.0 in.
Inspector	D. McIlwaine	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION SURFACE ELEVATION 769	Stratum Elevation	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
5 in. Asphalt over 5 in. Aggregate Base	768.2	0.8									
Brown, moist, medium stiff, CLAY (CH)	767.0	2.0		1	SS			13-4-4	23.8	2.5	Ground surface elevation estimated from topographic survey provided by HWC, completed by CSC dated 9-21-2021
Brown, moist, stiff, SILTY CLAY (CL)	765.5	3.5		2	SS			5-5-7	26.0	1.5	**Sample No. 1:** Atterberg Limits: LL=55 PL=19 PI=36
Brown, moist, medium stiff, SILTY CLAY (CL) with trace sand and gravel	764.0	5.0	5	3	SS		▨	5-5-3	26.8	1.75	
Bottom of Test Boring at 5.0 ft.											

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater
● Noted on Drilling Tools **None** ft.
▽ At Completion **None** ft.
▼ After -- hours -- ft.
▨ Cave Depth **4.1** ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

FIELD CLASSIFICATION SYSTEM FOR SOIL EXPLORATION

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

Density		SPT*
Very Loose	-	5 blows/ft or less
Loose	-	6 to 10 blows/ft
Medium Dense	-	11 to 30 blows/ft
Dense	-	31 to 50 blows/ft
Very Dense	-	51 blows/ft or more

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

Particle Size Identification			
Boulders	-	8 inch or greater	
Cobbles	-	3 to 8 inch	
Gravel	-	Coarse	- 1 to 3 inch
		Medium	- ½ to 1 inch
		Fine	- ¼ to ½ inch
Sand	-	Coarse	2.00mm to ¼ inch (dia. of pencil lead)
		Medium	0.42 to 2.00mm (dia. of broom straw)
		Fine	0.074 to 0.42mm (dia. of human hair)
Silt			0.074 to 0.002mm (cannot see particles)

COHESIVE SOILS
(Clay, Silt and Combinations)

Consistency		SPT*
Very Soft	-	3 blows/ft or less
Soft	-	4 to 5 blows/ft
Medium Stiff	-	6 to 10 blows/ft
Stiff	-	11 to 15 blows/ft
Very Stiff	-	16 to 30 blows/ft
Hard	-	31 blows/ft or more

Plasticity	
Degree of Plasticity	Plasticity Index
None to slight	0 - 4
Slight	5 - 7
Medium	8 - 22
High to Very High	over 22

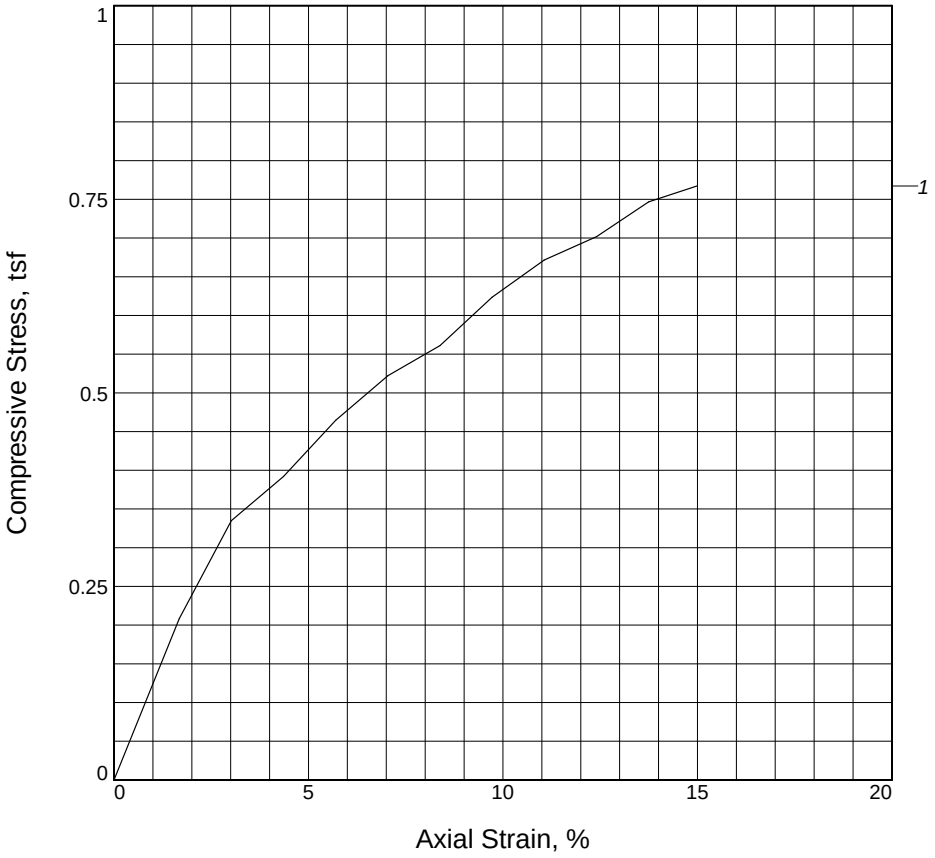
Classification on the logs are made by visual inspection of samples.
*Based upon results of Standard Penetration Test as described below.

Standard Penetration Test — Driving a 2.0" O.D. 1-3/8" I.D. sampler a distance of 12 inches into undisturbed soil with a 140 pound hammer free falling a distance of 30 inches. It is customary for ATC to drive the split-barrel sampler 6 inches to seat into undisturbed soil, then perform the test. The number of hammer blows for seating the split-barrel sampler and making the test are recorded for each 6 inches of penetration of the sampler (Example – 6-8-9). The standard penetration test result can be obtained by adding the last two figures (i.e., 8 + 9 = 17 blows/ft). The Standard Penetration Test is performed according to ASTM D-1586-18.

Strata Changes — In the column "Soil Classifications" on the Test Boring Logs the horizontal lines represent strata changes. A solid line (_____) represents an actually observed change. A dashed line (_ _ _ _ _) represents an estimated change.

Ground Water observations were made at the times and conditions indicated on the Test Boring Logs. Porosity of soil strata, weather conditions, site topography, etc., may cause changes in the water levels indicated on the logs.

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, tsf	0.767			
Undrained shear strength, tsf	0.384			
Failure strain, %	15.0			
Strain rate, %/min.	2.00			
Water content, %	17.3			
Wet density, pcf	134.8			
Dry density, pcf	114.9			
Saturation, %	100.0			
Void ratio	0.4665			
Specimen diameter, in.	1.41			
Specimen height, in.	2.98			
Height/diameter ratio	2.11			

Description:

LL =	**PL =**	**PI =**	**Assumed GS=** 2.7	**Type:** Split spoon

Project No.: 170GC01720
Date Sampled:
Remarks:

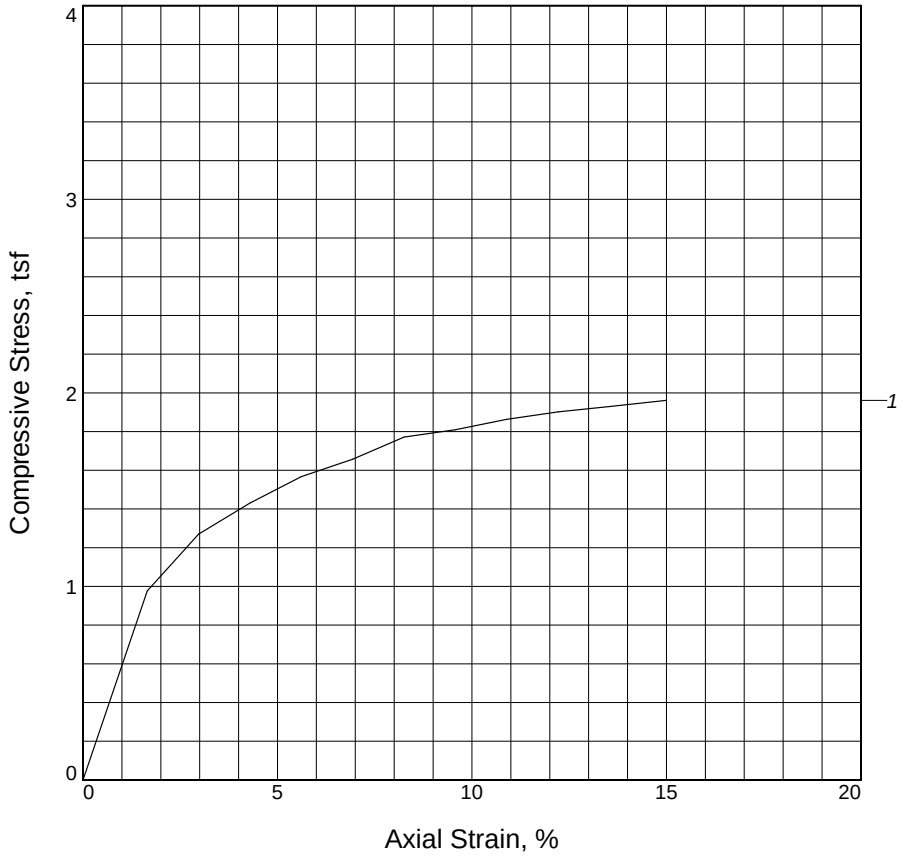
Figure QU15767F

Client: South Putnam Community Schools

Project: South Putnam High School Fieldhouse - North Greencastle, IN
Source of Sample: 15767 **Depth:** 13.5'-15.0'
Sample Number: B-1; S-6

UNCONFINED COMPRESSION TEST
Atlas
Indianapolis, Indiana

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, tsf	1.961			
Undrained shear strength, tsf	0.981			
Failure strain, %	15.0			
Strain rate, %/min.	2.00			
Water content, %	18.6			
Wet density, pcf	131.9			
Dry density, pcf	111.2			
Saturation, %	97.5			
Void ratio	0.5151			
Specimen diameter, in.	1.35			
Specimen height, in.	3.03			
Height/diameter ratio	2.24			

Description:

LL =	**PL =**	**PI =**	**Assumed GS=** 2.7	**Type:** Split spoon

Project No.: 170GC01720
Date Sampled:
Remarks:

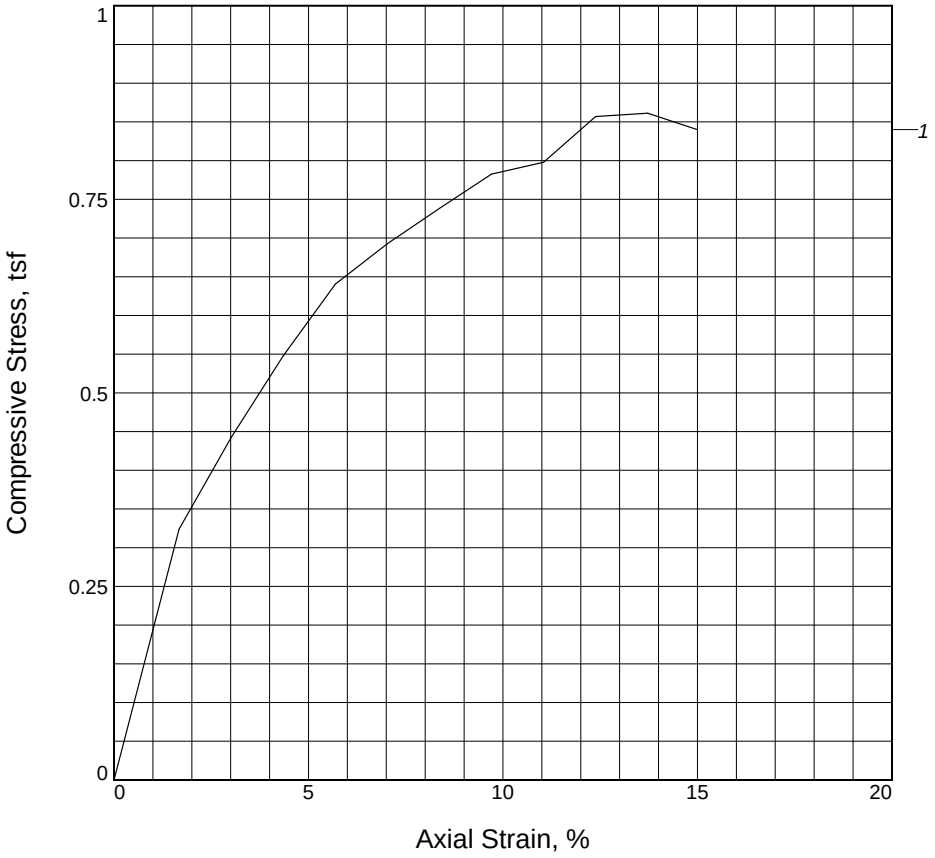
Figure QU15767O

Client: South Putnam Community Schools

Project: South Putnam High School Fieldhouse - North Greencastle, IN
Source of Sample: 15767 **Depth:** 19.5'-20.0'
Sample Number: B-2; S-7

UNCONFINED COMPRESSION TEST
Atlas
Indianapolis, Indiana

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, tsf	0.861			
Undrained shear strength, tsf	0.431			
Failure strain, %	13.7			
Strain rate, %/min.	2.00			
Water content, %	17.3			
Wet density, pcf	133.0			
Dry density, pcf	113.4			
Saturation, %	95.8			
Void ratio	0.4867			
Specimen diameter, in.	1.34			
Specimen height, in.	2.99			
Height/diameter ratio	2.22			

Description:

LL =	**PL =**	**PI =**	**Assumed GS=** 2.7	**Type:** Split spoon

Project No.: 170GC01720
Date Sampled:
Remarks:

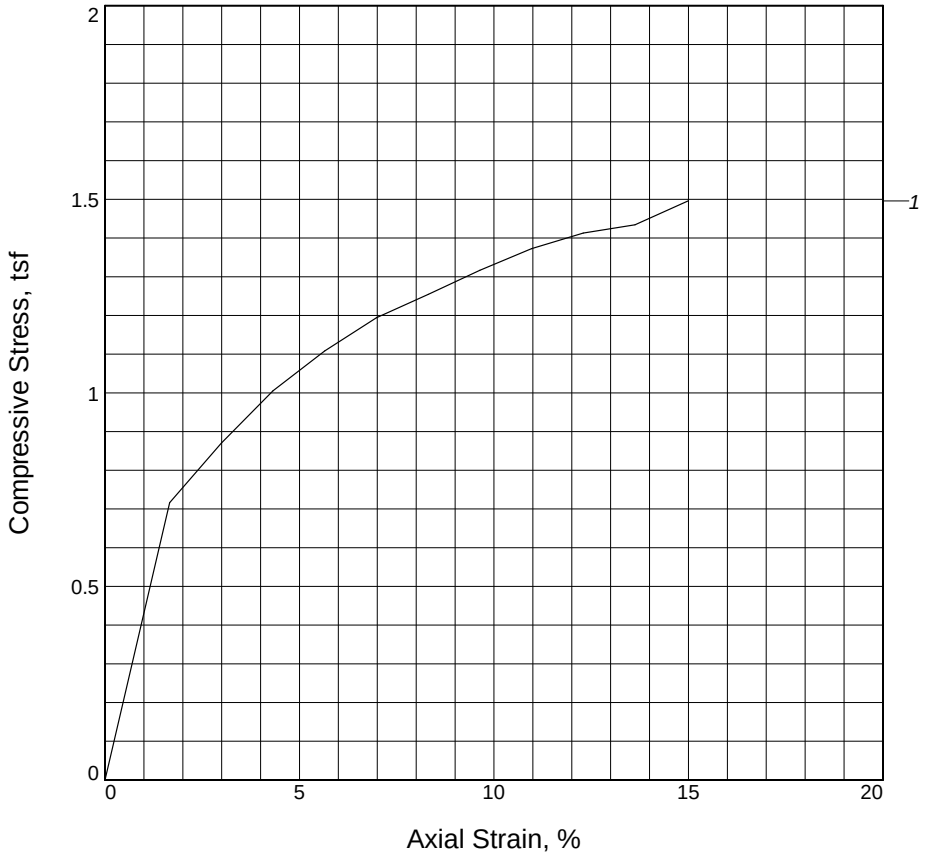
Figure QU15767V

Client: South Putnam Community Schools

Project: South Putnam High School Fieldhouse - North Greencastle, IN
Source of Sample: 15767 **Depth:** 18.5'-20.0'
Sample Number: B-3; S-7

UNCONFINED COMPRESSION TEST
Atlas
Indianapolis, Indiana

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, tsf	1.496			
Undrained shear strength, tsf	0.748			
Failure strain, %	15.0			
Strain rate, %/min.	2.00			
Water content, %	24.2			
Wet density, pcf	124.0			
Dry density, pcf	99.8			
Saturation, %	94.8			
Void ratio	0.6881			
Specimen diameter, in.	1.36			
Specimen height, in.	3.01			
Height/diameter ratio	2.21			

Description:

LL =	**PL =**	**PI =**	**Assumed GS=** 2.7	**Type:** Split spoon

Project No.: 170GC01720
Date Sampled:
Remarks:

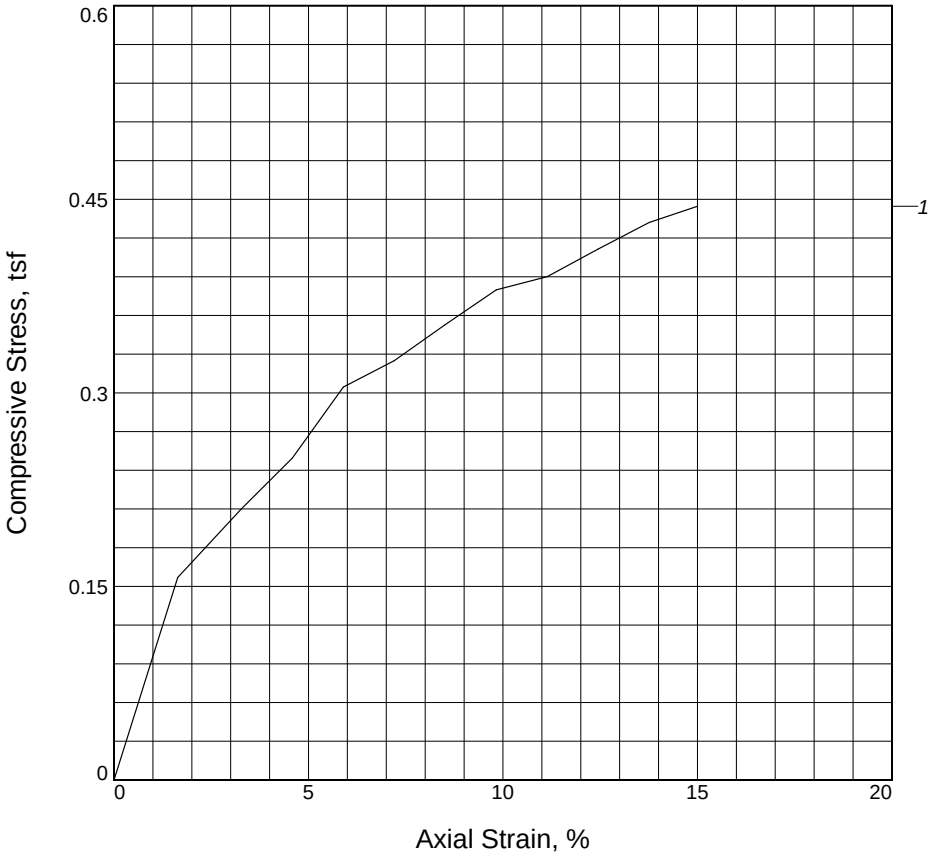
Figure QU15768I

Client: South Putnam Community Schools

Project: South Putnam High School Fieldhouse - North Greencastle, IN
Source of Sample: 15768 **Depth:** 3.5'-5.0'
Sample Number: B-5; S-2

UNCONFINED COMPRESSION TEST
Atlas
Indianapolis, Indiana

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, tsf	0.445			
Undrained shear strength, tsf	0.222			
Failure strain, %	15.0			
Strain rate, %/min.	2.00			
Water content, %	15.7			
Wet density, pcf	135.1			
Dry density, pcf	116.8			
Saturation, %	95.5			
Void ratio	0.4431			
Specimen diameter, in.	1.44			
Specimen height, in.	3.05			
Height/diameter ratio	2.12			

Description:

LL =	**PL =**	**PI =**	**Assumed GS=** 2.7	**Type:** Split spoon

Project No.: 170GC01720
Date Sampled:
Remarks:

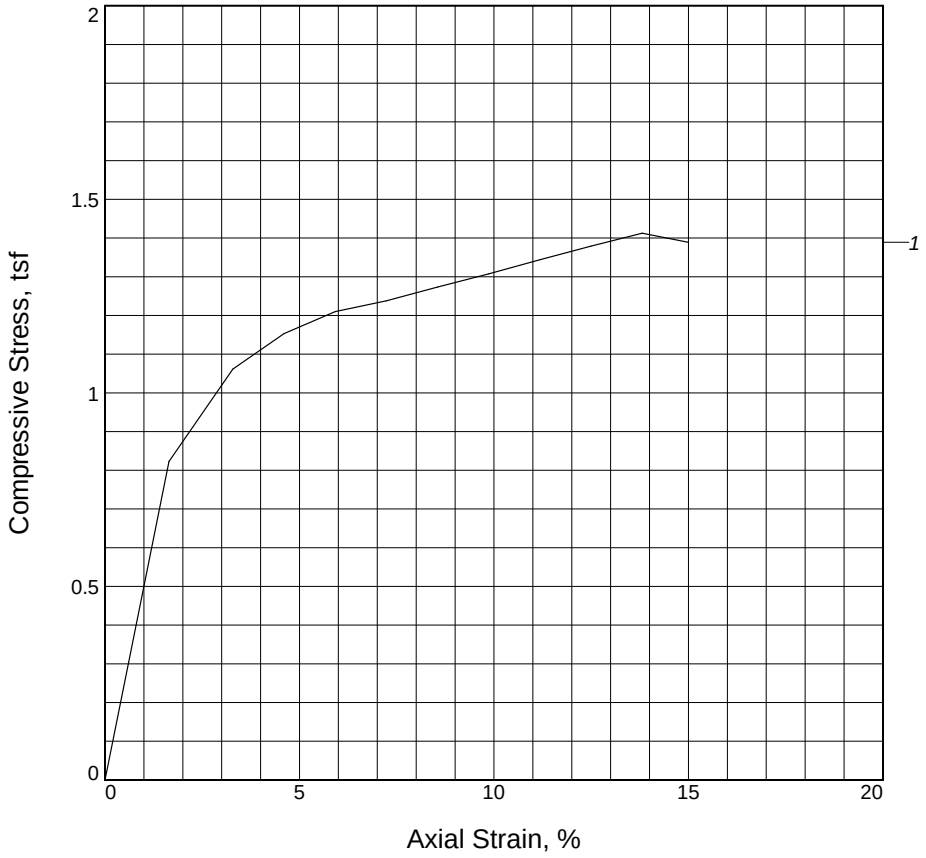
Figure QU15768M

Client: South Putnam Community Schools

Project: South Putnam High School Fieldhouse - North Greencastle, IN
Source of Sample: 15768 **Depth:** 13.5'-15.0'
Sample Number: B-5; S-6

UNCONFINED COMPRESSION TEST
Atlas
Indianapolis, Indiana

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, tsf	1.413			
Undrained shear strength, tsf	0.706			
Failure strain, %	13.8			
Strain rate, %/min.	2.00			
Water content, %	21.6			
Wet density, pcf	129.4			
Dry density, pcf	106.5			
Saturation, %	99.8			
Void ratio	0.5833			
Specimen diameter, in.	1.38			
Specimen height, in.	3.04			
Height/diameter ratio	2.21			

Description:

LL =	**PL =**	**PI =**	**Assumed GS=** 2.7	**Type:** Split spoon

Project No.: 170GC01720
Date Sampled:
Remarks:

Figure QU15768O

Client: South Putnam Community Schools

Project: South Putnam High School Fieldhouse - North Greencastle, IN
Source of Sample: 15768 **Depth:** 23.5'-25.0'
Sample Number: B-5; S-8

UNCONFINED COMPRESSION TEST
Atlas
Indianapolis, Indiana

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical- engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply this report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical-engineering report whose adequacy may have been affected by*: the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Contact the geotechnical engineer before applying this report to determine if it is still reliable.* A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. *Confirmation-dependent recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly

problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Environmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold- prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical- engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you GBC-Member geotechnical engineer for more information.

GEOTECHNICAL BUSINESS COUNCIL
of the Geoprofessional Business Association

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@geoprofessional.org www.geoprofessional.org

_____ **NAME OF BIDDER**

BIDDER REMINDER LIST TO BE COMPLETED AND INCLUDED IN BID PACKAGE FOR REVIEW AT BID OPENING

	YES	NO
Have you properly and completely executed the **Bid Form**?		
Is the **Bid Total** written in both words and figures?		
Are the **Alternate** amounts in both words and figures and noted as **Add or Deduct**?		
Is **PART II** of the bid form completely filled out?		
Is the Signatures Page completely filled out?		
Is the Written **Drug Testing Plan Cert of Compliance** included?		
Have you enclosed a certified check or **Bid Bond**? (Note: bond must be signed by Surety and Principal)		
Have you included your company's **Financial Statement?** This can be in a separate sealed envelope.		
Will you send Contractors and Products List to the Construction Manager within **48** Hours of the Bid Opening?		
On the outside of the envelope containing your Bid have you indicated: • Name of project • Name of bidder • Bid package number and name. • Date and time of closing of bids		
Did you include duplicate copy of your Bid documents?		

NOTE: IF ANY OF THE REQUIRED BIDDING DOCUMENTS ARE NOT INCLUDED, DATED OR PROPERLY EXECUTED, THE CONTRACTOR'S BID MAY NOT BE ACCEPTED.

CONTRACTOR'S BID FOR PUBLIC WORKS FORM NO. 96
Format (Revised 2013) (Amended for SPCSC project)

SOUTH PUTNAM HIGH SCHOOL FIELDHOUSE ADDITION
BID FORM – PART I

Bidder: _____

Address: _____

Phone: _____ Estimator/Sales Person: _____

Estimator/Sales Person Email: _____

Bid Package Number: 06a GENERAL TRADES FIELDHOUSE

Bid Package Title: 06a GENERAL TRADES FIELDHOUSE

To: **SOUTH PUTNAM COMMUNITY SCHOOL CORPORATION**
3999 South U.S. Highway 231
Greencastle, IN 46135

I have received and carefully reviewed the Contract Documents prepared and certified by:

Architect:
Fanning Howey
350 East New York St. Suite 300
Indianapolis, IN 46204
Phone: (317) 848-0966

Construction Manager:
Michael Kinder and Sons, Inc.
6055 Innovation Blvd.
Fort Wayne, IN 46818
Phone: (260) 744-4359

In submitting this proposal, I agree to the following:

1. To hold my bid open sixty (60) days after receipt of bids.
2. To accept the provisions in the Instructions to Bidders.
3. To enter into and execute a contract in the form contained in this bid package, if awarded on the basis of this proposal, and to furnish Contract Performance, Payment, and Maintenance Bonds. The cost of this bond is included in base bid at this time.
4. To accomplish the Work in accordance with the Contract Documents.
5. To submit Certificates of Insurance for the coverage specified in the Contract Documents.

BID CONFIRMATIONS: I have examined all documents, all drawings and submit the following proposal. I have received either hard copies or via electronic format all bid documents and verify that I have reviewed all available information.

Received and include provisions for the following Addendum Nos. _____

- Reviewed all bid packages provided in Project Manual/Bid Package Description. YES_____NO _____
- Attended Pre-Bid Conference YES _____ NO _____
- Visited the Jobsite YES _____ NO _____
- ~~Acknowledge receipt and reviewed MKS's Subcontract and/or Purchase Order sample that was included in this bid manual and understand that edits to the contract language of the final agreement will not be allowed. Signed contract or checklist are not necessary when submitting a bid but will be required once awarded the contract.~~

  ~~YES_____ NO _____~~

- Bidder has reviewed the Schedule provided and the intent of the schedule can be met:

  YES_____ NO _____

- Bidder has included their Written Drug Testing Plan that covers all employees of the bidder who will perform Work on the public Work project and meets or exceeds the requirements set in IC 4-13-18-5 or IC 4-13-18-6.

  YES_____ NO_____

The undersigned further agrees to furnish a bond or certified check with this Bid for an amount specified in the Notice to Bidders.

If additional units of material included in the contract are needed, the cost of units must be the same as that shown in the original contract if accepted by the governmental unit. If the bid is to be awarded on a unit basis, the itemization of the units shall be shown on a separate attachment.

The successful bidder and its Contractors, if any, shall not discriminate against or intimidate any employee, or applicant for employment, to be employed in the performance of this contract, with respect to any matter directly or indirectly related to employment because of race, religion, color, sex, national origin, or ancestry. Breach of this covenant may be regarded as a material breach of the contract.

CERTIFICATION OF USE OF UNITED STATES STEEL PRODUCTS
(if applicable)

I, the undersigned bidder, or agent as a contractor on a public Works project, understand my statutory obligation to use steel products made in the United States (I.C. 5-16-8-2). I hereby certify that I and all Contractors employed by SPCSC for this project will use U.S. steel on this project if awarded. I understand that violations hereunder may result in forfeiture of contractual payments.

ALLOWANCES: The following allowances are to be included in bid.

BASE BID: I agree to execute the Work of the following Bid Package indicated for the lump sum amount given therein.

BID PACKAGE NUMBER: 06a GENERAL TRADES

DOLLAR AMOUNT: $_____

DOLLAR AMOUNT WORDS: _____

ALTERNATE BIDS: I agree to execute the work for this Bid Package indicated for the lump sum amount given therein. (Circle ADD or DEDUCT). Base bid amount may be increased or decreased in accordance with such of the following alternate proposals as may be selected. If there is no bid amount submitted for the alternate, it will be assumed that the alternate has no effect on the bidder's scope of work.

ALTERNATE BID #1 Provide all components for a new sound system in Weight Room, Room B115, as indicated on Drawings T-11B and T-503.

ADD / DEDUCT: ($_____)_____

ALTERNATE BID #2 Provide alternate manufacturer for Fluid-Applied Athletic Flooring as described in Specification Section 09 67 66.

ADD / DEDUCT: ($_____)_____

ALTERNATE BID #3 Provide Exterior Illuminated Panel Signage as described in Specification Section 10 14 33 and indicated on Elevation drawings. Power to sign location shall be part of Base Bid.

ADD / DEDUCT: ($_____)_____

ALTERNATE BID #4 Provide full height wall tile and tile base on additional walls of locker rooms and restrooms as indicated on finish plan Drawings.

Base bid: Full height tile shall be provided in the showers and wet walls as indicated on the finish plan Drawings.

ADD / DEDUCT: ($_____)_____

ALTERNATE BID #5 Provide Decorative Metal Fences and Gates as described in Specification Section 32 31 19 in lieu of chain link fences and gates indicated on Drawings.

ADD / DEDUCT: ($_____)_____

ALTERNATE BID #6 Remove existing exterior dimensional letters on north face of the existing building and replace with new dimensional letters as described in Specification Section 10 14 19 and shown on Drawing Sheet A-201.

ADD / DEDUCT: ($_____)_____

ALTERNATE BID #7 Raise existing unit ventilators in Commons, room A30. Replace and reconnect piping and ductwork as shown on Mechanical Drawings.

ADD / DEDUCT: ($_____)_____

ALTERNATE BID #8 Base bid to include no work on SP HS Pool drawings and specifications.

Alternate No. 8: State the cost to include all scope of work shown on SP HS Pool drawings, dated May 23, 2024, and specifications dated May 23, 2024. Include P & P Bond.

ADD / DEDUCT: ($_____)_____

ALTERNATE BID #9 Base bid to include no work on parking lot at Central Elementary School.

Alternate No. 9: State the costs to include all scope of work to complete the base bid work on the CES parking per the drawing by HWC Engineering dated January 29, 2024. Include P & P Bond.

ADD / DEDUCT: ($_____)_____

ALTERNATE BID #9a Base bid to include no work on parking lot at Central Elementary School.

Alternate No. 9a: State the costs to include all scope of work to complete the work on the existing CES parking (ADD. BID) per the drawing by HWC Engineering dated January 29, 2024. Include P & P Bond.

ADD / DEDUCT: ($_____)_____

ALTERNATE BID #10 State the cost to exclude payment and performance bond from your quote.

DEDUCT: ($_____)_____

BID FORM - PART II

(For projects of $150,000 or more – IC 36-1-12-4)

These statements are to be submitted under oath by each bidder with, and as a part of, its bid. (Attach additional pages for each section as needed.)

SECTION I EXPERIENCE QUESTIONNAIRE

1. **What public Works projects has your organization completed for the period of one** (1) year prior to the date of the current bid?

Contract Amount	Class of Work	Completion Date	Name and Address of Owner

2. What public Works projects are now in process of construction by your organization?

Contract Amount	Class of Work	Completion Date	Name and Address of Owner

3. Have you ever failed to complete any Work awarded to you?_____If so, where, and why?

_____

_____

_____

4. List references from private firms for which you have performed Work.

_____

_____

_____

SECTION II PLAN AND EQUIPMENT QUESTIONNAIRE

1. Explain your plan or layout for performing proposed Work. (Examples could include a narrative of when you could begin, complete the Work, number of Workers, etc. and any other information which you believe would enable the Construction Manager to consider your bid.)

2. Please list the names and addresses of all Contractors (i.e., persons or firms outside your own firm who have performed part of the Work) that you have used on public Works projects during the past five (5) years along with a brief description of the Work done by each Contractor.

3. If you intend to sublet any portion of the Work, state the name, and addresses of each Contractor, equipment to be used by the Contractor, and whether you will require a bond. However, if you are unable to currently provide a listing, please understand a listing must be provided prior to contract approval. Until the completion of the proposed project, you are under a continuing obligation to immediately notify the Construction Manager in the event that you subsequently determine that you will use a Contractor on the proposed Work.

4. What equipment do you have available to use for the proposed Work? Any equipment used by Contractors may also be required to be listed by the Construction Manager.

5. Have you entered into contracts or received offers for all materials which substantiate the prices used in preparing your bid? If not, please explain the rationale used which corroborate the process listed.

_____

_____

_____

_____

SECTION III CONTRACTOR'S FINANCIAL STATEMENT

Attachment of bidder's financial statement is mandatory. Any bid submitted without said financial statement as required by statute shall thereby be rendered invalid. The financial statement provided hereunder to the Construction Manager must be specific enough in detail so that the Construction Manager can make a proper determination of the bidder's capability for completing the Work, if awarded.

SECTION IV CONTRACTOR NON-COLLUSION AFFIDAVIT

The undersigned bidder or agent, being duly sworn on oath, says that it has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by the bidder, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting nor to prevent any person from bidding nor to induce anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding.

The undersigned bidder or agent further says that no person or persons, firms, or corporations has, have, or will receive directly or indirectly, any rebate, fee, gift, commission, or thing of value on account of such contract.

SECTION V OATH AND AFFIRMATION

I HEREBY AFFIRM UNDER THE PENALTIES OF PERJURY THAT THE FACTS AND INFORMATION CONTAINED IN THE FOREGOING BID FOR PUBLIC WORKS ARE TRUE AND CORRECT

Sole Proprietor:

IN TESTIMONY WHEREOF, the bidder has hereunto set his/her hand this_____day of _____2024.

Bidder:_____

Partnership:

IN TESTIMONY WHEREOF, the bidder has hereunto set its hand this_____day of _____2024.

Firm:_____

By:_____

Individual Names:

_____

_____

Corporation:

IN TESTIMONY WHEREOF, the bidder has hereunto set its hand this_____day of _____2024.

Corporation:_____

President:_____

Secretary:_____

(SEAL)

ACKNOWLEDGEMENT

STATE OF _____

COUNTY OF _____

Before me, a Notary Public, personally appeared the above-named

_____

Swore that the statements contained in the foregoing document are true and correct.

Subscribed and sworn to before me this_____day of_____2024

_____

Notary Public Name

My Commission Expires:_____ County of Residence: _____

Part of State Form 52414 (R2 / 2-13) / Form 96 (Revised 2013)

BID OF

_____

(Contractor)

_____

(Address)

_____

FOR

PUBLIC WORKS PROJECTS

OF

_____

_____

_____

_____

Filed _____, _____

_____

Action taken _____

_____

_____

END OF SECTION 004584

UNIT PRICE BIDS: Following unit costs are to be submitted by the bidder as part of its bid to be included in future potential agreement with intent to utilize these costs for potential future changes as applicable on the project. Each unit cost item is intended to be applicable only to itself. **Each unit cost item is to be all inclusive and therefore, include all overhead & profit. No additional mark-up will be allowed for potential future changes on these unit cost items (if utilized).** If an item does not apply to bidder, bidder is to mark "N/A" or "Not-Applicable."

UNIT PRICE # 1A – Unsuitable Soil Excavation: Unit price shall include removing unsuitable soil material and placing unsuitable soils off site. Unit of measurement shall be in place soils, no excavation swell.

Unit Price: $/CY: _____

UNIT PRICE # 1B – Unsuitable Aggregate Excavation: Unit price shall include removing unsuitable aggregate material and placing unsuitable aggregate off site. Unit of measurement shall be in place soils, no excavation swell.

Unit Price: $/CY: _____

UNIT PRICE # 2 – Import Engineered Fill: Unit price shall include soil fill replacement from offsite. Price shall include placing in lifts and compacting.

Unit Price: $/CY: _____

UNIT PRICE # 3 – Import Engineered Fill: Unit price shall include importing and compacting #73 Aggregate.

Unit Price: $/CY: _____

UNIT PRICE # 4 – Import Engineered Fill: Unit price shall include importing and compacting #53 Aggregate.

Unit Price: $/CY: _____

UNIT PRICE # 5 – Import Engineered Fill: Unit price shall include importing and compacting #2 Aggregate.

Unit Price: $/CY: _____

UNIT PRICE # 6 – Import Engineered Fill: Unit price shall include importing and compacting #1 Aggregate.

Unit Price: $/CY: _____

UNIT PRICE # 7 – Geogrid: Unit price shall include providing and installing BX 1300 Geogrid in $/SY price – based on minimum 50 SY area.

Unit Price: $/CY: _____

UNIT PRICE # 8 – Small Quantity Asphalt Repair: Unit price shall include place & compact stone aggregate + light duty pavement section – based on minimum 15 SY area.

Unit Price: $/CY: _____

NOTE: These items must be filled in when submitting your bid. All days below refer to calendar days. All lead times greater than 4 weeks after receipt of LOI or contract.

1. List material/equipment name (s), shop drawing lead time duration & ETA to jobsite(calendar days) for material/equipment within your bid package scope of work:

   a. Material Name/Equipment Name:_____
      • Shop Drawing Lead Time (calendar days):_____
      • Delivery after Approved Shops received (calendar days):_____

   b. Material Name/Equipment Name:_____
      • Shop Drawing Lead Time (calendar days):_____
      • Delivery after Approved Shops received (calendar days):_____

   c. Material Name/Equipment Name:_____
      • Shop Drawing Lead Time (calendar days):_____
      • Delivery after Approved Shops received (calendar days):_____

   d. Material Name/Equipment Name:_____
      • Shop Drawing Lead Time (calendar days):_____
      • Delivery after Approved Shops (calendar days):_____

   e. Material Name/Equipment Name:_____
      • Shop Drawing Lead Time (calendar days):_____
      • Delivery after Approved Shops received (calendar days):_____

   f. Material Name/Equipment Name:_____
      • Shop Drawing Lead Time (calendar days):_____
      • Delivery after Approved Shops received (calendar days):_____

   g. Material Name/Equipment Name:_____
      • Shop Drawing Lead Time (calendar days):_____
      • Delivery after Approved Shops received (calendar days):_____

   h. Material Name/Equipment Name:_____
      • Shop Drawing Lead Time (calendar days):_____
      • Delivery after Approved Shops received (calendar days):_____

BACKGROUND CHECK & DRUG TESTING - CERTIFICATE OF COMPLIANCE

This is to certify that_____(Contractor name) and all of its sub-contractors have screened and will continue to screen all employees providing services to the owner throughout the duration of the project.

A drug testing program will remain in place throughout the duration of the project.

Background check screening need only occur once at the beginning of the project, as long as the contractor and sub- contractors continually screen new hires and provide documentation of same in the form of re-submission of this form with the new date.

Background check screening shall include a minimum of the following information: local, state and national criminal history records check, sex and violent offender registry check through a website such as www.SafeHiringSolutions.com

_____(Contractor name) shall further report arrest and/or filing of criminal charges against each employee within two business days of the occurrence and the disposition of such arrest or filing of charges throughout duration of project.

Non-compliance with these requirements shall be a breach of a material term of any contract and reason for termination. Personally identifiable information obtained in the implementation of this policy shall not be released except as necessary to implement this policy or to defend a decision made pursuant to it.

_____
Authorized Signature

_____
Date

00 60 00 – PROJECT FORMS

1.1 FORM OF AGREEMENT

A. The following form of Owner/Contractor Agreement and form of the General Conditions shall be used for Project:

a. AIA A132 Standard Form of Agreement Between Owner and Contractor, Construction Manager as Advisor Edition

B. Payment Forms:

1. Schedule of Values Form: AIA Document G703-1992 "Continuation Sheet."
2. Payment Application: AIA Document G702-1992/703-1992 "Application and Certificate for Payment and Continuation Sheet."
3. Exhibit C – Michael Kinder and Sons, Inc. Standard Lien Waivers

END OF SECTION 00 60 00

SECTION 01 12 00 CONTRACT SUMMARY

Table of Contents

General Notes

Each bid package is responsible for the below items.

1. PROJECT SITE WILL BE 100% HARDHAT & SAFETY GLASSES. ALL CONTRACTORS ARE RESPONSIBLE TO PROVIDE HARDHATS & SAFETY GLASSES TO THEIR EMPLOYEES.
2. Each successful Prime Contractor is required to submit background checks for all onsite tradesman and supervisory personnel, including office staff that will be onsite. Include all lower tier contractors under contract to the Prime. Turn over background checks to MKS.
3. Personal Protective Equipment:
    a. Subcontractors are required to wear hardhats.
    b. Suitable work boots.
    c. High visibility vest, shirt, sweatshirt, etc. throughout the project.
    d. Long pants must be worn.
    e. Shorts sleeves (4 inches) are permitted.
    f. Shirts with sleeves must be worn and shall not have obscene, offensive, distasteful, or harassing slogans. Determination of what constitutes obscene, offensive, distasteful, and harassing is solely up to the discretion of the owner, and MKS.
    g. Eye protection / safety glasses or side shields
4. All interactions with staff must be conducted professionally. Adherence to safety procedures outlined in each subcontractor's contract is mandatory throughout the project. Operators of lifts or equipment must be certified and carry their certification cards at all times. A trained competent person must be present on-site when performing work requiring such expertise as per OSHA regulations. Profanity or offensive language will not be tolerated.
5. Subcontractors are responsible for enforcing disciplinary measures among their employees. Superintendents and foremen are required to caution employees against safety breaches and terminate those who refuse to adhere. Serious and deliberate violations may warrant instant dismissal from the project, encompassing on-site tobacco usage, possession of alcohol, firearms, or illicit substances, engaging in altercations, tampering with emergency equipment, or disregarding fall protection protocols.
6. Compliance with MKS Fall Protection guidelines is mandatory whenever employees are exposed to falls exceeding six (6) feet. Failure to comply will result in immediate expulsion from the worksite.
7. Daily removal of debris, particularly combustible scraps, is mandatory.
8. Prompt reporting and documentation of all incidents are obligatory. Project foremen must report each incident immediately to the MKS site supervisor and respective safety personnel. Documentation should be completed on the day of the incident and includes injuries, property damage, theft, or non-compliance with stated rules and code of conduct.
9. AM/FM radios, CD players, MP3 players, personal entertainment devices, or similar items are prohibited on the construction site.
10. Construction vehicles must park in designated areas only. Unauthorized parking may result in towing.
11. Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.
    a. Owner Occupancy: Allow for Owner occupancy.
    b. Driveways and Entrances: Keep driveways and entrances outside of construction limits, serving the premises, clear and available to the Owner, the Owner’s employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.

c. Construction personnel are prohibited from using owner facilities such as restrooms or breakrooms. Any person found breaking this rule will be asked to leave the site and not return.

12. Use of the Existing Building: Maintain the existing building in a weathertight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.
13. Owners Right to Maintain Operations
    a. During the course of this Project, normal and customary functions and operations must be maintained. The Contract Documents are intended to define a strict separation between the school activities of students and staff from the activities of the construction project.
    b. The Construction Manager, Architect, and Owner will not tolerate any visible or audible actions initiated or responded to by any employees of Contractors on this Project toward any students, teachers, or staff members at the school system. Violators shall be promptly removed from the site.
    c. The Owner intends to instruct students, teachers, and staff to refrain from communications with Contractor's personnel working on this Project. All communication with Owner and staff shall be through the Construction Manager.
    d. Contractors must expend their best effort toward protection of the health, safety, and welfare of occupants on the Owner's property during the course of construction on this Project.
    e. Contractors and Subcontractors shall be subject to such rules and regulations for the conduct of the Work as the Owner may establish. Employees shall be properly and completely clothed while working. Bare torsos, legs and feet will not be allowed.
    f. Possession or consumption of alcoholic beverages or drugs, tobacco or other noxious behavior on the site is strictly prohibited. Violators shall be promptly removed from the site. Smoking is not permitted on school property or within school buildings.
14. The Work shall be performed in accordance with the health, safety and environmental regulations of the authorities having jurisdiction and all federal, state, and local laws.
15. Each bid package is required to understand and adhere to the project schedule, phasing plans and logistic plans.
16. Where bid documents reference the term "General Contractor" change to "Construction Manager".
17. Each bid package to include all mobilizations and demobilizations required for performance of the Work.
18. A single prime contract will be awarded as per the " Contract Summary". Contractors shall include Work required by the Specifications and Drawings for each contract area defined in the Schedule.
19. The contract will be AIA A132 Contract between Owner and Contractor, Construction Manager as Adviser Edition.
20. Each bid package shall provide protection of existing and new work by others during his operations. The costs associated with repair and/or replacement of materials damaged by his work operations will be the responsibility of the bid package that damaged. Each bid package shall provide adequate protection to all areas of existing finishes to remain during any operations performed under their scope of work.
21. Although specifications are allocated to respective bid packages each bid package must read and understand all contract documents assigned to the other trades.

22. Each bid package includes all work, including coordination with related work performed under other contracts, to result in a functional system or product.
23. Each Bid Package will perform all work in coordination with other trades and the CMa.
24. Use of motor oil or machine oil on or above slab will not be permitted. All lifts are required to be fitted with lift diapers to contain any oil leaks from the equipment. Diapers should be inspected periodically during each day of use.
25. Each Contractor utilizing a pipe cutting or threading tool shall have a sand box or litter box directly under said tool to protect floor from oil staining. Construction Manager reserves the right to immediately dispose of any threading/cutting tool on the project site that is being used without stated boxes underneath.
26. Clean-up is a Safety Priority. Accordingly, daily clean-up, i.e., broom clean, consistently organized and neatly stacked materials, and daily removal of trash to dumpsters by each Prime Contractor is required. No tolerance will be allowed for failure to comply. CMa shall issue one verbal request to the Prime Contractor's Foreman. If corrective action is needed, and if not corrected immediately or as requested, CMa will provide manpower to properly clean the Prime Contractor's area(s) and shall issue a deductive CO for the labor and material cost, plus 15% Administrative Fee.
27. Each bid package is required to give minimum 72 hours written notice prior to any disruption in utilities, roadway, or any other activity that would interrupt the normal operations of the Owner's facilities and shall receive written acknowledgement from CMa before undertaking any such work.
28. Each bid package must coordinate deliveries in advance with CMa project staff on a daily basis. Due to site security, logistics, space limitations, and Owner operations, deliveries that come directly to the site without prior knowledge or proper authorization will be rejected. Any deliveries that block traffic or pose any safety concern whatsoever shall require flagmen provided by responsible bid package. Deliveries must be received and unloaded by each bid package. CMa will not provide labor or equipment to unload deliveries from subcontractors.
29. Each bid package is responsible for obtaining written approval from CMa prior to proceeding with any extra work. If written approval is not received, payment for extra work will not be approved.
30. All bidders are responsible to review and ensure compliance with timeline issued for bidding and construction. Weather (eg. Rainout) days will be made up through longer hours, Saturdays, or Sunday. Each Prime Contractor is fully obligated to meet the requirements of the project schedule within these constraints.
31. When a bid package is to supply materials that will be installed by another bid package, the bid package supplying materials shall be responsible for submitting lay-out and product shop drawings to comply with project schedule.
32. Detailed notes provided for each bid package are provided for clarification purposes and do not represent a complete listing of scope of work. Bidders are responsible for the work assigned in the bid packages, specification and on the drawings.
33. Any access panels not shown on drawings but required by a bid package will be borne by said bid package.
34. Any wood or metal blocking required by a bid package that is not specifically shown on the drawings will be the responsibility of the said bid package.
35. Bid packages are to remove stickers, labels, clean and provide protection over finished products.
36. All submittals must be submitted per the specifications and in accordance with the project schedule.
37. ~~All bidders must agree to terms and conditions of MKS subcontract agreement as defined in the specifications.~~

38. Building is not to be used for material storage. All materials are to be stored in trailers or off site until needed for installation. Preferably materials should be delivered just in time for installation in accord with the project schedule. See logistics plan for laydown areas.
39. Punch list Work – Upon delivery of a “Completion List” by CMa and later a punch list by the Architect, Engineer, and Owner each bid package shall provide a “Punch list Crew” as required to address open items and shall staff the crew with sufficient manpower of persons to complete all Punch list items within 5 days. Subcontractor to provide sufficient manpower that does not take away from other work required by the Project Schedule. Once in the Punch list Phase, CMa will hold weekly punch list meetings and require the Subcontractors punch list crew lead employee to attend, update progress, and coordinate with other trades as needed.
40. All closeout documentation is required to be submitted within 30 days of substantial completion. Final payments will not be made until all closeout documentation is received.
41. If temporary roof protection is not in place, each contractor accessing or traversing the roof is responsible for protection of the roof membrane. Contractors will be held liable for any damages resulting from failure to protect.
42. See Logistics Plan for staging areas.
43. Food and beverage consumption will be permitted in contractor provided break trailers or employees vehicles.
44. The project worksite is TOBACCO FREE! The use of tobacco, smoking, chewing, vaping, E-cig and sunflower seeds on the site will not be permitted. Anyone who violates will be removed from the project.
45. Project is exempt from Indiana sales tax.

Bid Package 07a South Putnam HS Fieldhouse Addition

Specifications: Furnish and Install the Following Spec Sections
Division 00 Procurement and Contracting Requirements
Division 01 General Requirements
Division 02 Existing Conditions
Division 03 Concrete
Division 04 Masonry
Division 05 Metals
Division 06 Carpentry
Division 07 Thermal and Moisture Protection
Division 08 Openings
Division 09 Finishes
Division 10 Specialties
Division 11 Equipment
Division 12 Furnishings
Division 13 Special Construction
Division 21 Fire Suppression
Division 22 Plumbing
Division 23 Heating, Ventilating and Air Conditioning
Division 26 Electrical
Division 27 Communications
Division 28 Electronic Safety and Security
Division 31 Earthwork
Division 32 Exterior Improvements

Supplemental Instructions to this Bid Package:

This bid package shall include, but shall not necessarily be limited to, the following scope of work:

1. This bid package is responsible for the labor, materials, supervision, taxes, insurance, equipment, placing, hoisting, scaffolding, protection, transportation, permits, licenses, fees necessary to complete this scope of work.
2. This bid package is responsible for visiting site to review existing conditions.
3. Prior to commencing any work on site, this bid package shall contact all utility companies for locating and flagging all existing utilities within the project boundaries if required. Any damage to existing utilities or structures is the responsibility of this contractor.
4. This bid package is responsible for providing dumpsters for debris generated by this scope of work.
5. This bid package is responsible for portable toilets for use by the tradesmen of this bid package.
6. All work to comply with O.S.H.A., City and State rules and regulations.
7. This bid package is responsible for adequate fire protection during construction.
8. This bid package is responsible for all required barricading associated with this work.
9. This bid package is responsible for a competent person observing or 100% tie-off will be required for all roofing work as required by OSHA.
10. This bid package is responsible to protect existing utilities, plumbing work/equipment, HVAC work/equipment, gas lines, and miscellaneous equipment shown to remain.
11. This bid package is responsible for all layout, both line and grade, for work by this bid package.
12. This bid package is responsible for conducting biweekly progress meetings for the duration of the project. Main topics include coordination and schedule.

Project Specific Requirements

13. This bid package will be delivered as a single prime contract for all scope of work shown on the Fieldhouse Addition bid documents dated May 23, 2024, the Pool Renovation bid documents dated May 23, 2024 and the Central Elementary School Parking Lot bid documents dated January 29, 2024.
14. Where there is a conflict or discrepancy between drawings and/or drawings and specifications, contractor shall included the costs to provide the more expensive and/or greater quantity.
15. All demolition debris to be removed offsite and legally disposed of.
16. This bid package is responsible for temporary construction fence and gates around the perimeter of the project site.
17. This bid package is responsible for furnishing and installing all temporary enclosures including temporary doors. Includes removal of enclosures prior to installation of finishes.
18. This bid package is responsible for one temporary fire extinguished per 3,0000 SF.
19. This bid package is responsible for temporary curb caps for weather when equipment is removed from roof.
20. This bid package is responsible for locating existing underground utility lines with a vendor specializing in locating underground utilities.
21. This bid package is responsible for scheduling and coordinating all lower tier contractor work.
22. This bid package is responsible for continuous clean up of project site including dust, debris, etc.
23. This bid package is responsible for labor and equipment necessary for unloading material and equipment.
24. This bid package is responsible for site supervision while this package is working onsite, including when lower tier contractors are working.
25. This bid package is responsible for As-Built drawings upon completion of work.
26. This bid package is responsible for completing the bid form including all alternates and unit pricing as applicable. A .pdf copy of this form is included in this document.
27. See attached Supplemental Conditions “Exhibit A”, “Exhibit C”, and “Exhibit D” which will be part of the Contract Agreement between South Putnam Community School Corporation, and this bid package.

Exhibit A Terms and Conditions

SUPPLEMENTAL CONDITIONS:

DEFINITION OF CONTRACTOR – The term "Contractor" wherever it is used herein shall mean Michael Kinder & Sons, Inc.

1. Safety

1.1 The Subcontractor agrees that the prevention of accidents to workmen and property engaged upon or in the vicinity of the Subcontract Work is its responsibility. The Subcontractor agrees to comply with all Federal, State, Municipal and local laws, ordinances, rules, regulations, codes, standards, orders, notices and requirements concerning safety as shall be applicable to the Subcontract Work, including, among others, the Federal Occupational Safety and Health Act of 1970, as amended, and all standards, rules, regulations and orders which have been or shall be adopted or issued thereunder, and with the safety standards established during the progress of the Subcontract Work by the Contractor.

1.2 When so ordered, the Subcontractor shall stop any part of the Subcontract Work which the Contractor deems unsafe until corrective measures satisfactory to the Contractor have been taken. The Subcontractor agrees that it shall not have nor make any claim for damages arising from such stoppages. Should the Subcontractor fail to take appropriate corrective measures in a timely manner, the Contractor may do so at the cost and expense of the Subcontractor and may deduct the cost and expense thereof from any payments due or to become due to the Subcontractor. Failure on the part of the Contractor to stop unsafe practices shall in no way relieve the Subcontractor of its responsibility therefore.

1.3 **Safety Training and Competent or Qualified Person.** Each worker sent to perform specific duties on the project will have required training and/or competency to meet all applicable Federal, State, and local regulations. Proof of training shall be submitted to the Contractor's Safety Director prior to commencement of work if requested. Tasks which require the appointment of a Qualified or Competent Person shall have credentials submitted to the Contractor's Safety Director prior to start of work.

1.4 **Subcontractor Injuries and Incidents**. Subcontractor shall notify Contractor of any incident or injury involving an employee of Subcontractor or one of its Subcontractors on the day of the injury or incident. Subcontractor shall complete an Incident Report and Investigation and submit the completed investigation to Contractor within twenty- four (24) hours of the incident or injury. Subcontractor agrees that all injuries and incidents will be investigated to determine root cause, corrective action, and preventative action to ensure similar injuries or incidents do not occur.

1.5 **Minimum Working Apparel**. Subcontractor agrees that the minimum working apparel includes hardhat meeting the current version of ANSI Standard Z89.1, safety glasses and side shields meeting the current version of ANSI Standard Z87.1, shirt with three inch or longer sleeves, long pants and durable work boots. Refer to the Safety Standard Operating Procedures Plan Personal Protection Equipment Section for more specific requirements.

1.6 **Fall Prevention**. Subcontractor shall comply with the Contractor Fall Protection Policy, which requires that no worker exposed to a fall hazard of six (6) feet or greater will work without one hundred percent (100%) fall protection. Subcontractor will take all practical measures to eliminate, prevent and control fall hazards of six (6) feet or more before resorting to a personal fall arrest system. When personal fall arrest is required, Subcontractor shall provide such proper equipment for this purpose and all necessary instruction and training in the care and use of the equipment, including refresher training. All training shall be documented and made available to Contractor upon request.

1.7 **Silica**. Subcontractor must provide action plan when workers may be exposed to silica beyond the action limit. Provide copy of written exposure control plan, name of competent person, practices to limit exposures, training practices, and medical surveillance for all affected workers

1.8 **Disciplinary Action**. Contractor may issue a written notice to individuals who are observed violating the laws, ordinances, rules, regulations, codes, standards, orders, and requirements noted under Regulatory Compliance above. Any Subcontractor or Subcontractor personnel who receive three (3) written violation notices within a one (1) year period may be removed from the Project. Individuals may be removed from the Project after one (1) written notice if Contractor determines in its discretion that the violation observed warrants such removal.

1.9 **Hazard Communication**. Subcontractor will provide Contractor with Project specific hazardous material inventory list and Safety Data Sheets (SDS) for each hazardous material Subcontractor or one of its Subcontractors will bring onto the Project site.

1.10 **Utility Locates.** The Subcontractor will follow the provisions of all applicable statutes and ordinances which require persons or firms doing excavation to do so only after giving notice to utility companies and obtaining information on the location of utilities (such as "one-call" systems).

1.11 **Regulatory Inspections**. If Contractor is fined by any regulatory inspection by a Federal, State, County or Municipal agency or body as a result of any act or omission of Subcontractor or one of its Subcontractors, Contractor will deduct the amount thereof and associated costs from any payments due or to become due to Subcontractor.

1.12 **Illegal Acts**. The theft, conversion, misappropriation, unauthorized removal, possession, or use of property or equipment belonging to Contractor, Owner, Subcontractor, or other worker including but not limited to, materials, tools documents, and propriety information is prohibited.

1.13 **General Safety Requirements**

- Subcontractors must observe and follow all posted safety signs.
- Any worker that is involved in an injury or loss event on the job must be drug tested at the expense of their employer and results cleared before they can continue working on the project.
- Subcontractors are expected to supply their own personal protective equipment (PPE).
- Adequate ventilation must be provided when using vapor producing materials or creating high dust levels. Subcontractor must notify Contractor twenty-four (24) hours in advance whenever work is being done that may generate any hazardous odors or dust.
- Subcontractors may not, under any circumstances, operate or disconnect any device used to control building services until permission has been obtained from the Contractor Superintendent.
- The following activities are prohibited on site and are causes for immediate dismissal: Using alcohol or illicit drugs, Fighting or horseplay, Tampering with equipment, Possession of firearms.
- Subcontractor must have a first aid/CPR-trained foreman on site whenever work is being performed.

- Subcontractor will conduct weekly employee toolbox meetings and copy Contractor with material covered and attendance record.
- *No radios or headsets, including cellular phones and earbuds, are allowed in work areas.*
- Subcontractor must submit safety plans and hazard specific work plans to Contractor prior to beginning work when requested.
- Subcontractor's equipment, tools, and personnel must comply with OSHA Safety and Health Regulations for Construction.
- No one under eighteen (18) years of age is allowed to work on or access to Contractor's jobsites.
- Subcontractor shall provide all required safety information of their sub tier subcontractors as required by Contractor or Contractor's insurance provider.
- Subcontractor must immediately correct any unsafe acts or practices brought to its attention.
- Subcontractor will have qualified operators on allequipment.
- Subcontractor will inspect all its equipment per the manufacturer's instructions daily.

The above Safety Requirement items are general in nature and not all inclusive of every situation or condition on Michael Kinder & Sons, Inc. construction projects.

2. Subcontractor Representations

2.1 The Subcontractor acknowledges receipt of all policies/procedures included in the Bid Documents. Subject to applicable law the Subcontractor further agrees to be bound by these policies/procedures as part of this Agreement. The Subcontractor represents and agrees that it has carefully examined and understands this Agreement and the other Subcontract Documents, has investigated the nature, locality and site of the Subcontract Work and the conditions and difficulties under which it is to be performed, and that it enters into this Agreement on the basis of its own examination, investigation and evaluation of all such matters and not in reliance upon any opinions or representations of the Contractor, the Owner or any of their respective officers, agents or employees.

2.2 The commencement of the Subcontract Work by the Subcontractor on the site of the Project shall constitute the legal and binding acceptance by the Subcontractor of this Agreement. For purposes of this paragraph the mobilization of equipment, delivery of materials or the performance of actual labor on the Project site, whichever occurs first, shall constitute a "commencement" of Subcontract Work by the Subcontractor. The Contractor reserves the right, however, to insist on a signed Agreement prior to the making of any payment to the Subcontractor.

3. Bonds

3.1 If required by the Contractor, a Performance Bond and a Separate Payment Bond satisfactory to the Contractor, in its sole determination are required to be furnished in the full amount of the Subcontract Amount. If Bonds are required, they shall be furnished by a surety acceptable to the Contractor, in the full amount of the Subcontract Amount. Subcontractor must also furnish any applicable statutory bonds if required by the state in which the Project is located.

4 Subcontractor Duties

4.1 **Subcontract Work.** The Contractor retains the Subcontractor as an independent contractor, to provide all labor, materials, equipment, and services necessary or incidental to complete the part of the work which the Contractor has contracted with the Owner to provide on the Project as set forth in Scope of Work included in this Agreement, consistent with the Project Schedule and in strict accordance with and reasonably inferable from the Subcontract Documents. The Subcontractor agrees to perform such part of the work (hereafter called "Subcontract Work") for the Project under the general direction of the Contractor and subject to the final approval of the Contractor, Architect/Engineer, or other specified representative of the Owner.

4.2 **Subcontract Documents.** The Subcontract Documents include this Agreement, Agreement between the Owner and the Contractor ("Prime Contract"), including all addenda, modifications, revisions, plans, drawings, specifications, details, together with all general, technical, supplementary and special terms and conditions, any invitations for bids or information for bidders, if any, to the extent applicable, and all other documents listed in or referred to by the Prime Contract. The Contractor and the Subcontractor are mutually bound by the terms of this Subcontract. To the extent the terms of the Prime Contract apply to the work of the Subcontractor, then the Contractor assumes toward the Subcontractor all the obligations, rights, duties and redress that the Owner under the Prime Contract assumes toward the Contractor. In the identical way, the Subcontractor assumes toward the Contractor all the same obligations, rights, duties and redress that the Contractor assumes toward the Owner and Architect/Engineer under the Prime Contract. This Agreement and the rest of the Subcontract Documents are intended to supplement and complement each other and shall, where possible, be so interpreted. However, if any provision of this Agreement irreconcilably conflicts with a provision of the Subcontract Documents, the provision granting greater rights or remedies to the Contractor or imposing the greater duty, standard or responsibility or obligation on the Subcontractor shall govern.

4.3 **Submittals**. Subcontractor shall, at its own expense, prepare and submit to the Contractor such Shop Drawings, Samples, Models and other submittal data for the materials to be furnished hereunder as detailed in the contract documents and as requested by Contractor, such Shop Drawings, Samples, Models and data to be approved in writing by such entities as Contractor may designate before Subcontractor proceeds under this Agreement. Such Documents shall be submitted to Contractor with reasonable promptness and in such sequence to cause no delay in the work or activities of the Contractor or other subcontractors. Any such approval of submittals or the receipt of materials and/or labor or payment therefore pursuant thereto shall in no event constitute an acceptance of such materials and/or labor and shall not limit or impair Contractor's right of inspection or rejection or any other rights or remedies to which Contractor may be entitled or relieve Subcontractor of any of its obligations and warranties hereunder. Subcontractor is responsible for reviewing Specifications prior to submitting any items verifying all Specification / Contract requirements. All submittals must be submitted electronically in .pdf format. All submittals must be submitted and approved prior to any payment to Subcontractor. All items must be submitted within 20 days of Subcontract date. All submittals must have a separate transmittal for each item and be labeled with the specification section. Any delays in material/equipment deliveries associated with delay in submission of submittal data which causes delays in the project schedule will be responsibility of Subcontractor as denoted in Section 1 of this agreement. Subcontractor may also be required to submit hard copies of submittals when requested by Contractor.

4.4 **Design Delegation.** If the Subcontract Documents (1) specifically require the Subcontractor to provide design services and (2) specify all design and performance criteria, the Subcontractor shall provide the design services necessary to satisfactorily complete the Subcontract Work. Design services provided by the Subcontractor shall be procured from licensed, design professionals (the "Designer") retained by the Subcontractor as permitted by the law of the place where the Project is located. The Designer's signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by the Designer. Shop Drawings and other submittals related to the Subcontract Work designed or

certified by the Designer, if prepared by others, shall bear the Subcontractor's and the Designer's written approvals when submitted to the Contractor. The Contractor shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by the Designer.

4.4.1 If the Designer is an independent professional, the design services shall be procured pursuant to a separate agreement between the Subcontractor and the Designer. The Subcontractor-Designer agreement shall not provide for any limitation of liability or exclusion from participation in the multiparty proceedings requirement of Paragraph 20.6. If applicable, the Designer(s) is (are)

The Subcontractor shall notify the Contractor in writing if it intends to change the Designer. The Subcontractor warrants the design furnished by the Designer will be in conformance with the information given and the design concept expressed in the Subcontract Documents. The Subcontractor shall not be responsible for the adequacy of the performance or design criteria required by the Subcontract Documents furnished by the Owner, Architect/Engineer or Contractor

4.4.2 The Subcontractor shall not be required to provide design services in violation of any applicable law.

4.5 **Clean Up.** The Subcontractor is responsible for its own "clean-up" and keeping the Subcontract Work areas "broom clean". If the Contractor determines the Subcontract Work area to be unsatisfactorily cleaned, the Contractor will so advise the Subcontractor. If the Subcontractor fails to commence cleaning procedures within twenty four (24) hours and continue to clean said area to the Contractor's satisfaction, the Contractor may without further notice execute and complete such clean up activities as the Contractor deems necessary and charge the cost to the Subcontractor or deduct such cost from payments due to the Subcontractor. The Subcontractor is responsible to clean the mud and gravel off its vehicles (including vehicles operated by its subcontractors and suppliers) prior to leaving the site. Any mud or gravel that is tracked onto the surrounding roads shall be removed immediately. The Contractor has the right to clean up surrounding roads immediately upon the Subcontractor's failure to do so, the cost of which shall be deducted from the Subcontractor's next payment.

4.6 **Protection of Subcontract Work.** The Subcontractor is responsible for protection of its material, equipment, and installation until the final acceptance by the Owner and the Architect.

4.7 **Protection of the Project.** The Subcontractor shall confine operations at the Project site to areas permitted by the Contractor and shall not unreasonably encumber the Project site with materials or equipment. The Subcontractor is responsible for any damage caused to adjacent property or access roads by the Subcontractor, its subcontractors, or suppliers during the course of the Subcontract Work.

4.8 **Supervision.** All of the Subcontract Work is the sole and absolute responsibility of the Subcontractor; shall be initiated, managed, performed and completed by qualified, competent, skilled and reputable supervisors, administrators, mechanics and laborers, all of which are satisfactory to the Contractor; shall be in full compliance with the Subcontract Documents including this Subcontract; and shall meet the approval and acceptance of the Contractor and the Owner or its authorized representative. Subcontractor shall not change their Superintendent or Project Manager without written approval from the Contractor.

4.9 **Deliveries.** A minimum of twenty-four (24) hours notice is required for all deliveries to the jobsite. Notify Contractor prior to any major deliveries providing ample time for coordination. Deliveries are to be made at the place, in the quantities and at the times specified in instructions set forth herein or in other written instructions, which may from time to time be furnished by Contractor. Contractor may from time to time change, in writing, delivery instructions or direct that shipment or work be temporarily suspended. Subcontractor shall make no commitments for material or production arrangements in excess of the amount or in advance of the time necessary to comply with Contractor's delivery or performance instructions.

4.10 **Layout.** The Subcontractor shall take careful field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Subcontractor with the Contract Documents before the commencement of the Work. Errors, inconsistencies, or omissions shall be reported at once to the Contractor. Each Subcontractor is responsible for its own layout work.

5. Schedule

5.1 Time is of the essence. The Subcontractor shall commence the Subcontract Work under this Subcontract when notified by the Contractor and shall complete the Subcontract Work in a diligent manner in accordance with the Subcontract Documents and the Schedule of Work provided in this Agreement so that progress or completion of the Project will not be delayed and in such a manner that the Contractor, any other subcontractors, and any separate contractors of the Owner shall not be delayed or impeded in their work. The Subcontractor shall participate and cooperate in the development of schedules and other efforts to achieve timely completion of the Subcontract Work by providing information on the timing and sequence of operations so as to meet the Contractor's overall schedule requirements. The Subcontractor shall continuously monitor the Project Schedule including any revisions thereto, and other work on the Project so as to execute the Subcontract Work in accordance with the requirements of the Project Schedule. The Subcontractor agrees to be responsible for, carry out, and perform all time guarantees upon work or materials referred to in the Subcontract Documents relating to any labor performed or material furnished under this Subcontract. If Subcontractor falls behind schedule, all costs to get back on schedule will be the responsibility of the Subcontractor, including additional costs to the Contractor or other subcontractors that are directly affected by the Subcontractors delays. This includes, but not limited to, overtime, additional supervision and project management, delivery expenses, storage fees, and any other cost and expense incurred in an effort to get back on schedule. If Contractor is responsible for Liquidated Damages and Subcontractor causes delay and Liquidated Damages are charged, the costs of Liquidated Damages will be passed onto the Subcontractor. The Project Schedule is subject to change at the direction of the Contractor at no additional cost.

6. Payment

6.1 In consideration of faithful and timely performance by the Subcontractor of all the covenants and the conditions aforesaid, the Contractor agrees to pay the Subcontractor, subject to other provisions hereof, including authorized additions and deletions the "Subcontract Amount" which sum includes all applicable taxes. Payment shall only be due for the portion of the Subcontract Work actually completed to the satisfaction of the Contractor, the Architect and the Owner. Within ten (10) days after receipt by the Contractor of payment from the Owner, the Contractor shall make payment in the amount and to the extent received from the Owner, less ten percent (10%) retainage. However, receipt of payment by the Contractor from the Owner for the Subcontract Work is a condition precedent to the obligation by the Contractor to pay the Subcontractor for the Subcontract Work in accordance with the preceding sentence, and payment for the Subcontract Work will be made to Subcontractor by the Contractor if and only to the extent such payment is received by the Contractor from the Owner. The Subcontractor hereby acknowledges that it relies on its own evaluation of the credit worthiness of the Owner, and not the credit worthiness of the Contractor, with respect to payment for the Subcontract Work, and expressly assumes

the risk of non-payment by the Owner thereof, for any reason including, without limitation, insolvency of the Owner. Notwithstanding Subparagraph 4.2 of this Agreement, the provisions of this Section shall prevail over any conflicting provisions in the Prime Contract. Progress payment applications must be submitted by the Subcontractor each month in an amount equal to One Hundred percent (100%) of the estimated value of the labor, materials and equipment incorporated in the construction and materials and equipment suitably stored at the Project site, less the aggregate of previous payments. The Subcontractor's Affidavit and Waiver of Lien for prior payments must be properly executed by an authorized representative of the Subcontractor and returned to the Contractor prior to issuance of subsequent payments. Subcontractor must use Waiver Forms included as Exhibit "C" to this Agreement. Subcontractor will be required to provide Sub-Subcontractor and Vendor waivers for values exceeding $5,000.00. No other waiver forms other than those in Exhibit "C" will be accepted.

6.3 Each payment request or invoice must be received by the Contractor by the 20th day of the month to be processed with the Contractor's payment application that month. Invoices and payment requests received that are inaccurate or without substantiation, or after said day of the month will be held until corrected and substantiated, and then processed with the following month's payment application. Subcontractor shall submit all applications electronically, in PDF format, to accounts payable at AP@kinderandsons.com.

6.4 The Subcontractor shall submit its request for partial payment conforming to the standard AIA G702/G703 billing form, with schedule of values attached thereto, representing a true and accurate estimate of the Subcontract Work completed, and materials stored during the immediately preceding month or such other immediately preceding period as directed by the Contractor. In addition, if allowed by the Subcontract Documents, all invoices and insurance certificates shall be included for all stored materials in an off-site storage area applicable to the payment request. Materials not onsite can only be billed for as stored materials, if allowed. If requested, Subcontractor shall submit copies of payrolls to document the value of work in place.

6.6 If the Contractor, in its sole discretion, deems it necessary, the Subcontractor agrees to receive each of its progress payments and final payment in the form of multiple checks issued jointly between the Subcontractor's lower tier subcontractors and major material suppliers and the Subcontractor. Lower tier subcontractors that are to receive part or all of their progress payments as joint checks shall additionally submit with their Payment Requests all invoices from each lower tier subcontractor and major supplier and the net payments to be issued to each.

6.7 No partial payment, or certificate, therefore, shall constitute acceptance or approval by the Contractor of the Subcontract Work or material for which the partial payment is made. No partial payment shall constitute a waiver by the Contractor of any right to require fulfillment of all the terms of this Subcontract. Neither the final payment nor any partial payment, nor any certificate for either, shall constitute acceptance by the Contractor of defective work or improper materials or of any element of the Subcontractor's performance determined to be at variance with this Subcontract.

6.8 The Contractor shall have the right to set off any amounts the Subcontractor owes to the Contractor under this Subcontract or bylaw against the remaining balance under this Subcontract, or against any amounts due the Subcontractor under any other agreements with the Contractor.

6.9 **Final Payment.** Final payment by the Contractor to the Subcontractor shall not become due and payable to the Subcontractor until the following express conditions precedent have been met: (1) The completion of the Subcontract Work required by this Subcontract and acceptance of the Subcontract Work by the Contractor, the Owner and the Architect; (2) Final Waiver shall be provided in exchange for final payment; (3) all closeout and warranty documentation provided by the Contract has been submitted to Contractor; and (4) complete and full satisfaction of all claims, demands, disputes and obligations of the Subcontractor arising out of or related to this Subcontract, including those between the Contractor and the Subcontractor and between the Subcontractor and any third party. Should there be any such claim, lien or unsatisfied obligation, whether before or after final payment is made, the Subcontractor shall deliver payment to the Contractor an amount equal to whatever cost the Contractor and/or the Owner must pay to discharge or defend against any such claim, obligation, lien or action brought, or any judgment thereon and all costs, including legal fees and expenses and a 15% Administrative Fee, incurred in connection therewith.

7. Hazardous Materials

7.1 The Subcontractor shall at all times comply with all rules and regulations of any municipality, state or federal environmental protection, and toxic waste and hazardous substances laws, ordinances and regulations, and how they relate to the Subcontract Work, and shall be equally responsible for actions and inactions of subcontractors, sub subcontractors, and any other agents or independent contractors of the Subcontractor. The Subcontractor shall be deemed to, and shall, have included in the Subcontract Amount the containment, removal, disposal or neutralization of all toxic wastes and hazardous substances created, generated, or transported to or from the Project site in conjunction with the Subcontract Work. The Subcontractor will be responsible for identifying toxic wastes and hazardous substances generated, released, caused by or resulting from the Subcontract Work and notifying the Contractor of its presence in writing as soon as it is identified. The terms "toxic wastes" and "hazardous substances" shall have the same meaning as defined under federal environmental laws and regulations. At all times, the Subcontractor shall defend, indemnify, and hold harmless the Contractor from any and all expenses, costs, damages, suits, fines, assessments, penalties and/or causes of action, including attorney's fees through all investigations, negotiations, hearings or appeals, relating to or arising out of the Subcontractor's failure to strictly comply with the terms of this paragraph.

8. Compliance with Laws

8.1 The Subcontractor agrees to be bound by, and at its own costs comply with, all federal, state, and local laws, ordinances, and regulations (the "Laws") applicable to the Subcontract Work, including but not limited to safety, equal employment opportunity, minority business enterprise, women's business enterprise, disadvantaged business enterprise, sexual and racial harassment, and all other Laws with which the Contractor must comply.

8.2 Where prescribed by Law pursuant to direct Federal contracts or Federally-financed or aided contracts, or otherwise required by Law, the Subcontractor agrees the following clauses found in the Subcontract Documents or in the Code of Federal Regulations (CFR) are incorporated in this Subcontract and binding on Subcontractor as if written herein word for word: the clauses entitled "Equal Opportunity Clause" (41 CFR Sections 60-1.4 & 60-4.3); "Affirmative Action Obligations of Contractors and Subcontractors for Disabled Veterans of the Vietnam Era" (41 CFR Section 60-250.4); "Affirmative Action Obligations of Contractors and Subcontractors for Handicapped Workers" (41 CFR Section 60-741.1); "Contract Work Hours and Safety Standards Act-Overtime Compensation"; "Apprentices and Trainees"; "Payrolls and Basic Records"; "Compliance with Copeland Act Requirements"; "Withholding"; "Subcontracts"; "Contract Termination-Department"; "Disputes Concerning Labor Standards"; "Compliance with Davis-Bacon and Related Act Requirements"; and "Certification of Eligibility" and such other clauses as the Federal Government has required by law or contract. Subcontractor agrees to include all such clauses in any non-exempt, lower-tier subcontracts.

8.3 **Immigration Compliance.** The Subcontractor represents and warrants to the Contractor that the Subcontractor is in compliance with, and shall remain

in compliance with, the provisions of the Immigration Reform and Control Act of 1986 (The "Act") and all other Federal, State, and/or local immigration statutes/ordinances, as applicable, including, but not limited to the provisions of the Act prohibiting hiring and continued employment of unauthorized aliens, requiring verification and record keeping with respect to identity and eligibility for employment and prohibiting discrimination on the basis of national origin, United States citizenship, or intending citizen status. The Subcontractor agrees to indemnify the Contractor and to hold the Contractor harmless from all liability, including liability for interest and penalties, the Contractor incurs which results from or is attributable to the Subcontractor's failure to comply with any provisions of the Act, and or applicable Federal, State, and/or local immigration statute/ordinance, including reimbursing the Contractor any monies expended by the Contractor in participating in or responding to any investigation/suit/civil or criminal immigration matter involving the Subcontractor. As it relates to immigration compliance, the Subcontractor shall be responsible for completing any and all required documentation in accordance with requirements put forth by the Owner, Contractor or applicable law.

8.4 The Subcontractor shall be liable to the Contractor and the Owner for all loss, cost and expense attributable to any acts of commission or omission by the Subcontractor, its Sub-Subcontractors at any tier, and its and their respective employees and agents resulting from the failure to comply with Laws, including, but not limited to, any fines, penalties, restitution, judgments, and other damages resulting from such acts of commission or omission.

9. Insurance

9.1 The Subcontractor agrees to procure, pay for, and maintain in full force and effect during the course of the performance of the Subcontract all insurance required by the laws of the state in which the Subcontract Work covered by this Subcontract is being performed, and in such form and amounts as described in in this section and in Exhibit D, whichever is greater, which is attached hereto and incorporated into this Subcontract. Certificates of Insurance on The American Institute of Architect's Form G-705 or other form acceptable to Contractor and Contractor's counsel must be returned to the Contractor with signed Contract Agreement prior to commencement of the Work or receiving any payment on the project. Subcontractor is responsible for the following insurance for protection from claims that may arise out of or result from Subcontractor's operations under this Agreement, whether such operations be by Subcontractor or by any sub-subcontractor, or by anyone directly or indirectly employed by any of them, or by anyone or whose acts any of them may be liable.

(a) Worker's compensation insurance in accordance with statutory laws and with limits as provided by statute.
(b) Comprehensive general liability, including completed operations coverage for a period of three (3) years from the Project Substantial Completion date, products liability coverage (with the Contractor and Owner protected as additional insured), and contractual liability coverage, with limits of not less than
(i) $1,000,000 each occurrence and $2,000,000 in the aggregate per project for bodily injury or death; and (ii) $1,000,000 each occurrence and $2,000,000 in the aggregate per project for property damage.
(c) Automobile insurance with coverage for owned and non-owned vehicles with a combined single limit of $1,000,000 public liability and property damage.
(d) Installation Floater with a combined limit not less than $500,000.
(e) In addition, Subcontractor shall purchase an umbrella policy with minimum limits of $5,000,000 per occurrence. This policy must provide coverage over the underlying liability policies.
(f) Professional Liability with a limit not less than $1,000,000.

Unless Contractor otherwise agrees in writing, the liability policies to be maintained by Subcontractor hereunder shall name Contractor and Owner as additional named insureds. All insurance limits and minimums must be in accord with both the above and/or that noted in the Project Manual/Specifications whichever minimums are greater. All insurance is to be classified as Primary/Non-Contributory (Form #CG7061 or equivalent) and denoted accordingly on Contractor's Insurance Certificate. Subcontractor shall defend, indemnify and hold harmless Contractor and Owner and their agents and employees from and against all claims, damages, causes of action, losses and expenses, including attorney's fees, arising out of or resulting from the performance of the work, provided that such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting therefrom; and (2) is caused in whole or in part by any negligent act or omission of Subcontractor or any of Subcontractor's subcontractors, anyone directly or indirectly employed by any of them or for anyone for whose acts any of them may be liable, regardless of whether it is caused in part by a party indemnified hereunder.

9.2 **Waiver of Subrogation**. A Blanket Waiver of Subrogation clause shall be added to the general liability (Policy Form #CG7036) or equivalent; automobile liability (Policy Form #CA0444) or equivalent and worker's compensation (Policy Form #WC000313 or equivalent). The policies shall be in favor of Michael Kinder & Sons, Inc. and this clause shall apply to Michael Kinder & Sons, Inc. officers, agents and employees, with respect to all projects during the policy term.

9.3 **Cancellation of Coverage**. Each policy of insurance shall provide notification to Contractor and Owner at least thirty (30) days prior to any cancellation or modification to reduce the insurance coverage.

9.4 **Sub-Subcontractors**. To the extent that the Subcontractor subcontracts with any other entity or individual to perform all or part of the Subcontractor's Work, the Subcontractor shall require the other Sub-Subcontractors to furnish evidence of equivalent insurance coverage, in all respects, terms and conditions as set forth herein, prior to the commencement of the Work by the Sub-Subcontractor. The Contractor and Owner shall be named as additional insured as detailed below.

9.5 **Blanket Additional Insured on General Liability and Automobile Liability**. Michael Kinder & Sons, Inc., and their affiliates, directors, employees, subsidiaries, representatives, and any other parties as required by this Contract Agreement. They must be listed as certificate holder, and the Contractor and Owner must be protected as additional insured for Ongoing Operations and Products/Completed Operations on the Subcontractor's and any Sub-Subcontractor's Commercial General Liability Policies. The coverage must be primary and non-contributory with respect to the additional insured. The Blanket Additional Insured coverage must be provided by General Liability Policy Form #CG7037 or equivalent and Automobile Liability Policy Form #CA2048 or equivalent.

9.6 The Contractor shall have no duty to the Subcontractor or to any of its insurers or their insurance agents to review any certificates or copies of insurance furnished to the Contractor or to determine whether the terms of each certificate or policy of insurance comply with the insurance-related provisions of the Subcontract. A failure of the Contractor to detect that the Subcontractor has not submitted certificates, or proper certificates, or is otherwise not in compliance with the insurance-related provisions of the Subcontract shall not be construed as a waiver or other impairment of any of the Contractor's rights under such insurance-related provisions.

9.7 If the Subcontractor fails to procure and maintain such insurance, in addition to the option of declaring the Subcontractor in default for breach of a material provision of this Subcontract, the Contractor shall have the right, but not the duty, to procure and maintain the same insurance, or other insurance that provides the Contractor with equivalent protection, and the Subcontractor shall furnish all necessary information to make effective and maintain such insurance. At the option of the Contractor, the cost of said insurance purchased by the Contractor shall be charged against and deducted from any monies then due or to become due to the Subcontractor or the Contractor shall notify the Subcontractor of the cost thereof and the Subcontractor shall promptly pay such cost.

9.8 The Subcontractor shall identify by certificate any Residential, Mold, EIFS, Silica or other major exclusions that impact the Subcontractor's ability to insure its risk. If the Project includes any Residential components or the proposed design includes EIFS systems, then the Subcontractor shall obtain appropriate endorsements acceptable to the Contractor as a condition of this Subcontract.

9.9 The Subcontractor shall at its own expense provide insurance coverage for materials stored off the site after written approval of the Contractor at the value established in the approval, and also for portions of the Subcontract Work in transit until such materials are permanently incorporated into the Project. The risk of loss for material and equipment provided by this Subcontract, whether in a deliverable state or otherwise, shall remain with the Subcontractor. Any damages to the material and equipment or loss of any kind occasioned in transit shall be borne by the Subcontractor, notwithstanding the manner in which the goods are shipped or who pays the freight or other transportation costs.

10. Indemnity

10.1 **General Indemnity.** To the fullest extent allowed by law, the Subcontractor agrees to defend, indemnify and hold harmless the Contractor to the same extent Contractor is obligated to defend, indemnify and hold harmless the Owner. In the absence of such Owner-required defense and indemnification, the Subcontractor shall defend, indemnify and hold harmless the Contractor, the Contractor's other subcontractors, the Architect/Engineer, the Owner and their agents, consultants, members and employees (the Indemnitees) from and against all claims, damages, losses and expenses, including, but not limited to, attorneys' fees, costs and expenses for bodily injury and property damage that may arise from the performance of the Subcontract Work to the extent of the negligent acts or omissions by, or the fault of, the Subcontractor, the Subcontractor's sub-subcontractors or anyone employed directly or indirectly by any of them or by anyone for whose acts or omissions any of them may be liable. The Subcontractor agrees to purchase and maintain contractual liability insurance covering its obligations in this article. These obligations shall not be interpreted to reduce or negate any other rights or obligations of indemnity otherwise existing with regard as to any party or person described in this Article.

10.2 **Patents.** The Subcontractor hereby agrees to defend, indemnify and hold harmless the Contractor and the Owner from and against any and all liability, loss or damage and to reimburse the Contractor and the Owner for any costs, including legal fees and expenses, which the Contractor and the Owner may incur because of claims or litigation on account of infringement or alleged infringement of any letters patent or patent rights by reason of the Subcontract Work, or materials, equipment or other items used by the Subcontractor in its performance.

10.3 **No Limitations.** In furtherance to, but not in limitation of the indemnity provisions in this Subcontract, the Subcontractor hereby expressly and specifically agrees that its obligation to indemnify, defend and hold harmless as provided in this Subcontract shall not in any way be affected or diminished by any statutory or constitutional immunity it enjoys from suits by its own employees or from limitations of liability or recovery under worker's compensation laws.

11. Termination for Convenience

11.1 It is understood that the basic assumption underlying the mutual obligations and responsibilities entered into by the parties to this Subcontract is the continued performance with respect to the Prime Contract that exists between the Contractor and the Owner. If, for any reason, the Prime Contract is breached, rescinded, or terminated, the Contractor shall have the right to immediately terminate this Subcontract. In no event shall the Contractor be obligated to the Subcontractor for any anticipatory profits or any damages incurred by the Subcontractor as a result of the termination of this Subcontract, unless approved and paid by the Owner. The Subcontractor agrees that the Contractor's decision or determination regarding the pro rata share of any monies received from the Owner as damages or compensation for said breach, rescission or termination of the Agreement shall be final and conclusive and that the Subcontractor shall have no claim or cause of action against the Contractor for any reason or greater amount.

11.2 The Contractor shall have the right at any time by written notice to the Subcontractor, to terminate this Subcontract without cause and require the Subcontractor to cease work. In the event of such a termination for convenience, the Subcontractor shall be entitled to payment pursuant to the terms of the Subcontract for the portion of the Subcontract Work actually completed as of the date of termination, together with reasonable costs of demobilization and such other reasonable costs as may be encountered by the Subcontractor and directly attributable to such termination provided that such amount may be reduced by all amounts for which the Subcontractor is liable or responsible. However, the Subcontractor shall only be entitled to profit on that portion of the work actually completed and approved for payment to the date of termination together with retainages withheld from prior payments. The Subcontractor waives any claim for loss of anticipated profits or other damages in the event the Contractor exercises this clause.

12. Failure of Performance

12.1 **Non-Conforming Subcontract Work.** The Subcontractor shall provide sufficient, safe, and proper facilities at all times for inspection by the Architect, the Owner or the Contractor of the Subcontract Work in the field, at shops or at any other place where materials required hereunder are in course of preparation, manufacture, treatment or storage. The Subcontractor shall, within twenty four (24) hours after receiving written notice from the Contractor to that effect, proceed to remove from the site any materials condemned by the Architect, the Owner, or the Contractor, whether worked or unworked, and to take down all portions of the Subcontract Work which the Architect, the Owner or the Contractor has condemned in writing, as unsound or improper, or as in any way failing to conform to the drawings, specifications and addenda and shall take full financial responsibility for all damage caused by such removal. In the event that all or any portion of the Subcontract Work as condemned should be of such a nature, or the time available should be so limited, that in the judgment of the Architect, the Owner or the Contractor it would not be expedient to order the same replaced or corrected, the Contractor, at its option, may deduct from the payments due or to become due to the Subcontractor such amount or amounts as in the opinion of the Architect or the Owner shall represent the difference between the fair and reasonable value of the Subcontract Work so condemned and its value had it been executed in conformity with the Subcontract Documents.

12.2 **Use of Non-Conforming Materials and Remedies.** Any materials and/or labor which at any time, whether before or after delivery, payment and/or utilization in the Project, fail to conform to any descriptions, specifications, or provisions contained in this Contract Agreement, or fail to satisfy any of

Subcontractor's express or implied warranties, or are shipped or delivered other than in the quantities or not at the time and place specified in Contractor's delivery instructions, or other than in containers or packages conforming to Contractor's specifications (or, in the absence of such specifications, in recognized standard containers), or which are otherwise not in conformance with this Contract Agreement shall be deemed "non-conforming materials and/or labor." If Subcontractor provides or utilizes any non-conforming materials and/or labor, Contractor, without limitation of any other right or remedy Contractor may have, may (a) require Subcontractor to repair or replace, at Contractor's option, such materials and/or labor at Subcontractor's expense; or (b) reject, in whole or in part, the materials and/or labor that are the subject of this Contract Agreement and receive credit or refund for such whole or part of the purchase price associated therewith. Non-conforming materials may be held (or returned to Subcontractor), at Subcontractor expense and risk, and shall be replaced by Subcontractor only upon the written request of the Contractor. Contractor may charge to Subcontractor all expenses of unpacking, examining, testing, repacking, storing and reshipping of any such non-conforming materials and/or of inspecting and testing any such non-conforming labor and may also charge to Subcontractor any other incidental or consequential damages suffered by Contractor as a result thereof.

12.3 **Remedies Cumulative.** The remedies provided for in this Contract Agreement are cumulative and shall be in addition to, and not in limitation of, the rights and remedies which may be available to Contractor at law or in equity. No waiver of a breach of any provision of this Agreement shall be effective unless in writing and no such waiver shall constitute a waiver of any other breach or of the same breach at a different time. The exercise by Contractor of the rights provided herein shall not be considered as a waiver of any damages which may be incurred by Contractor or a waiver of any other rights or remedies to which Contractor might be entitled.

12.4 **Notice to Cure.** If the Subcontractor is unable, refuses or fails to supply enough properly-skilled workers, proper materials, correct non-conforming Subcontract Work, or maintain the Schedule of Work, or fails to make prompt payment to its workers, subcontractors or suppliers, or disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, or otherwise is guilty of a material breach of a provision of this Agreement, the Subcontractor shall be deemed in default of this Agreement. If the Subcontractor fails within three (3) business days after written notification to commence and continue satisfactory correction of the default with diligence and promptness, then the Contractor without prejudice to any other rights or remedies, shall have the right to any or all of the following remedies:

12.4.1 to supply workers, materials, equipment and facilities as the Contractor deems necessary for the completion of the Subcontract Work or any part which the Subcontractor has failed to complete or perform after written notification, and charge the cost, including reasonable overhead, profit, attorneys' fees, costs and expenses to the Subcontractor;

12.4.2 to contract with one or more additional contractors to perform such part of the Subcontract Work as the Contractor determines will provide the most expeditious completion of the Subcontract Work, and charge the cost to the Subcontractor; and/or

12.4.3 withhold any payments due or to become due the Subcontractor pending corrective action in amounts sufficient to cover losses and compel performance to the extent required by and to the satisfaction of the Contractor.

12.4.4 terminate the Subcontractor for default by delivering written notice of such termination to the Subcontractor.

12.4.5 to charge to the Subcontractor an Administrative Fee of 15% of all costs incurred by the Contractor in exercising any of the above remedies.

In the event of an emergency affecting the safety of persons or property, the Contractor may proceed as above without notice, but the Contractor shall give the Subcontractor notice promptly after the fact as a precondition of cost recovery.

12.3 **Termination for Default.** If the Subcontractor has been terminated for default, the Contractor may take possession of the Subcontract Work, materials, tools, appliances and equipment of the Subcontractor at the Project site, and through itself or others provide labor, equipment and materials to prosecute Subcontract Work on such terms and conditions as shall be deemed by the Contractor as necessary, and shall deduct the cost, including without restriction all claims, charges, expenses, losses, costs, damages, and attorneys' fees, incurred as a result of the Subcontractor's failure to perform, from any money then due or thereafter to become due to the Subcontractor under this Agreement.

12.3.1 If the Contractor so terminates the employment of the Subcontractor, the Subcontractor shall not be entitled to any further payments under this Agreement and no sum shall be deemed due or to become due to the Subcontractor until Subcontract Work has been completed and accepted by the Owner, all Subcontract requirements have been fulfilled, and payment has been received by the Contractor from the Owner. In the event the unpaid subcontract earnings exceed the Contractor's cost of completion and any and all incidental costs, including administrative, legal and other professional fees, the difference shall be paid to the Subcontractor, but if such expenses exceed the subcontract earnings, the Subcontractor agrees to pay the difference to the Contractor promptly.

12.3.2 If it is determined or agreed that the Contractor wrongfully exercised any option under this Article, the Contractor shall be liable to the Subcontractor solely for the reasonable value of Subcontract Work performed by the Subcontractor prior to such action, including reasonable overhead and profit on the Subcontract Work performed, less prior payments made. Under no circumstances shall the Subcontractor be entitled to recovery of claimed lost future profits.

13. Delays

13.1 Should the progress of the Subcontract Work be delayed, obstructed or interfered with through any fault, action or failure to act by the Subcontractor or any of its officers, agents, employees, subcontractors or suppliers so as to cause any additional cost, expense, liability or damage to the Contractor or the Owner, including legal fees or expenses incurred in defending claims arising from such delay or seeking reimbursement and indemnity from the Subcontractor and its surety hereunder, the Subcontractor and its surety agree to compensate and indemnify the Contractor and the Owner against all such costs, expenses, damages and liabilities.

13.2 In addition, the Subcontractor, at the Contractor's direction and at the Subcontractor's own cost and expense, shall work such overtime as may be necessary to make up for all time lost in the completion of the Subcontract Work and in the completion of the Project due to such delay. Weather days will be made up through longer hours, Saturdays, and/or Sundays. Subcontractor fully obligated to meet the requirements of the project schedule within these constraints. If the Subcontractor fails to make up for the time lost by reason of such delay, the Contractor has the right to use other subcontractors or suppliers and to take whatever other action the Contractor deems necessary to avoid delay in the completion of the Subcontract Work and the Project, the cost of which shall be borne by the Subcontractor. In the event Subcontractor delays timely performance of the Subcontract

Work or to the completion of the Project, either by its acts or omissions, and such delays result in the Contractor being charged by the Owner with actual or liquidated damages, then the Subcontractor shall reimburse the Contractor the full amount of all such damages and charges resulting from the delays caused by the Subcontractor. The Contractor may offset any such damages against the remaining balance due to the Subcontractor on the Subcontract Amount, if any.

13.3 If the commencement and/or progress of the Subcontract Work is delayed without the fault or responsibility of the Subcontractor, the time for the Subcontract Work shall be extended by Subcontract Change Order to the extent obtained by the Contractor from the Owner pursuant to the Prime Contract, and the Schedule of Work shall be revised accordingly.

14. Changes

14.1 Subcontract Changes. The Contractor and the Subcontractor agree the Contractor may make changes to the Subcontract Work, including but not limited to; additions, deletions or revisions. Any changes made to the Subcontract Work involved, or any other parts of this Agreement, shall be by a written Change Order. To the extent that any such change impacts Subcontractor's cost of or time for performance, the Subcontract Amount and Subcontract Schedule shall be equitably adjusted to compensate for such impact. Changes shall be initiated by one of the three methods outlined below, or as provided in the Prime Contract and shall be incorporated into the Subcontract by a Change Order.

14.1.1. **Request for Change Proposal.** A Request for Change Proposal (RFCP) is a written request that informs Subcontractor about a potential change in the Subcontract Work and requests a proposal for the potential change. Subcontractor shall promptly reply with such request. Subcontractor shall not implement the change or incur any costs until a Change Order is fully executed.

14.1.2. **Construction Change Directive.** A Construction Change Directive (CCD) is a written directive that instructs Subcontractor to take some immediate action in connection with the Subcontract Work. CCDs are issued when there is not time to issue a RFCO or Change Order. Subcontractor shall immediately proceed so as not to delay the progress of the Work and in accordance with the terms of the CCD. Any impact of a CCD on the Contract Price or Schedule shall be adjusted by a Change Order.

14.1.3. **Change Order Requests.** Within seven (7) calendar days after the occurrence of any event or observance of any condition that Subcontractor believes entitles Subcontractor to an adjustment in Subcontract Amount and/or Subcontract Schedule, Subcontractor shall prepare and submit a Change Order Request (COR) to Contractor. The COR shall include a detailed factual narrative, a detailed analysis showing entitlement and a detailed analysis of the proposed change to the Subcontract Amount and/or Subcontract Schedule.

14.2 **Change Orders.** A Change Order (CO) is a written instrument prepared by the Contractor and signed by the Subcontractor stating their agreement with the change in the Subcontract Work and any adjustment to the Subcontract Amount and/or Subcontract Schedule. All changes and/or additions in the Subcontract Work ordered in writing by the Contractor shall be deemed a part of the Subcontract Work and shall be performed and furnished in strict accordance with all terms and conditions of this Agreement and the Subcontract Documents, including the current Schedule of Work.

Change Orders will be used to implement approved Requests for Change Proposals, Construction Change Directives and Change Order Requests. Upon receipt of a properly documented COR or CCD, the parties shall negotiate in good faith to determine if the Subcontractor is entitled to a Change Order and, if so, the appropriate equitable adjustment. Any adjustment to the Subcontract Amount shall be established by one of the following methods:

a. mutual acceptance of an itemized lump sum, or
b. unit prices as indicated in the Subcontract Documents or as subsequently agreed to by the parties; or
c. costs determined in a manner acceptable to the parties and a mutually acceptable fixed or percentage fee; or
d. another method provided in the Subcontract Documents.

If the Parties are unable to agree on the dispositions of a COR or CCD, Contractor will either (i) issue a Notice denying Subcontractor's request or (ii) issue a unilateral Change Order setting forth the Contractor's final determination regarding the adjustments. Any cost and schedule adjustments shall be a full accord and satisfaction for all cumulative impacts of the underlying change.

14.3 The Subcontractor shall not be entitled to receive additional compensation for extra work or materials or changes of any kind except to the extent the same was ordered by the Contractor or any of its representatives. The Subcontractor shall be responsible for any costs incurred by the Contractor for changes of any kind made by the Subcontractor that increase the cost of the Work for either the Contractor or other subcontractors when the Subcontractor proceeds with such changes without a Change Order or Construction Change Directive.

14.4 Determination by Owner or Architect/Engineer. Notwithstanding any other provision, if the Subcontract Work for which the Subcontractor claims additional compensation is determined by the Owner or Architect/Engineer not to entitle the Contractor to a Change Order, additional compensation or a time extension, the Contractor shall not be liable to the Subcontractor for any additional compensation or time extension for such Subcontract Work, unless the Contractor agrees in writing to pay such additional compensation or to grant such extension.

15. Claims

15.1 A Claim is a written demand by Subcontractor seeking an adjustment in the Subcontract Amount and/or Subcontract Schedule or some other relief under the terms of the Subcontract for events other than a RFCP that has been denied in writing. Subcontractor shall provide Notice to Contractor of any potential Claim within seven (7) calendar days after the event giving rise to the Claim. Within fifteen (15) calendar days thereafter, Subcontractor shall submit a detailed factual narrative, a detailed analysis showing entitlement and a detailed analysis of the alleged change to the Subcontract Amount and/or Subcontract Schedule. Claims not timely made, in writing, by the Subcontractor shall be deemed to have been abandoned and waived. The acceptance and consideration of any claim out of time by the Contractor shall not create any precedent nor "course of dealing' between the Contractor and the Subcontractor, nor shall it waive the Contractor's right to insist on strict adherence by the Subcontractor to the contract claims procedures. If Contractor denies Subcontractor's Claim, Subcontractor may pursue the matter under Article 21 Dispute Resolution.

15.2 The Subcontractor shall not delay or suspend the Subcontract Work because of the pendency of or the denial by the Contractor of any such claim or because of the continuance of the condition out of which the claim arose, but shall proceed diligently in performing the Subcontract Work while the claim is being resolved by agreement or being fully adjudicated.

15.3 In the event the Subcontractor asserts that it should receive additional compensation because of an act or omission on the Owner's part, or someone for whom the Owner is responsible, the Subcontractor shall promptly submit the claim to the Contractor in writing at least three (3) working days

before the date the Contractor is required to submit such claims under the Prime Contract. If timely submitted with all documentation required by the Prime Contract, the Contractor will, on behalf of the Subcontractor, submit the same to the Owner for its consideration. Failure of the Subcontractor to submit such claims in a timely and proper manner shall result in a waiver of such claim and the Contractor is not required to submit it to the Owner, and the Subcontractor shall be bound to the same consequence which the Contractor would suffer under the Prime Contract.

15.4 The Subcontractor shall fully cooperate with the Contractor in the submission of such pass through claims, shall prepare all supporting data and do everything else necessary to properly present the claims, including payment of legal fees incurred by the Contractor to prepare, submit and negotiate or otherwise resolve such claim. Should the Owner allow and pay additional compensation to the Contractor on account of such pass through claim asserted by the Subcontractor, the Contractor will pay the same to the Subcontractor, less the Contractor's overhead, costs, expenses, legal fees and a 15% Administrative Fee.

15.5 It shall be an express condition precedent to any obligation on the part of the Contractor to make payment of any cost, reimbursement, compensation or damages to the Subcontractor hereunder that the Contractor shall first be determined to be entitled to such compensation on behalf of the Subcontractor and then receive such payment from Owner, and Subcontractor expressly acknowledges that the Contractor is not obligated or required to pursue the Subcontractor's claim against the Owner if the Contractor, in its sole discretion, after review of the Subcontractor's claim, has deemed the claim to lack merit in whole or in part.

15.6 If at any time a controversy should arise between the Contractor and the Subcontractor with respect to any matter in this Subcontract which the Contractor determines is not a claim, dispute or controversy which should involve or be asserted against the Owner, the decision of the Contractor relating to the subject of the controversy shall be followed by the Subcontractor.

16. Taxes

16.1 The Subcontract Amount includes all applicable sales, excise, transportation, unemployment compensation, social security, and any other taxes presently existing or subsequently imposed and levied and the Subcontractor agrees to pay all of the above and to conform to all applicable municipal, state and federal laws in connection with such taxes. The Subcontractor further agrees to withhold taxes from the wages and salaries of all employees of the Subcontractor and pay the same in accordance with the federal and state laws and regulations pertaining thereto. The Subcontract Amount includes federal, state, and municipal taxes now levied or in force or hereafter imposed on any and all tangible personal property sold or transferred to the Contractor under this Subcontract and the Subcontractor agrees to pay such tax or taxes on such property, the cost of which is included in the Subcontract Amount.

17. Liens

17.1 The Subcontractor shall promptly pay when due all its project creditors, together with the project creditors of all those below it in the contractual chain.

17.2 If the Project involves private work, the Subcontractor shall keep the property and improvements free and clear of all mechanic, materialmen and similar lien claims or statements. In the event any such lien is filed, asserted, or claimed, the Subcontractor shall immediately secure its release either by paying the lien claimant, by filing a lien release bond, or by any other means permitted by law. If not so released, the Contractor may retain an amount equal to 150% of the lien or claim and may pay the claimant and offset that amount, plus any legal fees from the amount so retained. If the Project involves public work, the Subcontractor shall promptly pay and secure releases from all of its project creditors, including all those below it in the contractual chain, who are entitled to assert claims against the Contractor or its surety.

17.3 If any claim or lien is made or filed with or against the Contractor, the Owner, the Project, the Premises or the Project funds by any person claiming that the Subcontractor or any subcontractor or other person under subcontract to the Subcontractor, or any person or entity employed or engaged by the Subcontractor at any tier, has failed to make payment for any labor, services, materials, equipment, taxes or other obligations furnished or incurred in connection with the Subcontract Work, or if the Subcontractor or any subcontractor or other person under subcontract to the Subcontractor, or any person or entity employed or engaged by the Subcontractor at any tier causes damage to the Subcontract Work or any other work on the project, or if the Subcontractor fails to perform or is otherwise in default of any term or provision of this Subcontract, the Contractor shall have the right to retain from any payment then due or thereafter due an amount which the Contractor deems sufficient to (1) satisfy, discharge and/or defend against any such claim or lien, (2) make good any such nonpayment, failure, damage or default, and (3) defend, indemnify and hold harmless the Contractor and the Owner against any and all losses, damages and costs, including legal fees and expenses, incurred by either or both of them. The Contractor shall require proof that any such nonpayment, claim or lien is fully satisfied, dismissed, and discharged before any remaining retained funds will be released. The Contractor shall, in addition, have the right to apply and charge against the Subcontractor so much of the amount retained as may be required for the foregoing purposes and the Subcontractor shall pay and reimburse the Contractor and the Owner all such losses, damages, and costs incurred by them which exceed the retained funds.

18. Assignment

18.1 To the fullest extent permitted by law, the Subcontractor agrees that it shall not assign, sell, transfer, delegate or encumber any rights, duties or obligations arising under this Subcontract including, but not limited to, any right to receive payments hereunder, without the prior written consent of the Contractor in its sole discretion and the giving of any such consent to a particular assignment shall not dispense with the necessity of such consent to any further or other assignments. In the event the Subcontractor assigns, sells, encumbers, or otherwise transfers its right to any funds due or to become due under this Subcontract as security for any loan, financing or other indebtedness ("Assignment"), notification to the Contractor of such Assignment must be sent by certified mail, return receipt requested, to the Contractor and the Assignment shall not be effective as against the Contractor until the Contractor provides its written consent to such Assignment. The Subcontractor agrees that any such Assignment shall not relieve the Subcontractor of any of its agreements, duties, responsibilities or obligations under this Subcontract and the Subcontract Documents and shall not create a contractual relationship or a third party beneficiary relationship of any kind between the Contractor and such assignee or transferee.

19. Guarantee/Warranty

19.1 For a period equal to that imposed upon the Contractor under the Prime Contract, but in no event less than one year from the date of the Owner's final acceptance of the Subcontract Work, the Subcontractor guarantees and warrants that the Subcontract Work complies with the Subcontract Documents requirements and is free from defects in material and workmanship. The Subcontractor shall remain liable for defects in the Subcontract Work for the

same period the Contractor remains liable to the Owner under the Prime Contract, or as required by law, whichever is greater. This guarantee/warranty shall include, but is not limited to, the cost of all labor, material, and related items necessary to correct any such defect, plus the cost of repairing any damage to other items which may have been caused by the defective material or workmanship. If the Subcontractor fails to begin warranty work within seventy-two (72) hours of being notified that such work is necessary, the Contractor may, at its option, perform the necessary remedial work or secure its performance by others and charge the Subcontractor with the cost thereof, plus a 15% Administrative Fee. Nothing in this paragraph shall shorten the statute of limitations on any action by the Contractor for breach of contract, negligence, or other cause of action against the Subcontractor.

20. Dispute Resolution

20.1 **Scope of Disputes Provisions.** All Claims, disputes, or other matters in question between the parties to this Subcontract which arise out of or relate to this Agreement (or the breach thereof), whether in contract or tort, (hereinafter "Dispute") shall be subject to the dispute resolutions set forth below.

20.2 **Initial Dispute Resolution/Mediation.** A Dispute which either party desires to pursue shall be set forth in a detailed written statement of claim submitted to the other party providing the specific basis upon which monetary or other relief is claimed to be due, the specific contractual provision(s) supporting the claim and an itemization of the amount claimed to be due. Following submission of the detailed statement of claim, Contractor and Subcontractor shall endeavor to settle the Dispute first through face to face direct discussions between corporate officers of the Contractor and Subcontractor which discussions shall be held at the Contractor's office location involved with the Project within thirty (30) calendar days of a request by either party. If the Dispute cannot be resolved through direct discussions, the parties shall participate in mediation under the Construction Industry Mediation Rules of the American Arbitration Association as a condition precedent and before recourse to any other form of binding dispute resolution. The location of the mediation shall be Allen County, Indiana, unless the parties agree on another location. Upon written notice requesting mediation provided to the other party and the American Arbitration Association, the parties agree to proceed with the mediation as scheduled by the mediator. Either party may terminate the mediation at any time after the first session, but the decision to terminate must be personally delivered to the other party and the mediator.

20.3 Binding Dispute Resolution. In the event Contractor and Subcontractor cannot resolve the Dispute through direct discussions or mediation as contemplated above, then the Dispute shall, at the sole discretion of Contractor, be decided either by submission to (a) arbitration administered by the American Arbitration Association or other arbitration tribunal mutually agreed upon by the parties; or (b) litigation subject to the exclusive jurisdiction and venue of Allen County, Indiana.

20.4 **Arbitration Election**

20.4.1 In the event Contractor exercises its exclusive right to resolve the Dispute in arbitration, such arbitration shall be conducted in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association or the applicable rules of such other arbitration tribunal as the parties may mutually determine in effect at the time the arbitration is commenced as modified by the terms hereof. Any arbitration hereunder shall be held in Allen County, Indiana.

20.4.2 Should Contractor exercise its exclusive right to resolve the Dispute by arbitration, then within fourteen (14) days after Contractor gives Subcontractor notice of Contractor's election of arbitration, the parties shall use good faith efforts to select a single arbitrator mutually acceptable to both parties. If the parties are unable to select an arbitrator, then the parties will select the arbitrator(s) from a panel of experienced construction arbitrators on the American Arbitration Association's large complex case panel or a comparable panel of experienced construction arbitrators maintained by such other arbitration tribunal mutually selected by the parties then in effect. In the event the amount in Dispute exceeds $1,000,000.00, Contractor and Subcontractor agree the arbitration shall be heard by a panel of three (3) arbitrators; otherwise, the Dispute shall be heard by a single arbitrator.

20.4.3 The parties will enter into an Electronically Stored Information Agreement outlining the scope and volume for ESI discovery, which shall take into account the amount and complexity of the Dispute.

20.4.4 The arbitration award shall be final and binding upon the parties, shall include attorneys' fees and costs to the prevailing party or parties, and may be entered as a judgment in any court having proper jurisdiction. In any arbitration the Arbitrator(s) shall have no power to render an award which has the effect of altering or amending or changing in any way any provisions of this Subcontract.

20.4.5 The parties stipulate and agree that the performance of this Subcontract is a transaction involving interstate commerce. Notwithstanding other provisions in the Subcontract, or choice of law provisions to the contrary, this agreement to arbitrate shall be enforced pursuant to, and governed by, the Federal Arbitration Act, 9 U. S. C. §1 et seq., which shall not be superseded or supplemented by any other arbitration act, statute, or regulation.

20.4.6 At the sole discretion of Contractor, any arbitration with Subcontractor shall be consolidated with any other arbitration proceeding relating to the work under the General Contract.

20.5 **Litigation Election.** In the event Contractor elects not to exercise its exclusive right to resolve the Dispute by arbitration, or in the event the Dispute between Contractor and Subcontractor, or any portion thereof, is found to be non-arbitrable, then the parties hereby agree that the Dispute or a portion thereof (as the case may be) shall be subject to exclusive jurisdiction and venue of Allen County, Indiana. In any such Dispute or portion thereof which is resolved by litigation, Subcontractor expressly waives any right to trial by jury.

20.6 **Multiparty Proceeding.** To the extent permitted by Subcontract Documents, all parties necessary to resolve a claim shall be parties to the same dispute resolution proceeding. To the extent Disputes between the Contractor and the Subcontractor involve in whole or in part disputes between the Contractor and the Owner, Disputes between the Subcontractor and the Contractor shall be decided by the same tribunal and in the same forum as disputes between the Contractor and the Owner.

20.7 **Stay of Proceedings.** (a) In the event the provisions for resolution of disputes between the Contractor and the Owner contained in the Subcontract Documents do not permit consolidation or joinder with disputes of third parties, such as the Subcontractor, resolution of any Dispute between Contractor and Subcontractor involving in whole or in part disputes between Contractor and Owner shall be stayed pending conclusion of any dispute resolution proceeding between Contractor and Owner. (b) In the event that any action is filed prior to exhaustion of remedies under the Subcontract; such action shall be stayed pending conclusion of any dispute resolution proceedings.

20.8 **Work Continuation and Payment.** Unless otherwise agreed in writing, Subcontractor shall continue the Subcontract Work and maintain the Schedule of

Work during any dispute resolution proceedings. As Subcontractor continues to perform, Contractor shall continue to make payments in accordance with this Agreement.

20.9 Cost of Dispute Resolution; Attorneys' Fees. The cost of any mediation proceeding shall be shared equally by the parties participating.

20.9.1 The prevailing party in any Dispute arising out of or relating to this Agreement or its breach that is resolved by a dispute resolution procedure designated in the Subcontract Documents shall be entitled to recover from the other party those reasonable attorneys' fees, costs and expenses (including expert fees and expenses) incurred by the prevailing party in connection with such dispute resolution process after direct discussions and mediation.

20.9.2 In the event the Subcontractor is awarded an amount equal to or less than the last written offer of settlement from Contractor, prior to the commencement of binding dispute resolution, Contractor shall be deemed prevailing party and be entitled to recover those reasonable attorneys' fees, costs and expenses (including expert fees and expenses) incurred by the Contractor.

21. Miscellaneous

21.1 No one, other than the parties hereto, their successors, trustees and assigns, shall be entitled to bring action on this Subcontract or the Performance Bond provided by the Subcontractor, it being the express intent of the parties that this Subcontract shall not be for the benefit of any third party.

21.2 Any term or provision of this Subcontract which is held to be invalid or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such invalidity or unenforceability without rendering invalid or unenforceable the remaining terms and provisions of this Subcontract or affecting the validity or enforceability of any of the terms or provisions of this Subcontract in any other jurisdiction.

21.3 This Subcontract, together with the documents referred to or incorporated herein by reference, constitute the complete agreement between the parties. No agent or employee of either party possesses the authority to make, and the parties shall not be bound by nor liable for, any statement, representation, promise or agreement not set forth herein. Any article, section, paragraph, or other headings contained in this Subcontract are for reference purposes and shall not affect in any way the meaning or interpretation of this Subcontract.

21.4 The terms and provisions shall extend to and be binding upon the successors, trustees and assigns of the parties hereto, and shall be governed and controlled, except as expressly provided herein or as required by the Subcontract Documents, by the laws of the State of the Project.

21.5 The Subcontractor agrees to comply with the provisions and any applicable local, state, or federal ordinance, regulation, status, or other mandate regarding affirmative action and/or minority/women's business enterprise participation.

21.6 This subcontract has not been altered in any manner from its original form as sent to the Subcontractor except for required signatures and dates, or as clearly marked and initialed by this Subcontractor. Any changes to this subcontract not initialed by the Contractor will not be binding.

21.7 Project Meetings. Subcontractor is required to attend all progress meetings when requested by Contractor, Architect, or Owner. Absence of Subcontractor at Progress Meetings when attendance is requested shall be subject to a $100.00 fine.

21.8 Equipment / Scaffolding. At no time shall subcontractor or any forces employed by or acting for, by, through or under subcontractor use any equipment or scaffolding which is owned, rented, or maintained by Contractor without prior written consent of Contractor and signed Release of Liability Waiver.

21.9 All requirements of Specification Divisions 00 and 01 apply to Subcontractor.

Exhibit C

Waiver of Lien to Date Sample

STATE OF: _____ Pay Application #:_____

COUNTY OF: _____ Invoice No.:_____

TO WHOM IT MAY CONCERN:

WHEREAS the undersigned has been employed by Michael Kinder & Sons, Inc. to furnish labor, material and equipment for the project known XXX is the owner.

THE undersigned, for and in consideration of _____ and _____/100 ($_____) Dollars, and other good and valuable considerations, upon the receipt whereof will be acknowledged, will hereby waive and release any and all lien or claim of, or right to lien, under the statutes of the State of Indiana, relating to mechanics' liens, with respect to and on said above-described premises, and the improvements, thereon, and on the material, fixtures, apparatus or machinery furnished, and on the moneys, funds or other considerations due or to become due from the owner, on account of all labor, services, material, fixtures, apparatus or machinery, furnished to this date by the undersigned for the above-described premises, INCLUDING EXTRAS.*

DATE _____

COMPANY NAME _____

COMPANY ADDRESS _____

CITY, STATE, ZIP _____

BY: _____

TITLE: _____

*EXTRAS INCLUDE BUT ARE NOT LIMITED TO CHANGE ORDERS, BOTH ORAL AND WRITTEN TO THE CONTRACT.

Subcontractor's Affidavit Sample

STATE OF: _____ Pay Application #:_____
COUNTY OF: _____ Invoice No.:_____

TO WHOM IT MAY CONCERN:

That the total amount of the contract with Michael Kinder and Sons, Inc. including extras* is $_____ on which he or she has received payment of $_____ as of the notarized date below. That all waivers are true, correct and genuine and delivered unconditionally and that there is no claim either legal or equitable to defeat the validity of said waivers.

That for the purpose of said contract, the following persons, firms or corporations have been engaged to furnish, have furnished, or will furnish materials and/or labor for said project; that there are due or to become due to them respectively, the amounts set opposite their names for said materials and/or labor; that there are no other known commitments and there is nothing due or to become due to any person, firm, or corporation for labor, services, materials, fixtures, machinery, apparatus, supplies or services, other than as stated herein.

That there are no other contracts for said work outstanding, and that there is nothing due or to become due to any person for material, labor or other work of any kind done or to be done upon or in connection with said work other than below stated.

			(A)	(B)	(C)	A-B-C=
MATERIAL SUPPLIER OR SUBCONTRACTOR	PHONE NUMBER	PROVIDED	CONTRACT PRICE INCLDG EXTRAS*	PREVIOUSLY REQUESTED TO DATE	CURRENT PAYMENT DUE	BALANCE OWED
TOTAL LABOR AND MATERIAL INCLUDING EXTRAS* TO COMPLETE.						

DATE _____ COMPANY NAME: _____
BY: _____
TITLE: _____

I HERBY CERTIFY THAT THE PERSON NAMED ABOVE, APPEARED BEFORE ME THIS DAY IN PERSON AND ACKNOWLEDGED THEY SIGNED THIS DOCUMENT (INCLUDING SUPPLEMENTAL SHEETS ATTACHED HERETO) AS THEIR FREE AND VOLUNTARY ACT AND DEED FOR THE USES AND PURPOSES HEREIN STATED.

SUBSCRIBED AND SWORN TO BEFORE ME THIS _____ DAY OF _____

NOTARY PUBLIC _____

MY COMMISSION EXPIRES: _____

*EXTRAS INCLUDE BUT ARE NOT LIMITED TO CHANGE ORDERS, BOTH ORAL AND WRITTEN TO THE CONTRACT.

Subcontractor is required to provide sub-subcontractor and material supplier waivers for values exceeding $5,000.00

Sub-Subcontractor Waiver of Lien to Date Sample

STATE OF: _____ Pay Application #:_____
COUNTY OF: _____ Invoice No.:_____

TO WHOM IT MAY CONCERN:

WHEREAS the undersigned has been employed by _____ to furnish labor, material and equipment for the project known as Huhtamaki Restroom Renovation of which XXX is the owner.

THE undersigned, for and in consideration of _____ and _____/100 ($_____) Dollars, and other good and valuable considerations, upon the receipt whereof will be acknowledged, will waive and release any and all lien or claim of, or right to lien, under the statutes of the State of Indiana, relating to mechanics' liens, with respect to and on said above-described premises, and the improvements, thereon, and on the material, fixtures, apparatus or machinery furnished, and on the moneys, funds or other considerations due or to become due from the owner, on account of all labor, services, material, fixtures, apparatus or machinery, furnished to this date by the undersigned for the above-described premises, INCLUDING EXTRAS.*

DATE _____

COMPANY NAME _____
ADDRESS _____
CITY, STATE, ZIP _____
BY: _____
TITLE: _____

*EXTRAS INCLUDE BUT ARE NOT LIMITED TO CHANGE ORDERS, BOTH ORAL AND WRITTEN TO THE CONTRACT.

Sub-Subcontractor's Affidavit Sample

STATE OF: _____
COUNTY OF: _____

TO WHOM IT MAY CONCERN:

THE undersigned, (Name) _____ being duly sworn, deposes and says that he or she is (Position) _____ of (Company Name) _____ who is the contractor furnishing _____ on the building located at XXX, owned by XXX.

That the total amount of the contract including extras* is $_____ on which he or she has received payment of $_____ as of the notarized date below. That all waivers are true, correct and genuine and delivered unconditionally and that there is no claim either legal or equitable to defeat the validity of said waivers. That the following are the names and addresses of all parties who have furnished material or labor, or both, for said work and all parties having contracts or sub contracts for specific portions of said work or for material entering into the construction thereof and the amount due or to become due to each, and that the items mentioned include all labor and material required to complete said work according to plans and specifications.

That there are no other contracts for said work outstanding, and that there is nothing due or to become due to any person for material, labor or other work of any kind done or to be done upon or in connection with said work other than above stated.

DATE _____ SIGNATURE _____

SUBSCRIBED AND SWORN TO BEFORE ME THIS _____ DAY OF _____
NOTARY PUBLIC _____
MY COMMISSION EXPIRES: _____

Material Supplier Waiver of Lien to Date Sample

STATE OF: _____ Pay Application #:_____
COUNTY OF: _____ Invoice No.:_____

TO WHOM IT MAY CONCERN:

WHEREAS the undersigned has been employed by_____ to furnish material and/or equipment for the project known as XXX is the owner.

THE undersigned, for and in consideration of _____ and _____/100 ($_____) Dollars, and other good and valuable considerations, upon the receipt whereof will acknowledged, will waive and release any and all lien or claim of, or right to lien, under the statutes of the State of Indiana, relating to mechanics' liens, with respect to and on said above-described premises, and the improvements, thereon, and on the material, fixtures, apparatus or machinery furnished, and on the moneys, funds or other considerations due or to become due from the owner, on account of all labor, services, material, fixtures, apparatus or machinery, furnished to this date by the undersigned for the above-described premises, INCLUDING EXTRAS.*

DATE _____ COMPANY NAME _____
ADDRESS _____
CITY, STATE, ZIP _____
BY: _____
TITLE: _____

*EXTRAS INCLUDE BUT ARE NOT LIMITED TO CHANGE ORDERS, BOTH ORAL AND WRITTEN TO THE CONTRACT

Material Supplier Affidavit Sample

STATE OF: _____

TO WHOM IT MAY CONCERN:

THE undersigned, (Name) _____ being duly sworn, deposes and says that he or she is (Position) _____ of (Company Name) _____ who is the material supplier furnishing _____ for _____ (Company purchasing material) on the building located at XXX, owned by XXX.

That the total amount of the contract including extras* is $_____ on which he or she has received payment of $_____ as of the notarized date below. That all waivers are true, correct and genuine and delivered unconditionally and that there is no claim either legal or equitable to defeat the validity of said waivers. That the following are the names and addresses of all parties who have furnished material or labor, or both, for said work and all parties having contracts or sub contracts for specific portions of said work or for material entering into the construction thereof and the amount due or to become due to each, and that the items mentioned include all labor and material required to complete said work according to plans and specifications.
That there are no other contracts for said work outstanding, and that there is nothing due or to become due to any person for material, labor or other work of any kind done or to be done upon or in connection with said work other than above stated.

DATE _____ SIGNATURE _____

SUBSCRIBED AND SWORN TO BEFORE ME THIS _____ DAY OF _____
NOTARY PUBLIC _____
MY COMMISSION EXPIRES: _____

Exhibit D Insurance Compliance Checklist

The following sample Certificate of Insurance shows the requirements needed to meet the terms of the Contract Agreement with Michael Kinder & Sons, Inc.

Please submit your client's Certificate of Insurance electronically to our office.

Please be sure your certificate of insurance and coverage meet the following requirements:

1. General aggregate limit is on a per project basis.
2. Limits are equal to or greater than those required.
3. Installation floater is included.
4. Michael Kinder & Sons, Inc. and SPCSC are protected as blanket additional insured on the General Liability Policy (per Form #CG7037 or equivalent) including ongoing operations and products/completed operations as required by contract.
5. Michael Kinder & Sons, Inc. and SPCSC are protected as blanket additional insured on the Auto Liability Policy (per Form #CA2048 or equivalent).
6. All insurance is primary and non-contributory.
7. Waiver of Subrogation in favor of Michael Kinder & Sons, Inc. and SPCSC on the General Liability and Workers Compensation policies is included.

Should you have any questions, please contact the project manager at out office. (260) 744-4359

Thank you.

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 8/16/2018

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Account Manager Name
ISU Stewart, Brimner, Peters & Company 3702 Rupp Drive Fort Wayne IN 46815	PHONE (A/C, No, Ext): (260) 482-6900 FAX (A/C, No): (260) 482-7305 E-MAIL ADDRESS: Account Manager email address

INSURED	INSURER(S) AFFORDING COVERAGE	NAIC #
Full Named Insured Address City St Zip	INSURER A: Name of Insurance Company	
	INSURER B:	
	INSURER C:	
	INSURER D:	
	INSURER E:	
	INSURER F:	

COVERAGES **CERTIFICATE NUMBER:** 17/18 Sample **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT LOC OTHER:	X	Y	123456789	XX/XX/XXXX	XX/XX/XXXX	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 2,000,000 $ 2,000,000
A	AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS X HIRED AUTOS X NON-OWNED AUTOS	X	Y	123456789	XX/XX/XXXX	XX/XX/XXXX	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) Underinsured motorist	$ 1,000,000 $ $ $ $ 1,000,000
A	X UMBRELLA LIAB X OCCUR EXCESS LIAB CLAIMS-MADE DED RETENTION $			123456789	XX/XX/XXXX	XX/XX/XXXX	EACH OCCURRENCE AGGREGATE	$ 5,000,000 $ 5,000,000
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N N N/A (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N/A	Y	123456789	XX/XX/XXXX	XX/XX/XXXX	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 500,000 $ 500,000 $ 500,000
A	Installation Floater			123456789	XX/XX/XXXX	XX/XX/XXXX	Limit Deductible	$500,000 $500

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Michael Kinder & Sons, Inc., & their affiliates, directors, employees, subsidaries, representative & any other parties as required by the GC/SubContractor contract agreement are listed as certificate holders. Per the signed contract, contractor & owner must be protected as blkt addl insureds on the GL policy incl on-going operations & prod/completed operations (Form #CG7037 or equivalent), & on the Auto Liab policy (Form CA2048 or equivalent). All insurance for subcontractors/sub-subcontractors shall be Primary & Non-Contributory. A Waiver of Subro clause in favor of Michael Kinder & Sons, Inc. shall be added to the GL, Auto and Work Comp Policies. Umbrella follows form.

CERTIFICATE HOLDER

wboyer@kinderandsons.com

Michael Kinder & Sons, Inc.
5206 Decatur Road
Fort Wayne, IN 46806

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Jeff Peters/AJP

SECTION 01 23 00 - ALTERNATES

Much of this Section consists of Project-specific data. Examples in Evaluations were chosen to illustrate possible Section content. Use these sample paragraphs as models to develop text for specific Project requirements, or delete them if they do not apply. See Evaluations for further discussion.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

Definition below expands definition in AIA Document A701, "Instructions to Bidders," and assumes normal bidding situation applies, with contractors stating alternate amounts requested on Bid Form. It also assumes that Owner will decide to accept or reject alternates before signing Owner/Contractor Agreement and that Bidding Requirements stipulate terms under which Owner will accept or reject alternates.

Revise definition below to suit Project.

A. Alternate: An amount proposed by bidders and stated on Bid Form for certain work defined in Bidding Requirements that may be added to or deducted from Base Bid amount if Owner decides to accept a corresponding change either in quantity of construction to be completed or in products, materials, equipment, systems, or installation methods described in Contract Documents.
   1. The cost or credit for each alternate is net addition to or deduction from Contract Sum to incorporate alternate into Work. No other adjustments are made to Contract Sum.
   2. Alternates described in this Section are part of Work only if enumerated in Agreement.

1.3 PROCEDURES

Make certain Bid Form clearly states that costs listed for each alternate include costs of related coordination, modification, or adjustment. If not clearly stated, revise paragraph and subparagraph below by stating this requirement.

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of alternate into Project.
   1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

Retain first paragraph below for most projects. Failure to require notification could create problems later.

B. Notification: Immediately following award of Contract, notify each entity involved, in writing, of status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

C. Execute accepted alternates under same conditions as other work of Contract.

D. Schedule: A Schedule of Alternates is included at end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

Copy and re-edit paragraph below for each alternate required for Project. See samples of alternate descriptions in Evaluations.

A. Alternate No. 1: Provide all components for a new sound system in Weight Room, Room B115, as indicated on Drawings T-11B and T-503.
B. Alternate No. 2: Provide alternate manufacturer for Fluid-Applied Athletic Flooring as described in Specification Section 09 67 66.
C. Alternate No. 3: Provide Exterior Illuminated Panel Signage as described in Specification Section 10 14 33 and indicated on Elevation drawings. Power to sign location shall be part of Base Bid.
D. Alternate No. 4: Provide full height wall tile and tile base on additional walls of locker rooms and restrooms as indicated on finish plan Drawings.
   Base bid: Full height tile shall be provided in the showers and wet walls as indicated on the finish plan Drawings.
E. Alternate No. 5: Provide Decorative Metal Fences and Gates as described in Specification Section 32 31 19 in lieu of chain link fences and gates indicated on Drawings.
F. Alternate No. 6: Remove existing exterior dimensional letters on north face of the existing building and replace with new dimensional letters as described in Specification Section 10 14 19 and shown on Drawing Sheet A-201.
G. Alternate No. 7: Raise existing unit ventilators in Commons, room A30. Replace and reconnect piping and ductwork as shown on Mechanical Drawings.
H. Alternate No. 8: Base bid to include no work on SP HS Pool drawings and specifications.
   Alternate No. 8: State the cost to include all scope of work shown on SP HS Pool drawings, dated May 23, 2024, and specifications dated May 23, 2024.
I. Alternate No. 9: Base bid to include no work on parking lot at Central Elementary School.
   Alternate No. 9: State the costs to include all scope of work to complete the base bid CES parking lot work per the drawing by HWC Engineering dated January 29, 2024.
J. Alternate No. 9a: Base bid to include no work on parking lot at Central Elementary School.
   Alternate No. 9a: State the costs to include all scope of work (ADD. BID) to complete the CES existing parking lot work per the drawing by HWC Engineering dated January 29, 2024.
K. Alternate No. 10: State the cost to exclude payment and performance bond from your quote.

END OF SECTION 01 23 00

SECTION 01 33 00.00 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Submittal schedule requirements.
   2. Administrative and procedural requirements for submittals.

B. Related Sections:
   1. Division 01 Section "Payment Procedures" for submitting Applications for Payment and the schedule of values.
   2. Division 01 Section "Project Management and Coordination" for submitting and distributing meeting and meeting minutes and for submitting Coordination Drawings.
   3. Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule and the Submittals Schedule.
   4. Division 01 Section "Closeout Procedures" for submitting warranties.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require A/E's responsive action. Action submittals are those submittals indicated in individual specification sections as “Action Submittals”.

B. Informational Submittals: Written and graphic information and physical samples that do not require A/E's responsive action. Submittals may be rejected for not complying with requirements. Information submittals are those submittals indicated in individual specification sections as “Informational Submittals.”

C. Closeout Submittals: Written and graphic information and physical extra stock items required at or near completion of a project. Requirements for those submittals are included in the General Conditions of the contract and Division 01 Section “Closeout Procedures”.

D. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.

E. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.3 SUBMITTAL SCHEDULE

A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or modifications to submittals noted by the A/E and additional time for handling and reviewing submittals required by those corrections.
   1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
   2. Initial Submittal: Submit concurrently with start-up construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work, those required early because of long lead time for manufacture or fabrication, and those indicated as “Expedited” below.

3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
    a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
4. Format: Arrange the following minimum information in a tabular format:
    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Submittal category: Action, informational, or quality assurance/control submittal.
    d. Name of subcontractor.
    e. Description of the Work covered.
    f. Scheduled date for A/E's final release or approval.
    g. Scheduled dates for purchasing.
    h. Scheduled date of fabrication.
    i. Scheduled dates for installation.
    j. Activity or event number.

B. Submit submittal schedule to A/E at earliest possible date but no later than seven days before the date scheduled for submittal of initial Application for Payment.
1. Failure to provide Submittal Schedule may delay initial payment and submittal approvals.
2. Failure to provide a Submittal Schedule also precludes the Contractor delay claims related to late return of submittals.

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. A/E's Digital Data Files: Digital data drawing files of the Contract Drawings may be provided by A/E for Contractor's use in preparing submittals.
1. A/E may furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings and Project Record Drawings.
    a. A/E makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
    b. Contractor shall execute a data licensing agreement in the form of AIA Document C106, Digital Data Licensing Agreement.
2. The cost to obtain Drawing files shall be as indicated on the “Digital Data Transmittal”.
3. Contractor shall send a “Digital Data Transmittal” to A/E to request digital data files.
    a. Digital Data Transmittal is included hereinafter.
4. Allow 14 days for processing Digital Data request.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    a. Where submission of samples, shop drawings, or other items are required from suppliers or subcontractors, it shall be the responsibility of the Contractor for whom the subcontractor is executing the Work to see that the submittal items required are complete and properly submitted, and corrected and resubmitted on the time and in the order required so as not to delay the progress of the Work. Submittals shall include sufficient detail to determine that the contractor clearly understands the requirements of the Contract Documents.
    b. Contractors on this Project shall provide submittals in accordance with the requirements of this Section. Where a submittal is required by a Contractor but assistance needed from others, Contractors shall participate and cooperate to expedite each submittal. .

c. A/E reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on A/E's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
1. Initial Review: Allow 14 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. A/E will advise Contractor when a submittal being processed must be delayed for coordination.
2. Resubmittal Review: Allow 14 days for review of each resubmittal.
3. Submittals Not Requested or Not Required: A/E will send a transmittal indicating submittals were “not required for review”. All copies of the submittals may be disposed of by the A/E.

D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
1. Assemble complete submittal package into a single bookmarked file with links enabling navigation to each item.
2. Each submittal shall be transmitted separately and shall cover only one specification section.
3. Name file with submittal number or other unique identifier, including revision identifier.
   a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
4. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by A/E.
5. Transmittal Form for Electronic Submittals: Use electronic form acceptable to A/E containing the following information.
   a. Project name.
   b. Date.
   c. Name and address of A/E.
   d. Name of Contractor.
   e. Name of firm or entity that prepared submittal.
   f. Name of subcontractor, manufacturer, and supplier.
   g. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier and alphanumeric suffix for resubmittals.
   h. Category and type of submittal.
   i. Submittal purpose and description.
   j. Specification Section, number and title, with paragraph number and generic name for each of multiple items.
   k. Drawing number and detail references, as appropriate.
   l. Location(s) where product is to be installed, as appropriate.
   m. Related physical samples submitted directly.
   n. Indication of full or partial submittal
   o. Transmittal number, numbered consecutively.
   p. Submittal and transmittal distribution record.
   q. Other necessary identification.
   r. Remarks.
6. Include the following information as keywords in the electronic file metadata:
   a. Project name.
   b. Number and title of appropriate Specification Section.
   c. Manufacturer name.
   d. Product name.

E. Options: Identify options requiring selection by the A/E.

F. Deviations and Additional Information: On an attached separate document, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by A/E on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
   1. Note date and content of previous submittal.
   2. Note date and content of revision in label or title block and clearly indicate extent of revision.
   3. Resubmit submittals until they are marked with approval notation from A/E's action stamp.

H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
   1. Final Shop Drawings: Furnish one full-size copy (as marked) to be kept at the Project site or provide easy access to clearly labeled electronic file.

I. Use for Construction: Use only final submittals that are marked "Reviewed" or "Furnish as Corrected" from A/E's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES, GENERAL

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections. Submit electronic submittals in one of the following formats as agreed upon in Preconstruction Meeting.
   1. Submit electronic submittals via email as PDF electronic files.
      a. A/E will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
   2. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."
   3. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
      a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
      b. Provide a notarized statement on original paper copy certificates and certifications where indicated.
   4. Test and Inspection Reports Submittals: Comply with requirements specified in Division 01 Section "Quality Requirements."

B. Electronic submittals will only be accepted in an unchangeable electronic format such as pdf. File formats such as MS Word (.doc or .docx), MS Excel (.xls or xlsx), AutoDesk, AutoCAD (.dwg or .dwf), are considered unacceptable as the original file submitted could be accidentally altered from the originators intended document. These file types will be rejected by A/E.

C. Fanning Howey Email Submittals: This shall be the primary means of electronic submittals less than 15MB.
   1. Email submittals to be sent to [**xx**]submittal@fanninghowey.com.
   2. Emails sent directly to FH staff will be rejected.

D. Fanning Howey File Transfer Site (Newforma Info Exchange): This shall be the primary means of electronic submittals greater than 15MB for the Project. The Info Exchange Project website does not have file size restrictions.
   1. External team members will be added to the Project Team and are granted access to the Fanning Howey Newforma Info Exchange project website.
   2. Invitations will be emailed to external team members for setting-up login information.
   3. Once access is gained, external team members will be able to upload submittals and check the status of the pending submittals.

2.2 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual specification sections.

B. Product Data: Collect information into a single submittal for each element of construction or system. Product data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.
   1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
   2. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products that are not required, mark copies to indicate the applicable information. Contractor must annotate information. Highlighting choices or striking out product not required is acceptable. Product data unmarked by Contractor may be returned unreviewed by A/E. Include the following information, as applicable:
      a. Manufacturer's catalog cuts
      b. Manufacturer's product specifications
      c. Manufacturer's installation instructions
      d. Standard color charts
      e. Statement of compliance with specified referenced standards and trade association standards.
      f. Testing by recognized testing agency standards.
      g. Application of testing agency labels and seals.
      h. Notation of coordination requirements.
      i. Availability and delivery time information.
   3. For equipment, include the following in addition to the above, as applicable.
      a. Wiring diagrams showing factory-installed wiring.
      b. Printed performance curves.
      c. Operational range diagrams.
      d. Clearances required to other construction, if not indicated on accompanying shop drawings.
   4. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed. Submit before or concurrent with samples and Shop Drawings.
   5. If a product changes or a name change has occurred an accompanying letter of explanation with the submittal is in order.
   6. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities. Show distribution on transmittal forms.
      a. Do not proceed with installation until a copy of Product Data is in the Installer's possession.
      b. Do not permit use of unsubmitted copies of Product Data in connection with construction.
   7. In compliance with the OSHA Hazard Communication Standard (1910.1200, 08-24-1987) Contractors shall post at the site MSDS (Material Safety Data Sheets) for ALL products classified as hazardous that their firm has knowledge that they will be furnishing, using, or storing on the jobsite during the duration of this Project in accordance with OSHA standards. At the completion of the project, the Contractor shall turn their "MSDS" information directly over to the Owner with a receipt for the Owner to sign. A copy of the signed receipt only shall be submitted to the A/E.

a. Material Safety Data Sheets (MSDS) should not be submitted to the A/E for review. Material Safety Data Sheets submitted to A/E will removed or cross out with no action taken.

8. Submit product data in the following format:
   a. PDF electronic file.

C. Shop Drawings: Prepare project specific information, drawn accurately to scale. Do not base shop drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on A/E's digital data drawing files is otherwise permitted.

1. The Contractor shall perform no portion of the Work requiring submittal and review of shop drawings, product data, samples or similar submittals until the A/E has approved the respective submittal. Such Work shall be in accordance with approved submittals.
2. Submit newly prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the bases of Shop Drawings. Standard information prepared without specific reference to the Project is not a Shop Drawing.
3. Shop drawings are drawings, diagrams, illustrations, schedules, performance charts, brochures, and other data that are prepared by the Contractor or subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work. Shop drawings are to be specially prepared for a specific Product to show how a given item is to be fabricated and installed; this is what distinguishes shop drawings from product data. Shop drawing show how the Contractor intends to fulfill contractual obligations and reflect the Contractor understands of the information given in the Contract Documents. Contract Documents do not show every condition that may exist, and they do not fully indicate how every part and piece must be fabricated or incorporated into the Construction. Preparing accurate Shop Drawings provides the opportunity to fully detail all conditions and show how requirements will be satisfied. Do not base shop drawings on reproduction of the Contract Documents.
   a. Advertising brochures will not be accepted as shop drawings.
   b. Erection and setting drawings as referred to in these Specifications will be considered as shop drawings and shall be submitted along with detailed shop drawings.
   c. Where schedules are required to indicate locations, they shall be submitted as part of the shop drawings package for that item.
   d. Shop drawings and schedules shall repeat the identification shown on the Contract Drawings.
   e. The Contractor shall check all shop drawings, samples and other submittals and submit them to the A/E utilizing a Transmittal Form, giving his approval and/or comments and suggestions. Failure to use a Transmittal Form will result in submittals being returned “without action”.
   f. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable::
      1) Identification of products and materials included by sheet and detail number
      2) Compliance with specified standards
      3) Notation of coordination requirements
      4) Notation of dimensions established by field measurements
      5) Fabrication and installation drawings
      6) Roughing-in and setting diagrams
      7) Wiring diagrams showing field installed wiring, including power, signal, and control wiring
      8) Shop work manufacturing instructions
      9) Templates and patterns
      10) Schedules
      11) Seal and signature of professional engineer, if specified.
      12) Relationship and attachment to adjoining construction clearly indicated.
4. Preparation of Submittals: Provide permanent marking on each submittal to identify project, date, Contractor, Subcontractor, submittal name, and similar information to distinguish it from other submittals. Show Contractor’s executed review and approval marking and provide space for A/E’s “action” marking. Package each submittal appropriately for transmittal and handling.

5. By approving and submitting shop drawings, the Contractor thereby represents that they have determined and verified field measurements, field construction criteria, materials, catalog numbers, and similar data, and that they have checked and coordinated each shop drawing with the requirements of the Work and of the Contract Documents prior to submitting to the A/E.
6. The Contractor shall make corrections required by the A/E and shall resubmit shop drawings until appropriately marked. The Contractor shall direct specific attention in writing or on resubmitted shop drawings to revisions other than the corrections requested by the A/E on previous submissions.
7. The A/E will review shop drawings only for conformance with the design concept of the Project and with the information given in the Contract Documents. The A/E's review of a separate item shall not indicate review of an assembly in which the item functions.
8. The A/E's review of shop drawings shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has informed the A/E in writing of such deviation at the time of submission and the A/E has given written approval to the specific deviation, nor shall the A/E's action relieve the Contractor from responsibility for errors or omissions in the shop drawings.
    a. The A/E shall review and approved or take other appropriate act on the Contractor submittals, such as shop drawings, product data, samples and other data, which the Contractor is required to submit, but only for the limited purpose of checking for conformance with the design concept and the information shown in the Construction Documents. This review shall not include review of the accuracy or completeness of details, such as quantities, dimensions, weight or gauges fabrication processes, construction means or methods, coordination of the work with other trades or construction safety precautions, all of which are the sole responsibility of the Contractor. Review of a specific item shall not indicate that the A/E has reviewed the entire assembly of which the item is a component. The A/E shall not be responsible for any deviations from the Contract Documents not brought to the attention of the Consultant in writing by the Contractor. The A/E shall not be required to review partial submissions or those for which submissions of correlated items have not been received.
9. Notations and remarks added to shop drawings by the A/E are to ensure compliance to Drawings and Specifications and do not imply a requested or approved change to contract cost.
10. Should deviations, discrepancies, or conflicts between shop and contract drawings and Specifications be discovered, either prior to or after review, Contract Documents shall control and be followed.
11. Submit shop drawings in the following format:
    a. PDF electronic file.
12. Shop drawings not requested by the A/E shall be returned without action.

D. Samples for Initial Selection: Prepare physical units of materials or products, including the following:
1. The Contractor shall submit to the A/E samples to illustrate materials or workmanship, colors, and textures, and establish standards by which the Work will be judged.
    a. Transmit samples that contain multiple, related components such as accessories together in one submittal package.
        1) When possible, Contractor is encouraged to give samples to Construction Administrators.
2. Identification: Attach label on unexposed side of samples that includes the following:
    a. Project name and submittal number.
    b. Generic description of sample.
    c. Product name and name of manufacturer.
    d. Sample source.
    e. Number and title of applicable specification section.
    f. Specification paragraph number and generic name of each item.
3. Email Transmittal: Provide corresponding electronic submittal of sample transmittal, digital image file illustrating sample characteristics, and identification information for record.

4. Web-Based Project Management Software: Prepare submittals in PDF form, and upload to web-based project software website. Enter required data in web-based software site to fully identify submittal.
5. Samples for Initial Selection: For color selections when colors are not preselected, submit manufacturer's color published charts consisting of units or sections of units showing the full range of colors, textures, and patterns available. Reproductions, facsimiles, or copies will be rejected.
    a. Number of Samples for Initial Selection: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. A/E will return transmittal with options indicated.

E. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively, used materials; swatches showing color, texture and pattern; color range sets.
    1. Number of Samples for Verification: Submit 2 sets of samples, unless otherwise noted. A/E will retain one sample set; remainder will be returned..
        a. Submit a single sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
        b. If variation in color, pattern, texture, or other characteristics is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
    2. Email Transmittal: Provide corresponding electronic submittal of sample transmittal, digital image file illustrating sample characteristics, and identification information for record.
        a. Contractor shall receive written notification.
    3. Disposition: Maintain one set of approved samples at project site, available for quality control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
        a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such samples must be in an undamaged condition at time of use.
        b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
    4. Identification: Permanently attach label on unexposed side of Samples that include the following:
        a. Product name and submittal number.
        b. Generic description of the sample.
        c. Product name and name of manufacturer.
        d. Sample source.
        e. Number and title of applicable Specification Section.
        f. Specification paragraph number and generic name of each item.
    5. By approving and submitting samples, the Contractor thereby represents that he has determined and verified materials, catalog numbers, and similar data, and that he has checked and coordinated each sample with the requirements of the Work and of the Contract Documents prior to submitting to the A/E.
    6. The Contractor shall resubmit the required number of correct or new samples until approved. The Contractor shall direct specific attention in writing or on resubmitted samples to revisions other than the changes requested by the A/E on previous submissions.
    7. The A/E will review samples but only for conformance with the design concept of the Project and with the information given in the Contract Documents. The A/E's review of a separate item shall not indicate approval of an assembly in which the item functions.

8. The A/E's action shall not relieve the Contractor of responsibility for deviations from the requirements of the Contract Documents unless the Contractor has informed the A/E in writing of the deviation at the time of submission and the A/E has given written approval to the specific deviation, nor shall the A/E's action relieve the Contractor from responsibility for errors or omissions in the samples.
9. Materials shall not be ordered until final review is received in writing from the A/E. Materials shall be furnished, equal in every respect to reviewed samples. Where color or shade cannot be guaranteed, the manufacturer shall indicate the maximum deviation. Work shall be in accordance with the final reviewed samples.

2.3 INFORMATIONAL/QUALITY ASSURANCE/CONTROL SUBMITTALS

A. General: Prepare and submit informational submittals required by other Specification Sections.

B. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of A/E's and Owners, and other information specified.

C. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
1. Type of product. Include unique identifier for each product indicated in the Contract Documents.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.
5. Submit product schedule in the following format:
   a. PDF electronic file.

D. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumption and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

E. Certificates:
1. Certificates and Certification Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
2. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized for this specific project.
3. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.
4. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.
5. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements.
6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

F. Test and Research Reports:
1. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

2. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.
3. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
4. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements.
5. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
    a. Test reports shall be no older than 15 months, unless otherwise noted or approved by A/E.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
    a. Name of evaluation organization.
    b. Date of evaluation.
    c. Time period when report is in effect.
    d. Product and manufacturers' names.
    e. Description of product.
    f. Test procedures and results.
    g. Limitations of use.

G. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
1. Preparation of substrates
2. Required substrate tolerances
3. Sequence of installation or erection
4. Required installation tolerances
5. Required adjustments
6. Recommendations for cleaning and protection

H. Manufacturer's Field Reports: Prepare written information documenting factory authorized service representative's tests and inspections. Include the following, as applicable:
1. Name, address, and telephone number of factory authorized service representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

I. Material Safety Data Sheets (MSDSs) or Safety Data Sheet(s): Submit information directly to Owner; do not submit to A/E. MSDS are to be collected and field as the jobsite by the Contractor as required by OSHA and other authorities. They communicate, to the Contractor's employees and other persons authorized to be on the Project site, important information about hazardous materials, such as their chemical and common names; ingredients that have been determined to be health hazards or carcinogens; physical and chemical characteristics; ingredients that have been determined to be physical hazards (potential for fire, explosion, reactivity, and so forth); health hazards, including signs and symptoms of exposures; and the OSHA – permissible exposure limit. Also included are precautions for their safe handling and use along with emergency and first-aid procedures to follow in case of exposure.

1. This information relates directly to construction safety, which is the sole responsibility of the Contractor.
2. MSDS or SDS shall not be submitted to the A/E for review.
3. MSDS or SDS submitted to A/E will be either removed or crossed out of submittal with no action taken.

J. Coordination Drawings: Comply with requirements specified in Division 1 Section "Project Management and Coordination".

K. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."

L. Application for Payment: Comply with requirements specified in Division 01 Section "Payment Procedures."

M. Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."

N. Subcontractors and Major Material Suppliers List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.
4. Submit subcontract list in the following format:
   a. PDF electronic file.

2.4 CLOSEOUT SUBMITTALS

A. General: Closeout Submittals are to be submitted with O and M Manuals only. Do not submit with other ACTION and INFORMATIONAL Submittals.

1. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements in Division 01 Section "Closeout Procedures".

2.5 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to A/E.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally-signed PDF electronic file signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Action and Informational/Quality Assurance/Control Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to A/E.

B. Project Closeout and Maintenance/Material Submittals: Refer to requirements in Division 01 Section "Closeout Procedures."

C. Contractor’s Approval: Indicate Contractor’s approval for each submittal with a uniform, approval stamp or indication in web-based Project Management Software. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
   1. A/E will not review submittals received from Contractor that do not have Contractor’s review and approval.

3.2 A/E'S ACTION

A. General: A/E will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: A/E will review each submittal, make marks to indicate corrections or modifications required, and return it. A/E will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
   1. Shop drawings will be marked as follows: Contractor shall take the following action for each respective marking:
      a. "REVIEWED" – Contractor shall make and distribute copies.
      b. “FURNISH AS CORRECTED” – Final Release; Contractor may proceed with fabrication, taking into account the necessary corrections on submittal or attached and with Contract Documents.
      c. "REVISE AND RESUBMIT" - Contractor may proceed with fabrication, taking into account the necessary corrections. Corrected shop drawings shall be resubmitted before fabrication of this work is complete to obtain a different action marking. Do not allow drawings marked "Resubmit" to be used in connection with installation of the Work.
      d. "REJECTED" - Contractor will be required to resubmit shop drawings in their entirety. No fabrication or installation shall be started until shop drawings so marked have been completely revised, resubmitted, and marked by A/E according to preceding Paragraphs a., b., or c.
      e. “SUBMIT SPECIFIED ITEM” – Contractor shall not submit substitutions in Shop Drawings. Submittal is rejected. Submit specified item.
      f. “NOT REQUIRED FOR REVIEW (INFORMATIONAL) – Contractor shall submit Information Submittals for A/E records only.

C. Informational/Quality Assurance/Control Submittals: A/E will review each submittal and will not return it, or will return it if it does not comply with requirements.

D. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from A/E.

E. Incomplete submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

F. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 01 33 00

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
   1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
   2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
   3. Requirements for Contractor to provide quality-assurance and -control services required by A/E, Owner, Construction Manager, or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Sections:
   1. Divisions 02 through 33 Sections for specific test and inspection requirements.

1.2 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by A/E or Construction Manager.

C. Mockups: Full size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
   1. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on the project site, consisting of multiple products, assemblies and subassemblies.
   2. Room Mockups: Mockups of typical interior spaces complete with wall, floor, and ceiling finishes, doors, windows, millwork, casework, specialties, furnishings and equipment, and lighting.

D. Preconstruction Testing: Tests and inspections performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

F. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
   1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade or trades.

1.3 CONFLICTING REQUIREMENTS

A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to A/E for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to A/E for a decision before proceeding.

1.4 INFORMATIONAL SUBMITTALS

A. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
   1. Specification Section number and title.
   2. Entity responsible for performing tests and inspections.
   3. Description of test and inspection.
   4. Identification of applicable standards.
   5. Identification of test and inspection methods.
   6. Number of tests and inspections required.
   7. Time schedule or time span for tests and inspections.
   8. Requirements for obtaining samples.
   9. Unique characteristics of each quality-control service.

1.5 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
   1. Date of issue.
   2. Project title and number.
   3. Name, address, and telephone number of testing agency.
   4. Dates and locations of samples and tests or inspections.
   5. Names of individuals making tests and inspections.
   6. Description of the Work and test and inspection method.
   7. Identification of product and Specification Section.
   8. Complete test or inspection data.
   9. Test and inspection results and an interpretation of test results.
   10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.

11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of technical representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement whether conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
   1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
   1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
   2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
   1. Build mockups in location and of size indicated or, if not indicated, as directed by A/E.
   2. Notify A/E and Construction Manager seven days in advance of dates and times when mockups will be constructed.
   3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at the Project.
   4. Demonstrate the proposed range of aesthetic effects and workmanship.
   5. Obtain A/E's approval of mockups before starting work, fabrication, or construction.
      a. Allow seven days for initial review and each re-review of each mockup.
   6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
   7. Demolish and remove mockups when directed, unless otherwise indicated.

K. Integrated Exterior Mockups: Construct integrated exterior mockup as indicated on Drawings. Coordinate installation of exterior envelope materials and products for which mockups are required in individual specification sections, along with supporting materials.

L. Room Mockups: Construct room mockups incorporating required materials and assemblies, finished in accordance with requirements. Provide required lighting and additional lighting where required to enable A/E to evaluate quality of the Work. Provide room mockups of the following rooms:

1.7 QUALITY CONTROL

A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
   1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
   2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.

B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
   1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
   2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
      a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
   3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
   4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
   5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
   6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."

D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

F. Testing Agency Responsibilities: Cooperate with A/E, Construction Manager, and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
   1. Notify A/E, Construction Manager, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
   2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
   3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
   4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
   5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
   6. Do not perform any duties of Contractor.

G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
   1. Access to the Work.
   2. Incidental labor and facilities necessary to facilitate tests and inspections.
   3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
   4. Facilities for storage and field curing of test samples.
   5. Delivery of samples to testing agencies.

6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses. .
1. Distribution: Distribute schedule to Owner, A/E, Construction Manager, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.8 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Owner will engage a qualified testing agency or special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
2. Notifying A/E, Construction Manager, and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to A/E, through Construction Manager, with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Prepare a record of tests and inspections. Include the following:
1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to A/E.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for A/E's and Construction Manager's reference during normal working hours.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 01 Section "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 40 00

SECTION 01 60 00 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.
   1. It is the intent of the Specifications and Drawings to accomplish a complete and first-rate installation executed by competent and experienced workers.
   2. Equipment, specialties, and similar items shall be checked for compliance and approved prior to installation. Contractors are cautioned that work or equipment installed without approval is subject to condemnation, removal, and subsequent replacement with an approved item without extra remuneration.

B. Related Sections include the following:
   1. Division 01 Section "Closeout Procedures" for submitting warranties for Contract closeout.
   2. Divisions 02 through 49 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.2 DEFINITIONS

A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
   1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
   2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products, unless otherwise indicated.
   3. Comparable Product: Product that is to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.
   1. Evaluating Comparable Products: In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification. Manufacturer's published attributes and characteristics of basis-of-design product also establish salient characteristics of products for purposes of evaluating comparable products.

C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual Specification Section, provide products qualified under the specified product procedure. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications; submit a comparable product request or substitution request, if applicable.

D. Comparable Product Request Submittal: An action submittal requesting consideration of a comparable product, including the following information:
   1. Identification of basis-of-design product or fabrication or installation method to be replaced, including Specification Section number and title and Drawing numbers and titles.
   2. Data indicating compliance with the requirements specified in "Comparable Products" Article.

1.3 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.
   1. Resolution of Compatibility Disputes between Multiple Contractors:
      a. Contractors are responsible for providing products and construction methods compatible with products and construction methods of other contractors.
      b. If a dispute arises between contractors over concurrently selectable but incompatible products, A/E will determine which products shall be used.

B. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.
   1. Labels: Locate required product labels and stamps on a concealed surface, or, where required for observation following installation, on a visually accessible surface that is inconspicuous.
   2. Equipment Nameplates: Provide a permanent nameplate on each item of service- or power-operated equipment. Locate on a visually accessible but inconspicuous surface. Include information essential for operation, including the following:
      a. Name of product and manufacturer.
      b. Model and serial number.
      c. Capacity.
      d. Speed.
      e. Ratings.
   3. See individual identification Sections in Divisions 21, 22, 23, and 26 for additional equipment identification requirements.

1.4 COORDINATION

A. Modify or adjust affected work as necessary to integrate work of approved comparable products and approved substitutions.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.

B. Delivery and Handling:
   1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
   2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
   3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
   4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

C. Storage:
   1. Store products to allow for inspection and measurement of quantity or counting of units.
   2. Store materials in a manner that will not endanger Project structure.
   3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
   4. Store cementitious products and materials on elevated platforms.
   5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
   6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
   7. Protect stored products from damage and liquids from freezing.

D. Each Contractor shall be responsible for materials he orders for delivery to the jobsite. Responsibility includes, but is not limited to, receiving, unloading, storing, protecting, and setting in place; ready for final connections.
   1. The Owner will not be responsible for deliveries related to the construction or operation of the Contractor. The Owner cannot sign delivery forms for the Contractor.

E. Each Contractor shall insure that products are delivered to the Project in accordance with the Construction Schedule of the Project. In determining date of delivery, sufficient time shall be allowed for shop drawings and sample approvals, including the possibility of having to resubmit improperly prepared submittals or products other than those specified and the necessary fabrication or procurement time along with the delivery method and distance involved.

1.6 WARRANTIES

A. Specific warranties or bonds called for in the Contract Documents, in addition to that falling under the general warranty as set forth in General Conditions, shall be furnished in accordance with the requirements of the Specifications.
   1. Owner’s Recourse: Expressed warranties made to the Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under law. Expressed warranty periods shall not be interpreted as limitations on the time in which the Owner can enforce such other duties, obligations, rights, or remedies.
      a. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

B. Each Contractor shall and does hereby agree to warrant for a period of one year, or for longer periods, where so provided in the Specifications, as evidenced by the date of Substantial Completion issued by the A/E, products installed under the Contract to be of good quality in every respect and to remain so for periods described herein.

C. Should defects develop in the previously mentioned Work within the specified periods, due to faults in products or their workmanship, the Contractor hereby agrees to make repairs and do necessary Work to correct defective Work to the A/E's satisfaction, in accordance with the General and Supplementary Conditions. Such repairs and corrective Work, including costs of making good other Work damaged by or otherwise affected by making repairs or corrective Work, shall be done without cost to the Owner and at the entire cost and expense of the Contractor within 30 days after written notice to the Contractor by the Owner.
   1. Related Damages and Losses: When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.
   2. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

D. Nothing herein intends or implies that the warranty shall apply to Work that has been abused, neglected, or improperly maintained by the Owner or his successor in interest.

E. Where service on products is required under this Article, it shall be promptly provided when notified by the Owner and no additional charge shall be made, unless it can be established that the defect or malfunctioning was caused by abuse or accidental damage not to be expected under conditions of ordinary wear and tear.

F. In the event movement in the adjoining structure or components causes malfunctioning, the Contractor responsible for the original installation of the adjoining structure or components shall provide such repair, replacement, or correction necessary to provide for proper functioning to bring the equipment back into the same operating condition as approved at the completion of the building.

G. The manufacturer and supplier expressly warrants that each item of equipment furnished by him and installed in this Project is suitable for the application shown and specified in the Contract Documents and includes features, accessories, and performing characteristics listed in the manufacturer's catalog in force on the date bids are requested for the Work. This warranty is intended as an assurance by the manufacturer that his equipment is not being misapplied and is fit and sufficient for the service intended. This warranty is in addition to and not in limitation of other warranties or remedies required by law or by the Contract Documents. It shall be the responsibility of the Contractor for the particular equipment to obtain this warranty in writing.

H. In case the Contractor fails to do Work so ordered, the Owner may have Work done and charge the cost thereof against monies retained as provided for in the Agreement and, if said retained monies shall be insufficient to pay such cost or if no money is available, the Contractor and his Sureties shall agree to pay to the Owner the cost of such Work.

I. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
   1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
   2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

J. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
   1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
   2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
   3. Refer to Divisions 02 through 49 Sections for specific content requirements and particular requirements for submitting special warranties.

K. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
   1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," A/E will make selection.
5. Where products are accompanied by the term "match sample," sample to be matched is A/E's.
6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.

B. Product Selection Procedures:
1. Sole Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
   a. Sole product may be indicated by the phrase "subject to compliance with requirements, provide the following."
2. Sole Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
   a. Sole manufacturer/source may be indicated by the phase "Subject to compliance with requirements, provide products by the following."
3. Limited List of Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
   a. Restricted List: Where specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Substitutions for Contractor's convenience will not be considered after award, unless otherwise noted.
   b. Limited list of products may be indicated by the phrase "Subject to compliance with requirements, provide one of the following."
4. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
   a. Restricted List: Where specifications include a list of manufacturer's names, provide a product by one of the manufacturers listed that complies with requirements. Substitutions for Contractor's convenience will not be considered, unless otherwise indicated.
   b. Limited list of manufacturers is indicated by the phase "Subject to compliance with requirements, provide products by one of the following."
5. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" article for consideration of an unnamed product by one of the other named manufacturers.
   a. For approval of products by unnamed manufacturers, comply with requirements in Division 01 Section "Substitution Procedures" for substitutions for convenience.
6. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches A/E's sample. A/E's decision will be final on whether a proposed product matches.
   a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 Article "Product Substitutions" for proposal of product.
7. Visual Selection Specification: Where Specifications include the phrase "as selected by A/E from manufacturer's colors, patterns, and textures" or a similar phrase, select a product that complies with other specified requirements. A/E will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, A/E will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.

b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, A/E will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 PROTECTION

A. Contractor shall protect building elements and products subject to damage. Should workers or other persons employed or commissioned by a Contractor be responsible for damage, the entire cost of repairing said damage shall be assumed by that individual Contractor. Should damage be done by a person or persons not employed or commissioned by a Contractor, the respective Contractors shall make repairs and charge the cost to the guilty person or persons. The affected Contractors shall be responsible for collecting such charges. If the person or persons responsible for damage cannot be discovered, the respective Contractor shall make full and satisfactory repairs, and the cost of Work shall be prorated against each Contractor.

B. The respective Contractors shall protect their products prior to installation and final acceptance. Storage shall be dry, clean, and safe. Materials or equipment damaged, deteriorated, rusted, or defaced due to improper storage shall be repaired, refinished, or replaced, as required by the A/E. Products lost through theft or mishandling shall be replaced by the Contractor without cost to the Owner.

2.3 ACCEPTANCE OF EQUIPMENT OR SYSTEMS

A. The Owner will not accept the start of the warranty period on systems or equipment until Substantial Completion is issued to the respective Contractor(s) for Owner's occupancy of the building, in part or whole. Each Contractor shall make such provisions as required to extend the manufacturer's warranty from time of initial operation of systems or equipment until Substantial Completion is given in writing.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 60 00

SECTION 01 73 29 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

B. Related Sections include the following:
   1. Division 02 Section "Selective Structure Demolition" for demolition of selected portions of the building.
   2. Divisions 2 through 33 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
   3. Division 07 Section "Penetration Firestopping" for patching fire-rated construction.

1.2 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

C. Cutting and patching performed during the manufacture of products or during the initial fabrication, erection, or installation processes is not considered to be "cutting and patching" under this definition. Drilling of holes to install fasteners and similar operations are also not considered to be "cutting and patching".

1.3 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
   1. Structural Elements: When cutting and patching structural elements, notify A/E of locations and details of cutting and await directions from the A/E before proceeding. Shore, brace, and support structural element during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
      a. Foundation construction.
      b. Bearing and retaining walls.
      c. Structural concrete.
      d. Structural steel.
      e. Lintels.
      f. Structural decking.
      g. Miscellaneous structural metals.
      h. Exterior curtainwall construction.
      i. Equipment supports.
      j. Piping, ductwork, vessels, and equipment.
      k. Structural systems of special construction in Division 13 Sections.

B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operating elements include the following:
   1. Primary operational systems and equipment.
   2. Air or smoke barriers.
   3. Fire-suppression systems.
   4. Mechanical systems piping and ducts.
   5. Control systems.
   6. Communication systems.
   7. Conveying systems.
   8. Electrical wiring systems.

9. Operating systems of special construction in Division 13 Sections.
10. Fire detection and alarm systems.
11. Fire separation assemblies.

C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Miscellaneous elements include the following:
1. Water, moisture, or vapor barriers.
2. Membranes and flashings.
3. Exterior curtain-wall construction.
4. Equipment supports.
5. Piping, ductwork, vessels, and equipment.
6. Noise- and vibration-control elements and systems.
7. Sprayed fire-resistive material.

D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in A/E's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

F. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

C. Cast-In-Place Concrete
1. Cementitious Materials
a. Portland Cement: ASTM C150, Type I or III, grey.
b. Normal-Weight Aggregate: ASTM C33, Class 3S.
2. Mix
a. Minimum Compressive Strength: 3500 psi at 28 days.
b. Maximum Water-Cementitious Materials Ratio: 0.45.
c. Slump Limit: 4 inches, plus or minus 1 inch, before adding water-reducing or plasticizing admixtures, with maximum slump less than 6 inches.
1) High range water reducers are not allowed.
d. Air Content: Do not allow air content of troweled finish floors to exceed 3 percent.

D. Hydraulic Cement Repair Underlayment: Cement-based, polymer-modified self-leveling product that can be applied in thicknesses required to patch and that can be feathered at edges to match adjacent floor elevations.
1. Cement Binder: ASTM C150, Portland cement or hydraulic or blended hydraulic cement as defined in ASTM C219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.

3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.
    a. Provide aggregate when recommended in writing by underlayment manufacturer for underlayment thickness required.
4. Compressive Strength: Not less than 4,000 psi at 28 days when tested according to ASTM C 109.
5. Products: Subject to compliance with requirements, provide one of the following:
    a. Ardex, Inc.; Ardex k-15
    b. BASF; Enemrex Self-Leveling Underlayment of MBT Mastertop 110 Plus Underlayments.
    c. Dayton Superior Corp.; Levelayer
    d. Dependable Chemical Co.; Skimflow ES
    e. Euclid Chemical Company; Super Flo-Top
    f. MAPEI Corp.; Ultrapan 1 Plus
    g. Maxxon Corp.; Level-Right
    h. TEC Specialty Products; EZ Level

E. Masonry Materials
1. Concrete Masonry Units: ASTM C90, normal weight, unless otherwise noted.
2. Mortar Material: Comply with ASTM C270, property specification.
    a. Portland Cement: ASTM C150, Type I or Type II.
    b. Hydrated Lime: ASTM C207, Type S.
    c. Aggregate for Mortar: ASTM C144.
    d. Use Type N mortar, unless otherwise noted.

F. Plaster Material
1. Metal Lath
    a. Expanded-Metal Lath: ASTM C 847 with ASTM A 653, G60, hot-dip galvanized zinc coating.
        1) Flat rib lath; weight: 3/4 lb/sq.yd.
    b. Wire-Fabric Lath
        1) Welded-wire lath; ASTM C923; self furring; weight: 1.4 lb/sq.yd.
        2) Woven-wire lath; ASTM C1032; self-furring, with stiffener wire backing; weight: 1.4 lb/sq.yd.
2. Accessories: Comply with ASTM C1063 and coordinate depth of trim and accessories with thicknesses to match existing.
3. Plaster Materials
    a. Portland Cement: ASTM C150, Type I.
    b. Lime: ASTM C206, Type S; or ASTM C207, Type S.
4. Plaster Mix: Comply with ASTM C926 and as required to match existing.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Existing Warranties: Remove, replace, patch and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

B. Temporary Support: Provide temporary support of Work to be cut.

C. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

D. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Division 01 Section "Summary."

E. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

3.3 CUTTING AND PATCHING

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
   1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
   2. Do not use cutting torches.
   3. Contractor shall make arrangements with the other trades for fitting his Work into the construction. Where the Contractor was given sufficient information as to required openings prior to construction and then the cost for cutting and restoring shall be paid for by the Contractor failing to provide the required openings.
   4. Contractor shall be responsible for cutting, fitting, and patching that may be required to complete his Work. Contractors shall not endanger Work of other Contractors by cutting, excavating, or otherwise altering Work; and shall not cut or alter the Work of other Contractors except with written consent of the A/E. Costs caused by defective or ill-timed Work shall be borne by the party responsible.
   5. Cutting or restoring performed by Contractors which is condemned by the A/E shall have such correction or restoration work performed through the General Contractor when so instructed by the A/E. The cost of such Work shall be borne by the Contractor responsible for the originally defective Work.
   6. No Contractor shall not do cutting that may impair the strength of the building or its components. No holes except for small screws or bolts may be drilled in the beams or other structural members for the purpose of supporting, routing, or attaching Work without obtaining prior approval from the A/E.
      a. Provide temporary support of work to be cut.
   7. Contractor shall do his own cutting and patching work in the existing building. This shall include cutting and patching required installing new utilities on the Project site.
   8. Refer to other Sections of these Specifications for specific cutting and patching requirements and limitations applicable to individual units of Work.
   9. Unless otherwise specified, requirements of this Section apply to Mechanical and Electrical Work.
      a. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
   1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
   2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
   3. Concrete or Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
      a. After coring, Contractor shall pack and grout openings around sleeves or work penetrating the floor or deck.

b. CMU Removal: Remove units that are damaged or require removal to accommodate new work. Carefully remove entire units joint to joint, without damaging surrounding masonry in a manner that permits replacement with full size units.
    1) Support and protect remaining masonry that surrounds removal area. Maintain reinforcement and adjoining construction in an undamaged condition.
    2) Clean surrounding removal areas by removing mortar, dust, and loose particles in preparation for replacement.

4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Do not proceed with patching until after construction operations requiring cutting in immediate area are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Patching should occur with materials and finishes to match the existing surrounding construction.
2. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
3. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.
4. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
    b. Patch Floor: Mix and apply underlayment components according to manufacturer's written instructions.
        1) Close areas to traffic during underlayment and for time period after application recommended in writing by manufacturer.
        2) Coordinate application of components to provide optimum underlayment-to-substrate and intercoat adhesion.
        3) At substrate expansion, isolation, and other moving joints, allow joint of same width to continue underlayment.
        4) Apply primer over prepared substrate at manufacturer's recommended spreading rate.
        5) Apply underlayment to a uniform, level surface.
            a) Apply a final layer without aggregate to produce surface.
            b) Feather edges to match adjacent floor elevations.
        6) Cure underlayment according to manufacturer's written instructions. Prevent contamination during application and curing processes.
        7) Do not install floor coverings over underlayment until after time period recommended in writing by underlayment manufacturer.
        8) Remove and replace underlayment areas that evidence lack of bond with substrate, including areas that emit a "hollow" sound when tapped.

c. Patch CMU: Replace damaged or removed units into bonding and coursing pattern of existing. Lay replacement units with completely filled bed, head, and collar joints. Butter ends with sufficient mortar to fill head joints and shove into place.

5. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
   a. Cut, patch, and repair plaster as necessary to accommodate new work and to restore to match adjacent undisturbed surfaces. Repair or replace work to eliminate evidence of new work.
6. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01 73 29

SECTION 01 77 00 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
   1. Substantial Completion procedures.
   2. Final Completion procedures.
   3. Warranties.
      a. Correction of work period.
   4. Corrections/Punch List/List of Incomplete Items.
   5. Repair of work.

B. Related Sections include the following:
   1. Division 01 Section “Submittal Procedures” for submission of closeout document procedures.
   2. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
   3. Division 01 Section "Project record Documents" for submitting Record Drawings.
   4. Division 01 Section "Demonstration and Training" for requirements for instructing Owner's personnel.

1.2 DEFINITIONS

A. List of Incomplete Items: Contractor-prepared list of items to be completed or corrected, prepared for the A/E’s use prior to A/E’s inspection, to determine if the work is substantially complete.

1.3 SUBMITTALS

A. Action Submittals
   1. Contractor’s List of Incomplete Items: Initial submittal of Substantial Completion.
   2. Certified List of Incomplete Items: Final submittal at Final Completion.

B. Closeout Submittals
   1. Certificates of Release: From authorities having jurisdiction.

1.4 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor’s List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor’s Corrections/Punch List), indicating the value of each item on the list and reasons why the Work is incomplete.

B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
   1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar release.
   2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
   3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.

4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Construction Manager.
5. Submit test/adjust/balance records.
6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
7. Certification
    a. Submit certification stating that no materials containing more than 1 percent asbestos were incorporated into the work.
    b. Plumbing Contractor shall submit certification stating that no flux or solder used for drinking water piping contains more than 0.2 percent lead, and lead content shall not exceed a weighted average of not more than 0.25 percent in the wetted surface material in accordance with requirements of EPS's "Safe Drinking Water Act" (SDWA).
8. Project Warranties:
    a. Organize warranty documents based on table of contents of Project Manual.
    b. Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
    c. This document shall be included as part of Maintenance and Operating Manuals.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Complete startup and testing of systems and equipment.
4. Perform preventive maintenance on equipment used prior to Substantial Completion.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Division 01 Section "Demonstration and Training".
6. Advise Owner of changeover in heat and other utilities.
7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
9. Complete final cleaning requirements, including touchup painting.
10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection for Substantial Completion a minimum of 14 days prior to the date of the work will be substantially complete. On receipt of request, A/E and Construction Manager will either proceed with inspection or notify Contractor of unfulfilled requirements. A/E will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by A/E, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
    a. If more than one reinspection is necessary, Contractor shall be charged $500.00 for each reinspection when work is found not to be substantially complete.
2. Results of completed inspection will form the basis of requirements for Final Completion.

1.5 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit certified copy of A/E's Substantial Completion inspection list of items to be completed or corrected (Corrections/Punch List), endorsed and dated by A/E. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
2. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Inspection: Submit a written request for final inspection for acceptance a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, A/E and Construction Manager will either proceed with inspection or notify Contractor of unfulfilled requirements. A/E will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
   1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
      a. For all additional reinspections, the Contractor shall be charged $500.00 per occurrence.

1.6 LIST OF INCOMPLETE ITEMS (CORRECTIONS/PUNCH LIST)

A. Prior to the A/E's preparation of a Corrections/Punch List, each Prime Contractor, with the Construction Manager, shall prepare an initial Corrections/Punch List on the job for use by his employees and subcontractors and for use by other Contractors and for use by the Construction Manager and A/E to facilitate completion of the Work.

B. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
   1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
   2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
   3. Include the following information at the top of each page:
      a. Project name.
      b. Date.
      c. Name of A/E and Construction Manager.
      d. Name of Contractor.
      e. Page number.
   4. Submit list of incomplete items in the following format:
      a. PDF electronic file. A/E, through Construction Manager, will return annotated file.
      b. Web-Based Project Software Upload: Utilize software feature for creating and updating list of incomplete item (punch list).

C. Upon receipt of the initial Corrections/Punch List, the A/E, assisted by the Construction Manager, will inspect the Work to determine if the work is substantially complete. Following the inspection, the A/E will issue a supplement to the Contractor’s list of a Final Corrections/Punch List.

D. At the time the A/E commences the Substantial Completion Inspection, if the A/E discovers excessive additional items requiring completion or correction, the A/E may decline to continue the inspection, instructing the Contractor as to the general classification of deficiencies which must be corrected before the A/E will resume the Substantial Completion Inspection. If the Contractor fails to pursue the Work so as to make it ready for Substantial Completion Inspection in a timely fashion, the A/E shall, after notifying the Contractor, conduct inspections and develop a list of items to be completed or corrected. This list of items shall be furnished to the Contractor who shall proceed to correct such items within 21 days. The A/E will conduct additional inspections as required to determine that the Work is ready for Substantial Completion Inspection. The A/E will invoice the Owner for $500.00 per reinspection.

E. The time fixed by the A/E and Construction Manager for the completion of all items on the Final Corrections/Punch List shall not be greater than 21 days. The Contractor shall complete items on the list within such 21 day period. The Contractor shall begin completion and correction and correction activities within 7 days of receipt of the lists and complete all activities within the 21 day period specified. If the Contractor fails to do so, the Owner in its discretion may perform the Work by itself or others and the cost thereof shall be charged against the Contractor. If more than one inspection by the A/E for the purpose of evaluating corrected work is required by the subject list of items to be completed or corrected, it will be performed at the cost of $500.00 per inspection and deducted from the Contractor's Contract.

1. The A/E will reinspect the work with the Construction Manager, upon request by the Contractor or within 21 days. If items required for Substantial Completion have been completed a certificate for Substantial Completion will be issued.

F. Deferred Items: With the approval of Owner, A/E and Construction Manager, upon reinspection, items of Work that cannot be completed within 21 days or because of seasonal conditions, such as bituminous paving or landscaping, or if the Owner has a schedule conflict, payment will be released to the Contractor less twice the cost of completing the remaining work as determined by the A/E and Construction Manager.

1.7 CORRECTION OF WORK PERIOD (WARRANTY)

A. One month prior to the expiration of the one year correction of work period (warranty), the Construction Manager will schedule a walk through to see if additional Work by the Contractor(s) is needed to make good on the warranties. An itemized list will be furnished to the Contractor for corrective or replacement work.

1. The walk through will be attended by the Construction Manager, A/E, and Owner.

B. This Work shall be completed immediately by the Contractor(s) after receiving notification.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

B. Utilize natural cleaning materials where feasible. Natural cleaning materials include:

1. Abrasive cleaners: Substitute 1/2 lemon dipped in borax.
2. Ammonia: Substitute vinegar, salt and water mixture, or baking soda and water.
3. Disinfectants: Substitute 1/2 cup borax in gallon of water.
4. Drain Cleaners: Substitute 1/2 cup baking soda with 1/4 cup vinegar in boiling water.
5. Upholstery Cleaners: Substitute dry cornstarch.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
   1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
   2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
      a. Do not paint over “UL” and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
   3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
   4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 01 77 00

SECTION 01 78 23 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
   1. Operation and maintenance documentation directory manuals.
   2. Emergency manuals.
   3. Systems and equipment operation manuals.
   4. Systems and equipment maintenance manuals.
   5. Product maintenance manuals.

B. Related Requirements:
   1. Division 01 Section "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
   2. Division 01 Section “Closeout Procedures” for administrative and procedural requirements including warranties.
   3. Division 01 Section ‘Project Record Documents” for preparing Record Drawings for operation and maintenance manuals.
   4. Divisions 02 through 49 Sections for specific operation and maintenance manual requirements for the Work of those Sections.

1.2 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.3 CLOSEOUT SUBMITTALS

A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections and as reviewed and approved at the time of section submittals. Submit manual content formatted and organized as required by this Section.
   1. A/E will comment on whether content of operation and maintenance submittals is acceptable.
   2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

B. Format: Submit operation and maintenance manuals in the following format:
   1. Submit in PDF form. Enable reviewer comments on draft submittals.

C. Initial Manual Submittal: Submit draft copy of table of contents at least 30 days before commencing demonstration and training. A/E will comment on whether general scope and content of manual are acceptable.

D. Final Manual Submittal: Submit each manual in final form at least 15 days before commencing demonstration and training.
   1. Correct or revise each manual to comply with A/E's comments. Submit copies of each corrected manual within days of receipt of A/E's comments and prior to commencing demonstration and training.

E. Comply with Section 01 77 00 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

1.4 FORMAT OF OPERATION AND MAINTENANCE MANUALS

A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
   1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
   2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

1.5 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
   1. Title page.
   2. Table of contents.
   3. Manual contents.

B. Title Page: Include the following information:
   1. Subject matter included in manual.
   2. Name and address of Project.
   3. Name and address of Owner.
   4. Date of submittal.
   5. Name and contact information for Contractor.
   6. Name and contact information for Construction Manager.
   7. Name and contact information for Architect.
   8. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
   9. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
   1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

1.6 EMERGENCY MANUALS

A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

B. Content: Organize manual into a separate section for each of the following:
   1. Type of emergency.
   2. Emergency instructions.
   3. Emergency procedures.

C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
   1. Fire.
   2. Flood.
   3. Gas leak.
   4. Water leak.
   5. Power failure.
   6. Water outage.
   7. System, subsystem, or equipment failure.
   8. Chemical release or spill.

D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

E. Emergency Procedures: Include the following, as applicable:
   1. Instructions on stopping.
   2. Shutdown instructions for each type of emergency.
   3. Operating instructions for conditions outside normal operating limits.
   4. Required sequences for electric or electronic systems.
   5. Special operating instructions and procedures.

1.7 SYSTEMS AND EQUIPMENT OPERATION MANUALS

A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.
   1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
   2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
   1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
   2. Performance and design criteria if Contractor has delegated design responsibility.
   3. Operating standards.
   4. Operating procedures.
   5. Operating logs.
   6. Wiring diagrams.
   7. Control diagrams.
   8. Piped system diagrams.
   9. Precautions against improper use.
   10. License requirements including inspection and renewal dates.

C. Descriptions: Include the following:
   1. Product name and model number. Use designations for products indicated on Contract Documents.
   2. Manufacturer's name.
   3. Equipment identification with serial number of each component.
   4. Equipment function.
   5. Operating characteristics.
   6. Limiting conditions.
   7. Performance curves.
   8. Engineering data and tests.
   9. Complete nomenclature and number of replacement parts.

D. Operating Procedures: Include the following, as applicable:
   1. Startup procedures.
   2. Equipment or system break-in procedures.
   3. Routine and normal operating instructions.
   4. Regulation and control procedures.
   5. Instructions on stopping.
   6. Normal shutdown instructions.
   7. Seasonal and weekend operating instructions.
   8. Required sequences for electric or electronic systems.
   9. Special operating instructions and procedures.

E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

F. Piped Systems: Diagram piping as installed, and identify color coding where required for identification.

1.8 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.
   1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
   2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds as described below.

C. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:
   1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

E. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training video recording, if available.

F. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

G. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

H. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

I. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

J. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
1. Do not use original project record documents as part of maintenance manuals.

1.9 PRODUCT MAINTENANCE MANUALS

A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

C. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Product Information: Include the following, as applicable:
   1. Product name and model number.
   2. Manufacturer's name.
   3. Color, pattern, and texture.
   4. Material and chemical composition.
   5. Reordering information for specially manufactured products.

E. Maintenance Procedures: Include manufacturer's written recommendations and the following:
   1. Inspection procedures.
   2. Types of cleaning agents to be used and methods of cleaning.
   3. List of cleaning agents and methods of cleaning detrimental to product.
   4. Schedule for routine cleaning and maintenance.
   5. Repair instructions.

F. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
   1. Include procedures to follow and required notifications for warranty claims.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 78 23

SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for project record documents, including following:
   1. Record Drawings.
   2. Record Samples.
   3. Miscellaneous record submittals.

B. Related Sections:
   1. Division 01 Section "Closeout Procedures" for general closeout procedures.
   2. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
   3. Divisions 02 through 49 Sections for specific requirements for project record documents of Work in those Sections.

1.2 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with following:
   1. Number of Copies: Submit PDF electronic files of scanned record prints.
   2. Print each drawing file, whether or not changes and additional information were recorded.

B. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit annotated PDF electronic files and directories of each submittal.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of Contract Drawings and Shop Drawings.
   1. Preparation: Mark record prints to show actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
      a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
      b. Accurately record information in an acceptable drawing technique.
      c. Record data as soon as possible after obtaining it.
      d. Record and check markup before enclosing concealed installations.
      e. Cross-reference record prints to corresponding archive photographic documentation.
   2. Content: Types of items requiring marking include, but are not limited to, following:
      a. Dimensional changes to Drawings.
      b. Revisions to details shown on Drawings.
      c. Depths of foundations below first floor.
      d. Locations and depths of underground utilities.
      e. Revisions to routing of piping and conduits.
      f. Revisions to electrical circuitry.
      g. Actual equipment locations.
      h. Duct size and routing.
      i. Locations of concealed internal utilities.
      j. Changes made by Change Order or Construction Change Directive.
      k. Changes made following A/E's written orders.
      l. Details not on original Contract Drawings.

m. Field records for variable and concealed conditions.
n. Record information on Work that is shown only schematically.

3. Mark Contract Drawings and Shop Drawings completely and accurately. Utilize personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record sets with red-colored instruments. Use other colors to distinguish between changes for different categories of Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Final Format: Electronically scan site record prints into a combined PDF electronic file or files. Include all drawings regardless if recorded changes appear on sheet.
1. Paper copies shall not be provided unless specifically requested.

2.2 RECORD SAMPLES

A. General, refer to Division 01 Section “Submittal Procedures” for additional submittal information.

B. Immediately before date of Substantial Completion, meet with A/E and Owner’s personnel at Project site to determine which Samples maintained during construction period shall be transmitted to Owner for record purposes.

C. Comply with A/E’s instructions for packaging, identification marking, and delivery to Owner’s sample storage space. Dispose of other Samples in manner specified for disposing of surplus and waste materials.

2.3 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

B. Format: Submit miscellaneous record submittals as PDF electronic file or scanned PDF electronic file(s) of marked-up miscellaneous record submittals.
1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

C. Refer to other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Immediately before Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for use and reference. Miscellaneous records include, but are not limited to, following:
1. Field records on excavations and foundations.
2. Field records on underground construction and similar work.
3. Surveys showing locations and elevations of underground lines.
4. Invert elevations of drainage piping.
5. Surveys establishing building lines and levels.
6. Authorized measurements using unit prices or allowances.
7. Records of plant treatment.
8. Ambient and substrate condition tests.
9. Certifications received in lieu of labels on bulk products.
10. Batch mixing and bulk delivery records.
11. Testing and qualification of trades persons.
12. Documented qualification of installation firms.
13. Load and performance testing.
14. Inspections and certifications by governing authorities.
15. Leakage and water-penetration tests.

16. Fire-resistance and flame-spread test results.
17. Final Inspection and correction procedures.
18. Landfill and hazardous waste records.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during construction period for project record document purposes. Post changes and modifications to project record documents as they occur; do not wait until end of Project.

B. Maintenance of Record Documents and Samples: Store record documents and Samples in field office apart from Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for A/E's and Construction Manager's reference during normal working hours.

END OF SECTION 01 78 39

SECTION 01 79 00 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
   1. Instruction in operation and maintenance of systems, subsystems, and equipment.
   2. Demonstration and training video recordings.
      a. Full cooperation during the Owner’s audio-and video-recording of demonstration and training for products in those Sections.

B. Related Sections:
   1. Divisions 02 through 33 Sections for specific requirements for demonstration and training for products in those Sections.

1.2 CLOSEOUT SUBMITTALS

A. Demonstration and Training Video Recordings: Submit two copies within seven days of end of each training module.
   1. Identification: On each copy, provide an applied label with the following information:
      a. Name of Project.
      b. Name and address of videographer.
      c. Name of A/E.
      d. Name of Construction Manager.
      e. Name of Contractor.
      f. Date of video recording.
   2. Transcript: Prepared in PDF electronic format. Include a cover sheet with same label information as the corresponding video recording and a table of contents with links to corresponding training components. Include name of Project and date of video recording on each page.
   3. At completion of training, submit complete training manual(s) for Owner's use in PDF electronic file format.

1.3 QUALITY ASSURANCE

A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.

B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 01 Section "Quality Requirements," experienced in operation and maintenance procedures and training.

C. Preinstruction Conference: Conduct conference at Project site. Review methods and procedures related to demonstration and training including, but not limited to, the following:
   1. Inspect and discuss locations and other facilities required for instruction.
   2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
   3. Review required content of instruction.
   4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

1.4 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by A/E.

1.5 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:
   1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
      a. System, subsystem, and equipment descriptions.
      b. Performance and design criteria if Contractor is delegated design responsibility.
      c. Operating standards.
      d. Regulatory requirements.
      e. Equipment function.
      f. Operating characteristics.
      g. Limiting conditions.
      h. Performance curves.
   2. Documentation: Review the following items in detail:
      a. Emergency manuals.
      b. Operations manuals.
      c. Systems and equipment
      d. Maintenance manuals.
      e. Product maintenance manuals.
      f. Project record documents.
      g. Identification systems.
      h. Warranties and bonds.
      i. Maintenance service agreements and similar continuing commitments.
   3. Emergencies: Include the following, as applicable:
      a. Instructions on meaning of warnings, trouble indications, and error messages.
      b. Instructions on stopping.
      c. Shutdown instructions for each type of emergency.
      d. Operating instructions for conditions outside of normal operating limits.
      e. Sequences for electric or electronic systems.
      f. Special operating instructions and procedures.
   4. Operations: Include the following, as applicable:
      a. Startup procedures.
      b. Equipment or system break-in procedures.
      c. Routine and normal operating instructions.
      d. Regulation and control procedures.
      e. Control sequences.
      f. Safety procedures.
      g. Instructions on stopping.
      h. Normal shutdown instructions.
      i. Operating procedures for emergencies.
      j. Operating procedures for system, subsystem, or equipment failure.
      k. Seasonal and weekend operating instructions.
      l. Required sequences for electric or electronic systems.
      m. Special operating instructions and procedures.
   5. Adjustments: Include the following:
      a. Alignments.
      b. Checking adjustments.

c. Noise and vibration adjustments.
d. Economy and efficiency adjustments.

6. Troubleshooting: Include the following:
   a. Diagnostic instructions.
   b. Test and inspection procedures.
7. Maintenance: Include the following:
   a. Inspection procedures.
   b. Types of cleaning agents to be used and methods of cleaning.
   c. List of cleaning agents and methods of cleaning detrimental to product.
   d. Procedures for routine cleaning
   e. Procedures for preventive maintenance.
   f. Procedures for routine maintenance.
   g. Instruction on use of special tools.
8. Repairs: Include the following:
   a. Diagnosis instructions.
   b. Repair instructions.
   c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
   d. Instructions for identifying parts and components.
   e. Review of spare parts needed for operation and maintenance.

1.6 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Division 01 Section "Operations and Maintenance Data."

B. Set up instructional equipment at instruction location.

1.7 INSTRUCTION

A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.

B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
   1. Owner will furnish Contractor with names and positions of participants.

C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
   1. Schedule training with Owner, through Construction Manager, with at least fourteen days' advance notice.

D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.

E. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a demonstration performance-based test.

F. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

1.8 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

A. General: Engage a qualified commercial videographer to record demonstration and training video recordings. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
   1. At beginning of each training module, record each chart containing learning objective and lesson outline.

B. Digital Video Recordings: Provide high-resolution, digital video in MPEG format, produced by a digital camera with minimum sensor resolution of 12 megapixels and capable of recording in full HD mode with vibration reduction technology.
   1. Submit video recordings on thumb drive or other format as approved by Owner.
   2. File Hierarchy: Organize folder structure and file locations in accordance with Project Manual table of contents. Provide complete screen-based menu.
   3. File Names: Utilize file names based on name of equipment generally described in video segment, as identified in Project specifications.
   4. Contractor and Installer Contact File: Using appropriate software, create a file for inclusion on the equipment demonstration and training recording that describes the following for each Contractor involved on the Project, arranged in accordance with Project Manual table of contents:
      a. Name of Contractor/Installer.
      b. Business address.
      c. Business phone number.
      d. Point of contact.
      e. Email address.

C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to show area of demonstration and training. Display continuous running time.
   1. Film training session(s) in segments not to exceed 15 minutes.
      a. Produce segments to present a single significant piece of equipment per segment.
      b. Organize segments with multiple pieces of equipment to follow order of Project Manual table of contents.
      c. Where a training session on a particular piece of equipment exceeds 15 minutes, stop filming and pause training session. Begin training session again upon commencement of new filming segment.

D. Light Levels: Verify light levels are adequate to properly light equipment. Verify equipment markings are clearly visible prior to recording.
   1. Furnish additional portable lighting as required.

E. Narration: Describe scenes on video recording by audio narration by microphone while video recording is recorded. Include description of items being viewed.

F. Pre-Produced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

G. General: Owner may engage a photographer or sound technician to audio-or video-record demonstration and training sessions.

H. Subcontractor and trainer shall cooperate fully with the Owner’s efforts to audio-or video-record demonstration and training sessions.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION 01 79 00