FANNING HOWEY

Project Manual

South Putnam – New Administration Building

South Putnam Community School Corporation
Greencastle, Indiana

MKS
MICHAEL KINDER & SONS
PLAN | DESIGN | BUILD

Project No. 224171.00
Book 1 of 3
Divisions 00 – 01
April 21, 2025

TABLE OF CONTENTS

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

DIVISION 01 - GENERAL REQUIREMENTS

00 01 15 LIST OF DRAWINGS

COVER	
00	GENERAL
G-101	FIRST FLOOR CODE PLAN
C001	GENERAL NOTES
C010	DEMOLITION PLAN
C100	SITE PLAN
C200	GRADING PLAN
C300	UTILITY PLAN
C400	EROSION CONTROL PLAN
C401	SWPPP
C500	CIVIL DETAILS
C501	CIVIL DETAILS
S-001	GENERAL NOTES
S-101	FOUNDATION PLAN
S-102	SLAB AND WALL PLAN
S-201	ROOF FRAMING PLAN
S-202	ISOMETRIC VIEWS
S-301	FOUNDATION DETAILS
S-302	FOUNDATION DETAILS
S-303	SLAB DETAILS
S-401	MASONRY DETAILS
S-501	WOOD FRAMING DETAILS
S-502	WOOD FRAMING DETAILS
S-503	FRAMING SECTIONS AND DETAILS
S-504	FRAMING SECTIONS AND DETAILS
S-505	TRUSS ELEVATIONS
A-101	FIRST FLOOR ARCHITECTURAL PLAN
A-102	FIRST FLOOR REFLECTED CEILING PLAN
A-103	ROOF PLAN
A-201	BUILDING ELEVATIONS
A-301	BUILDING SECTIONS
A-302	WALL SECTIONS AND DETAILS
A-303	WALL SECTIONS AND DETAILS
A-401	ENLARGED PLANS AND DETAILS
A-402	DETAILS
A-601	DOOR AND FRAME SCHEDULE AND DETAILS
A-602	FRAME DETAILS
A-701	FIRST FLOOR EQUIPMENT PLAN
A-702	SIGNAGE TYPES
A-703	CASEWORK ELEV, DETAILS, LIST OF FINISHES
A-801	FIRST FLOOR FINISH PLAN
A-802	INTERIOR ELEVATIONS & DETAILS
A-803	LIST OF FINISHES & TRANSITIONS
P-001	PLUMBING SYMBOLS AND ABBREVATIONS
PF101	PLUMBING FOUNDATION PLAN
PP101	PLUMBING FIRST FLOOR PLAN
P-501	PLUMBING DETAILS AND SECTIONS
P-601	PLUMBING SCHEDULES
P-901	PLUMBING ISOMETRICS
M-001	MECHANICAL SYMBOLS AND ABBREVIATIONS
MH101	MECHANICAL HVAC FIRST FLOOR PLAN - UNIT A
M-501	MECHANICAL DETAILS AND SECTIONS
M-601	MECHANICAL SCHEDULES
M-701	TEMPERATURE CONTROLS SCHEMATICS
ES101	ELECTRICAL SITE PLAN
E-001	ELECTRICAL SYMBOLS AND ABBREVIATIONS
EL101	ELECTRICAL FIRST FLOOR LIGHTING PLAN
EP101	ELECTRICAL FIRST FLOOR POWER PLAN
EF101	ELECTRICAL FIRST FLOOR FIRE ALARM PLAN
E-501	GROUNDING & GENERAL DETAILS
E-502	LIGHTING DETAILS & SCHEMATICS
E-601	SCHEDULES & ONE-LINE DIAGRAM
T000	SYMBOLS AND ABBREVIATIONS
TS100	TECHNOLOGY SITE PLAN
T101	FIRST FLOOR TECHNOLOGY PLAN
T401	TECHNOLOGY ENLARGED PLANS
T501	TECHNOLOGY DETAILS
T502	TECHNOLOGY DETAILS
T503	TECHNOLOGY DETAILS

END OF SECTION

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 (CMa) service in connection with the South Putnam – New Administration Building, located at 1780 East U.S. Highway 40, Greencastle, IN 46135. Accordingly, South Putnam Community School Corporation 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 – New Administration Building.

Contractor's bid will be accepted at South Putnam CSC Administration Building, 3999 South U.S. Highway 231, Greencastle, IN 46135 on or before Wednesday, May 28, 2025. Bids are due at 2 PM on Wednesday, May 28, 2025 Bids mailed/overnighted prior to 2 PM (local time) on Wednesday, May 28, 2025 must be addressed to South Putnam Community School Corporation on "behalf of Michael Kinder and Sons, Inc". Bids will be opened and read aloud immediately after.

Bid Packages are as follows:

- Bid Package 06a General Trades (single prime contractor)

A Pre-Bid Conference will be held on Wednesday, May 14, 2025, 12:30 PM via Microsoft Teams meeting.
Meeting ID: 250 726 305 461
Passcode: No96jF92
Dial in by Phone - +1 260-399-9669,,722171407# United States, Fort Wayne

All bidding and construction shall be in accordance with construction documents prepared by Fanning Howey, Michael Kinder and Sons, Inc., TLF Engineers, KBSO Consulting and Creative Engineering Solutions, 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 and Michael Kinder and Sons, Inc.

Bids may be hand delivered and/or delivered by delivery service at the location listed above. Bids not reaching said location by Wednesday, May 28, 2025 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

00 11 16 - INVITATION TO BID

PART 1 - GENERAL

1.1 PROJECT INFORMATION

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

A. Project Identification: South Putnam – New Administration Building

B. Project Location: 1780 East U.S. Highway 40, Greencastle, IN 46135

C. Owner: South Putnam Community School Corporation

D. Architect: Fanning Howey

E. Construction Manager - Michael Kinder and Sons, Inc.

F. Project Description: Project consists of a new 3,800 SF building, stick framed construction, standing seam roof, MEP, earthwork and site development.

G. Construction Contract: Bids will be received for a single prime contractor for Bid Package 06a General Trades

1.2 BID SUBMITTAL AND OPENING

Owner will receive sealed bids 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:

Bid Date: Wednesday, May 28, 2025

1. Bid Time: 2 PM, local time.
2. Location: South Putnam CSC Administration Building
   3999 South U.S. Highway 231
   Greencastle, IN 46135

Bids will be publicly opened and read aloud thereafter.

1.3 BID SECURITY

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 via Microsoft Teams on Wednesday, May 14, 2025 at 12:30 PM, local time. Prospective bidders are encouraged to attend.
Meeting ID: 250 726 305 461
Passcode: No96jF92
Dial in by Phone - +1 260-399-9669,,722171407# United States, Fort Wayne

B. Bidders may request a visit the site prior at anytime contacting Larry Easterday(leasterday@kinderandsons.com)

1.5 DOCUMENTS

A. 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.

1.6 QUESTIONS & CLARIFICATIONS

A. Send all RFI's to Larry Easterday. Deadline for RFI's for Addendum 1 is Monday, May 12, 2025 at 3 PM. Deadline for RFI's for Addendum 2 is Monday, May 19, 2025 at 3 PM. Any clarifications, revisions or changes to the bid documents will be issued via addenda.

1.7 RFI's & ADDENDA

A. RFI's are due 7 calendar days prior to bid day. Submit your RFI to leasterday@kinderandsons.com and include a detailed description including plan pages, details, specification section. RFI submitted after due date will not be processed. Bidder to include worst case after. Addenda may be issued at anytime. Addenda will be posted in plan rooms and emailed via Procore to invited bidders.

1.8 TIME OF COMPLETION

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

1.9 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.

B. Preferred Subcontractors familiar with Client are as follows:
1. Cash Concrete, Neal Cash, (765) 653-6533

END OF SECTION 00 11 16

00 21 13 INSTRUCTIONS TO BIDDERS

1. BIDDER'S REPRESENTATIONS

(a) By submitting a Bid, the Bidder represents that:

(i) Bidder has read and completely understands the bidding documents.

(ii) Bidder understands how bidding documents relate to other portions of the project, if any, being bid concurrently or presently under construction.

(iii) the Bid complies with the bidding documents;

1) the Bidder has investigated all required fees, permits and regulatory requirements of authorities having jurisdiction and has properly included in the submitted bid the cost of such fees, permits and requirements not otherwise indicated as provided by the Owner.

(iv) Bidder has visited the site and has familiarized itself with local conditions under which the work is to be performed and has compared observations with the proposed contract documents. Any errors, inconsistencies or uncertainties must be reported to the Contractor.

(v) the Bid is based upon the materials, equipment and systems required by the bidding documents without exception;

1) the Bidder is a properly licensed contractor according to the laws and regulations of the jurisdictions having authority and meets qualifications indicated in Division 00 and Division 01.

2. BIDDING DOCUMENTS

(a) Distribution

1) Bidders shall obtain complete bidding documents from the Construction Manager issuing the bidding documents as indicated in the invitation to bid.

2) Bidding documents may be purchased at any reprographics service bidder chooses. Bidder is responsible for all fees associated with reproduction.

3) Construction Manager issuing the bidding documents, as indicated in the invitation to bid, will not issue bidding documents to lower tier contractors bidding to prime contractors.

4) Bidders shall use complete Bidding Documents in preparing bids. Neither Owner, Architect or Construction Manager assumes any responsibilities for errors or omissions by using an incomplete bidding documents.

(ii) Modification or Interpretation of Bidding Documents

1) The Bidder shall carefully study the Bidding Documents, examine site and local conditions and notify the Construction Manager of errors, inconsistencies or ambiguities.

2) Timeline for RFI's is included in the invitation to bid. No RFI's will be entertained after closing date.

3) Requests for Interpretation shall be emailed to the Construction Manager.

a) Requests shall include a detailed description of interpretation required including plan page(s) and/or specification sections.

4) Modifications or Interpretations of the Bidding Documents will be made by Addendum.

(iii) Substitutions

1) Written requests for substitutions shall be received by the Construction Manager per cutoff time in 00 11 16.

2) Requests for substitutions shall be emailed to the Construction Manager on a Substitution Request form if provided in specifications or in the same manner as an RFI.

3) Approvals will be set forth in Addendum.

(iv) Addenda

1) Addenda will be issued by Construction Manager by means indicated in the invitation to bid.

2) Addenda may be issued at anytime prior to receipt of bids.

3) Bidder shall acknowledge receipt of Addenda on the bid form provided.

3. BIDDING PROCEDURES

(i) Preparation of Bids

1) Bids shall be submitted on the Bid Form provided in the Bidding Documents. A printable .pdf file of the bid form is available in Division 00 of the specification manual.

2) All blank lines on the bid form shall be legibly executed.

3) All requested Alternates shall be bid. If there is no change in the Base Bid, Bidder must enter "no change" on Alternate.

4) All requested Unit Prices shall be bid if included in Bidder's scope of work. If there is no change in Base Bid, Bidder must enter "no change" on Unit Price.

5) Bids for labor and materials shall include sales and use tax unless owner is a tax exempt organization. South Putnam Community School Corporation

(ii) Bid Security

1) Bidder pledges to enter into a Contract with the South Putnam Community School Corporation on the terms stated in the Bid and shall, if required, furnish bonds to cover faithful performance of the contract and payment of all obligations arising thereunder.

2) Bidder is required to provide a certified check or bid bond as bid security for 5% of total amount of bid made payable to South Putnam Community School Corporation. South Putnam Community School Corporation will have the right to retain bid security of the low responsible Bidder until a contract has been executed.

(iii) Submission of Bids

1) Hard copies (2) of the Bid, bid security and all documents required per the specifications shall be delivered in sealed envelope, minimum size is 9 x 12. Envelope shall be addressed to the party receiving the Bids and shall be identified with the 1) Project Name 2) Bidder's name 3) Bid Package Name & Number. See 00 41 13 for additional information.

2) Bids must be submitted by date and time and place indicated in the invitation to bid. Bids submitted late or at wrong address will not be considered. It is the bidder's responsibility to deliver for timely delivery at the location noted for Receipt of Bids.

~~3) Combination bids are encouraged. Bidder must first submit a bid for each bid package in the combination bid and a separate bid for the combination bid. All bids must be in separate envelopes as described in Item 1 above.~~

(iv) Modification or Withdrawal of Bid

1) A bidder may withdraw or modify their bid at any time prior to deadline set for receipt of bids.

2) Bidders cannot withdraw or modify their bid for a period of 60 days after the deadline set for receipt of bids.

(b) Opening of Bids

1) All bids submitted by deadline set for receipt of bids will be opened publicly and read aloud with Owner and Construction Manager present. Location will be as noted in the Invitation to Bid.

(c) Disqualification of Bids

1) South Putnam Community School Corporation and Michael Kinder and Sons, Inc. reserve the right to reject a bid unless prohibited by law.

4. POST BID INFORMATION

(a) Subcontractor list of the apparent low bidder is due within 48 hours of receipt of a request for the Subcontractor list by Construction Manager or Owner.

5. PERFORMANCE AND PAYMENT BOND

(a) If noted in the bidding documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Costs of the bonds shall be included in the Bid.

END OF SECTION

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:

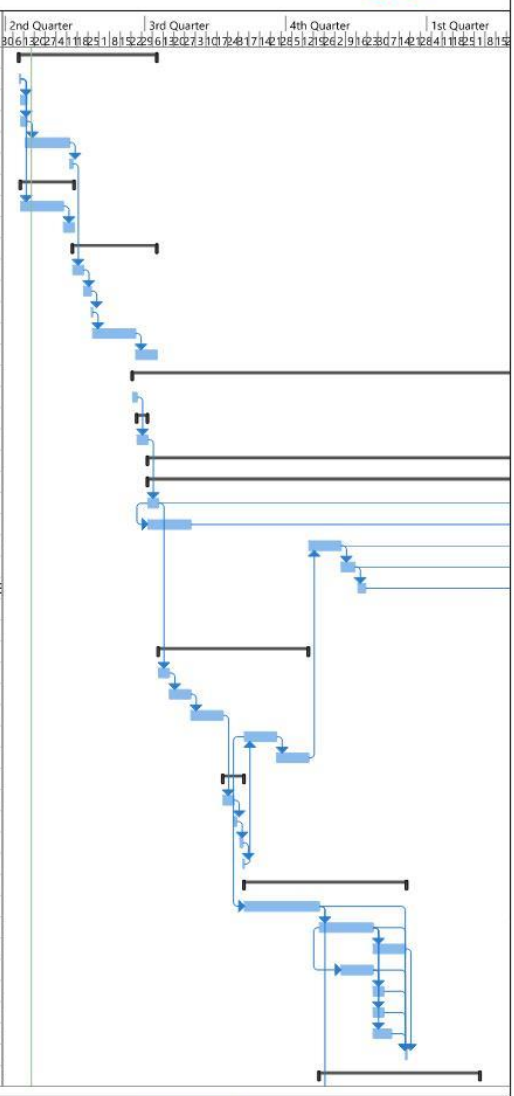
Accepted Accepted as Noted
Not Accepted Received too Late
PM _____
Specifier _____
Date _____
Remarks _____
Telephone _____

END OF SECTION 00 26 00.01

00 31 13 CONSTRUCTION SCHEDULE + LOGISTIC PLAN

SOUTH PUTNAM ADMIN BUILDING - OVERALL SCHEDULE

ID	Task Mode	Task Name	Start
1		**PRE-CONSTRUCTION**	**Thu 4/10/25**
2		100% CD's	Thu 4/10/25
3		CD review	Fri 4/11/25
4		MKS Finalize Bid Packages	Fri 4/11/25
5		Bid Period	Mon 4/14/25
6		MKS Recommendation	Tue 5/13/25
7		**Permits**	**Fri 4/11/25**
8		State Design Release	Fri 4/11/25
9		Local Building Permit	Fri 5/9/25
10		**Procurement**	**Thu 5/15/25**
11		Draft Contracts	Thu 5/15/25
12		School Board Approval	Thu 5/22/25
13		Issue Contracts	Tue 5/27/25
14		Submittals	Wed 5/28/25
15		Submittal Review	Wed 6/25/25
16		**Construction**	**Mon 6/23/25**
17		Mobilize	Mon 6/23/25
18		**Demo**	**Thu 6/26/25**
19		Site Demo	Thu 6/26/25
20		**Admin Building**	**Thu 7/3/25**
21		**Sitework**	**Thu 7/3/25**
22		Site Prep (Building Pad)	Thu 7/3/25
23		Site Utilies	Thu 7/3/25
24		Site Concrete	Thu 10/16/25
25		Asphalt Patching/Binder	Thu 11/6/25
26		Landscaping	Mon 11/17/25
27		Asphalt surface/stripe/parking curbs	Mon 3/16/26
28		Sitework Complete	Wed 3/25/26
29		**Structural**	**Thu 7/10/25**
30		Helical Piles	Thu 7/10/25
31		Footings	Thu 7/17/25
32		Foundations	Thu 7/31/25
33		Wall framing	Thu 9/4/25
34		Roof framing	Thu 9/25/25
35		**Slabs**	**Thu 8/21/25**
36		Underslab MEP	Thu 8/21/25
37		Fine Grade	Thu 8/28/25
38		Prep SOG Pour 1	Mon 9/1/25
39		Pour SOG Pour 1	Wed 9/3/25
40		**Envelope**	**Thu 9/4/25**
41		Sheathing & Vapor Barrier	Thu 9/4/25
42		Brick Veneer	Thu 10/23/25
43		MCM Panel	Thu 11/27/25
44		Standing Seam Metal Roof	Thu 11/6/25
45		Gutters	Thu 11/27/25
46		Windows	Thu 11/27/25
47		Storefront	Thu 11/27/25
48		Weather Tight	Thu 12/18/25
49		**Interior (includes common area A001)**	**Thu 10/23/25**



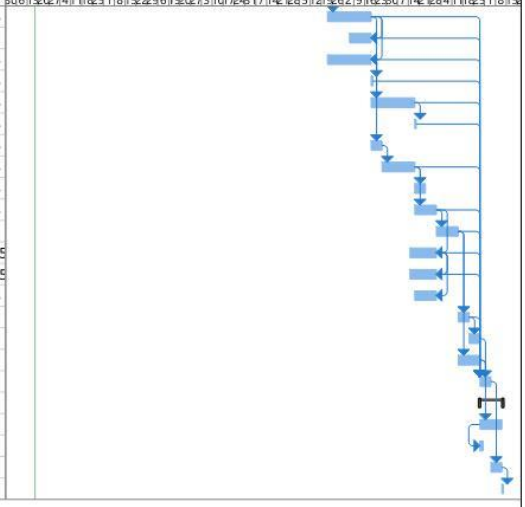
Project: spcsc bidding schedule
Date: Fri 4/18/25

Task
Split
Milestone
Summary
Project Summary
Manual Task
Manual Summary Rollup
Manual Summary
Progress
Manual Progress

Page 1

SOUTH PUTNAM ADMIN BUILDING - OVERALL SCHEDULE

ID	Task Mode	Task Name	Start
50		Interior framing	Thu 10/23/25
51		Door Frames	Thu 11/6/25
52		In Wall MEPs	Thu 10/23/25
53		In Wall Inspections	Thu 11/20/25
54		Above Ceiling MEP	Thu 11/20/25
55		Above Ceiling Inspections	Thu 12/18/25
56		Insulate Walls	Thu 11/20/25
57		Drywall hang and finish	Thu 11/27/25
58		Insulate attic	Thu 12/18/25
59		Paint 1st coat	Thu 12/18/25
60		Paint 2nd coat	Thu 1/1/26
61		Flooring	Mon 12/15/25
62		Base	Mon 12/15/25
63		Casework	Thu 12/18/25
64		Toilet Partitions	Thu 1/15/26
65		Toilet Accessories	Thu 1/22/26
66		MEP Trimout	Thu 1/15/26
67		Final Inspection	Thu 1/29/26
68		**Closeout**	**Thu 1/29/26**
69		Punch List	Thu 1/29/26
70		Owner Training	Thu 1/29/26
71		COC	Thu 2/5/26
72		Turnover	Thu 2/12/26

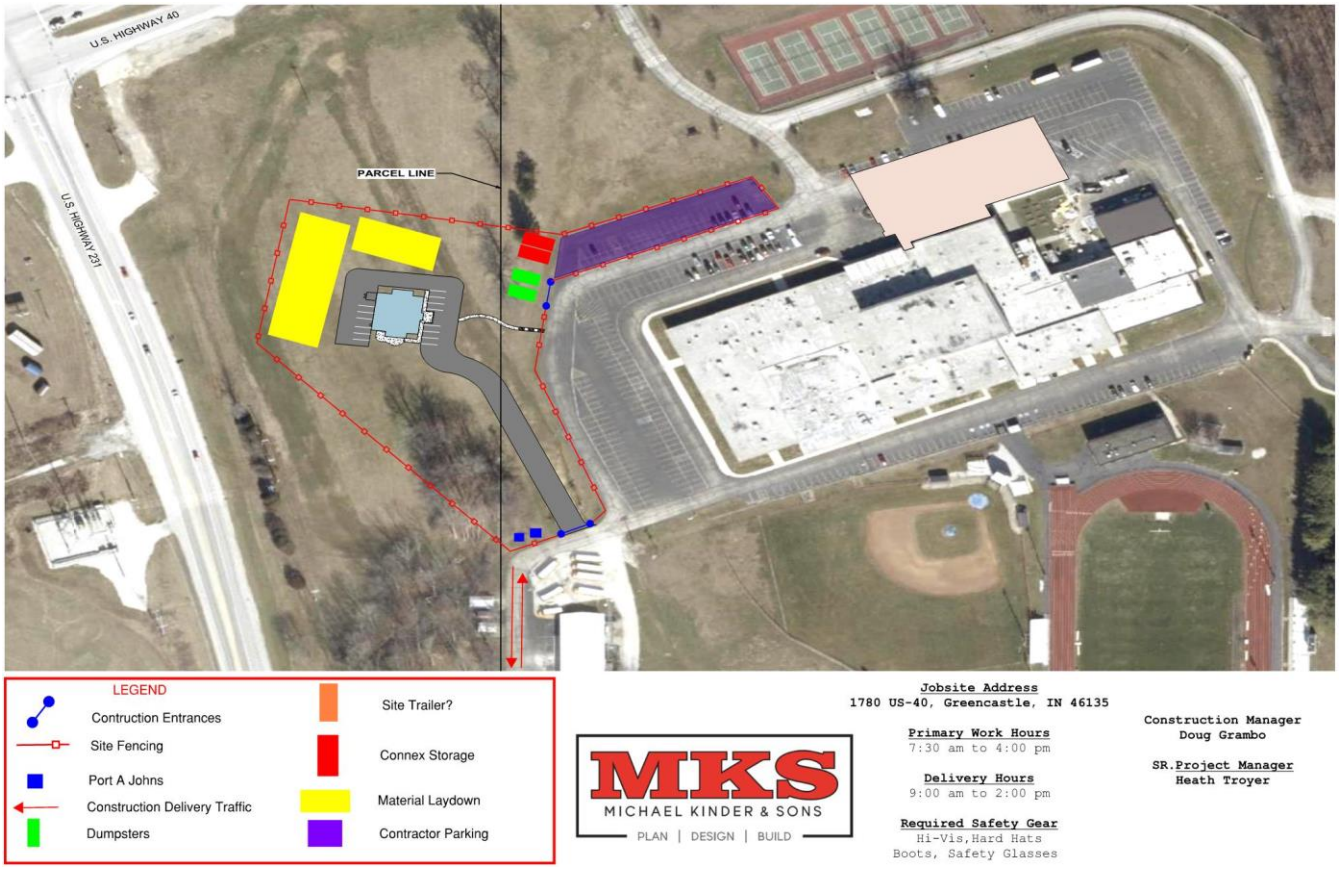


Project: spcsc bidding schedule
Date: Fri 4/18/25

Task
Split
Milestone
Summary
Project Summary
Manual Task
Manual Summary Rollup
Manual Summary
Progress
Manual Progress

Page 2

SITE LOGISTICS



END OF SECTION 00 31 13

00 31 00 – AVAILABLE PROJECT INFORMATION

1.1 GEOTECHNICAL DATA

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

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

C. A geotechnical investigation report for Project, prepared by Alt Witzig. dated 12/24/2024 is available for viewing as appended to this Document.

1. The opinions expressed in this report are those of a geotechnical engineer and represent interpretations of subsoil conditions, tests, and results of analyses conducted by a geotechnical engineer. Owner is not responsible for interpretations or conclusions drawn from the data.
2. Any party using information described in the geotechnical report shall make additional test borings and conduct other exploratory operations that may be required to determine the character of subsurface materials that may be encountered.

SUBSURFACE INVESTIGATION & GEOTECHNICAL RECOMMENDATIONS

SOUTH PUTNAM COMMUNITY SCHOOLS – NEW ADMINISTRATION BUILDING
GREENCASTLE, INDIANA
A&W PROJECT NO.: 24IN0670

PREPARED FOR:
TLF
INDIANAPOLIS, INDIANA

PREPARED BY:
ALT & WITZIG ENGINEERING, INC.
GEOTECHNICAL DIVISION

DECEMBER 17TH, 2024

Alt & Witzig Engineering, Inc.
4105 West 99th Street • Carmel, Indiana • 46032
Ph (317) 875-7000 • Fax (800) 875-6028

December 17th, 2024

TLF
3901 West 86th Street, Suite 200
Indianapolis, Indiana 46268
Attention: Ms. Tracy Chariton, PE, LEED AP BD+C

Report of Subsurface Investigation and Geotechnical Recommendations

RE: South Putnam Community Schools – New Administration Building
1780 US Highway 40
Greencastle, Indiana
A&W Project No.: **24IN0670**

Dear Ms. Chariton:

In compliance with your request, Alt & Witzig Engineering, Inc. has completed a subsurface investigation for the above-referenced site. The Statement of Objectives, Scope of Work, and results of our investigation are presented in the following report. It is our pleasure to transmit a .pdf copy of our findings.

The results of our test borings and laboratory tests completed to date are presented in the appendix of the report. Our recommendations for the project are presented in the "Geotechnical Analysis and Recommendations" section of the report. When final design plans have been developed, they should be submitted to Alt & Witzig Engineering, Inc. for review to determine if changes to our recommendations are necessary. If you have any questions or comments regarding this matter, please contact us at your convenience.

Sincerely,
ALT & WITZIG ENGINEERING, INC.

Joshua W. Tinkle, P.E.

JACOB L. RANKIN
REGISTERED
No. PE11900847
STATE OF
INDIANA
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Jacob L. Rankin, M.Eng., P.E.

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Purpose

The purpose of this investigation was to determine the various soil profile components, determine the engineering characteristics of the foundation materials, and provide geotechnical recommendations for use by the design engineers and architects in preparing the foundation design of the proposed new administration building to be constructed northwest of the existing South Putnam Middle/High School located at the street address of 1780 US Highway 40 in Greencastle, Indiana.

1.2 Statement of Objectives

In compliance with your request, we have completed a total of sixteen (16) soil borings at the above referenced site. This project included:

- A review of geological maps of the area and review of geologic and related literature
- A reconnaissance of the immediate site and subsurface exploration
- Field and laboratory testing
- Engineering analysis and evaluation of the foundation materials

1.3 Scope of Work

This investigation was performed for TLF. Authorization to perform this investigation was in the form of a written proposal (A&W Proposal No. 2411G007) issued by Alt & Witzig Engineering, Inc. on November 5th, 2024, that was accepted by a representative of the client. The scope of this investigation did not specifically or by any implication provide an environmental assessment of the site.

1.4 Incorporations by Reference

Our subsurface investigation was conducted in accordance with guidelines set forth in the scope of services and applicable industry standards.

1.5 Report Reliance

This report is solely for the use of TLF. Any reliance of this report by third parties shall be at such party's sole risk and may not contain sufficient information for purposes of other parties for other uses. This report shall only be presented in full and may not be used to support any other objectives than those set out in the scope of work, except where written approval and consent are provided by TLF and Alt & Witzig Engineering, Inc.

2.0 BACKGROUND INFORMATION

2.1 Site Location

The site of the proposed new administration building is located just south of Greencastle, Indiana in Putnam County. More specifically, the site is located northwest of the existing South Putnam Middle/High School located at the street address of 1780 US Highway 40. It should be noted that at the time of this report, two (2) locations were being considered for the proposed structure. The locations of the proposed sites are shown on the enclosed *Site Location Map* presented in Appendix A of this report. An aerial photograph of the general site locations is presented in *Exhibit 1*.

Exhibit 1 – General Site Location, Google Earth

2.2 Site Description

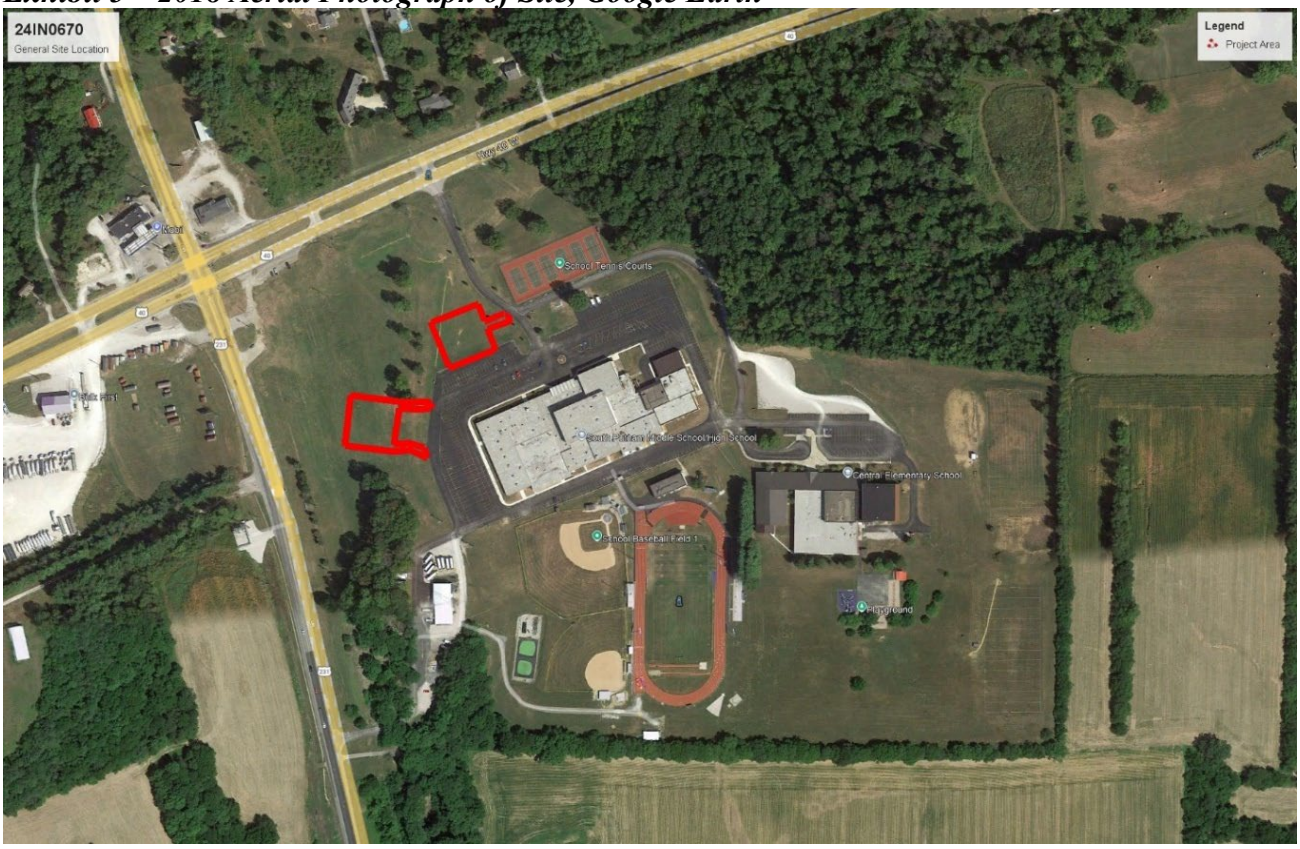
The area of the two sites being considered for the proposed new building currently consists of undeveloped grass landscape located to the northwest of the existing school facilities. Based on our site reconnaissance and review of available map data, it appears that the surface of the proposed new building area generally slopes down from west to east with an elevation range of approximately 780 to 770 feet. The sites are surrounded by a mixture of undeveloped agricultural and wooded landscapes as well as some rural residential development with paved roadways and overhead / underground utilities.

2.3 Site History

As part of our investigation, historical aerial photographs were reviewed. Based on our review, it appears that most of the existing school facilities were developed sometime prior to 1998. However, the sites of the proposed new building have been undeveloped since that time. Historical aerial photographs of the site from 1998 and 2018 provided by Google Earth are shown in *Exhibits 2 and 3*.

Exhibit 2 – 1998 Aerial Photograph of Site, Google Earth

Exhibit 3 – 2018 Aerial Photograph of Site, Google Earth

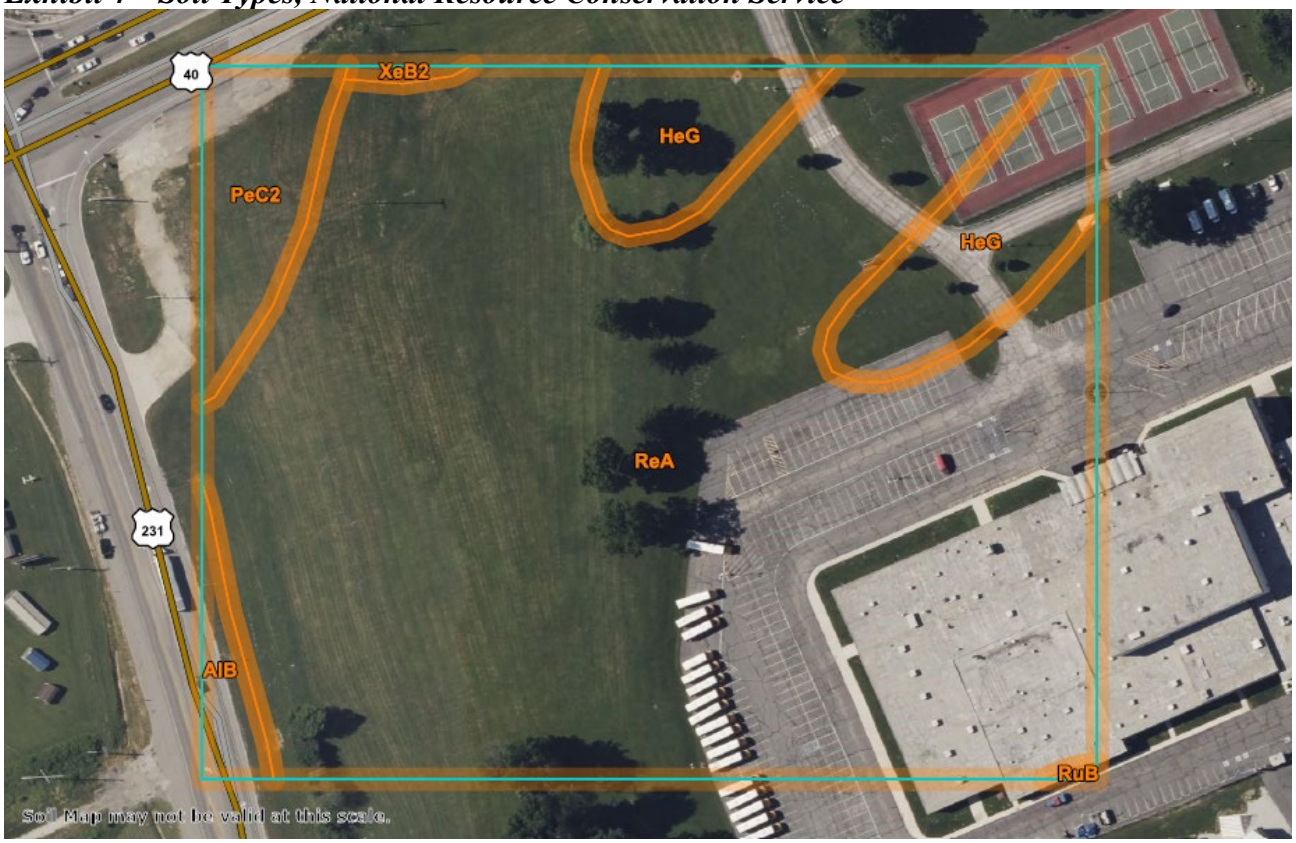


2.4 Site Geology

The sites are located within the Martinsville Hills section of the Southern Hills and Lowlands physiographic region of Indiana. Geological maps published by the Indiana Geological Survey indicate the bedrock at this site consists of the Blue River formation group, which is characterized as mostly micritic, skeletal, and oolitic limestone of the Mississippian age. The approximate elevation of this bedrock is 700 feet.

According to the *Custom Soil Resource Report for Putnam County, Indiana* published by the United States Department of Agriculture Soil Conservation Service (USDA SCS), the shallow natural soils covering the proposed new building area are classified as Reesville silt loam (ReA) and Hennepin loam (HeG) type soils as shown in *Exhibit 4*. These soil types are generally characterized as somewhat poorly drained to well drained with depths to seasonal-high water table estimated as shallow as 6 inches to greater than 80 inches below existing ground level. The *Custom Soil Resource Report for Putnam County, Indiana* has been included in Appendix B of this report.

Exhibit 4 – Soil Types, National Resource Conservation Service

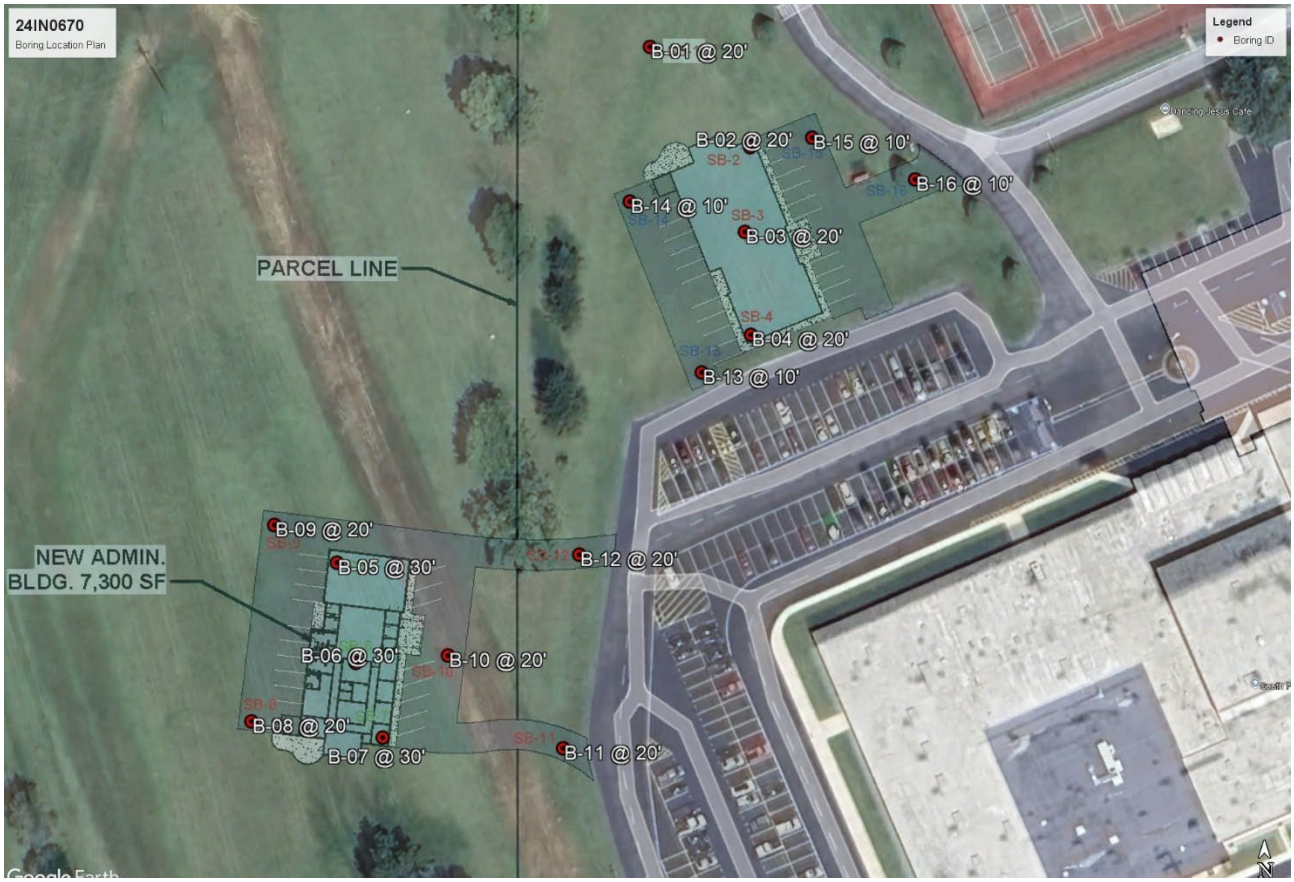


3.0 WORK PERFORMED

3.1 Boring Locations

A total of sixteen (16) soil borings were completed at the above referenced sites for the proposed construction. The soil boring locations as well as the general site layout provided by the client were projected onto aerials provided by the Google Earth website allowing for the correlation of the approximate latitude and longitude coordinates with each location as shown in *Exhibit 5*. The locations were then staked by a representative of Alt & Witzig Engineering, Inc. utilizing a handheld GPS unit.

Exhibit 5 – Boring locations overlaid onto aerial photograph by Google Earth



3.2 Field Sampling & Laboratory Analysis

Field investigations to determine the engineering characteristics of the foundation materials included a reconnaissance of the project sites and drilling a total of sixteen (16) soil borings. Standard penetration tests with split-spoon sampling were performed during drilling operations. The apparent groundwater level at these boring locations was also determined.

3.2.1 Soil Sampling Methodology

The soil borings were performed with a drilling rig equipped with a rotary head. Conventional hollow-stem augers were used to advance the holes. Borings were accessed by a track mounted drilling rig. During the sampling procedure, standard penetration tests were performed at regular intervals in accordance with ASTM Method D 1586 to obtain the standard penetration value of the soil. The standard penetration value is defined as the number of blows a 140 lb hammer, falling 30 inches, required to advance the split-spoon sampler 12 inches into the soil. The results of the standard penetration tests indicate the relative density and comparative consistency of the soils, and thereby provide a basis for estimating the relative strength and compressibility of the soil profile components. Soil samples were field classified and placed in suitable glass jars with Teflon-lined lids for transport to our geotechnical laboratory for further analysis.

3.2.2 Laboratory Analyses for Soil Samples

A supplementary laboratory investigation was conducted to ascertain additional pertinent engineering characteristics of the subsurface materials necessary in analyzing the behavior of the proposed construction. The laboratory-testing program included:

- Moisture content of soils in general accordance with ASTM D 2216
- Visual classification of soils in general accordance with ASTM D 2488
- Split-spoon samples of cohesive soils were tested utilizing a calibrated spring testing machine and a soil penetrometer to aid in determining the strength.

The values of the unconfined compressive strength as determined on the soil samples from the split-spoon sampling must be considered approximate, recognizing the manner in which they were obtained since the split-spoon sampling techniques provide a representative but somewhat disturbed soil sample.

3.3 Groundwater Elevation

The apparent groundwater level at each boring location was measured during and upon completion of the drilling operations. These water level measurements consisted of observing the depth at which water was encountered on the drilling rods during the soil sampling procedure and measuring the depth to the top of any water following removal of the hollow stem augers. Delayed groundwater level measurements were also recorded at select borings upon completion of drilling. It should be noted that the groundwater level measurements recorded on the individual *Boring Logs* in Appendix A of this report are accurate only for the specific dates on which the measurements were performed. It must be understood that the groundwater levels will fluctuate throughout the year and the *Boring Logs* do not indicate these fluctuations.

3.4 Ground Surface Elevation

Ground surface elevations were not available to us at the time of this report. However, a review of available map data indicates that the surface of the proposed new building area generally slopes down from west to east with an elevation range of approximately 780 to 770 feet. All depths and elevations referred to in this report are referenced from the ground surface existing at the time of this report.

4.0 INVESTIGATION RESULTS

The types of foundation materials encountered have been visually classified and are described in detail on the *Boring Logs*. The results of the field penetration tests, strength tests, water level observations, and laboratory moisture contents are presented on the *Boring Logs* in numerical form. Representative samples of the soils encountered in the field were placed in suitable glass jars and are now stored in our laboratory for further analysis if desired. Unless notified to the contrary, all samples will be disposed of after two (2) months.

4.1 Subsurface Conditions

At the ground surface, our borings encountered a thin layer of topsoil approximately three (3) to six (6) inches in thickness. Immediately below the topsoil, our borings typically encountered soft to medium stiff cohesive soils consisting of silty clay, sandy silty clay, sandy clay, and silt, as well as marginally cohesive soils consisting of clayey sand to termination depth between ten (10) to thirty (30) feet below existing ground level. The natural (in-situ) moisture contents of these cohesive and marginally cohesive soils were generally in the range of fifteen (15) to thirty (30) percent. **It should be noted that very soft or very loose conditions (N-values of 0 to 3 for cohesive or 0 to 5 for granular) were encountered at boring locations B-03, B-04, B-05, B-06, B-07, B-08, B-10, and B-15, typically between depths of approximately five (5) to seven and one-half (7.5) feet below existing ground level.** Additionally, it should be noted that layers of wet granular soils consisting of fine sand or sand & gravel as well as thin sand seams were encountered within or below the cohesive soil layers at boring locations B-02, B-07, B-08, B-09, B-10, B-13, B-15, and B-16, as shallow as five (5) feet below existing ground level. For a detailed description of the soil conditions encountered at each boring location, please refer to the *Boring Logs* in Appendix A.

4.2 Groundwater Observations

The *Custom Soil Resource Report for Putnam County, Indiana* indicates the shallow natural soils covering the proposed new building area are generally characterized as somewhat poorly drained to well drained with depths to seasonal-high water table estimated as shallow as 6 inches to greater than 80 inches below existing ground level. Groundwater level measurements taken at completion of drilling operations were generally recorded between four (4) to eight (8) feet below existing grade. However, groundwater level measurements taken up to twenty-four (24) hours after completion of the drilling operations indicated groundwater as shallow as two (2) to three (3) feet below existing grade. The exact location of the water table should be anticipated to fluctuate somewhat depending upon normal seasonal variations in precipitation and surface runoff. It should be noted that the groundwater level measurements recorded on the individual *Boring Logs* included in Appendix A of this report, are accurate only for the dates on which the measurements were performed.

4.3 Seismic Parameters

Based on the field and laboratory tests performed on the subsurface materials and an assumption that the bedrock surface is greater than 100 feet below the existing ground surface, this site should be considered a **Site Class D** in accordance with the current International Building Code.

The location of the site was entered into the website www.seismicmaps.org to determine seismic parameters. Maximum spectral response acceleration values of Ss=0.210 and S_1=0.100 g were generated by the program. Additional parameters are included in the printout in Appendix B.

5.0 GEOTECHNICAL ANALYSES AND RECOMMENDATIONS

5.1 Project Description

Based on information provided by the client during the request for proposal, it is our understanding that the proposed new administration building will be a one-story metal-framed structure with an approximately 7,300 square foot footprint constructed as a slab-on-grade. Paved drive lanes and parking lots are also proposed surrounding the building. Additionally, one (1) detention basin is proposed to the north of the building. Maximum wall loads of no more than three (3) kips per linear foot are anticipated for the proposed building. No columns are expected. The final design loads should be submitted to Alt & Witzig Engineering, Inc. to determine if changes to our recommendations need to be made.

Grading plans were not available at the time of this report. However, based on information provided by the client during the request for proposal, two (2) potential locations are being explored for the new building. **However, cuts and fills of three (3) feet or less are expected at either location. The finalized building location and site grades should be submitted to Alt & Witzig Engineering, Inc. to determine if changes to our recommendations need to be made.**

5.2 Site Preparation & Earthwork

At the ground surface, our borings encountered a layer of topsoil approximately three (3) to six (6) inches in thickness. Excessively organic soil will generally undergo high volume changes, which are detrimental to the behavior of shallow foundations, floor slabs, and pavements. Therefore, it is recommended that topsoil and loose materials be stripped from the construction areas and wasted or stockpiled for later use. The topsoil depths shown on the *Boring Logs* are not exact and should only be used for estimation purposes. A representative of Alt & Witzig Engineering, Inc. should be present at the time of stripping to determine the final depth of stripping.

Prior to placement of any new fill, the exposed subgrade should be proof roll inspected with approved equipment and witnessed by Alt & Witzig Engineering, Inc. This proof roll inspection will determine if any pockets of unstable materials exist beneath the proposed building area. Where pockets of unstable materials are encountered, the materials should be remediated as dictated by field conditions. A review of field information indicates that the shallow soils across the site are cohesive in nature with elevated moisture contents and areas of soft conditions. Therefore, areas of failed proof roll should be anticipated, especially if earthmoving is conducted during the wetter portions of the year. Repeated heavy equipment traffic on the site will likely cause large areas of subgrade failure. Therefore, when feasible, heavy equipment traffic across the subgrade should be limited.

Fills greater than three (3) feet may induce settlement of the shallow in-situ soils at either site. Should it be necessary to place fills greater than three (3) feet Alt & Witzig should be contacted and additional recommendations regarding foundation type may be necessary.

After completion of the proof roll and any necessary remediation has been completed, it is recommended that proper control of subgrade compaction and structural fill replacement be maintained by a representative of Alt & Witzig Engineering, Inc. as per the *Recommended Specifications for Compacted Fills and Backfills*, presented in Appendix A of this report. These proper construction practices will help minimize volume changes and differential settlements which are detrimental to behavior of shallow foundations, floor slabs, and pavements.

5.3 Foundation Recommendations

Conventional foundations consisting of spread footings and continuous wall footings are generally most economical when the existing soil conditions allow them to be founded at a shallow depth. However, based on our investigation, very soft to soft soils are present at and near the anticipated foundation depth at either of the structure sites. Therefore, if the owner is willing to accept some risk of settlement of the proposed structure, a shallow foundation system utilizing a low bearing capacity may be utilized at this site. If the owner does not wish to accept any risk of settlement at this site, a ground improvement system such as rammed aggregate piers or a deep foundation system such as helical piers or drilled piers could be considered.

The options provided are assuming cuts and fills of three (3) feet or less to establish the proposed grades. If fills of three (3) feet or more are necessary to establish the final site grades, the weight of the fill may induce some settlement. Therefore, if fills of three (3) feet or greater are necessary, Alt & Witzig Engineering, Inc. should be contacted to determine if changes to our recommendations are necessary.

5.3.1 Shallow Conventional Foundations Utilizing a Low Bearing Capacity

It is our understanding that the structure at this site will be metal framed and will have relatively low structural loads. Based on information provided, wall loads on the order of three (3) kips per linear foot or less are expected. No columns are expected at this site.

Due to the very soft to soft soil conditions at this site, we expect that total and differential settlements outside of typically accepted standards could be experienced at this site. However, in order to reduce upfront costs, the owner may elect to accept the risks of settlement at this site. If the owner is willing to accept some risk of differential settlement, conventional foundations utilizing a low net allowable soil bearing capacity could be considered.

If this option is considered, we recommend a low net allowable soil bearing capacity of **1,200 psf** for design of the continuous wall footings at this site, founded on natural soil or properly compacted fill. It is recommended that the base of the footing excavations be inspected by a representative of Alt & Witzig Engineering, Inc. If very soft soils with elevated moisture contents or unsuitable materials such as organics or debris are encountered, some undercutting may be necessary. However, in general, the use of the low bearing capacity should limit undercutting at this site. If it is not convenient to lower the footings to the level of suitable bearing materials, then the footing areas can be re-established to the proposed footing elevation by placing granular structural fill in accordance with the *Excavation Detail in Unstable Material* in the appendix. Using approved materials, it is recommended that a density of 95% maximum dry density in accordance with ASTM D-1557 be achieved in all areas which will be stressed by the foundation loads. Footing undercuts may also be re-established with lean concrete, if desired. If so, the footing undercut geometry may be conducted in accordance with the *Excavation Detail in Unstable Material* in the appendix.

Should granular soils be encountered at the base of the foundation excavations they should be compacted with a vibratory plate compactor prior to placing the concrete. The base of the excavations are anticipated to be relatively soft and will need to be protected from construction disturbance, including excessive foot traffic.

5.3.2 Helical Piers

If the owner does not wish to accept some risk of settlement, a foundation support alternative is a helical pier system. Steel piers are rotated into the ground to the specified depth and can be loaded immediately upon installation. In order for the piers to function, it is imperative that the proposed footings act as a beam and are capable of spanning from pier to pier. Generally, the controlling factor in the determination of the pier spacing is not the capacity of the pier but the structural capacity of the footings and floor slab design.

It is recommended that the piers be extended several feet into the underlying firm natural soils. At this time, it appears that piers installed to depths of up to twenty-five (25) feet or greater below the existing ground surface or greater will be required for support the structure. However, the depth of piers should be expected to vary across the site. In some locations, we did not penetrate through all of the soft soils. Therefore, if this option is selected, additional investigations may be warranted. The capacity of the helical piers will depend on the size of the helix selected and the depth into the firm underlying soils that the piers are installed. Typically, individual pier capacities range from thirty (30) to eighty (80) kips. The exact capacity of each individual pier may be determined at the time of installation. It is highly recommended that the helical pier contractor work with the structural engineer so that an approximate foundation system can be designed.

A representative of a helical pier contractor should visit the site in order to assist in determining the spacing of the piers and estimated time frame at the project. The boring logs should be provided to the helical pier contractor in order to evaluate the correct pile for the structure related to the subsurface conditions.

5.3.3 Drilled Piers

If the owner does not wish to accept some risk of settlement, a foundation support alternative is a caisson or drilled pier type foundation system. At this time, it appears that piers installed to depths of up to twenty-five (25) feet or greater below the existing ground surface or greater will be required for support the structure. However, the depth of piers should be expected to vary across the site. In some locations, we did not penetrate through all of the soft soils. Therefore, if this option is selected, additional investigations may be warranted.

5.3.4 Ground Improvement System

Due to the soft soil conditions encountered in our borings, the use of a ground improvement system such as rammed aggregate piers, controlled modulus columns, etc. may be considered for this site. These ground improvement methods provide a matrix of dense stone or concrete, dependent on the system chosen, within a weak soil zone and create a suitable bearing material on which conventional footings may be placed. Bearing capacities achieved through this type of ground modification will be dictated by tolerable settlement criteria. A contractor specializing in this type of work should determine specific details as to the type of elements, the exact number, spacing, and placement of the elements, as well as the final resulting bearing capacity and settlement estimates. Our experience is that this type of soil modification beneath foundations may economically improve the bearing capacity of marginal soils to values in the range of 4,000 to 6,000 psf. It is highly recommended that the ground modification contractor works closely with Alt & Witzig Engineering, Inc. and all other members of the design team if this system is chosen.

5.3.5 General Foundation Recommendations

The above recommended bearing pressures will help reduce differential settlements associated with footings founded on natural soil or compacted fills with varying stiffness across the building pad. Using the above-mentioned bearing pressures and recommendations for limiting settlements, total settlements of less than one (1) inch and differential settlements of one half (½) inch or less can be anticipated. In utilizing the above-mentioned net allowable pressures for dimensioning footings, it is necessary to consider only those loads applied above the finished floor elevation.

In order to alleviate the effects of seasonal variation in moisture content on the behavior of the footings and eliminate the effects of frost action, all exterior foundations and foundations in unheated areas should be founded a minimum of two and one-half (2 ½) feet below the final grade.

Depending upon the time of the year and the weather conditions when the excavations are made, seepage from surface runoff may occur into shallow excavations or soften the subgrade soils. Since these foundation materials tend to loosen when exposed to free water, every effort should be made to keep the excavations dry should water be encountered. Sump pumps or other conventional dewatering procedures should be sufficient for this purpose within the shallow cohesive soils encountered. It is also recommended that all concrete for footings be poured the same day as the excavation is made.

As noted previously, layers of wet granular soils consisting of fine sand or sand & gravel as well as thin sand seams were encountered within or below the cohesive soil layers at boring locations B-02, B-07, B-08, B-09, B-10, B-13, B-15, and B-16, as shallow as five (5) feet below existing ground level. If excavations penetrate into these granular soil layers, more extensive dewatering procedures and temporary shoring of the excavation would be necessary. Additionally, it will be necessary to use a vibratory compactor to densify granular soils where encountered prior to placement of concrete. All excavations should be performed in accordance with any applicable OSHA regulations.

5.4 Floor Slab Recommendations

A conventional ground floor for the proposed structure can be constructed as a slab-on-grade supported by firm natural soils and/or compacted fill materials at this site. In the areas where the existing grade is above the final floor elevation, the building area should be undercut, and a free draining granular material placed beneath the slab. In those areas where the existing grade is below the final floor elevation, a well-compacted structural fill will be necessary to raise the site to the desired grade. Fill materials may consist of approved materials if proper moisture content and compaction procedures are maintained.

Prior to elevating the site, the existing subgrade soil must be proof rolled with approved equipment. It is recommended that a representative of Alt & Witzig Engineering, Inc. be present to determine the exact depth of undercutting and to monitor backfilling operations if necessary. The upper two feet of the cohesive soil in Central Indiana is subjected to constant moisture changes and freezing and thawing. Therefore, careful consideration of the time of year construction commences is recommended. If weather conditions are favorable, the soil may be aerated, dried, and recompacted. However, if weather conditions or construction schedule dictate immediate improvement then chemical-soil drying may be necessary. Remediation will be dictated by the field conditions upon construction.

After the building area has been raised to the proper elevation, a layer of free draining granular material should be placed immediately beneath all floor slabs. It is recommended that the materials within the subgrade area, above footing elevation, be compacted to a minimum density of 93% of maximum density in accordance with ASTM D-1557 (modified effort).

5.5 Pavement Design Considerations and Subgrade Concerns

The shallow soils across the site generally consisted of soft to medium stiff cohesive soil. A proof roll inspection is critical to determine the stability of these shallow soil conditions for placement of pavements. These soils should be inspected to determine if undercuts or modifications are necessary. Modifications will be determined at the time of the proof roll inspection. Based upon experience with soils having a similar consistency and limited laboratory tests, a design CBR value of 2.5 is estimated for the pavement design. However, the actual CBR value will be dependent on the condition of the soils in the field.

Cohesive soils tend to pump and rut easily when they are at or near saturation. If construction begins during the wetter portions of the year, remediation of the subgrade may be necessary to achieve the above referenced CBR value. Options including but not limited to; undercutting and replacement, disking and drying, and chemical-soil modification / stabilization may be considered if remediation is necessary. When chemical-soil modification / stabilization is determined to be necessary, it is recommended that samples of the subgrade be collected by a representative of Alt & Witzig Engineering Inc. to perform laboratory soil analysis and/or mix design testing. The referenced laboratory testing will aid in determining the most suitable chemical type, percentage, and spread rate to be utilized for subgrade treatment. In areas where fill will be required to raise the site to proposed grade, the performance of the pavements will be greatly affected by the quality of compaction achieved in the subgrade soils. Thus, it is recommended that all pavement areas be compacted to 93% of the material's maximum dry density in accordance with ASTM D-1557 (modified effort).

All paved areas should be designed to prevent water from collecting or ponding immediately beneath the pavement. This can be accomplished by sloping the subgrade soils and providing a well-drained granular layer beneath the pavement which is outletted to drainage ditches, underdrains, or drainage structures that will remove trapped water from the pavement section. It is suggested that underdrains be installed in the pavement areas to minimize potential saturation of the soils identified across the site. At a minimum, underdrains should be considered around all storm structures, at asphalt to concrete interfaces, and under pavements where any slopes will drain onto a pavement surface. For underdrains to be effective, minimum installation depths of 18-inches are suggested. The drains should consist of a 4-inch perforated plastic pipe encased in a clean granular washed No. 8 stone. The No. 8 stone should extend up to the bottom of the pavement stone layer to facilitate drainage.

Based on the general site layout provided by the client, it is anticipated that the light-duty pavements will be primarily subjected to up to twenty (20) passenger cars per day. It is anticipated that the heavy-duty pavements will be subjected to the referenced passenger car loading as well as one (1) to two (2) trash trucks and/or delivery box trucks per week. The following pavement sections were determined based on these assumed traffic conditions, utilizing a 15-year design life, a CBR value of 2.5, and the American Association of State Highway and Transportation Officials (AASHTO) design method. **Based on the general site layout, it should be noted that school bus traffic is anticipated to be maintained on existing pavement areas and was not included in the pavement design.**

Table 1: Pavement Sections

Traffic Type	Pavement Type	Surface Course	Binder Course	Concrete	Aggregate Base Course
Light Duty (20 Passenger Cars)	Asphalt	1.5”	2.5”	-	6”
Heavy Duty (1 to 2 Trucks/Wk)	Asphalt	1.5”	3.5”	-	8”
Dumpster Pad	Concrete	-	-	6”	6”

The design for the new pavement should include a new stone section with a uniform thickness and proper gradation. It will be critical that the stone section be designed with a well-drained granular material such as INDOT #53 crushed limestone. “Commercial Grade” #53 stone is typically not held to gradation and quality requirements of INDOT and is therefore considered unsuitable for this application. If “commercial grade” #53 stone is desirable, it is recommended that a sample of the material be submitted to Alt & Witzig Engineering, Inc. for laboratory gradation analysis. Additionally, field sampling during placement may be necessary to ensure that significant material changes are not encountered during construction.

The asphalt shall be placed in accordance with INDOT Standard Specification Section 400.

It is recommended that the concrete pavements be air entrained, have a minimum modulus of rupture of 650-psi, and a 4,000-psi compressive strength. This concrete should be placed over a well-prepared subgrade and subbase compacted to 95% of maximum dry density in accordance with ASTM D-1557. Drainage beneath the pavement is critical to performance as mentioned above.

The area designed for placement of the trash container should be constructed with a concrete pad. These concrete aprons will support the heavy twisting loads often imparted to the pavement section during pick-up of these containers. The concrete pad should be of sufficient size to accommodate the entire truck during loading and unloading conditions.

5.6 Utility Excavations & Groundwater Considerations

The depths of the utility lines to be constructed on this project were not available at the time of this report. Deep utilities should not be placed too close to the proposed structures. Differential settlement becomes a concern when structures are constructed within the cutback slope and backfill of deep utilities.

Depending upon the time of the year and the weather conditions when the excavations are made, seepage from surface runoff may occur into shallow excavations or soften the subgrade soils. Since these foundation materials tend to loosen when exposed to free water, every effort should be made to keep the excavations dry should water be encountered. Sump pumps or other conventional dewatering procedures should be sufficient for this purpose within the shallow cohesive soils encountered.

As noted previously, layers of wet granular soils consisting of fine sand or sand & gravel as well as thin sand seams were encountered within or below the cohesive soil layers at boring locations B-02, B-07, B-08, B-09, B-10, B-13, B-15, and B-16, as shallow as five (5) feet below existing ground level. If excavations penetrate into these granular soil layers, more extensive dewatering procedures and temporary shoring of the excavation would be necessary. All excavations should be performed in accordance with any applicable OSHA regulations.

5.7 Detention Pond Recommendations

Soil boring B-01 was conducted in the proposed detention pond area of the site. The depth of the proposed pond was not available at the time of this report. It is assumed that the excavation at the pond location will be performed using an open cut with sloped excavation sides. It is recommended that the excavation be performed using slopes of 3H:1V or shallower. Additional recommendations could be required once proposed grades are determined in the pond area.

Based on our investigation, a clay liner will likely need to be placed in areas where sand is exposed in the sidewalls and base of the pond if it desired to maintain the pond level. The clay liner soil should be constructed over the entire pond bottom and sideslopes where granular soils are present with a thickness of twenty-four (24) inches. The clay soil should be placed so that a density of at least 95% of maximum dry density in accordance with ASTM D-1557 is achieved. The material should be compacted with a moisture content of approximately 2% over the optimum moisture content for the soil as determined by ASTM D-1557.

Additionally, it will be necessary to dewater the sand layers while installing the liner. While installing the liner, it is recommended that the pump be allowed to run continuously until the liner has been installed and the water level in the pond is at or very near normal pool. Once the water level reaches that point, the dewatering system may be removed. Premature removal of the dewatering system will result in a buildup of hydrostatic pressure and potential failure of the liner.

Soil excavated to create the pond may be used as mass fill if proper moisture content and compaction is achieved. Based on a review of the boring logs at this site, it appears that the shallow subgrade soils will need to be moisture conditioned prior to being used as structural fill material.

6.0 STATEMENT OF LIMITATIONS

An inherent limitation of any geotechnical engineering study is that conclusions must be drawn based on data collected at a limited number of discrete locations. The geotechnical parameters provided in this report were developed from the information obtained from the test borings that depict subsurface conditions only at these specific locations and on the date indicated on the boring logs. Soil conditions at other locations may differ from conditions encountered at these boring locations and groundwater levels shall be expected to vary with time. The nature and extent of variations between the borings may not become evident until the course of construction. The recommendations submitted are based on the available soil information and assumed design details enumerated in this report. When final design plans have been developed, they should be submitted to Alt & Witzig Engineering, Inc. for review to determine if changes to our recommendations are necessary.

ALT & WITZIG ENGINEERING, INC.

APPENDIX A

Recommended Specifications for Compacted Fills and Backfills
Undercut Detail for Footings in Unstable Materials
Site Location Plan
Boring Location Plan
Boring Logs
General Notes

RECOMMENDED SPECIFICATIONS FOR COMPACTED FILLS AND BACKFILLS

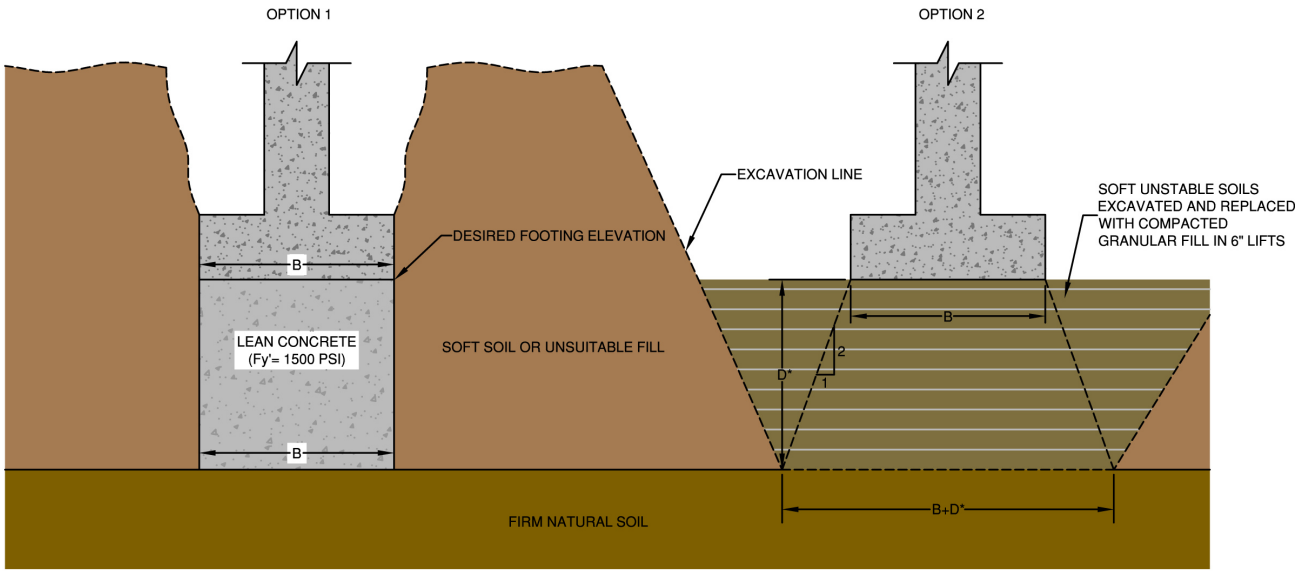
All fill shall be formed from material free of organic materials, construction debris, large rock, and other deleterious material. Prior to placement of fill, a sample of the proposed fill material should be submitted to the soil engineer for laboratory testing. The fill material should be placed in lifts. A representative of Alt & Witzig Engineering, Inc. should be consulted regarding lift thicknesses. The lift thickness will be determined based on compaction equipment to be utilized as well as the field conditions at the time of the filling operations. Dependent upon the moisture content of the proposed fill materials, moisture conditioning in the form of disking/aeration or addition of water may be required to achieve proper compaction. Under no circumstances should a bulldozer or similar tracked vehicles be used as compacting equipment.

All fill shall be compacted to the specified percent of the maximum density obtained in accordance with ASTM D-1557 as indicated in the table below:

Below Footing Level	**95%**
Interior Slabs on Grade	**93%**
Pavement Areas	**93%**
Utility Trenches Backfill	**95%**

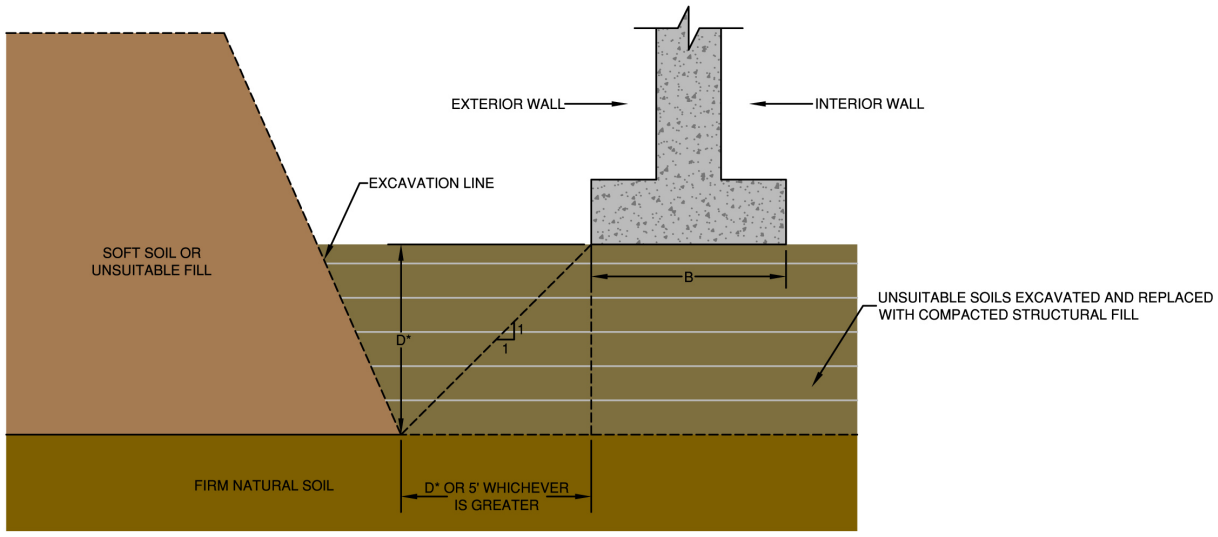
Should the results of the in-place density tests indicate that the specified compaction limits are not obtained; the areas represented by such tests shall be reworked and retested as required until the specified limits are reached.

UNDERCUT EXCAVATION FOR ISOLATED FOOTINGS IN UNSTABLE MATERIALS



D* IS DEPTH FOR SUITABLE SOILS

MASS EXCAVATION FOR FOOTINGS IN UNSTABLE MATERIALS



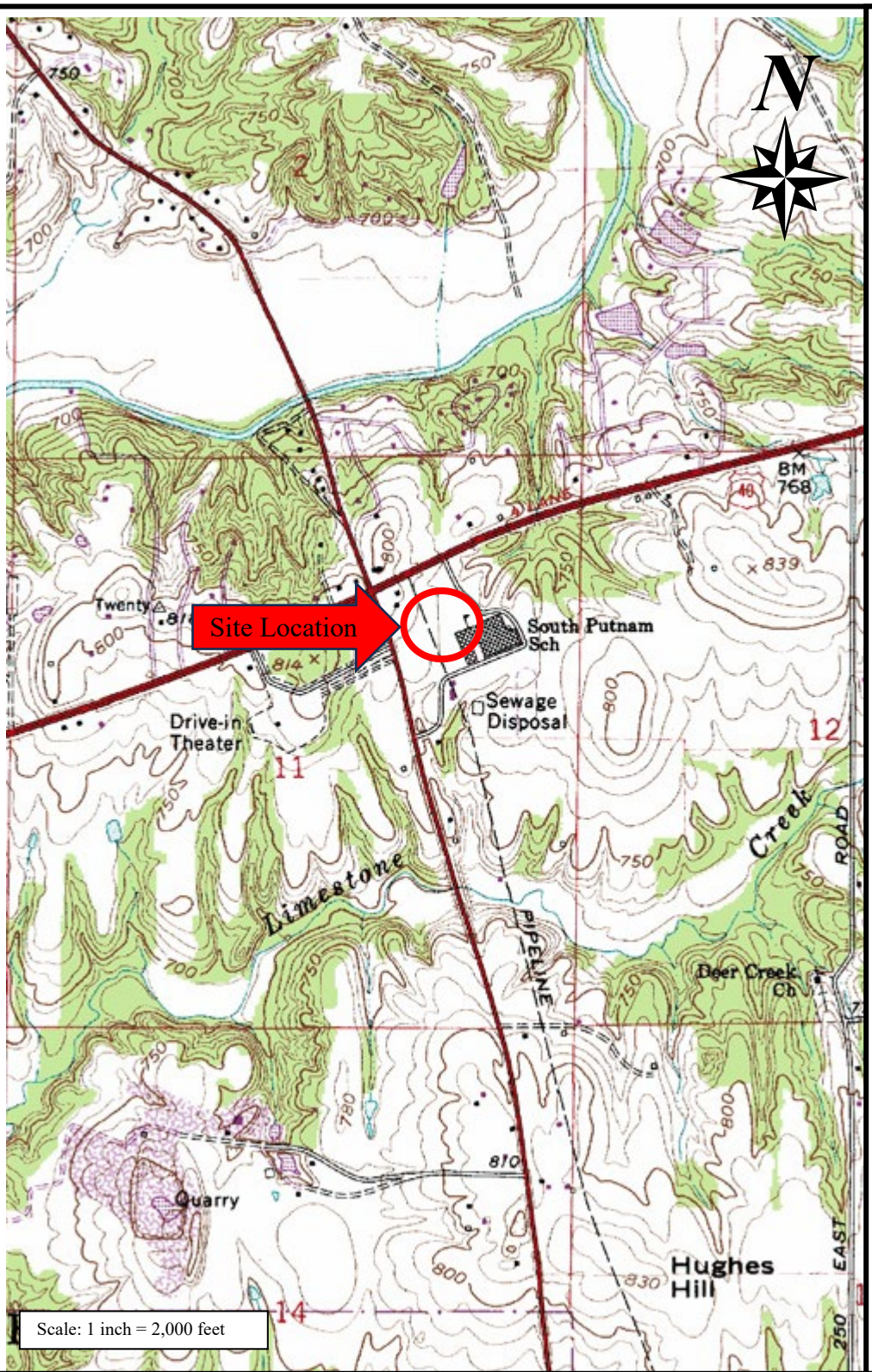
D* IS DEPTH FOR SUITABLE SOILS

Undercut Detail for Footing Excavation in Unstable Material

PROJECT: **South Putnam Community Schools – Admin Building**
LOCATION: Greencastle, Indiana – Putnam County
CLIENT: **TLF**
A&W File No.: 24IN0670

Alt & Witzig Engineering Inc.
4105 W. 99th Street ·Carmel, IN 46032
TEL (317)875-7000 · FAX (317) 876-3705
www.altwitzig.com

SITE LOCATION MAP



USGS Topographic Map:
Cloverdale Quadrangle

Township: T 13 N.
Range: R 4 W.
Section: 11

PROJECT: **South Putnam Community Schools – New Admin. Building**
LOCATION: Greencastle, Indiana – Putnam County
CLIENT: **TLF**
A&W File No.: 24IN0670

Alt & Witzig Engineering Inc.
4105 W. 99th Street ·Carmel, IN 46032
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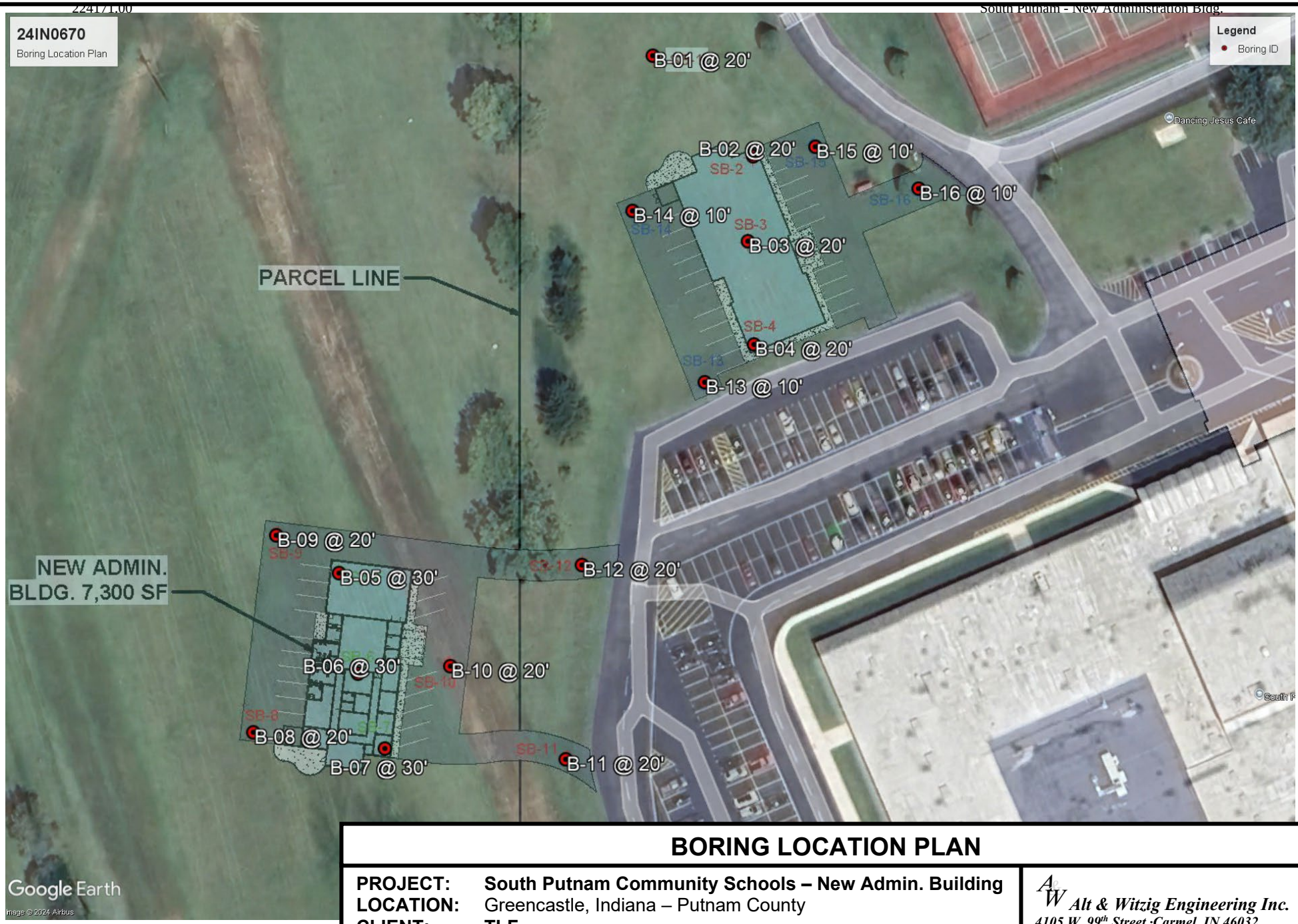
Last Modified: 11/12/2024 4:16 PM



BORING LOCATION PLAN

PROJECT: **South Putnam Community Schools – New Admin. Building**
LOCATION: Greencastle, Indiana – Putnam County
CLIENT: **TLF**
A&W File No.: 24IN0670

Alt & Witzig Engineering Inc.
4105 W. 99th Street ·Carmel, IN 46032
TEL (317)875-7000 · FAX (317) 876-3705
www.altwitzig.com

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **TLF**

BORING # **B-01**

PROJECT NAME **South Putnam Schools - New Administration Building**

ALT & WITZIG FILE # **24IN0670**

PROJECT LOCATION **Greencastle, IN**

DRILLING and SAMPLING INFORMATION

Date Started **11/25/24**

Hammer Wt. **140** lbs.

Date Completed **11/25/24**

Hammer Drop **30** in.

Boring Method **HSA**

Spoon Sampler OD **2** in.

Driller **D. McWherter**

Rig Type **CME 55 ATV**

STRATA ELEV.	SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % / *Dry Unit Weight (pcf)*	Remarks
	TOPSOIL	0.4										
	Brown Clayey SAND			1	SS			5			21.6	
			5	2	SS			5			19.2	
		7.5		3	SS		▽	6	1.0		16.6	
			10	4	SS			9			17.4	
	Gray Sandy Silty CLAY		15	5	SS		○	4	0.5		22.8	
			20	6	SS			4		0.8	20.8	
		21.0										
	End of Boring at 21 feet											

Sample Type

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

Groundwater

○ During Drilling *14.5 ft.*
▽ At Completion *8.0 ft.*

Boring Method

HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **TLF**

BORING # **B-02**

PROJECT NAME **South Putnam Schools - New Administration Building**

ALT & WITZIG FILE # **24IN0670**

PROJECT LOCATION **Greencastle, IN**

DRILLING and SAMPLING INFORMATION

Date Started **11/25/24** Hammer Wt. **140** lbs.

Date Completed **11/25/24** Hammer Drop **30** in.

Boring Method **HSA** Spoon Sampler OD **2** in.

Driller **D. McWherter** Rig Type **CME 55 ATV**

STRATA ELEV. / SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % Dry Unit Weight (pcf)	Remarks
TOPSOIL	0.4										
			1	SS			9	2.5		14.8	
Reddish Brown Sandy Silty CLAY		5	2	SS			10		2.5	20.6	
	7.5		3	SS		▽	17			18.8	
Gray Sandy Silty CLAY						○					
	10.0	10	4	SS			13		3.5	26.0	
Gray SILT	12.5										
		15	5	SS			6		1.5	18.6	
Gray Sandy Silty CLAY											
	20.0	20	6	SS			31				
Gray, Wet SAND and GRAVEL	21.0										
End of Boring at 21 feet											

Sample Type

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

Groundwater

○ During Drilling *9.5 ft.*
▽ At Completion *8.0 ft.*

Boring Method

HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **TLF**

BORING # **B-03**

PROJECT NAME **South Putnam Schools - New Administration Building**

ALT & WITZIG FILE # **24IN0670**

PROJECT LOCATION **Greencastle, IN**

DRILLING and SAMPLING INFORMATION

Date Started **11/25/24** Hammer Wt. **140** lbs.

Date Completed **11/25/24** Hammer Drop **30** in.

Boring Method **HSA** Spoon Sampler OD **2** in.

Driller **D. McWherter** Rig Type **CME 55 ATV**

STRATA ELEV. / SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % *Dry Unit Weight (pcf)*	Remarks
TOPSOIL	0.4										
Reddish Brown Sandy Silty CLAY			1	SS			6	1.5		18.1	
	5.0	5	2	SS			2	0.5		30.3	
Gray SILT	7.5		3	SS			3	0.5		15.4	
Gray Sandy Silty CLAY											
	10.0	10	4	SS			7	2.0		25.2	
Gray SILT	12.5										
Gray Sandy Silty CLAY		15	5	SS			9	2.0		18.2	
	21.0	20	6	SS			6	1.5		16.8	
End of Boring at 21 feet											

TEST DATA

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

Groundwater
○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

224171.00

BORING LOG

South Putnam - New Administration Bldg.

Alt & Witzig Engineering, Inc.

CLIENT **TLF**

BORING # **B-04**

PROJECT NAME **South Putnam Schools - New Administration Building**

ALT & WITZIG FILE # **24IN0670**

PROJECT LOCATION **Greencastle, IN**

DRILLING and SAMPLING INFORMATION

Date Started **11/22/24** Hammer Wt. **140** lbs.

Date Completed **11/22/24** Hammer Drop **30** in.

Boring Method **HSA** Spoon Sampler OD **2** in.

Driller **D. McWherter** Rig Type **CME 55 ATV**

STRATA ELEV.	SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % / *Dry Unit Weight (pcf)*	Remarks
	TOPSOIL	0.4										
	Brown Clayey SAND			1	SS		▽	4			17.5	
			5	2	SS		▽	4			14.4	
				3	SS		○	2			17.1	
		10.0	10	4	SS			6	1.0		13.3	
	Gray Sandy Silty CLAY		15	5	SS			8	2.0		14.8	
			20	6	SS			6	1.5		15.6	
		21.0										
	End of Boring at 21 feet											

Sample Type

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

Groundwater

○ During Drilling 7.5 ft.
▽ At Completion 6.0 ft.

▼ After 5.0 hours 2.0 ft.

Boring Method

HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **TLF**

BORING # **B-05**

PROJECT NAME **South Putnam Schools - New Administration Building**

ALT & WITZIG FILE # **24IN0670**

PROJECT LOCATION **Greencastle, IN**

DRILLING and SAMPLING INFORMATION

Date Started **11/21/24** Hammer Wt. **140** lbs.

Date Completed **11/21/24** Hammer Drop **30** in.

Boring Method **HSA** Spoon Sampler OD **2** in.

Driller **D. McWherter** Rig Type **CME 55 ATV**

STRATA ELEV.	SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % / *Dry Unit Weight (pcf)*	Remarks
	TOPSOIL	0.5										
	Brown Silty CLAY			1	SS			8		2.5	20.7	
		5.0	5	2	SS			3			21.0	
				3	SS		▽	8			13.1	
	Brown Clayey SAND w/ Some Gravel		10	4	SS			19			12.7	
		15.0	15	5	SS			4			13.3	
	Gray Clayey SAND		20	6	SS			4			14.5	
		25.0	25	7	SS			34		4.5	11.0	
	Brown Sandy CLAY w/ Some Gravel *(Glacial Till)*		30	8	SS			59		4.5	10.7	
		31.0										
	End of Boring at 31 feet											

Sample Type

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

Groundwater

○ During Drilling 6.5 ft.
▽ At Completion 7.5 ft.

Boring Method

HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **TLF**

BORING # **B-06**

PROJECT NAME **South Putnam Schools - New Administration Building**

ALT & WITZIG FILE # **24IN0670**

PROJECT LOCATION **Greencastle, IN**

DRILLING and SAMPLING INFORMATION

Date Started **11/21/24**

Hammer Wt. **140** lbs.

Date Completed **11/21/24**

Hammer Drop **30** in.

Boring Method **HSA**

Spoon Sampler OD **2** in.

Driller **D. McWherter**

Rig Type **CME 55 ATV**

STRATA ELEV. / SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % Dry Unit Weight (pcf)	Remarks
TOPSOIL	0.3										
Brown Silty CLAY	5.0	5	1	SS			7	1.5		24.6	
			2	SS			2			21.9	
			3	SS			8			14.3	
Brown Clayey SAND w/ Some Gravel		10	4	SS			5			11.6	
	15.0	15	5	SS			7	1.5		14.0	
Gray Sandy Silty CLAY		20	6	SS			5	1.0		13.3	
	25.0	25	7	SS			14			16.8	
Brown Clayey SAND		30	8	SS			6			16.9	
	31.0										
End of Boring at 31 feet											

Sample Type

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

Groundwater

During Drilling 4.5 ft.
At Completion 5.0 ft.

Boring Method

HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **TLF**

BORING # **B-07**

PROJECT NAME **South Putnam Schools - New Administration Building**

ALT & WITZIG FILE # **24IN0670**

PROJECT LOCATION **Greencastle, IN**

DRILLING and SAMPLING INFORMATION

Date Started **11/20/24**

Hammer Wt. **140** lbs.

Date Completed **11/20/24**

Hammer Drop **30** in.

Boring Method **HSA**

Spoon Sampler OD **2** in.

Driller **D. McWherter**

Rig Type **CME 55 ATV**

STRATA ELEV. / SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % / *Dry Unit Weight (pcf)*	Remarks
TOPSOIL	0.3										
Brown Silty CLAY			1	SS			6	1.5		22.0	
	5.0	5	2	SS		▽	2			10.5	
Brown Clayey SAND	7.5		3	SS		○	6	1.0		14.4	
		10	4	SS			6	0.8		18.1	
Gray Sandy Silty CLAY with Sand Seams		15	5	SS			0	0.5		18.3	
		20	6	SS			5	0.8		16.2	
	25.0	25	7	SS			2				
Gray, Wet Fine SAND		30	8	SS			0				
	31.0										
End of Boring at 31 feet											

Sample Type

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

Groundwater

○ During Drilling *7.5 ft.*
▽ At Completion *5.0 ft.*

Boring Method

HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

South Putnam - New Administration Bldg.

Alt & Witzig Engineering, Inc.

CLIENT **TLF**

BORING # **B-08**

PROJECT NAME **South Putnam Schools - New Administration Building**

ALT & WITZIG FILE # **24IN0670**

PROJECT LOCATION **Greencastle, IN**

DRILLING and SAMPLING INFORMATION

Date Started **11/21/24** Hammer Wt. **140** lbs.

Date Completed **11/21/24** Hammer Drop **30** in.

Boring Method **HSA** Spoon Sampler OD **2** in.

Driller **D. McWherter** Rig Type **CME 55 ATV**

STRATA ELEV. / SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % Dry Unit Weight (pcf)	Remarks
TOPSOIL	0.2										
Brown Silty CLAY			1	SS		▽	4	0.8		27.8	
	5.0	5	2	SS		▽	3			21.3	
Brown Clayey SAND	7.5		3	SS			0		0.5	30.6	
Brown Silty CLAY	10.0	10	4	SS		○	9			16.8	
Gray Sandy Silty CLAY with Sand Seams		15	5	SS			10		2.0	15.2	
		20	6	SS			6		1.0	15.3	
End of Boring at 21 feet	21.0										

Sample Type

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

Groundwater

○ During Drilling 9.5 ft.
▽ At Completion 5.0 ft.

▼ After 24.0 hours 3.0 ft.

Boring Method

HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **TLF**

BORING # **B-09**

PROJECT NAME **South Putnam Schools - New Administration Building**

ALT & WITZIG FILE # **24IN0670**

PROJECT LOCATION **Greencastle, IN**

DRILLING and SAMPLING INFORMATION

Date Started **11/21/24** Hammer Wt. **140** lbs.

Date Completed **11/21/24** Hammer Drop **30** in.

Boring Method **HSA** Spoon Sampler OD **2** in.

Driller **D. McWherter** Rig Type **CME 55 ATV**

STRATA ELEV. / SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	TEST DATA: Standard Penetration Test, N - blows/foot	TEST DATA: Qu-tsf Unconfined Compressive Strength	TEST DATA: PP-tsf Pocket Penetrometer	TEST DATA: Moisture Content % Dry Unit Weight (pcf)	Remarks
TOPSOIL	0.6										
Brown Silty CLAY			1	SS		▽	6		1.5	24.5	
	5.0	5	2	SS			4			20.2	
Brown Clayey SAND	7.5		3	SS		○	5	0.8		15.3	
		10	4	SS			7	2.0		18.4	
Reddish Brown Sandy Silty CLAY with Sand Seams		15	5	SS			5				No Recovery
		20	6	SS			10		2.0	17.5	
	21.0										
End of Boring at 21 feet											

Sample Type

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

Groundwater

○ During Drilling 7.5 ft.
▽ At Completion 4.5 ft.

Boring Method

HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **TLF**

BORING # **B-10**

PROJECT NAME **South Putnam Schools - New Administration Building**

ALT & WITZIG FILE # **24IN0670**

PROJECT LOCATION **Greencastle, IN**

DRILLING and SAMPLING INFORMATION

Date Started **11/22/24**

Hammer Wt. **140** lbs.

Date Completed **11/22/24**

Hammer Drop **30** in.

Boring Method **HSA**

Spoon Sampler OD **2** in.

Driller **D. McWherter**

Rig Type **CME 55 ATV**

TEST DATA

STRATA ELEV.	SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % / *Dry Unit Weight (pcf)*	Remarks
	TOPSOIL	0.5										
	Brown Silty CLAY			1	SS			7		1.5	25.5	
		5.0	5	2	SS			5			16.8	
	Brown Clayey SAND			3	SS		▽	2			17.4	
		10.0	10	4	SS			6		1.0	20.3	
	Reddish Brown Sandy Silty CLAY											
		15.0	15	5	SS			10		2.0	13.6	
	Gray Sandy Silty CLAY											
		20.0	20	6	SS		○	10				
	Gray, Wet SAND and GRAVEL	21.0										
	End of Boring at 21 feet											

Sample Type

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

Groundwater

○ During Drilling *19.5 ft.*
▽ At Completion *8.0 ft.*

Boring Method

HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **TLF**

BORING # **B-11**

PROJECT NAME **South Putnam Schools - New Administration Building**

ALT & WITZIG FILE # **24IN0670**

PROJECT LOCATION **Greencastle, IN**

DRILLING and SAMPLING INFORMATION

Date Started **11/22/24**

Hammer Wt. **140** lbs.

Date Completed **11/22/24**

Hammer Drop **30** in.

Boring Method **HSA**

Spoon Sampler OD **2** in.

Driller **D. McWherter**

Rig Type **CME 55 ATV**

TEST DATA

STRATA ELEV.	SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % / *Dry Unit Weight (pcf)*	Remarks
	TOPSOIL	0.3										
	Reddish Brown Sandy Silty CLAY			1	SS			10		2.5	15.3	
		5.0	5	2	SS			5			18.0	
	Brown Clayey SAND			3	SS			4			19.7	
		10.0	10	4	SS			12		3.0	14.3	
	Reddish Brown Sandy Silty CLAY											
		15.0	15	5	SS			6	1.0		15.1	
	Gray Sandy Silty CLAY											
		21.0	20	6	SS			5	0.8		15.6	
	End of Boring at 21 feet											

Sample Type

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

Groundwater

○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method

HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **TLF**

BORING # **B-12**

PROJECT NAME **South Putnam Schools - New Administration Building**

ALT & WITZIG FILE # **24IN0670**

PROJECT LOCATION **Greencastle, IN**

DRILLING and SAMPLING INFORMATION

Date Started **11/22/24**

Hammer Wt. **140** lbs.

Date Completed **11/22/24**

Hammer Drop **30** in.

Boring Method **HSA**

Spoon Sampler OD **2** in.

Driller **D. McWherter**

Rig Type **CME 55 ATV**

TEST DATA

STRATA ELEV.	SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % *Dry Unit Weight (pcf)*	Remarks
	TOPSOIL	0.5										
	Brown Silty CLAY			1	SS			9	2.0		22.1	
			5	2	SS			9		2.0	18.4	
		7.5		3	SS			4	0.5		16.2	
	Brown Clayey SAND		10	4	SS			13			12.9	
			15	5	SS			12				No Recovery
		20.0	20	6	SS			12	2.5		16.4	
	Gray Sandy Silty CLAY	21.0										
	End of Boring at 21 feet											

Sample Type

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

Groundwater

○ During Drilling *Dry ft.*
▽ At Completion *Dry ft.*

Boring Method

HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **TLF**

BORING # **B-13**

PROJECT NAME **South Putnam Schools - New Administration Building**

ALT & WITZIG FILE # **24IN0670**

PROJECT LOCATION **Greencastle, IN**

DRILLING and SAMPLING INFORMATION

Date Started **11/22/24** Hammer Wt. **140** lbs.

Date Completed **11/22/24** Hammer Drop **30** in.

Boring Method **HSA** Spoon Sampler OD **2** in.

Driller **D. McWherter** Rig Type **CME 55 ATV**

STRATA ELEV. / SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % / *Dry Unit Weight (pcf)*	Remarks
TOPSOIL	0.3										
Brown Clayey SAND			1	SS			7			15.0	
	5.0	5	2	SS		○ ▽	9			16.2	
Brown, Wet SAND w/ Some Gravel	7.5		3	SS			7	1.5		14.0	
Gray Sandy Silty CLAY	10.0	10	4	SS			4		1.0	27.2	
Gray SILT	11.0										
End of Boring at 11 feet											

Sample Type

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

Groundwater

○ During Drilling *4.5 ft.*
▽ At Completion *6.0 ft.*

Boring Method

HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **TLF**

BORING # **B-14**

PROJECT NAME **South Putnam Schools - New Administration Building**

ALT & WITZIG FILE # **24IN0670**

PROJECT LOCATION **Greencastle, IN**

DRILLING and SAMPLING INFORMATION

Date Started **11/25/24**

Hammer Wt. **140** lbs.

Date Completed **11/25/24**

Hammer Drop **30** in.

Boring Method **HSA**

Spoon Sampler OD **2** in.

Driller **D. McWherter**

Rig Type **CME 55 ATV**

TEST DATA

STRATA ELEV.	SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % *Dry Unit Weight (pcf)*	Remarks
	TOPSOIL	0.3										
	Brown Clayey SAND			1	SS			5			14.8	
			5	2	SS		▽	4			13.2	
				3	SS			8			16.2	
			10	4	SS			19			17.8	
	End of Boring at 11 feet	11.0										

Sample Type

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

Groundwater

○ During Drilling *Dry ft.*
▽ At Completion *7.0 ft.*

Boring Method

HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **TLF**

BORING # **B-15**

PROJECT NAME **South Putnam Schools - New Administration Building**

ALT & WITZIG FILE # **24IN0670**

PROJECT LOCATION **Greencastle, IN**

DRILLING and SAMPLING INFORMATION

Date Started **11/25/24**

Hammer Wt. **140** lbs.

Date Completed **11/25/24**

Hammer Drop **30** in.

Boring Method **HSA**

Spoon Sampler OD **2** in.

Driller **D. McWherter**

Rig Type **CME 55 ATV**

TEST DATA

STRATA ELEV.	SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % *Dry Unit Weight (pcf)*	Remarks
	TOPSOIL	0.5										
	Brown Clayey SAND			1	SS			2			24.4	
		5.0	5	2	SS		▽	23				
	Brown, Moist Fine SAND	7.5		3	SS		○	26				
	Brown, Wet SAND w/ Some Gravel	10.0	10	4	SS			10	2.0		25.6	
	Gray SILT	11.0										
	End of Boring at 11 feet											

Sample Type

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

Groundwater

○ During Drilling *7.5 ft.*
▽ At Completion *5.0 ft.*

Boring Method

HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

BORING LOG

Alt & Witzig Engineering, Inc.

CLIENT **TLF**

BORING # **B-16**

PROJECT NAME **South Putnam Schools - New Administration Building**

ALT & WITZIG FILE # **24IN0670**

PROJECT LOCATION **Greencastle, IN**

DRILLING and SAMPLING INFORMATION

Date Started **11/25/24** Hammer Wt. **140** lbs.

Date Completed **11/25/24** Hammer Drop **30** in.

Boring Method **HSA** Spoon Sampler OD **2** in.

Driller **D. McWherter** Rig Type **CME 55 ATV**

STRATA ELEV.	SOIL CLASSIFICATION / SURFACE ELEVATION	Strata Depth	Depth Scale	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Ground Water	Standard Penetration Test, N - blows/foot	Qu-tsf Unconfined Compressive Strength	PP-tsf Pocket Penetrometer	Moisture Content % / *Dry Unit Weight (pcf)*	Remarks
	TOPSOIL	0.4										
	Brown Clayey SAND			1	SS			5			19.7	
		5.0	5	2	SS		○ ▽	6	1.0		19.8	
	Reddish Brown Sandy Silty CLAY	7.5		3	SS			35				
	Brown, Wet SAND w/ Some Gravel		10	4	SS			27				
		11.0										
	End of Boring at 11 feet											

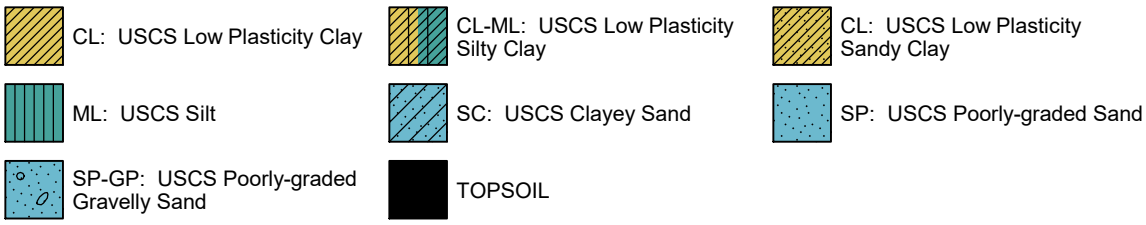
TEST DATA

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

Groundwater
- ○ During Drilling 4.5 ft.
- ▽ At Completion 6.0 ft.

Boring Method
- HSA - Hollow Stem Augers
- CFA - Continuous Flight Augers
- DC - Driving Casing
- MD - Mud Drilling

MATERIAL GRAPHICS LEGEND



SOIL PROPERTY SYMBOLS

N: *Standard "N" penetration value. Blows per foot of a 140-lb hammer falling 30" on a 2" O.D. split-spoon.*

Qu: *Unconfined Compressive Strength, tsf* PP: *Pocket Penetrometer, tsf*

LL: *Liquid Limit, %* PL: *Plastic Limit, %* PI: *Plasticity Index, %*

DRILLING AND SAMPLING SYMBOLS

GROUNDWATER SYMBOLS

- ○ *Apparent water level noted while drilling.*
- ▽ *Apparent water level noted upon completion.*
- ▼ *Apparent water level noted upon delayed time.*

SAMPLER SYMBOLS

- ⊠ SS: Split Spoon

RELATIVE DENSITY & CONSISTANCY CLASSIFICATION (NON-COHESIVE SOILS)

TERM	*BLOWS PER FOOT*
Very Loose	0 - 5
Loose	6 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	>51

RELATIVE DENSITY & CONSISTANCY CLASSIFICATION (COHESIVE SOILS)

TERM	*BLOWS PER FOOT*
Very Soft	0 - 3
Soft	4 - 5
Medium Stiff	6 - 10
Stiff	11 - 15
Very Stiff	16 - 30
Hard	>31

Alt & Witzig Engineering, Inc.
4105 West 99th St.
Carmel, IN 46032
Telephone:
Fax:

GENERAL NOTES

Project: South Putnam Schools - New Administration Building

Location: Greencastle, IN

Number: 24IN0670

APPENDIX B

Seismic Design Parameters
Custom Soil Resource Report for Putnam County, Indiana

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

OSHPD

Latitude, Longitude: 39.58366215, -86.81749945

Date	11/12/2024, 3:53:30 PM
Design Code Reference Document	IBC-2015
Risk Category	II
Site Class	D - Stiff Soil

Type	Value	Description
S_S	0.21	MCE_R ground motion. (for 0.2 second period)
S_1	0.1	MCE_R ground motion. (for 1.0s period)
S_{MS}	0.337	Site-modified spectral acceleration value
S_{M1}	0.241	Site-modified spectral acceleration value
S_{DS}	0.225	Numeric seismic design value at 0.2 second SA
S_{D1}	0.161	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	C	Seismic design category
F_a	1.6	Site amplification factor at 0.2 second
F_v	2.398	Site amplification factor at 1.0 second
PGA	0.1	MCE_G peak ground acceleration
F_{PGA}	1.599	Site amplification factor at PGA
PGA_M	0.161	Site modified peak ground acceleration
T_L	12	Long-period transition period in seconds
SsRT	0.21	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	0.233	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.1	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.117	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.6	Factored deterministic acceleration value. (Peak Ground Acceleration)
PGA_{UH}	0.1	Uniform-hazard (2% probability of exceedance in 50 years) Peak Ground Acceleration
C_{RS}	0.902	Mapped value of the risk coefficient at short periods

Type	Value	Description
C_{R1}	0.856	Mapped value of the risk coefficient at a period of 1 s
C_V		Vertical coefficient

DISCLAIMER

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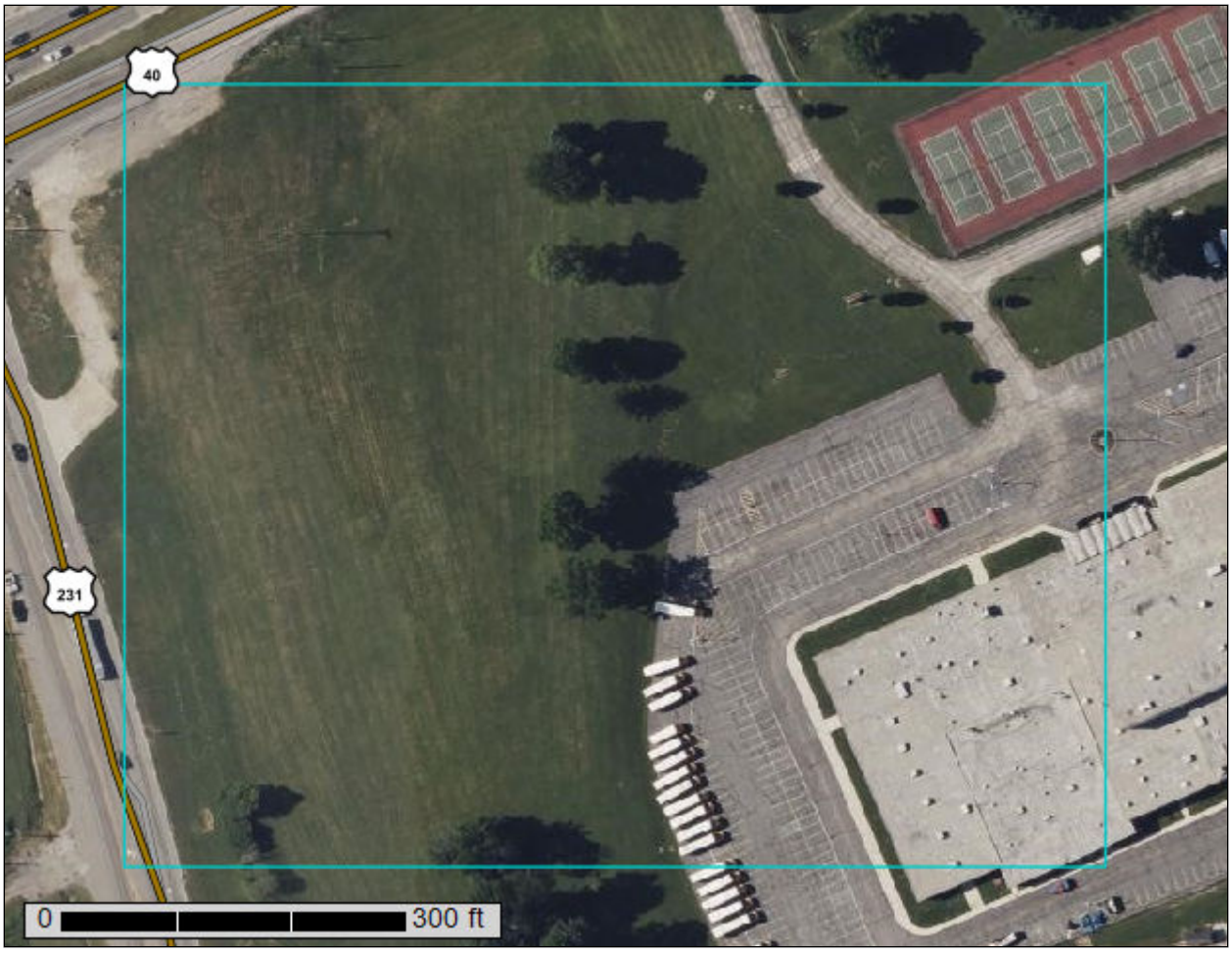
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

Custom Soil Resource Report for Putnam County, Indiana



Preface

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

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

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

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

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

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

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Contents

How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

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

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

Soil Map

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

Map Scale: 1:1,750 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 25 50 100 150

Feet
0 50 100 200 300

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

Custom Soil Resource Report

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Putnam County, Indiana
Survey Area Data: Version 26, Aug 24, 2024

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

Date(s) aerial images were photographed: Jun 15, 2022—Jun 23, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AlB	Alford silt loam, 2 to 6 percent slopes	0.2	1.6%
HeG	Hennepin loam, 25 to 50 percent slopes	1.4	10.7%
PeC2	Parke silt loam, 6 to 12 percent slopes, eroded	0.6	4.8%
ReA	Reesville silt loam, 0 to 2 percent slopes	10.9	82.5%
RuB	Russell silt loam, 2 to 6 percent slopes	0.0	0.1%
XeB2	Xenia silt loam, 2 to 6 percent slopes, eroded	0.0	0.3%
Totals for Area of Interest		**13.2**	**100.0%**

Map Unit Descriptions

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

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

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

was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

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

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

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

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

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

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

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

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

Putnam County, Indiana

AlB—Alford silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 5c99
Elevation: 350 to 1,050 feet
Mean annual precipitation: 36 to 46 inches
Mean annual air temperature: 49 to 56 degrees F
Frost-free period: 180 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Alford and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Alford

Setting

Landform: Loess hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loess

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 49 inches: silty clay loam
H3 - 49 to 80 inches: silt loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 11.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F111XD016IN - Dry Loess Upland, F114XA802IN - Eolian Forest
Hydric soil rating: No

HeG—Hennepin loam, 25 to 50 percent slopes

Map Unit Setting

National map unit symbol: 2w0vj
Elevation: 510 to 1,150 feet
Mean annual precipitation: 37 to 45 inches
Mean annual air temperature: 48 to 55 degrees F
Frost-free period: 145 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Hennepin and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hennepin

Setting

Landform: Till plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
Bw - 3 to 14 inches: loam
C - 14 to 60 inches: loam

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: F111XD010IN - Till Ridge
Hydric soil rating: No

Minor Components

Miami, eroded

Percent of map unit: 10 percent
Landform: Ground moraines, water-lain moraines, recessionial moraines
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Ecological site: F111XD010IN - Till Ridge
Hydric soil rating: No

PeC2—Parke silt loam, 6 to 12 percent slopes, eroded

Map Unit Setting

National map unit symbol: 5cbg
Elevation: 350 to 1,050 feet
Mean annual precipitation: 36 to 46 inches
Mean annual air temperature: 49 to 56 degrees F
Frost-free period: 180 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Parke and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Parke

Setting

Landform: Outwash plains
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loess over loamy outwash

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 30 inches: silt loam
H3 - 30 to 45 inches: sandy clay loam
H4 - 45 to 60 inches: sandy clay loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F111XD018IN - Dry Outwash Upland, F114XA404IN - Outwash Upland Forest
Hydric soil rating: No

ReA—Reesville silt loam, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: 2t68f
Elevation: 360 to 1,250 feet
Mean annual precipitation: 37 to 46 inches
Mean annual air temperature: 49 to 55 degrees F
Frost-free period: 175 to 220 days
Farmland classification: Prime farmland if drained

Map Unit Composition
Reesville and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Reesville

Setting
Landform: Till plains
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over loamy till

Typical profile
Ap - 0 to 12 inches: silt loam
Bt - 12 to 34 inches: silty clay loam
C - 34 to 58 inches: silt loam
2Cd - 58 to 79 inches: loam

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: 55 to 61 inches to densic material
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 18 inches

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F111XD005IN - Till Depression, F111XA006IN - Till Depression
Hydric soil rating: No

Minor Components

Fincastle

Percent of map unit: 5 percent
Landform: Till plains
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: F111XA008IN - Wet Till Ridge
Hydric soil rating: No

Ragsdale

Percent of map unit: 5 percent
Landform: Flats, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf, dip
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Ecological site: F111XA013IN - Loess Upland
Hydric soil rating: Yes

RuB—Russell silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2w0vz
Elevation: 540 to 1,170 feet
Mean annual precipitation: 37 to 46 inches
Mean annual air temperature: 48 to 55 degrees F
Frost-free period: 145 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Russell

Setting

Landform: Till plains
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over loamy till

Typical profile

Ap - 0 to 8 inches: silt loam
Bt1 - 8 to 13 inches: silty clay loam
Bt2 - 13 to 28 inches: silty clay loam
2Bt3 - 28 to 52 inches: clay loam
2BCt - 52 to 58 inches: loam
2Cd - 58 to 79 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 42 to 60 inches to densic material
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 40 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F111XD010IN - Till Ridge
Hydric soil rating: No

Minor Components

Xenia

Percent of map unit: 5 percent
Landform: Till plains
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F111XD010IN - Till Ridge
Hydric soil rating: No

Fincastle

Percent of map unit: 5 percent
Landform: Till plains
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope

Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F111XD009IN - Wet Till Ridge
Hydric soil rating: No

Cyclone, drained

Percent of map unit: 3 percent
Landform: Swales, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F111XD008IN - Till Depression Flatwood
Hydric soil rating: Yes

Williamstown

Percent of map unit: 2 percent
Landform: Till plains, recessionial moraines, water-lain moraines
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Ecological site: F111XD010IN - Till Ridge
Hydric soil rating: No

XeB2—Xenia silt loam, 2 to 6 percent slopes, eroded

Map Unit Setting

National map unit symbol: 2t990
Elevation: 530 to 1,020 feet
Mean annual precipitation: 37 to 45 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 145 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Xenia, Eroded

Setting

Landform: Till plains
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over loamy till

Typical profile

Ap - 0 to 8 inches: silt loam
Bt1 - 8 to 30 inches: silty clay loam
2Bt2 - 30 to 50 inches: clay loam
2BCt - 50 to 58 inches: loam
2Cd - 58 to 79 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 40 to 60 inches to densic material
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B/D
Ecological site: F111XD010IN - Till Ridge
Hydric soil rating: No

Minor Components

Treaty

Percent of map unit: 5 percent
Landform: Till plains, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Linear, concave
Ecological site: F111XD008IN - Till Depression Flatwood
Hydric soil rating: Yes

Russell, eroded

Percent of map unit: 5 percent
Landform: Till plains
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F111XD010IN - Till Ridge
Hydric soil rating: No

Fincastle

Percent of map unit: 5 percent
Landform: Till plains
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear

Across-slope shape: Linear
Ecological site: F111XD009IN - Wet Till Ridge
Hydric soil rating: No

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END OF DOCUMENT 00 31 32

_____ **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**?		
Have you included the original and one copy of 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?		
Did you include Indiana Contractor Qualification Certification?		
Did you include Iran Investment Certification?		
Did you complete unit price bid form?		
Is the Written **Drug Testing Plan** 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. If project requires prequalification, delete this line.		
Have you included the cost of the performance and payment bond in your quote?		
Will you send Contractors and Products List to the Construction Manager within **48** Hrs of the Bid Opening if requested?		
Procurement Leadtime form will be complete and emailed to MKS within **48** Hrs 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 bid		

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

CONTRACTOR'S BID FOR PUBLIC WORKS FORM NO. 96
Format (Revised 2013) (Amended for South Putnam – New Administration Building project)

SOUTH PUTNAM – NEW ADMINISTRATION BUILDING
BID FORM

Bidder: _____

Address: _____

Phone: _____ Estimator/Sales Person: _____

Estimator/Sales Person Email: _____

Bid Package Number: _____

Bid Package Title: _____

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 Inc.
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, if requested by Construction Manager.
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 No. _____ Dated _____
Addendum No. _____ Dated _____
Addendum No. _____ Dated _____
Addendum No. _____ Dated _____

- 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 me 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 included in my bid as directed by my specific bid package description.

List None, if not directed by specific bid package description:

$_____ for _____

$_____ for _____

$_____ for _____

$_____ for _____

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: _____

Div 03 Concrete	$_____
Div 04 Masonry	$_____
Div 05 Structural Steel & Erection	$_____
Div 06 Carpentry (including casework)	$_____
Div 07 Thermal Protection	$_____
Div 08 Openings	
Doors Frames Hardware	$_____
Aluminum Framed Storefronts/Entrances	$_____
Div 09 Finishes	
Drywall	$_____
Tiling, Terrazzo Tiling	$_____
Acoustical Panel Ceilings	$_____
Tiling	$_____
Resilient Flooring & Base	$_____
Carpeting	$_____
Painting, High Perf Coatings	$_____
Div 10 Specialties	$_____
Div 12 Furnishings	$_____
Div 22 Plumbing	$_____

Div 23 HVAC	$_____
Div 31 Earthwork – Utilities	$_____
Div 32 Exterior Improvements	$_____
General Conditions	$_____
Total (must match base bid)	$_____

ALTERNATE BIDS

I agree to execute the Work for this Bid Package indicated for the lump sum amount given therein. (MUST 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 submitted for the alternate, it will be assumed that the alternate has no effect on the bidder's scope of Work. See Section 01 23 00 for a detailed description.

ALTERNATE BID #1: State the cost to delete the Performance& Payment Bond to Base Bid.

DEDUCT ($ _____) _____

ALTERNATE BID #2: State the cost to delete LVT in restrooms and replace with Porcelain Tile & Base

DEDUCT ($ _____) _____

ALTERNATE BID #3: State the cost to delete metal roofing and replace with asphalt shingles + gutters, downs, flashings

DEDUCT ($ _____) _____

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 Price: $/CY: _____

UNIT PRICE # 1B – Unsuitable Aggregate Excavation: Unit price shall include removing unsuitable aggregate material and placing unsuitable aggregate off site.

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: _____

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.

_____

_____

_____

5. List your company's experience modification rate (EMR) for the previous year.

2024 Rate _____

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 _____2025.

Bidder:_____

Partnership:

IN TESTIMONY WHEREOF, the bidder has hereunto set its hand this_____day of _____2025.

Firm:_____

By:_____

Individual Names:

_____

_____

Corporation:

IN TESTIMONY WHEREOF, the bidder has hereunto set its hand this_____day of _____2025.

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_____2025

_____

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 _____

_____

_____

INDIANA CONTRACTOR QUALIFICATION CERTIFICATION

Pursuant to Indiana Code 5-16-13, Contractor hereby certifies that he/she shall be qualified under either IC 4-13-6.4 (Qualification for State Public Works Projects) or IC 8-23-10 (Qualifications of Bidders for Contracts) prior to performing any work on South Putnam – New Administration Building public works project. Contractor further certifies that subcontractors of Contractor awarded subcontracts on a Public Works Contract in excess of $300,000 shall be qualified under the applicable statute. Contractor acknowledges that if he/she violates any of the foregoing qualification requirements, he/she shall be ineligible to bid on Public Works Contracts for such time period as the South Putnam Community School Corporation determines.

_____
Name of Company

By:_____
(Signature)

_____
(Printed Name)

Title:_____

E-Verify Affidavit

Pursuant to Indiana Code 22-5-1.7, Contractor agrees and shall enroll in and verify the work eligibility status of all newly hired employees of the contractor through the E-Verify program including all new employees of lower tier subcontractors. E-Verify means the electronic verification of work authorization program of the Illegal Immigration Reform and Immigration Responsibility Act of 1996 (P.L. 104-208). Division C, Title IV, s.403(a), as amended, operated by the United States Department of Homeland Security or a successor work authorization program designated by the United States Department of Homeland Security or other federal agency authorized to verify the work authorization status of newly hired employees under the Immigration Reform and Control Act of 1986 (P.L. 99-603). Contractor is not required to verify the work eligibility status of all newly hired employees of Contractor through the E-verify program if the E-Verify program no longer exists.

The undersigned, on behalf of the Contractor, being first duly sworn, deposes and states that the Contractor does not knowingly employ an unauthorized alien. The undersigned further affirms that, prior to entering into its contract with the City, the undersigned Contractor will enroll in and agrees to verify the work eligibility status of all its newly hired employees through the E-Verify program.

_____
Name of Company

By: _____
Title

ACKNOWLEDGEMENT

STATE OF INDIANA)
) SS
COUNTY OF ALLEN)

Before me, a Notary Public, in and for said State and County, personally appeared the within named Company by Name, Title, who being first duly sworn upon his/her oath states that he/she is a duly authorized agent of the Contractor, and as such duly authorized to execute the foregoing Declaration and acknowledged the same as his/her voluntary act and deed.

WITNESS my hand and sear this _____ day of _____, 20_____.

My Commission Expires: _____

_____
Signature of Notary Public

Resident of _____ County

_____
Printed Name

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

IRAN INVESTMENT CERTIFICATION

PROJECT NAME HERE

The undersigned contractor hereby certifies in accordance with I.C. 5-22-16.5-1 et seq., to the above mentioned school corporation, that the undersigned is not engaged in investment activities in Iran as defined in the above cited statute

_____
Name Printed

_____
Signature

00 60 00 PROJECT FORMS

1.1 FORM OF AGREEMENT

A. The following form of Construction Manager/Contractor Agreement and other forms that shall be used for Project:
   1. AIA A132 Standard Form of Agree ment Between Owner and Contractor, Construction Manager as advisor Edition
   2. N/A
   3. Exhibit A Terms and Conditions
   4. Exhibit D Insurance Compliance Checklist

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

AIA® Document A132™ – 2019

Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition

AGREEMENT made as of the _____ day of _____ in the year _____
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address, and other information)

and the Contractor:
(Name, legal status, address, and other information)

for the following Project:
(Name, location, and detailed description)

The Construction Manager:
(Name, legal status, address, and other information)

The Architect:
(Name, legal status, address, and other information)

The Owner and Contractor agree as follows.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is intended to be used in conjunction with AIA Documents A232™–2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition; B132™–2019, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132™–2019, Standard Form of Agreement Between Owner and Construction Manager as Adviser.

AIA Document A232™–2019 is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

TABLE OF ARTICLES

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than Modifications, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND DATES OF SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:
(Check one of the following boxes.)

☐ The date of this Agreement.

☐ A date set forth in a notice to proceed issued by the Owner.

☐ Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion of the Project or Portions Thereof

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the date of Substantial Completion of the Work of all of the Contractors for the Project will be:

(Insert the date of Substantial Completion of the Work of all Contractors for the Project.)

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work of all of the Contractors for the Project are to be completed prior to Substantial Completion of the entire Work of all of the Contractors for the Project, the Contractors shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date

§ 3.4 When the Work of this Contract, or any Portion Thereof, is Substantially Complete

§ 3.4.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall substantially complete the entire Work of this Contract:

(Check one of the following boxes and complete the necessary information.)

☐ Not later than _____ (__) calendar days from the date of commencement of the Work.

☐ By the following date: _____

§ 3.4.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work of this Contract are to be substantially complete prior to when the entire Work of this Contract shall be substantially complete, the Contractor shall substantially complete such portions by the following dates:

Portion of Work	Date to be substantially complete

§ 3.4.3 If the Contractor fails to substantially complete the Work of this Contract, or portions thereof, as provided in this Section 3.4, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be one of the following:

(Check the appropriate box.)

☐ Stipulated Sum, in accordance with Section 4.2 below

☐ Cost of the Work plus the Contractor's Fee, in accordance with Section 4.3 below

☐ Cost of the Work plus the Contractor's Fee with a Guaranteed Maximum Price, in accordance with Section 4.4 below

(Based on the selection above, complete Section 4.2, 4.3, or 4.4 below.)

§ 4.2 Stipulated Sum
§ 4.2.1 The Contract Sum shall be _____ ($ __), subject to additions and deductions as provided in the Contract Documents.

§ 4.2.2 Alternates
§ 4.2.2.1 Alternates, if any, included in the Contract Sum:

Item	Price

§ 4.2.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance

§ 4.2.3 Allowances, if any, included in the Contract Sum:
(Identify each allowance.)

Item	Price

§ 4.2.4 Unit prices, if any:
(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)

§ 4.3 Cost of the Work Plus Contractor's Fee without a Guaranteed Maximum Price
§ 4.3.1 The Cost of the Work is as defined in Exhibit B, Determination of the Cost of the Work.

§ 4.3.2 The Contractor's Fee:
(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee.)

§ 4.3.3 The method of adjustment of the Contractor's Fee for changes in the Work:

§ 4.3.4 Limitations, if any, on a Subcontractor's overhead and profit for increases in the cost of its portion of the Work:

§ 4.3.5 Rental rates for Contractor-owned equipment shall not exceed _____ percent (__ %) of the standard rental rate paid at the place of the Project.

§ 4.3.6 Unit prices, if any:
(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)

§ 4.3.7 The Contractor shall prepare and submit to the Construction Manager, within 14 days of executing this Agreement, a written Control Estimate for the Owner's review and approval. The Control Estimate shall include the items in Section B.1 of Exhibit B, Determination of the Cost of the Work.

§ 4.4 Cost of the Work Plus Contractor's Fee with a Guaranteed Maximum Price
§ 4.4.1 The Cost of the Work is as defined in Exhibit B, Determination of the Cost of the Work.

§ 4.4.2 The Contractor's Fee:
(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee.)

§ 4.4.3 The method of adjustment of the Contractor's Fee for changes in the Work:

§ 4.4.4 Limitations, if any, on a Subcontractor's overhead and profit for increases in the cost of its portion of the Work:

§ 4.4.5 Rental rates for Contractor-owned equipment shall not exceed _____ percent (__ %) of the standard rental rate paid at the place of the Project.

§ 4.4.6 Unit Prices, if any:
(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)

§ 4.4.7 Guaranteed Maximum Price

§ 4.4.7.1 The Contract Sum is guaranteed by the Contractor not to exceed _____ ($ __), subject to additions and deductions by Change Order as provided in the Contract Documents. This maximum sum is referred to in the Contract Documents as the Guaranteed Maximum Price. Costs which would cause the Guaranteed Maximum Price to be exceeded shall be paid by the Contractor without reimbursement by the Owner.

§ 4.4.7.2 Alternates

§ 4.4.7.2.1 Alternates, if any, included in the Guaranteed Maximum Price:

Item	Price

§ 4.4.7.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance

§ 4.4.7.3 Allowances, if any, included in the Guaranteed Maximum Price:
(Identify each allowance.)

Item	Price

§ 4.4.7.4 Assumptions, if any, upon which the Guaranteed Maximum Price is based:
(Identify each assumption.)

§ 4.4.8 To the extent that the Contract Documents are anticipated to require further development, the Guaranteed Maximum Price includes the costs attributable to such further development consistent with the Contract Documents and reasonably inferable therefrom. Such further development does not include changes in scope, systems, kinds and quality of materials, finishes, or equipment, all of which, if required, shall be incorporated by Change Order.

§ 4.4.9 The Owner shall authorize preparation of revisions to the Contract Documents that incorporate the agreed-upon assumptions contained in Section 4.4.7.4. The Owner shall promptly furnish such revised Contract Documents to the Contractor. The Contractor shall notify the Owner and Architect of any inconsistencies between the agreed-upon assumptions contained in Section 4.4.7.4 and the revised Contract Documents.

§ 4.5 Liquidated damages, if any:
(Insert terms and conditions for liquidated damages, if any, to be assessed in accordance with Section 3.4.)

§ 4.6 Other:
(Insert provisions for bonus, cost savings or other incentives, if any, that might result in a change to the Contract Sum.)

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Construction Manager by the Contractor, and Certificates for Payment issued by the Construction Manager and Architect, the Owner shall make progress payments on account of the Contract Sum, to the Contractor, as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 5.1.3 Provided that an Application for Payment is received by the Construction Manager not later than the _____ day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the _____ day of the _____ month. If an Application for Payment is received by the Construction Manager after the application date fixed above, payment of the amount certified shall be made by the Owner not later than _____ (__) days after the Construction Manager receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Progress Payments Where the Contract Sum is Based on a Stipulated Sum

§ 5.1.4.1 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Construction Manager and Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.4.2 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.4.3 In accordance with AIA Document A232™–2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.4.3.1 The amount of each progress payment shall first include:

.1 That portion of the Contract Sum properly allocable to completed Work;

.2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and

.3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.4.3.2 The amount of each progress payment shall then be reduced by:

.1 The aggregate of any amounts previously paid by the Owner;

.2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A232–2019;

.3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;

.4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A232–2019; and

.5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.5 Progress Payments Where the Contract Sum is Based on the Cost of the Work without a Guaranteed Maximum Price

§ 5.1.5.1 With each Application for Payment, the Contractor shall submit the cost control information required in Exhibit B, Determination of the Cost of the Work, along with payrolls, petty cash accounts, receipted invoices, or invoices with check vouchers attached, and any other evidence required by the Owner, Construction Manager or Architect to demonstrate that payments already made by the Contractor on account of the Cost of the Work equal or exceed progress payments already received by the Contractor, plus payrolls for the period covered by the present Application for Payment, less that portion of the payments attributable to the Contractor's Fee.

§ 5.1.5.2 Applications for Payment shall show the Cost of the Work actually incurred by the Contractor through the end of the period covered by the Application for Payment and for which the Contractor has made or intends to make actual payment prior to the next Application for Payment.

§ 5.1.5.3 In accordance with AIA Document A232-2019 and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.5.3.1 The amount of each progress payment shall first include:

.1 The Cost of the Work as described in Exhibit B, Determination of the Cost of the Work;

.2 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified; and

.3 The Contractor's Fee computed upon the Cost of the Work described in the preceding Section 5.1.5.3.1.1 at the rate stated in Section 4.3.2; or if the Contractor's Fee is stated as a fixed sum in Section 4.3.2 an amount which bears the same ratio to that fixed-sum Fee as the Cost of the Work included in Section 5.1.5.3.1.1 bears to a reasonable estimate of the probable Cost of the Work upon its completion.

§ 5.1.5.3.2 The amount of each progress payment shall then be reduced by:

.1 The aggregate of any amounts previously paid by the Owner;

.2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A232–2019;

.3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;

.4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A232–2019;

.5 The shortfall, if any, indicated by the Contractor in the documentation required by Section 5.1.5.1 to substantiate prior Applications for Payment, or resulting from errors subsequently discovered by the Owner's auditors in such documentation; and

.6 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.5.4 The Owner, Construction Manager and Contractor shall agree upon a mutually acceptable procedure for review and approval of payments to Subcontractors and the percentage of retainage held on Subcontracts, and the Contractor shall execute subcontracts in accordance with those agreements.

§ 5.1.5.5 In taking action on the Contractor's Applications for Payment, the Construction Manager and Architect shall be entitled to rely on the accuracy and completeness of the information furnished by the Contractor, and such action shall not be deemed to be a representation that (1) the Construction Manager and Architect have made a detailed examination, audit or arithmetic verification of the documentation submitted in accordance with Article 5 or other supporting data; (2) that the Construction Manager and Architect have made exhaustive or continuous on-site inspections; or (3) that the Construction Manager and Architect have made examinations to ascertain how or for what purposes the Contractor has used amounts previously paid on account of the Contract. Such examinations, audits and verifications, if required by the Owner, will be performed by the Owner's auditors acting in the sole interest of the Owner.

§ 5.1.5.6 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.1.5.7 If final completion of the Work is materially delayed through no fault of the Contractor, then the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A232-2019.

§ 5.1.6 Progress Payments Where the Contract Sum is Based on the Cost of the Work with a Guaranteed Maximum Price

§ 5.1.6.1 With each Application for Payment, the Contractor shall submit payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached, and any other evidence required by the Owner, Construction Manager or Architect to demonstrate that payments already made by the Contractor on account of the Cost of the Work equal or exceed progress payments already received by the Contractor plus payrolls for the period covered by the present Application for Payment, less that portion of the progress payments attributable to the Contractor's Fee.

§ 5.1.6.2 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Guaranteed Maximum Price among: (1) the various portions of the Work; (2) any contingency for costs that are included in the Guaranteed Maximum Price but not otherwise allocated to another line item or included in a Change Order; and (3) the Contractor's Fee.

§ 5.1.6.2.1 The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Construction Manager and Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.6.2.2 The allocation of the Guaranteed Maximum Price under this Section 5.1.6.2 shall not constitute a separate guaranteed maximum price for the Cost of the Work of each individual line item in the schedule of values.

§ 5.1.6.2.3 When the Contractor allocates costs from a contingency to another line item in the schedule of values, the Contractor shall submit supporting documentation to the Architect and Construction Manager.

§ 5.1.6.3 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment. The percentage of completion shall be the lesser of (1) the percentage of that portion of the Work which has actually been completed; or (2) the percentage obtained by dividing (a) the expense that has actually been incurred by the Contractor on account of that portion of the Work and for which the Contractor has made payment or intends to make payment prior to the next Application for Payment by (b) the share of the Guaranteed Maximum Price allocated to that portion of the Work in the schedule of values.

§ 5.1.6.4 In accordance with AIA Document A232-2019, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.4.1 The amount of each progress payment shall first include:

- **.1** That portion of the Guaranteed Maximum Price properly allocable to completed Work as determined by multiplying the percentage of completion of each portion of the Work by the share of the Guaranteed Maximum Price allocated to that portion of the Work in the most recent schedule of values;
- **.2** That portion of the Guaranteed Maximum Price properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction or, if approved in writing in advance by the Owner, suitably stored off the site at a location agreed upon in writing;
- **.3** That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified; and
- **.4** The Contractor's Fee, computed upon the Cost of the Work described in the preceding Sections 5.1.6.4.1.1 and 5.1.6.4.1.2 at the rate stated in Section 4.4.2 or, if the Contractor's Fee is stated as a fixed sum in that Section, an amount that bears the same ratio to that fixed-sum fee as the Cost of the Work included in Sections 5.1.6.4.1.1 and 5.1.6.4.1.2 bears to a reasonable estimate of the probable Cost of the Work upon its completion.

§ 5.1.6.4.2 The amount of each progress payment shall then be reduced by:

- **.1** The aggregate of any amounts previously paid by the Owner;
- **.2** The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A232–2019;
- **.3** Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;

.4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A232–2019;

.5 The shortfall, if any, indicated by the Contractor in the documentation required by Section 5.1.6.1 to substantiate prior Applications for Payment, or resulting from errors subsequently discovered by the Owner's auditors in such documentation; and

.6 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.6.5 The Owner and the Contractor shall agree upon a mutually acceptable procedure for review and approval of payments to Subcontractors and the percentage of retainage held on Subcontracts, and the Contractor shall execute subcontracts in accordance with those agreements.

§ 5.1.6.6 In taking action on the Contractor's Applications for Payment, the Construction Manager and Architect shall be entitled to rely on the accuracy and completeness of the information furnished by the Contractor and such action shall not be deemed to be a representation that (1) the Construction Manager or Architect have made a detailed examination, audit, or arithmetic verification of the documentation submitted in accordance with Section 5.1.6.1 or other supporting data; (2) that the Construction Manager or Architect have made exhaustive or continuous on-site inspections; or (3) that the Construction Manager or Architect have made examinations to ascertain how or for what purposes the Contractor has used amounts previously paid on account of the Contract. Such examinations, audits, and verifications, if required by the Owner, will be performed by the Owner's auditors acting in the sole interest of the Owner.

§ 5.1.6.7 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.1.6.8 If final completion of the Work is materially delayed through no fault of the Contractor, then the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A232-2019.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to when the Work of this Contract is substantially complete, the Owner may withhold the following amount, as retainage, from the payment otherwise due:
(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

§ 5.1.7.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:
(If the retainage established in Section 5.1.7.1 is to be modified prior to when the entire Work of this Contract is substantially complete, including modifications for completion of portions of the Work as provided in Section 3.4.2, insert provisions for such modifications.)

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, when the Work of this Contract is substantially complete, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted when the Work of this Contract is substantially complete shall not include retainage as follows:
(Insert any other conditions for release of retainage when the Work of this Contract is substantially complete, or upon Substantial Completion of the Work of all Contractors on the Project or portions thereof.)

§ 5.2 Final Payment

§ 5.2.1 Final Payment Where the Contract Sum is Based on a Stipulated Sum

§ 5.2.1.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A232–2019, and to satisfy other requirements, if any, which extend beyond final payment; and

.2 a final Certificate for Payment or Project Certificate for Payment has been issued by the Architect.

§ 5.2.1.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the final Certificate for Payment or Project Certificate for Payment, or as follows:

§ 5.2.2 Final Payment Where the Contract Sum is Based on the Cost of the Work with or without a Guaranteed Maximum Price

§ 5.2.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A232–2019, and to satisfy other requirements, if any, which extend beyond final payment;

.2 the Contractor has submitted a final accounting for the Cost of the Work, pursuant to Exhibit B, Determination of the Cost of the Work and a final Application for Payment; and

.3 a final Certificate for Payment or Project Certificate for Payment has been issued by the Architect in accordance with Exhibit B, Determination of the Cost of the Work.

§ 5.2.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the final Certificate for Payment or Project Certificate for Payment, or as follows:

§ 5.3 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.
(Insert rate of interest agreed upon, if any.)

_____ % _____

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as Initial Decision Maker pursuant to Article 15 of AIA Document A232–2019, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A232–2019, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

☐ Arbitration pursuant to Article 15 of AIA Document A232–2019.

☐ Litigation in a court of competent jurisdiction.

☐ Other: *(Specify)*

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 Where the Contract Sum is a Stipulated Sum

§ 7.1.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A232–2019.

§ 7.1.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A232–2019, then the Owner shall pay the Contractor a termination fee as follows:
(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)

§ 7.1.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A232–2019.

§ 7.2 Where the Contract Sum is Based on the Cost of the Work with or without a Guaranteed Maximum Price

§ 7.2.1 Termination

§ 7.2.1.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A232–2019.

§ 7.2.1.2 Termination by the Owner for Cause

§ 7.2.1.2.1 If the Owner terminates the Contract for cause as provided in Article 14 of AIA Document A232–2019, the Owner shall then only pay the Contractor an amount as follows:

.1 Take the Cost of the Work incurred by the Contractor to the date of termination;

.2 Add the Contractor's Fee, computed upon the Cost of the Work to the date of termination at the rate stated in Section 4.3.2 or 4.4.2, as applicable, or, if the Contractor's Fee is stated as a fixed sum in that Section, an amount that bears the same ratio to that fixed-sum Fee as the Cost of the Work at the time of termination bears to a reasonable estimate of the probable Cost of the Work upon its completion;

.3 Subtract the aggregate of previous payments made by the Owner; and

.4 Subtract the costs and damages incurred, or to be incurred, by the Owner under Article 14 of AIA Document A232–2019.

§ 7.2.1.2.2 When the Contract Sum is based on the Cost of the Work with a Guaranteed Maximum Price, if the Owner terminates the Contract for cause as provided in Article 14 of AIA Document A232-2019, the amount, if any, to be paid to the Contractor under Article 14 of AIA Document A232-2019 shall not cause the Guaranteed Maximum Price to be exceeded, nor shall it exceed the amount calculated in Section 7.2.1.2.1.

§ 7.2.1.2.3 The Owner shall also pay the Contractor fair compensation, either by purchase or rental at the election of the Owner, for any equipment owned by the Contractor that the Owner elects to retain and that is not otherwise included in the Cost of the Work under Section 7.2.1.2.1.1. To the extent that the Owner elects to take legal assignment of subcontracts and purchase orders (including rental agreements), the Contractor shall, as a condition of receiving the payments referred to in this Article 7, execute and deliver all such papers and take all such steps, including the legal assignment of such subcontracts and other contractual rights of the Contractor, as the Owner may require for the purpose of fully vesting in the Owner the rights and benefits of the Contractor under such subcontracts or purchase orders. All Subcontracts, purchase orders and rental agreements entered into by the Contractor will contain provisions allowing for assignment to the Owner as described above.

§ 7.2.1.3 Termination by the Owner for Convenience

If the Owner terminates the Contract for convenience in accordance with Article 14 of AIA Document A232–2019, then the Owner shall pay the Contractor a termination fee as follows:
(Insert the amount of or method for determining the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)

§ 7.3 Suspension

The Work may be suspended by the Owner as provided in Article 14 of AIA Document A232–2019; in such case, the Contract Sum and Contract Time shall be increased as provided in Article 14 of AIA Document A232–2019, except that the term "profit" shall be understood to mean the Contractor's Fee as described in Section 4.3.2 or 4.4.2, as applicable, of this Agreement.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A232–2019 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner's representative:
(Name, address, email address, and other information)

§ 8.3 The Contractor's representative:
(Name, address, email address, and other information)

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A132™–2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A132™–2019, Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A232–2019, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:
(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

§ 8.7 Relationship of the Parties

Where the Contract is based on the Cost of the Work plus the Contractor's Fee, with or without a Guaranteed Maximum Price, the Contractor accepts the relationship of trust and confidence established by this Agreement and covenants with the Owner to cooperate with the Architect and exercise the Contractor's skill and judgment in furthering the interests of the Owner; to furnish efficient business administration and supervision; to furnish at all times an adequate supply of workers and materials; and to perform the Work in an expeditious and economical manner consistent with the Owner's interests. The Owner agrees to furnish and approve, in a timely manner, information required by the Contractor and to make payments to the Contractor in accordance with the requirements of the Contract Documents.

§ 8.8 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

.1 AIA Document A132™–2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition

.2 AIA Document A132™–2019, Exhibit A, Insurance and Bonds Exhibit

.3 AIA Document A232™–2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition

.4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203-2013 incorporated into this Agreement.)

.5 Drawings

Number	Title	Date

.6 Specifications

Section	Title	Date	Pages

.7 Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.8 Other Exhibits:
(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

☐ AIA Document A132™–2019, Exhibit B, Determination of the Cost of the Work

☐ AIA Document E235™–2019, Sustainable Projects Exhibit, Construction Manager as Adviser Edition, dated as indicated below:
(Insert the date of the E235-2019 incorporated into this Agreement.)

☐ The Sustainability Plan:

Title	Date	Pages

☐ Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

.9 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A232–2019 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

This Agreement is entered into as of the day and year first written above.

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
(Printed name and title)	*(Printed name and title)*

Exhibit A 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, high visibility shirt with a minimum sleeve length of three inches or a high visibility vest in conjunction with an appropriate piece of clothing with a minimum sleeve length of three inches, 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. 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

1.13.1. Subcontractors must observe and follow all posted safety signs.

1.13.2. 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.

1.13.3. Subcontractors are expected to supply their own personal protective equipment (PPE).

1.13.4. Adequate ventilation must be provided when using vapor producing materials or creating high dust levels. Subcontractor must notify Contractor twenty-four

1.13.5. (24) hours in advance whenever work is being done that may generate any hazardous odors or dust.

1.13.6. 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.

1.13.7. 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.

1.13.8. Subcontractor must have a first aid/CPR-trained foreman on site whenever work is being performed.

1.13.9. Subcontractor will conduct weekly employee toolbox meetings and copy Contractor with material covered and attendance record.

1.13.10. No radios or headsets, including cellular phones and earbuds, are allowed in work areas.

1.13.11. Subcontractor must submit safety plans and hazard specific work plans to Contractor prior to beginning work when requested.

1.13.12. Subcontractor's equipment, tools, and personnel must comply with OSHA Safety and Health Regulations for Construction.

1.13.13. No one under eighteen (18) years of age is allowed to work on or access to Contractor's jobsites.

1.13.14. Subcontractor shall provide all required safety information of their sub tier subcontractors as required by Contractor or Contractor's insurance provider.

1.13.15. Subcontractor must immediately correct any unsafe acts or practices brought to its attention.

1.13.16. Subcontractor will have qualified operators on all equipment.

1.13.17. 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, 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 in the Subcontract Documents. The Contractor and the Subcontractor are mutually bound by the terms of this Subcontract. 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 the 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 proceeding's 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 cleanup 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. DIPOSAL OF PALLETS IS BY SUBCONTRACTOR AND NOT TO BE DISPOSED IN ONSITE DUMPSTER.

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' responsibility during the course of the Subcontract Work.

4.8. **Supervision**. All 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 Forty-Eight (48) 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 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 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 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 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

6.2. 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 and the Project Manager assigned to the project.

6.3. 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.

6.4. 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 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.

6.5. 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.

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

6.7. **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 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. Requirements

9.1.1. The Subcontractor agrees to procure, pay for, and maintain in full force and effect during 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.Worker’s compensation insurance in accordance with statutory laws and with limits as provided by statute.

9.1.2. 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.

9.1.3. Automobile insurance with coverage for owned and non-owned vehicles with a combined single limit of $1,000,000 public liability and property damage.

9.1.4. Installation Floater with a combined limit not less than $500,000.

9.1.5. 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.

9.1.6. 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 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 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 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.

12.5. **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.

12.5.1. 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 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.

12.5.2. 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:

14.2.1. mutual acceptance of an itemized lump sum, or

14.2.2. unit prices as indicated in the Subcontract Documents or as subsequently agreed to by the parties; or

14.2.3. costs determined in a manner acceptable to the parties and a mutually acceptable fixed or percentage fee; or

14.2.4. another method provided in the Subcontract Documents.

14.2.5. 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 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 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 consider 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.

WAIVER OF LIEN TO DATE FOR 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 as SAMPLE, of which SAMPLE 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 _____
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 FOR 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 _____
ADDRESS _____
CITY, STATE, ZIP _____
BY: _____
TITLE: _____

I HERBY CERTIFY THAT THE PERSON NAMED ABOVE, APPREARED 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 FOR SAMPLE

State of: _____
County of: _____

TO WHOM IT MAY CONCERN:

WHEREAS the undersigned has been employed by _____ to furnish labor, material and equipment for the project known as SAMPLE, of which SAMPLE 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

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 SAMPLE, owned by SAMPLE

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 FOR SAMPLE

State of: _____
County of: _____

TO WHOM IT MAY CONCERN:

WHEREAS the undersigned has been employed by_____ to furnish material and/or equipment for the project known as SAMPLE, of which SAMPLE 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: _____
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 material supplier furnishing _____ for _____ (Company purchasing material) on the building located at SAMPLE, owned by SAMPLE.

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 the project owner 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 the project owner 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. 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.

ACORD

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

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Name of Insurance Company	
INSURER B :	
INSURER C :	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED: Full Named Insured
Address

City St Zip

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)

Job/Project Description: (Insert here)
Michael Kinder & Sons, Inc., & their affiliates, directors, employees, subsidiaries, representative & any other parties as required by the GC/ Subcontractor contract agreement are listed as Additional Insureds. Per the signed contract, contractor & owner must be protected by blanket additional insured status on the General Liability policy including on-going operations & prod/completed operations and on the Auto Liability policy. All insurance for subcontractors/sub-subcontractors shall be Primary & Non-Contributory. A Waiver of Subrogation in favor of Michael Kinder & Sons, Inc. shall be added to the General Liability, Auto, and Work Comp Policies. Umbrella follows form. 30 day NOC applies. (Note: Please reference all applicable forms or provide a copy of all endorsements, including Waiver of Subrogation.)

CERTIFICATE HOLDER

Michael Kinder & Sons, Inc.
6055 Innovation Blvd.
Fort Wayne, IN 46818

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

ACORD 25 (2014/01)
INS025 (201401)

The ACORD name and logo are registered marks of ACORD

END OF SECTION 00 60 00

01 12 00 Contract Summary

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. 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
3. All interactions with staff must be conducted professionally. Adherence to safety procedures outlined in each subcontractor's contract is mandatory throughout the project.
4. 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. Owners Right to Maintain Operations

a. The Owner intends to their staff to refrain from communications with Contractor's personnel working on this Project. All communication with Owner and staff shall be through the MKS.
b. Contractors must expend their best effort toward protection of the health, safety, and welfare of visitors on the Owner's property during the course of construction on this Project.
c. 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.
d. 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.

13. 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.
14. Each bid package is required to understand and adhere to the project schedule, phasing plans and logistic plans.
15. Where bid documents reference the term "General Contractor" change to "Construction Manager"(CM).
16. Each bid package and all lower tier contractors are to include all mobilizations and demobilizations required for performance of the Work.
17. A single prime contract for entire scope of work will be awarded as per 01 12 00.
18. Contractors shall include Work required by the Specifications and Drawings for each contract area defined in the Schedule.
19. Where there is a conflict in materials on the drawings or the specifications, the more costly of the materials is to be included in the base bid.
20. The contract will be A132™ – 2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition. A sample copy can be viewed by utilizing AI or search engine.
21. 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.
22. Successful bidder my employ only competent and skilled craftsmen.
23. This bid package is responsible for coordinating all work, including work performed by the owner or owner's contractors.
24. Bidder's lower tier contractors are required to be compatible with all contractors on the project.
25. Although specifications are allocated to respective bid packages each bid package must read and understand all contract documents.
26. Each bid package includes all work, including coordination with related work performed under other contracts, to result in a functional system or product.
27. 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.
28. 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. MKS reserves the right to immediately dispose of any threading/cutting tool on the project site that is being used without stated boxes underneath.
29. 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 Subcontractor is required. No tolerance will be allowed for failure to comply. MKS shall issue one verbal request to the Prime Contractor's Foreman. If corrective action is needed, and if not corrected immediately or as requested, MKS 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.

30. 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 MKS before undertaking any such work.
31. Each bid package must coordinate deliveries in advance with MKS 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. MKS will not provide labor or equipment to unload deliveries from subcontractors.
32. Each bid package is responsible for obtaining written approval from MKS prior to proceeding with any extra work. If written approval is not received, payment for extra work will not be approved.
33. 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.
34. 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.
35. 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.
36. Any access panels not shown on drawings but required by a bid package will be borne by said bid package.
37. 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.
38. Bid packages are to remove stickers, labels, clean and provide protection over finished products.
39. All submittals must be submitted per the specifications and in accordance with the project schedule.
40. All bidders, including lower tier bidders, must agree to terms and conditions of MKS subcontract agreement as defined in the specifications.
41. 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.
42. Punch list Work – Upon delivery of a "Completion List" by MKS 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, MKS 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.
43. 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.
44. 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.
45. See Logistics Plan for staging areas.
46. Food and beverage consumption will be permitted in contractor provided break trailers or employees vehicles.
47. 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.
48. Project is tax exempt.

Bid Package 06a General Trades

In addition to and including the General Contract Specification Sections Complete (also known as the "Project Manual") (such as Bidding Requirements & Forms; Scope of Work Applicable to All Bid Packages; Preliminary Construction Schedule; All General & Supplementary/Special Conditions including, but not limited to, the entire Division 01 - General Requirements, Contractual Conditions, Summary of Work, and Schedule of Contract Responsibilities), this Prime Contractor is Furnishing and Installing all Technical Scope Specific Specification Section(s) complete:

Specifications: Furnish and Install the Scope found in the Following Spec Sections and Drawings
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 12 Furnishings
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

General Scope Items
1. Subcontractor is responsible for all work related to this work scope included in the entire set of contract documents.
2. Where there is a conflict or discrepancy between drawings and/or drawings and specifications; subcontractor shall include the costs to provide the more expensive and/or greater quantity.
3. Subcontractor acknowledges that the section in the Project Manual labeled "BID PACKAGES – SCOPE OF WORK – ALL BID PACKAGES" applies to EACH/EVERY/(ALL) bid package(s)/Subcontractor(s) including this Subcontractor specific scope of work. Subcontractor includes all costs in its base bid to adhere to this aforementioned section of the Project Manual. If there is a discrepancy between the "BID PACKAGES–SCOPE OF WORK–ALL BID PACKAGES" section and the Subcontractor's specific bid package scope, the Subcontractor's specific bid package scope shall apply and be adhered to by the Subcontractor at no additional cost to the project.
4. Subcontractor will provide all materials, manpower, equipment, receiving, transporting, loading, unloading, rigging, hoisting, handling, storing, setting, conveying, hoisting, temporary bracing, scaffolding, working platforms, protection/safety of all materials and manpower, etc. to execute this scope of work.
5. Subcontractor will provide all costs for delivery, freight, and applicable sales tax to the jobsite. Project is tax exempt.
6. Subcontractor will provide all required field measuring, layout/surveying, engineering, submittals, shop drawings, etc. necessary to complete this scope of work.

7. Subcontractor is responsible for all applicable permits, licenses, registrations, and fees required by authorities having jurisdiction and/or Owner, with exception of the General Building Permit. The General Building Permit will be acquired by Construction Manager and copies provided as required.
8. Subcontractor will provide all necessary permits, fees, inspections, and notifications for its work that are not already specifically stated to be covered by Construction Manager.
9. Subcontractor will comply with all applicable City, State, Federal codes, and quality workmanship requirements regarding materials, methods of work, and disposal of excess and waste material.
10. Subcontractor includes coordination and notification for all materials testing, permits, fees, and inspections required by the specifications.
11. Subcontractor will provide multiple mobilizations as necessary to meet the project schedule.
12. Subcontractors quote is not part of the contract or scope of work documentation.
13. Subcontractor will provide all necessary barricades, safety, and warning devices for its work. If a safety barricade is removed by this subcontractor for access to its work, this Subcontractor is responsible to replace same safety barrier to its original integrity.
14. Subcontractor will provide continuous daily clean-up and housekeeping including complete removal of trash, debris, and dirt generated from its activities to a dumpster furnished by Construction Manager and its supervisors have the right to identify insufficient daily clean-up and housekeeping for correction within 24 hours of the notice (or sooner if a safety hazard), as well as performing noncompliance clean-up and housekeeping on behalf and at the expense of the subcontractor if left unaddressed after the 24-hour notice.
15. On-Site Subcontractor supervision is required when any work of this subcontract is being performed on site. Supervisor of work is required to attend weekly job progress meetings to report on scope of work, make decisions related to cost and schedule, and to be accountable to other Subcontractors on the project.
16. Subcontractor will provide submittals for review as needed/required including shop drawings, product data, color samples, etc.
17. Subcontractor will provide electronic closeout documents as needed/required.
18. Subcontractor will provide as-built documentation in accordance with the specifications. (As-built's must be documented and submitted on a minimum monthly basis.)
19. Subcontractor will supply attic stock as indicated in the specifications.
20. The Subcontractor will provide all final testing, training, and commissioning for its scope of work (as/if training is applicable).

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 (Maintenance of Traffic) 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 for protecting existing utilities, plumbing work/equipment, HVAC work/equipment, gas lines, and miscellaneous equipment shown to remain.
11. This bid package is responsible for all layouts, 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.
13. This bid package is responsible for daily site supervision for the duration of the project while work is being performed by this package or lower tier contractors or owner's vendors.
14. This bid package is responsible for As-Built drawings upon completion of work.
15. 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.
16. 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.

Project Specific Requirements

1. This bid package will be delivered as a single prime contract for all scope of work shown on the drawings dated 04/21/2025, noted in specification manuals dated 04/21/25 and all future addenda.
1. Where there is a conflict or discrepancy between drawings and/or drawings and specifications, this contractor shall include the costs to provide the more expensive and/or greater quantity.
2. This bid package is responsible for temporary construction fence and gates around the perimeter of the project site per logistics plan.
3. This bid package is responsible for one temporary fire extinguished per 3,0000 SF.
4. This bid package is responsible for locating existing underground utility lines with a vendor specializing in locating underground utilities.
5. This bid package is responsible for scheduling and coordinating all lower tier contractor work.
6. This bid package is responsible for dust control during earthwork activities.
7. This bid package is responsible for continuous clean up of project site.
8. This bid package is responsible for labor and equipment necessary for unloading material and equipment.
9. This bid package is responsible for sawcutting asphalt paving for a clean edge required for patching.
10. All civil demolition debris to be removed offsite and legally disposed of.
11. This bid package is responsible for all aspects of storm water pollution prevention plan including all required temporary measures.
12. This bid package is responsible for furnishing and installing temporary enclosures during the course of construction. This scope includes door opening and window openings. Include removal to dumpster after door and window installation.
13. This bid package is responsible for all temporary lighting that is required for the project, including setting of a new temporary service for the construction of the building. Temporary power should be provided so that extension cord length inside the building does not exceed 100'. Temporary lighting should be provided at a minimum of 60w/100SF.
14. All spoils created by this bid package are to be removed offsite by this bid package.
15. This bid package is responsible for furnishing and installing all traffic signage required for the new pavement.

END OF SECTION

SECTION 01 23 00 - ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 DEFINITIONS

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

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.

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

A. Alternate No. 1: State the cost to not provide performance and payment bond.

B. Alternate No. 2: Provide Porcelain Tile (PT) flooring and Porcelain Base (PTB) in lieu of LVT flooring and Resilient Base within restroom locations.

C. Alternate No. 3: Provide Asphalt Shingles and other asphalt shingle accessories in lieu of Metal Roof Panels. This alternate shall include gutters, downspouts and flashings for the shingle roofing system as specified in Section 07 62 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. 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