

**VOLUME 1
SPECIFICATION DIVISIONS 0-33
FOR:**

**2022 PARTIAL REROOFING &
ROOF REPAIRS
PEMBROKE
ELEMENTARY SCHOOL**

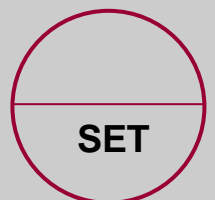
**1600 PEMBROKE OAK GROVE ROAD
PEMBROKE, KY 42266**

**CHRISTIAN COUNTY BOARD OF EDUCATION
200 GLASS AVENUE
HOPKINSVILLE, KENTUCKY**

BG# 22-338

ARCHITECT:

**JKS ARCHITECTURE
402 LIBERTY STREET
HOPKINSVILLE, KENTUCKY 42240
(270) 885-2296 FAX: (270) 885-2379**



**MARCH 31, 2022
JKS # 2021058**

PARTIAL REROOFING & ROOF REPAIRS
PEMBROKE ELEMENTARY SCHOOL
PEMBROKE, KENTUCKY

03-31-2022
BG # 22-338
CONTRACT DOCUMENT



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SECTION 000100 – INVITATION FOR PRICE CONTRACT

The Christian County Board of Education, Hopkinsville, Kentucky is requesting pricing through The Kentucky Purchasing Cooperative System. Scope of work shall be in accordance with the contract documents, Kentucky Department of Education regulations and Kentucky Purchasing Cooperative's Pricing Procedures (as approved by the KY Department of Education. Include labor, materials and O+P)

Pricing format shall be a lump sum price and shall include, but is not limited to, lump sum price with unit breakdowns

- KPC Contract Number and Documentation
- Contract Bid Documentation
- Executed Coop Membership Agreement
- KPC Procurement Process
- Other submittals as required by the KY Department of Education

Pricing shall be submitted via email no later than 4 PM CST, April 28th, 2022 to:

Josh Hunt..... josh.hunt2@christian.kyschools.us

Copies to:

Jessica Darnell.....jessica.darnell@christian.kyschools.us
Trevor Herndon.....trevor.herndon@christian.kyschools.us
Bruce Nelson.....bnelson@jksae.com

SECTION 005000 – CONTRACT

The following pages are AIA DOCUMENT A101 STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR (KDE VERSION), where the basis of payment is a stipulated sum.

Kentucky Department of Education Version of **AIA**® Document A101™ – 2007

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum



This version of AIA Document A101™–2007 is modified by the Kentucky Department of Education. Publication of this version of AIA Document A101–2007 does not imply the American Institute of Architects' endorsement of any modification by the Kentucky Department of Education. A comparative version of AIA Document A101–2007 showing additions and deletions by the Kentucky Department of Education is available for review on the Kentucky Department of Education Web site.

Cite this document as "AIA Document A101™–2007, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum — KDE Version," or "AIA Document A101™–2007 — KDE Version."

Kentucky Department of Education Version of AIA® Document A101 – 2007

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

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

The Owner and Contractor agree as follows.



This version of AIA Document A101–2007 is modified by the Kentucky Department of Education. Publication of this version of AIA Document A101 does not imply the American Institute of Architects' endorsement of any modification by the Kentucky Department of Education. A comparative version of AIA Document A101–2007 showing additions and deletions by the Kentucky Department of Education is available for review on the Kentucky Department of Education Web site.

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

Init.

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ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Owner direct Purchase Orders, 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 a Modification, 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 SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.

(Insert the date of commencement if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

If, prior to the commencement of the Work, the Owner requires time to file mortgages and other security interests, the Owner's time requirement shall be as follows:

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

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than () days from the date of commencement, or as follows:
(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work. Either list requirements for earlier Substantial Completion here or refer to an exhibit attached to this Agreement.)

Portion of Work

Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.

Liquidated Damages: As actual damages for delay in completion of Work are impossible to determine, the Contractor and his Surety shall be liable for and shall pay to the Owner the sum of

(\$), not as a penalty, but as fixed, agreed and liquidated damages for each calendar day of delay until the Contract Work is substantially completed as defined in the General Conditions of the Contract for Construction. The Owner shall have the right to deduct liquidated damages from money in hand otherwise due, or to become due, to the Contractor, or to sue and recover compensation for damages for failure to substantially complete the Work within the time stipulated herein. Said liquidated damages shall cease to accrue from the date of Substantial Completion.

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

(\$), subject to additions and deductions as provided in the Contract Documents.

(List the base bid amount, sum of accepted alternates, total construction cost (the sum of base bid amount plus sum of accepted alternates), sum of Owner's direct Purchase Orders. The Contract Sum shall equal the sum of Total Construction Cost, less Owner direct Purchase Orders. Either list this information here or refer to an exhibit attached to this Agreement.)

	Amount
Base Bid	\$
Sum of Accepted Alternates	\$
Total Construction Cost (the sum of base bid amount plus sum of accepted alternates)	\$
Sum of Owner's direct Purchase Orders	\$
Contract Sum (total construction cost less Owner direct Purchase Orders)	\$

Init.

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires. Either list alternates here or refer to an exhibit attached to this Agreement.)

Number	Item Description	Amount
Total of Alternates		

§ 4.3 Unit prices, if any:

(Identify and state the unit price; state quantity limitations, if any, to which the unit price will be applicable. Either list unit prices here or refer to an exhibit attached to this Agreement.)

Item	Units and Limitations	Price per Unit (\$0.00)
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§ 4.4 Allowances included in the Contract Sum, if any:

(Identify allowance and state exclusions, if any, from the allowance price. Either list allowances here or refer to an exhibit attached to this Agreement.)

Item	Price
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ARTICLE 5 PAYMENTS

§ 5.1 PROGRESS PAYMENTS

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the 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 Architect not later than the _____ day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the _____ day of the _____ month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than _____ () days after the Architect receives the Application for Payment.

State law (KRS 371.405) requires the Owner to pay undisputed Applications for Payment within forty-five (45) business days following receipt of the invoices. If the Owner fails to pay the Contractor within forty-five (45) business days following receipt of an undisputed Application for Payment, state law requires the Owner shall pay interest to the Contractor beginning on the forty-sixth business day after receipt of the Application for Payment, computed at the rate required by state law.

§ 5.1.4 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 Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 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.

§ 5.1.6 Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of _____ percent (_____ %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™–2007, General Conditions of the Contract for Construction — KDE Version;
- .2 Add 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), less retainage of _____ percent (_____ %);
- .3 Subtract the aggregate of previous payments made by the Owner; and
- .4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201–2007 — KDE Version.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

- .1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Architect shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and
(Section 9.8.5 of AIA Document A201–2007 — KDE Version requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)

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- .2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201–2007 — KDE Version.

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:

When Owner direct Purchase Orders are used, retainage that would otherwise be held on materials and equipment shall transfer to the Contractor, and the material suppliers will be paid the full amount of their invoices. The Owner shall retain ten percent (10%) from each Application for Payment, and an amount equal to ten percent (10%) of approved Purchase Order payments, up to fifty percent (50%) completion of the Work, then provided the Work is on schedule and satisfactory, and upon written request of the Contractor together with consent of surety and the recommendation of the Architect, the Owner shall approve a reduction in Retainage to five percent (5%) of the current Contract Sum plus Purchase Orders. No part of the five percent (5%) retainage shall be paid until after Substantial Completion of the Work, as defined in the General Conditions of the Contract for Construction. After Substantial Completion, if reasons for reduction in retainage are certified in writing by the Architect, a reduction to a lump sum amount less than the five percent (5%) retainage may be approved by the Owner when deemed reasonable. The minimum lump sum retainage shall be twice the estimated cost to correct deficient or incomplete work.

§ 5.1.9 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.

§ 5.2 FINAL PAYMENT

§ 5.2.1 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 Section 12.2.2 of AIA Document A201–2007 — KDE Version, and to satisfy other requirements, if any, which extend beyond final payment;
- .2 a final Certificate for Payment has been issued by the Architect; and
- .3 the Contractor provides the Owner with affidavits that all payrolls, bills for materials, supplies and equipment, and other indebtedness connected with the Work have been paid or otherwise satisfied, and with Consent of Surety for final payment.

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 INITIAL DECISION MAKER

The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201–2007 — KDE Version, 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 Section 15.3 of AIA Document A201–2007 — KDE Version, the method of binding dispute resolution shall be as follows:

(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, 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.)

- ☐ Arbitration pursuant to Section 15.4 of AIA Document A201–2007 — KDE Version
- ☐ Litigation in a court of competent jurisdiction where the Project is located
- ☐ Other: *(Specify)*

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2007 — KDE Version.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2007 — KDE Version.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2007 — KDE Version or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 Payments due and unpaid under the Contract shall bear interest from the date payment is due at such rate required by state law, or in the absence of law, at the legal rate prevailing at the time and place where the Project is located.
(Insert rate of interest agreed upon, if any.)

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

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

Init.

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

§ 8.6 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A101–2007, Standard Form of Agreement Between Owner and Contractor — KDE Version.

§ 9.1.2 The General Conditions are AIA Document A201–2007, General Conditions of the Contract for Construction — KDE Version.

§ 9.1.3 The Supplementary and other Conditions of the Contract:

(Either list Supplementary and other Conditions of the Contract here or refer to an exhibit attached to this Agreement.)

Document	Title	Date	Pages
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§ 9.1.4 The Specifications:

(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

Section	Title	Date	Pages
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Init.

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§ 9.1.5 The Drawings:

(Either list the Drawings here or refer to an exhibit attached to this Agreement.)

Number	Title	Date
--------	-------	------

§ 9.1.6 The Addenda, if any:

(Either list the Addenda here or refer to an exhibit attached to this Agreement.)

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

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents:

- .1 AIA Document E201™-2007, Digital Data Protocol Exhibit, if completed by the parties, or the following
- .2 Other documents, if any, listed below:

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(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201–2007 — KDE Version provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor’s bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)

- A. AIA Document A701–1997, Instructions to Bidders — KDE Version
- B. Contractor’s Form of Proposal
- C. KDE Purchase Order Summary Form

ARTICLE 10 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201–2007 – KDE Version.

(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201–2007 – KDE Version. Either list insurance and bond information here or refer to an exhibit attached to this Agreement.)

Type of Insurance or Bond

Limit of Liability or Bond Amount (\$0.00)

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

OWNER (Signature)

CONTRACTOR (Signature)

(Printed name and title)

(Printed name and title)

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SECTION 006500 - PERFORMANCE AND PAYMENT BOND

The following is AIA DOCUMENT A312 PERFORMANCE AND PAYMENT BOND (KDE VERSION).

The successful Bidder will be required to furnish the Owner a 100% Performance Bond and Payment Bond using the following form.

Kentucky Department of Education Version of AIA® Document A312™ – 2010

Performance Bond and Payment Bond



COMPARATIVE

NOTE: This comparative version of AIA Document A312–2010 shows additions and deletions to standard AIA content by the Kentucky Department of Education. Additions to AIA Document A312–2010 are underlined (addition); deletions are stricken (~~deletion~~). Publication of this modified version of AIA Document A312–2010 does not imply the American Institute of Architects' endorsement of any modification by the Kentucky Department of Education.

Kentucky Department of Education Version of AIA Document A312™ – 2010

Performance Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place
of business)

OWNER:

(Name, legal status and address)

CONSTRUCTION CONTRACT

Date:

Amount:

Description:

(Name and location)

THIS COMPARATIVE DOCUMENT IS FOR REFERENCE PURPOSES
ONLY AND IS NOT FOR USE.

BOND

Date:

(Not earlier than Construction Contract Date)

Amount:

Modifications to this Bond: ☐ None ☐ See Section 16

CONTRACTOR AS PRINCIPAL

Company: _____
(Corporate Seal)

SURETY

Company: _____
(Corporate Seal)

Signature: _____

Name _____

and Title: _____

(Any additional signatures appear on the last page of this Performance Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)



This comparative version of AIA Document A312–2010 is modified by the Kentucky Department of Education. Publication of this version of AIA Document A312 does not imply the American Institute of Architects' endorsement of any modification by the Kentucky Department of Education.

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

AIA Document A312–2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
- .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and

- .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 **Balance of the Contract Price.** The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 **Construction Contract.** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 **Contractor Default.** Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

§ 16.1 Surety Company shall be licensed to conduct business in the Commonwealth of Kentucky.

§ 16.2 Insurance Agency and Agents issuing bond shall be registered and licensed to conduct business in the Commonwealth of Kentucky with the appropriate Power of Attorney included.

THIS COMPARATIVE DOCUMENT IS FOR REFERENCE PURPOSES ONLY AND IS NOT FOR USE.

§ 16.3 Bond shall comply with all statutory requirements of the Commonwealth of Kentucky including the Kentucky Unemployment Insurance Law.

§ 16.4 No suit, action or proceeding by reason or any default whatever shall be brought on this bond after two (2) years from the date on which final payment of the contract fall due and provided further that if any alterations or additions which may be made under the contract or in the work to be done under it, or the giving by the Owner of any extension of time for the performance of the contract or any other forbearance on the part of either the Owner or the Principal shall not, in any way, release the Principal and Surety, or either of them, their heirs, executors, administrators, successors, or assigns for their liability hereunder. Notice to the Surety of any such alterations, extensions, or forbearance being expressly waived.

This obligation shall remain in force and effect until the performance of all covenants, terms and conditions herein stipulated and after such performance, it shall become null and void.

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

SURETY

Company:

(Corporate Seal)

Company:

(Corporate Seal)

Signature: _____

Name and Title: _____

Address _____

Signature: _____

Name and Title: _____

Address _____

Kentucky Department of Education Version of AIA Document A312™ – 2010

Payment Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place
of business)

OWNER:

(Name, legal status and address)

CONSTRUCTION CONTRACT

Date:

Amount:

Description:

(Name and location)

THIS COMPARATIVE DOCUMENT IS FOR REFERENCE PURPOSES
ONLY AND IS NOT FOR USE.

BOND

Date:

(Not earlier than Construction Contract Date)

Amount:

Modifications to this Bond: ☐ None ☐ See Section 18

CONTRACTOR AS PRINCIPAL

Company: _____

(Corporate Seal)

SURETY

Company: _____

(Corporate Seal)

Signature: _____

Name

and Title:

(Any additional signatures appear on the last page of this Payment Bond.)

Signature: _____

Name

and Title:

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)



This version of AIA Document A312–2010 is modified by the Kentucky Department of Education. Publication of this version of AIA Document A312 does not imply the American Institute of Architects' endorsement of any modification by the Kentucky Department of Education. A comparative version of AIA Document A312–2010 showing additions and deletions by the Kentucky Department of Education is available for review on the Kentucky Department of Education Web site.

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

AIA Document A312–2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

THIS COMPARATIVE DOCUMENT IS FOR REFERENCE PURPOSES ONLY AND IS NOT FOR USE.

§ 16.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

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§ 18.2 Insurance Agency and Agents issuing bond shall be registered and licensed to conduct business in the Commonwealth of Kentucky with the appropriate Power of Attorney included.

§ 18.3 Bond shall comply with all statutory requirements of the Commonwealth of Kentucky including the Kentucky Unemployment Insurance Law.

§ 18.4 No suit, action or proceeding by reason or any default whatever shall be brought on this bond after two (2) years from the date on which final payment of the contract fall due and provided further that if any alterations or additions which may be made under the contract or in the work to be done under it, or the giving by the Owner of any extension of time for the performance of the contract or any other forbearance on the part of either the Owner or the Principal shall not, in any way, release the Principal and Surety, or either of them, their heirs, executors, administrators, successors, or assigns for their liability hereunder. Notice to the Surety of any such alterations, extensions, or forbearance being expressly waived.

This obligation shall remain in force and effect until the performance of all covenants, terms and conditions herein stipulated and after such performance, it shall become null and void.

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

Company:

(Corporate Seal)

SURETY

Company:

(Corporate Seal)

Signature: _____

Name and Title: _____

Address _____

Signature: _____

Name and Title: _____

Address _____

SECTION 007000 - GENERAL CONDITIONS

The following pages are AIA DOCUMENT A201, GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION. (KDE VERSION).

Kentucky Department of Education Version of AIA® Document A201™ – 2007

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

THE OWNER:

(Name, legal status and address)

THE ARCHITECT:

(Name, legal status and address)

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Owner direct Purchase Orders, Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by separate contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2 and certify termination of the Agreement under Section 14.2.2.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as “all” and “any” and articles such as “the” and “an,” but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications and Other Instruments of Service

§ 1.5.1 The Architect and the Architect’s consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect’s or Architect’s consultants’ reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the Instruments of Service provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the Instruments of Service on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and the Architect’s consultants.

§ 1.6 Transmission of Data in Digital Form

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they shall endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner’s approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term “Owner” means the Owner or the Owner’s authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of or enforce mechanic’s lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner’s interest therein.

§ 2.2 Information and Services Required of the Owner

§ 2.2.1 (Not Used)

§ 2.2.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.2.3 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.2.4 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.2.5 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.3 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.4 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect or failure. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.2.3, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for

information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall make Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely written notice to the Owner and Architect and shall not proceed with that portion of the Work without further written instructions from the Architect. If the Contractor is then instructed to proceed with the required means, methods, techniques, sequences or procedures without acceptance of changes proposed by the Contractor, the Owner shall be solely responsible for any loss or damage arising solely from those Owner-required means, methods, techniques, sequences or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work authorized by the Architect in accordance with Sections 3.12.8 or 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further

warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 21 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may proceed as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the name and qualifications of a proposed superintendent. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to the proposed superintendent or (2) that the Architect requires additional time to review. Failure of the Architect to reply within the 14 day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

§ 3.10.2 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect's approval. The Architect's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. Their purpose is to demonstrate the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design

concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting and patching shall be restored to the condition existing prior to the cutting, fitting and patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Owner shall retain an architect lawfully licensed to practice architecture or an entity lawfully practicing architecture in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 4.1.2 Duties, responsibilities and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.

§ 4.1.3 If the employment of the Architect is terminated, the Owner shall employ a successor architect as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment, and, at the discretion of the Owner may be the Owner's representative during the one-year period for correction of Work described in Section 12.2. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Section 3.3.1.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications Facilitating Contract Administration

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Architect about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance

with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5 and 3.12. The Architect's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Architect, of any construction means, methods, techniques, sequences or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more project representatives to assist in carrying out the Architect's responsibilities at the site. The duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design)

proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person or entity previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Article 15.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights that apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Architect apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a separate contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a separate contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or separate contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner and each separate contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Architect; a Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

§ 7.1.4 Proposed Change in the Work equal to or exceeding \$25,000 additive or deductive, shall be subject to approval by the Kentucky Department of Education prior to execution of the Change Order by the Owner.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.7.

§ 7.3.4 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 7.3.5 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.6 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit not to exceed fifteen (15%) of the net cost of the change. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.7 shall be limited to the following:

- .1 Costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
- .2 Costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
- .5 Additional costs of supervision and field office personnel directly attributable to the change.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect has authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes will be effected by written order signed by the Architect and shall be binding on the Owner and Contractor.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article 11 to be

furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit to the Architect, before the first Application for Payment, a schedule of values allocating the entire Contract Sum to the various portions of the Work and prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. Such application shall be notarized, if required, and supported by such data substantiating the Contractor's right to payment as the Owner or Architect may require, such as copies of requisitions from Subcontractors and material suppliers, and shall reflect retainage as stipulated in Section 9.3.4.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the

Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.3.4 When Owner direct Purchase Orders are used, retainage that would otherwise be held on materials and equipment shall transfer to the Contractor, and the material suppliers will be paid the full amount of their invoices. The Owner shall retain ten percent (10%) from each Application for Payment, and an amount equal to ten percent (10%) of approved Purchase Order payments, up to fifty percent (50%) completion of the Work, then provided the Work is on schedule and satisfactory, and upon written request of the Contractor together with consent of surety and the recommendation of the Architect, the Owner shall approve a reduction in Retainage to five percent (5%) of the current Contract Sum plus Purchase Orders. No part of the five percent (5%) retainage shall be paid until after Substantial Completion of the Work, as defined in Section 9.8. herein. After Substantial Completion, if reasons for reduction in retainage are certified in writing by the Architect, a reduction to a lump sum amount less than the five percent (5%) retainage may be approved by the Owner when deemed reasonable. The minimum lump sum retainage shall be twice the estimated cost to correct deficient or incomplete work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data comprising the Application for Payment, that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated and that the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Architect. The issuance of a Certificate for Payment will further constitute a representation that the Contractor is entitled to payment in the amount certified. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a separate contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Architect will reflect such payment on the next Certificate for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents or as required by state law, whichever is more restrictive, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor no later than seven days after receipt of payment from the Owner the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor, except as may otherwise be required by law.

§ 9.6.5 Contractor payments to material and equipment suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The ability to occupy and utilize the Work or designated portion thereof shall require an

occupancy permit issued by the Kentucky Department of Housing, Building, and Construction and any other agencies that have statutory authority and approval requirements.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection and, when the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

- .1 Upon receipt and approval of the final Application for Payment, for each Contract and Purchase Order, if any, the Architect will prepare, and the Architect and Owner shall complete their portion of the Kentucky Department of Education BG-4 Contract Closeout Form – 2013, and forward the board-approved BG-4 form to the Kentucky Department of Education with a copy of the final Certificate for Payment upon the Board authorizing the BG-4 form, accepting the Work, and approving final payment to the Contractor or Material Supplier.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents; or
- .3 terms of special warranties required by the Contract Documents.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

§ 10.2.3 The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and report the condition to the Owner and Architect in writing.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall indemnify the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Liability Insurance

§ 11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations and completed operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 Claims under workers' compensation, disability benefit and other similar employee benefit acts that are applicable to the Work to be performed;
- .2 Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 Claims for damages insured by usual personal injury liability coverage;
- .5 Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 Claims for bodily injury or property damage arising out of completed operations; and
- .8 Claims involving contractual liability insurance applicable to the Contractor's obligations under Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents. Such insurance shall be no less than the following amounts:

- | | |
|----------------------|--|
| (1) Public Liability | \$200,000.00 one person/maximum each person
\$500,000.00 one accident/maximum each person |
| (2) Property Damage | \$200,000.00 one accident/maximum
\$500,000.00 aggregate |

§ 11.1.2.1 The insurance required by Section 11.1.1 shall be written for not less than the following limits, or greater if required by law:

- (1) Worker's Compensation:
 - a. State Statutory
 - b. Applicable Federal (e.g., Longshoreman's) Statutory
 - c. Employer's Liability \$500,000
- (2) Comprehensive or Commercial General Liability (including Premises-Operations; Independent Contractor's Protection; Product Liability and Completed Operations; Broad Form Property Damage);
 - a. General Aggregate (except Products-Completed Operations) \$1,000,000
 - b. Products-Completed Operations Aggregate \$1,000,000
 - c. Personal/Advertising Injury (per person/organization) \$1,000,000
 - d. Each Occurrence (Bodily Injury and Property Damage) \$1,000,000
 - e. Limit per Person Medical Expense \$10,000
 - f. Exclusions of Property in Contractors Care, Custody or Control will be eliminated.
 - g. Property Damage Liability Insurance will provide Coverage for Explosion, Collapse, and Underground Damage.
- (3) Contractual Liability:
 - a. General Aggregate \$1,000,000
 - b. Each Occurrence (Bodily Injury and Property Damage) \$1,000,000
- (4) Automobile Liability:
 - a. Bodily Injury \$500,000 Each Person
\$1,000,000 Each Accident
 - b. Property Damage \$500,000 Each Accident, or
a combined single limit of \$1,000,000
- (5) Liability coverage for the Owner, the Architect, the Architect's Consultants and others listed in the Supplementary Conditions will be provided (subject to customary exclusions for professional liability), by endorsement as additional insured's on the Contractor's Liability Policy.
- (6) Excess Liability Umbrella Form:
 - a. General Aggregate \$1,000,000
 - b. Each Occurrence \$1,000,000

§ 11.1.2.2 There shall be an endorsement in each of the above policies reading as follows: "It is hereby agreed that in the event of a claim arising under this policy, the company may not deny liability be reason of the insured being a state, county, municipal corporation or governmental agency."

§ 11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work and thereafter upon renewal or replacement of each required policy of insurance. These certificates and the insurance policies required by this Section 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. An additional certificate evidencing continuation of liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment as required by Section 9.10.2 and thereafter upon renewal or replacement of such coverage until the expiration of the time required by Section 11.1.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness.

§ 11.1.4 The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations.

§ 11.2 Owner's Liability Insurance

The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.3 Property Insurance

§ 11.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract Modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance shall be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for Architect's and Contractor's services and expenses required as a result of such insured loss.

§ 11.3.1.2 If the Owner does not intend to purchase such property insurance required by the Contract and with all of the coverages in the amount described above, the Owner shall so inform the Contractor in writing prior to commencement of the Work. The Contractor may then effect insurance that will protect the interests of the Contractor, Subcontractors and Sub-subcontractors in the Work, and by appropriate Change Order the cost thereof shall be charged to the Owner. If the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain insurance as described above, without so notifying the Contractor in writing, then the Owner shall bear all reasonable costs properly attributable thereto.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ 11.3.1.4 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or

companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 Boiler and Machinery Insurance

The Owner shall purchase and maintain boiler and machinery insurance required by the Contract Documents or by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner; this insurance shall include interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and the Owner and Contractor shall be named insureds.

§ 11.3.3 Loss of Use Insurance

The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused. The Owner waives all rights of action against the Contractor for loss of use of the Owner's property, including consequential losses due to fire or other hazards however caused.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described herein or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost thereof shall be charged to the Contractor by appropriate Change Order.

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

§ 11.3.6 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

§ 11.3.7 Before an exposure to loss may occur, the Owner shall provide the Architect and the Kentucky Department of Education with certificates of insurance coverage required by this Section 11.3.

§ 11.3.7 Waivers of Subrogation

The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Architect, Architect's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner as fiduciary shall, upon occurrence of an insured loss, give bond for proper performance of the Owner's duties. The cost of required bonds shall be charged against proceeds received as fiduciary. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement between the Owner and Contractor. If after such loss no other special agreement is made and unless the Owner terminates the Contract for convenience, replacement of damaged property shall be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved in the manner selected by the Owner and Contractor as the method of binding dispute resolution in the Agreement. If the Owner and Contractor have selected arbitration as the method of binding dispute resolution, the Owner as fiduciary shall make settlement with insurers or, in the case of a dispute over distribution of insurance proceeds, in accordance with the directions of the arbitrators.

§ 11.4 Performance Bond and Payment Bond

§ 11.4.1 Unless otherwise provided, when the Contract Sum exceeds twenty-five thousand dollars (\$25,000) the Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder. A surety company authorized to do business in Kentucky shall execute bonds, and the cost thereof shall be included in the Contract Sum. Unless otherwise provided, the amount of each bond shall be equal to 100% of the Contract Sum plus Purchase Orders, or 100% of the Lump Sum Base Bid plus or minus accepted Alternates, whichever is greater.

§ 11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

§ 12.2 Correction of Work

§ 12.2.1 Before or After Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the

Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.1.1 None of the Contract Documents for this project shall be construed against the party preparing documents on the grounds that the party prepared or drafted the document, or any portion thereof.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

§ 13.3 Written Notice

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.4 Rights and Remedies

§ 13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

§ 13.4.2 No action or failure to act by the Owner, Architect or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach there under, except as may be specifically agreed in writing.

§ 13.5 Tests and Inspections

§ 13.5.1 Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.5.2 If the Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.5.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.5.3, shall be at the Owner's expense.

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Architect's services and expenses shall be at the Contractor's expense.

§ 13.5.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.5.5 If the Architect is to observe tests, inspections or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.6 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as required by state law, or in the absence of law, at the legal rate prevailing at the time and place where the Project is located.

§ 13.7 Time Limits on Claims

The Owner and Contractor shall commence all claims and causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the final dispute resolution method selected in the Agreement within the time period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all claims and causes of action not commenced in accordance with this Section 13.7.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any

other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor promptly, upon the Contractor's request, reasonable evidence as required by Section 2.2.1.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor or a Subcontractor, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, repeated suspensions, delays or interruptions of the entire Work by the Owner as described in Section 14.3 constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred by reason of such termination, and damages.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the above reasons exist, the Owner, upon certification by the Initial Decision Maker that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case

may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim.

§ 15.1.2 Notice of Claims

Claims by either the Owner or Contractor must be initiated by written notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3 Continuing Contract Performance

Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents. The Architect will prepare Change Orders and issue Certificates for Payment in accordance with the decisions of the Initial Decision Maker.

§ 15.1.4 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.5 Claims for Additional Time

§ 15.1.5.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, written notice as provided herein shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.5.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

§ 15.1.6 Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.6 shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those arising under Sections 10.3, 10.4, 11.3.9, and 11.3.10, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim arising prior to the date final payment is due, unless 30 days have passed after the Claim has been referred to the Initial Decision Maker with no decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of such request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of an initial decision, demand in writing that the other party file for mediation within 60 days of the initial decision. If such a demand is made and the party receiving the demand fails to file for mediation within the time required, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.6 shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation, which shall be in accordance with the Construction Industry Mediation Procedures of the American Arbitration Association in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as the Owner and Contractor under this Agreement.

Sample

SECTION 008100 - SPECIAL CONDITIONS

PART 1 - GENERAL

- 1.1 **DAMAGED FACILITIES:** The contractor shall repair and/or replace any section of existing roads, streets, sidewalks curbs, utilities and structures damaged by reason of work performed during the construction of this project. Disturbed lawn areas shall be seeded and graded as required to restore them to their original condition. Care shall be taken to avoid damage to existing buildings, landscape and other improvements.
- 1.2 **INTERRUPTION OF UTILITIES:** Utility services to existing facilities shall not be interrupted unless absolutely necessary. Interruptions shall be of minimum duration and shall be scheduled to cause the least possible inconvenience. In all cases, the Owner shall be notified well in advance of an anticipated interruption of utilities.
- 1.3 Due to the nature of this project, sequencing and scheduling of contraction must be coordinated with the Owner in order to allow school to remain operational thru-out the school year. The school will be occupied during construction for normal summer activities.
- 1.4 **TEMPORARY UTILITIES:**
 - A. **Water:** The Contractor shall furnish all water for the construction of this project.
 - B. **Electricity** The Contractor shall furnish all electricity for the construction of this Project.
 - C. Also see Section 015000 - Temporary Facilities And Controls.
- 1.5 **VISITING THE SITE:** Bidders, before submitting proposal, shall visit and examine the site to satisfy themselves as to the nature and the scope of the construction and any difficulties attempting the execution. The submission of a proposal will be construed as evidence that visit and examination has been made. Later claims for labor, equipment or materials required or difficulties encountered which could have been foreseen had such an examination been made, will not be recognized.
- 1.6 **LISTING SUBCONTRACTORS & MATERIAL SUPPLIERS:** Bidders are required to furnish with their bid a listing of proposed subcontractors, materials, and material suppliers as required by the Bid Forms. These lists are the basis by which the Contractor binds himself to those listed. The contractor cannot change any listing without the written approval of the Architect. Failure to furnish a complete listing or indicating by G.C. or as specified is not acceptable and is grounds for rejection of a bid.
- 1.7 **DIVISION OF SPECIFICATIONS:** Division of specifications into sections is done for the convenience of reference and is not intended to control contractors in dividing work among subcontractors or to limit scope of work performed by any trade under any given section.

- 1.8 REJECTION OF BIDS: In addition to the stipulation set forth in the Instructions to Bidders, the Owner further reserves the right to reject the bid of any bidder or General Contractor who does not habitually perform roofing work with their own forces.
- 1.9 TRADE NAMES: Whenever manufactured products, devices, or materials are specified under particular trade name of manufacturer, it shall not be construed to mean that these are closed specifications, whether the clause "or approved equal", is included or not. Other products comparable in type, quality, utility, and price, are acceptable if approved by the Architect and the Owner.

The burden of proof for equality shall, in all cases, rest with the Contractor. Approval of unlisted products must be issued in the form of addendum no less than 4 days prior to the Bid date.

1.10 ORDERING MATERIALS:

- A. Immediately after the award of contract for this work, the Contractor shall determine source of supply for all materials and length of time required for their delivery, including materials of subcontractors.
- B. If for any reason, any item specified will not be available when needed and the Contractor can show that he has made reasonable persistent effort to obtain item in question, the Architect is to be notified in writing within ten (10) days after contract is signed, and he will either determine source of supply, or arrange with the Owner for appropriate substitute, or extension of time, otherwise, Contractor will not be excused for delays in securing materials specified and will be held accountable if completion of building is thereby delayed.

1.11 CODES AND ORDINANCES

- A. All branches of the work shown on the plans or specified shall be executed in strict compliance with all applicable local and state regulations and codes, and shall be in compliance with all National Codes, when same have jurisdiction.
- B. All Bidders must be qualified, and meet all requirements provided and/or required under any local and/or state statute, code, ordinance, or rule, governing performance of the type of work for which he submits a bid and be able to submit proof thereof upon request.

- 1.12 DISPUTES: The Contractor is hereby put on notice that it is his contractual obligation to adjust differences between his several subcontractors. Attempts to have Architect settle disputes between Contractor and his subcontractors or between subcontractors will not be given consideration.

- 1.13 STORAGE OF MATERIALS: Storage of materials and equipment will be the responsibility of the Contractor providing same, and shall be executed so as not to block entrance to, or create a hazard in access to facilities.

- 1.14 CUSTODY OF MATERIALS: The Contractor is fully responsible for the protection of materials, both from damage and theft. Cost for replacing materials due to damage, misuse or theft is the responsibility of the Contractor.
- 1.15 ALLOCATION OF WORK: Where certain materials are specified to be installed under various headings, it shall be the responsibility of the General Contractor to re-allocate such work under the proper subcontractor, if the specification is in conflict with local jurisdiction.
- 1.16 NOT IN CONTRACT: Items indicated on the drawings as "N.I.C." or "Not In Contract" are shown for explanatory purposes only and are not to be included in this contract.
- 1.17 FIELD MEASUREMENTS: The contractor and each subcontractor shall be responsible for verification of all measurements at the building site before ordering any materials or doing any work. No extra charge or compensation shall be allowed due to differences between actual dimensions and dimensions which may be found before the contractor proceeds with the work in the affected area.
- 1.18 EXPLOSIVES: No explosives shall be used on this project without written approval from the Owner.
- 1.19 FIELD OFFICES: The Contractor shall maintain equipped with a telephone. When directed by the Owner, the temporary office shall be removed. Field office shall be maintained in reasonably clean condition.
- 1.20 SANITARY FACILITIES: At the beginning of the project, before any work is started, the General Contractor shall furnish, install, and maintain ample sanitary facilities for the workmen. As the needs arise, enclosed temporary toilets in sufficient number shall be placed as required. Permanent toilets installed under this contract shall not be used during construction of this project. Drinking water shall be provided from an approved safe source, so piped or transported as to be kept clean and fresh and served from single service containers or satisfactory types of sanitary drinking stands or fountains. All such facilities and services shall be furnished in strict accordance with current health regulations.
- 1.21 CLEANING: It shall be the General Contractor's responsibility to keep the building and site clean at all times. Each subcontractor shall remove his own debris and excess material daily.
- 1.22 CLEANING STREETS: The Contractor shall keep public streets clean. When site conditions are such that construction traffic may track the streets with mud, etc., the Contractor shall establish and use wash-off stations. If street tracking occurs, it shall be immediately cleaned.
- 1.23 TEMPORARY ENCLOSURES: Temporary enclosures shall be provided at door, window and other openings in floors, walls and necessitated by weather conditions and for safety and security. Enclosures shall be erected in a safe, suitable manner of appropriate materials, maintained in good repair and removed when no longer needed. Protect adjacent work from damage as necessary.

1.24 PROJECT DOCUMENTS

- A. The Architect or his consultants do not imply or expressly warrant and/or guarantee that the contract documents are without error or inconsistencies. The Contractor is responsible for notifying the Architect of any errors or inconsistencies in the contract documents prior to proceeding with the work.
- B. In the case of an inconsistency between Drawings and Specifications or within either Document not clarified by addendum the better quality or greater quantity of Work shall be provided in accordance with the Architect's interpretation.

1.25 SCHEDULE OF WORK: Ordering of materials may begin upon receipt of an executed Contract or a Notice to Proceed. Work at the site shall not begin until on or after receipt of the executed contract.

1.26 PERMITTED WORK HOURS:

- A. Beginning May 28, 2022 until August 8, 2022, the Contractor will have 24 hours a day, 7 days a week access to the site (work hours are at the discretion of the Contractor).
- B. Beginning October 8, 2022 until October 16, 2022 the Contractor will have 24 hours a day, 7 days a week access to the site.
- C. Beginning December 21, 2022 until January 3, 2023 the Contractor will have 24 hours a day, 7 days a week access to the site.
- D. All other days shall be restricted to no work, unless specifically approved in writing by the owner.

CONTRACTOR SHALL COORDINATE WORK, STORAGE, TRAFFIC LOCATIONS WITH THE OWNER TO MINIMIZE DISTURBANCE OF SCHOOLS NORMAL SUMMER ACTIVITIES.

1.27 TIME FOR COMPLETION:

- Substantial completion shall be December 31, 2022
- Final completion shall be January 3, 2023

1.28 EXTENSION OF CONTRACT TIME:

"An extension day will be granted for each day that there is a morning forecast of 50 percent or greater chance of precipitation" for that day. Contractor shall be responsible for maintaining adequate records of proof. Extension of time shall be granted for

unexpected and reasonable delays in delivery of materials. Contractor is responsible for documentation (from manufacturer and supplier) of the delivery delay and cause. Architect/Owner shall review documents and make a determination as to validity of delay.

So called snow days, cold days, etc., will be given consideration for time extension as follows:

- A “snow day” will be granted for days when snow accumulation on the roof will prevent work that day. Contractor is to provide a reasonable effort to remove minor amounts of snow in order to proceed with work.
- A “cold day” will be granted when the day’s temperature if not predicted to reach an acceptable temperature for application as defined by the manufacturer’s written application criteria.

1.29 **LIQUIDATED DAMAGES:** As actual damages for any delay in completion are difficult to determine, the Contractor and their sureties shall be liable to pay to the Owner, the following sums as fixed, and agreed, liquidated damages for each calendar day of delay, until the work is “substantially complete”, and applies also to work not completed by the final completion date. **LIQUATED DAMAGES SHALL BE \$1,000 PER CALENDAR DAY & SHALL BE APPLICABLE TO BOTH SUBSTANTIAL AND FINAL COMPLETION**

1.30 **FEES, PERMITS AND NOTICES:**

A. Contractor is responsible for, but not limited to, costs associated with:

1. Building Permit
2. Contractor License
3. Disposal of Removed Materials

1.27 “The Kentucky Fairness in Construction Act, KRS 371.400 to 371.900, applies to this construction contract, and where there is a conflict between the terms and conditions of these contract documents and the provisions of the Kentucky Fairness in Construction Act, the latter shall prevail.”

“Within 10 days after award of contract and as required by KRS 45A.343, Section (2) (a), each Contractor and all Subcontractors performing work under the contract shall in writing to the Owner reveal any final determination of a violation by the Contractor or Subcontractor within the previous 5 year period pursuant to KRS Chapters 136, 139, 141, 337, 338, 341 and 342 that apply to the Contractor or Subcontractor.

As required by KRS 45A.343, Section (2) (b), Contractors and Subcontractors performing work under the contract shall be in continuous compliance with the provisions of KRS

Chapters 136, 139, 141, 337, 338, 341 and 342 that apply to the Contractor or Subcontractor for the duration of the contract.”

1.28 Bidders/Contractors obligation to complete the project:

- A. Bidders/Contractors are responsible for including in their bid all necessary provisions for labor, materials and installation.
- B. The absence of careful consideration of the project requirements does not relieve the Bidder/Contractor of their responsibility to completely fulfill the requirements for completing the project.
- C. No consideration for a change in the contract sum will be given on account of the Bidder's/Contractor's failure to understand that which, by the normal course of the project, is revealed as necessary for project completion.
- D. Bidders/Contractors are advised that the plans and specifications shall not be used to exploit the contract provisions for changes in the work.
- E. Where industry standards, manufacturer's standards, code provisions, and craftsmanship dictates greater or higher quality of work, the greater and higher quality of work shall be done.
- F. Where work is damaged or otherwise compromised as a result of the construction, all costs for correction are the responsibility of the Bidder/Contractor.
- G. In the event there is a conflict or discrepancy within the project documents, the bidder shall include in his price the greater or higher quality/quantity of work. The bidder shall also immediately inform the Architect of the conflict or discrepancy.

1.29 The Contractor will be furnished free of charge three (3) copies of Drawings and Project Manuals. Additional sets may be purchased through JKS Architecture for \$75.00 per set.

- A. Disposal of removed materials.

1.30 All Contractors, General Contractors, Subcontractors, etc., are required to obtain local business licenses and/or similar costs for doing business in the city / county.

1.31 WORKER'S CODE OF CONDUCT:

- A. Workers on school property shall wear shirts with short or long sleeves, shall not: possess alcohol, smoke, possess illegal drugs, possess firearms, use foul language or fraternize with students and staff.
- B. Workers convicted of felony sex crimes are prohibited from work on school projects/grounds.

- C. Workers/Contractor shall minimize construction noise, debris, traffic to the extent practical. During school hours ie. No radios, no powder-activated or pneumatic equipment, sawing, hammering, etc. unless approved by the Owner.

1.32 BACKGROUND CHECKS:

BACKGROUND CHECKS ARE NOT REQUIRED FOR WORKERS WHO WILL NOT BE IN DIRECT CONTACT WITH SCHOOL PERSONEL OR STUDENTS.

- 1.33 The Owner reserves the right to refuse access to school property to any person as they deem necessary for the safety and protection of students, school personnel or property.

- 1.34 All new materials used in this project shall be asbestos free.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 008100

SECTION 008112 – AFFIDAVIT OF ASSURANCES

- 1.1 The following is the Division of Code Enforcement’s “Affidavit of Assurances pursuant of KRS 198B.060 (10). The General Contractor shall complete this affidavit and submit it to the Ky Division of Codes Enforcement prior to beginning work on site.

END OF SECTION 008112



Environmental and Public Protection Cabinet
Office of Housing, Buildings and Construction
Division of Building Codes Enforcement
101 Sea Hero Rd
Frankfort, KY 40601

Case Number: _____
Project Name: _____
City/County: _____

**AFFIDAVIT OF ASSURANCES
PURSUANT OF KRS 198B.060(10)**

Comes the Applicant, (Please Print Name) _____ and
states pursuant to KRS 198B.060(10), that all contractors and subcontractors employed or that will be
employed on any activity under the above referenced project shall be in compliance with the
Commonwealth of Kentucky requirements for Workers' Compensation Insurance (according to KRS
Chapter 342) and Unemployment Insurance (according to KRS Chapter 341).

This the _____ day of _____, 20____.

CONTRACTOR, OWNER OR OWNER'S AGENT

The foregoing Affidavit of Assurance was acknowledged and sworn to before me by
_____, Applicant, on this the _____ day of _____, 20____.

NOTARY PUBLIC
KENTUCKY STATE AT LARGE

MY COMMISSION EXPIRES _____, 20____.

Note: This Affidavit of Assurances shall be submitted for any project under State jurisdiction and where there is no
local building official. Persons claiming exemption to the Workers' Compensation Laws should file a Waiver with the
Kentucky Department of Workers' Claims, Division of Security & Compliance, 657 1270 Louisville Road, Frankfort,
Kentucky 40601. (800/554-8601).



SECTION 010510 - FIELD ENGINEERING

PART 1 - GENERAL

- 1.1 Drawings and General Provisions of the Contract, including Divisions 0 and 1 Specification Sections, shall apply to the work of this section.
- 1.2 Work included: Contractor to provide such field engineering services (by licensed surveyor) as are required for proper completion of the Work including, but not necessarily limited to:
 1. Establishing and maintaining lines and levels;
 2. Items provided by the Contractor as part of his means and methods of construction.
- 1.3 Related work:
 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
 2. Additional requirements for field engineering also may be described in other Sections of these Specifications.
- 1.4 Upon request of the Architect, submit:
 1. Data demonstrating qualifications of persons proposed to be engaged for field engineering services.
 2. Documentation verifying accuracy of field engineering work.

END OF SECTION 010510

SECTION 010680 - DEFINITIONS AND STANDARDS

Definitions:

General: Except as specifically defined otherwise, the following definitions supplement definitions of the contract. Drawings and General Provisions of the Contract, including Divisions 0 and 1 Specification Sections, shall apply to the work of this section.

General Requirements: Provisions of Division-1 sections of these specifications.

Indicated: Shown on the drawings by notes, graphic or schedules, or written into other portions of the contract documents. The terms such as "shown", "noted", "scheduled" and "specified" have same meaning as "indicated", and are used to assist the reader in locating particular information.

Directed, Requested, Approved, Accepted, etc.: These terms imply "by the Architect/Engineer", unless otherwise indicated.

Approved by Architect/Engineer: In no case releases Contractor from responsibility to fulfill requirements of contract documents.

Furnish: Supply and deliver to the project site, ready for unloading, unpacking, assembly, installation, and similar subsequent requirements.

Install: Operations at project site, including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar requirements.

Provide: Furnish and install, complete and ready for intended use.

Installer: Entity (firm or person) engaged to install work, by Contractor, subcontractor or sub-subcontractor. Installers are required to be skilled in work they are engaged to install.

Specification Text Format: Underscoring facilitates scan reading, no other meaning. Imperative language is direct at Contractor, unless otherwise noted.

Overlapping/Conflicting Requirements: Most stringent (generally most costly) applies and will be enforced, unless more detailed language written directly into contract documents clearly indicates that a less stringent requirement is acceptable. Refer uncertainties to Architect/Engineer for decision before proceeding. Where optional requirements are specified option is intended to be Contractor's unless otherwise indicated.

Minimum Requirements: Indicated requirements are for a specific minimum acceptable level of quality/quantity, as recognized in the industry. Actual work must comply (within specified tolerances), or may exceed minimums within reasonable limits. Refer uncertainties to Architect/Engineer before proceeding.

Abbreviations, Plural Words: Abbreviations, where not defined in contract documents, will be interpreted to mean the normal construction industry terminology, determined by recognized grammatical rules, by the Architect/Engineer. Plural words will be interpreted as plural where applicable for context of contract documents.

Testing Laboratory: An independent entity engaged for the project to provide inspections, tests, interpretations, reports and similar services.

Standards and Regulations:

Industry Standards: Applicable standards of construction industry have same force and effect on performance of the work as if copied directly into contract documents or bound and published therewith. Standards referenced in contract documents or in governing regulations have precedence over non-referenced standards, insofar as different standards may contain overlapping or conflicting requirements. Comply with standards in effect as of date of contract documents, unless otherwise indicated.

Abbreviations: Where abbreviations or acronyms are used in contract documents, they mean the well recognized name of entity in building construction industry; refer uncertainties to Architect/Engineer before proceeding.

A/E: Architect and/or Engineer.

END OF SECTION 010680

SECTION 012000 - PROJECT MEETINGS

PART 1 - GENERAL

- 1.1 Drawings and General Provisions of the Contract, including Divisions 0 and 1 Specification Sections, shall apply to the work of this section.
- 1.2 Work included: To enable orderly review during progress of the Work, and to provide for systematic discussion of problems, the Contractor will conduct project meetings throughout the construction period.
- 1.3 Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Special Conditions, and Sections in Division 1 of these Specifications.
 - 2. The Contractor's relations with his subcontractors and materials suppliers, and discussions relative thereto, are the Subcontractor's responsibility and normally are not part of project meetings content.
- 1.4 For those persons designated by the Contractor to attend and participate in project meetings, provide required authority to commit the Subcontractor to solutions agreed upon in the project meetings.
- 1.5 Agenda items: To the maximum extent practicable, advise the Contractor at least 24 hours in advance of project meetings regarding items to be added to the agenda.
- 1.6 Minutes:
 - 1. The Contractor will compile minutes of each project meeting, and will furnish three copies to the Subcontractor and required copies to the Owner and Architect.
 - 2. Recipients of copies may make and distribute such other copies as they wish.

PART 2 - PRODUCTS - (No Products in this Section).

PART 3 - EXECUTION

- 3.1 Except as noted below for Pre-construction Meeting, project meetings will be held every two weeks.
- 3.2 Contractor will coordinate as necessary to establish mutually acceptable schedule for meetings.
- 3.3 The Contractor will establish meeting location. To the maximum extent practicable, meetings will be held at the job site.
- 3.4 Pre-construction Meeting will be scheduled to be held within 10 working days after the Owner has authorized the Contractor to proceed with the Work.
 - 1. Provide attendance by authorized representatives of the Subcontractors.

2. The Contractor will advise other interested parties, including the Owner, and may request their attendance.
- 3.5 Minimum agenda: Data will be distributed and discussed on at least the following items.
1. Organizational arrangement of Contractor and Subcontractor's forces and personnel, and those of materials suppliers.
 2. Channels and procedures for communication.
 3. Construction schedule, including sequence of critical work.
 4. Contract Documents, including distribution of required copies of original Documents and revisions.
 5. Processing of Shop Drawings and other data submitted to the Contractor for review.
 6. Processing of Revisions Documents, field decisions, and Change Orders.
 7. Rules and regulations governing performance of the Work; and
 8. Procedures for safety and first aid, security, quality control, housekeeping, and related matters.
- 3.6 Project Meeting Attendance:
1. To the maximum extent practicable, assign the same person or persons to represent the Contractor and Subcontractors at project meetings throughout progress of the Work.
 2. Subcontractors, materials suppliers, and others will be invited to attend those project meetings in which their aspect of the Work is involved.
- 3.7 Project Meeting Minimum Agenda
1. Review, revise as necessary, and approve minutes of previous meetings.
 2. Review progress of the Work since last meeting, including status of submittals for approval.
 3. Identify problems which impede planned progress.
 4. Develop corrective measures and procedures to regain planned schedule.
 5. Complete other current business.
- 3.8 Revisions to minutes:
1. Unless published minutes are challenged in writing prior to the next regularly scheduled progress meeting, they will be accepted as properly stating the activities and decisions of the meeting.
 2. Persons challenging published minutes shall reproduce and distribute copies of the challenge to all indicated recipients of the particular set of minutes.

3. Challenge to minutes shall be settled as priority portion of "old business" at the next regularly scheduled meeting.

END OF SECTION 012000

SECTION 013400 - SUBMITTALS AND SUBSTITUTIONS

PART 1 - GENERAL

- 1.1 Drawings and general provisions of the Contract, including Divisions 0 and 1 Specification Sections, shall apply to the work of this section.
- 1.2 Work included: Make submittals required by the Contract Documents, and revise and resubmit as necessary to establish compliance with the specified requirements.
- 1.3 Related work:
 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary conditions, and Section in Division 1 of these Specifications.
 2. Individual requirements for submittals also may be described in pertinent Sections of these Specifications.
- 1.4 Work not included:
 1. Unrequired submittals will not be reviewed by the Architect.
 2. The Contractors and subcontractors to provide drawings, setting diagrams, and similar information to help coordinate the Work.
- 1.5 Coordination of submittals:
 1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
 2. Verify that each item and the submittal for it conform in all respects with the specified requirements.
- 1.6 Substitutions:
 1. The Contract is based on the standards of quality established in the Contract Documents. Substitutions will be considered only when approved by addendum no less than 7 days prior to bid date.
 2. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved in writing for this Work by the Architect.
- 1.7 "Or equal":
 1. Where the phrase "or equal", or "equal as approved by the Architect", occurs in the Contract Documents, do not assume that the materials, equipment, or methods will be approved as equal unless the item has been specifically so approved for this Work by the Architect, by addendum no less than 7 days prior to bid date.
 2. The decision of the Architect shall be final.
- 1.8 Make submittals of Shop Drawings, Samples, substitution request, and other items in accordance with the provisions of this Section.

PART 2 - PRODUCTS

- 2.1 Scale and measurements: Make Shop Drawings accurately to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the Work.
- 2.2 All shop drawings shall be submitted as electronic files in PDF format. There shall be one (1) PDF file per submittal and the filename shall contain a unique & consecutive number prefix, a brief description, and a spec section reference. For example:
"001 - Rebar for footings 0033000.pdf".
"002 - Concrete mix designs 0033000.pdf"
If a re-submittal is required, then the prefix shall change as follows:
"002.1 - Concrete mix designs re-submittal 0033000.pdf"
- 2.3 Review comments of the A/E will be shown on the electronic file when it is returned to the Contractor. The Contractor may print and distribute such copies as are required for his purposes.
- 2.4 Where contents of submitted literature from manufacturers includes data not pertinent to the submittal, clearly show which portions of the contents is being submitted for review.
- 2.5 Provide Sample or Samples identical to the precise article proposed to be provided.
- 2.6 Number of Samples required:
1. Unless otherwise specified, submit Samples in the quantity, which is required to be returned, plus two which will be retained by the Architect.
 2. By pre-arrangement in specific cases, a single Sample may be submitted for review and, when approved, be installed in the Work at a location agreed upon by the Contractor and Architect.
- 2.7 Unless the precise color and pattern is specifically called out in the Contract Documents, and whenever a choice of color or pattern is available in the specified products, submit accurate color and pattern charts to the Architect for selection.

PART 3 - EXECUTION

- 3.1 Accompany each submittal with a letter of transmittal showing all information required for identification and checking. On at least the first page of each submittal, and elsewhere as required for positive identification, show the submittal number in which the item was included.
- 3.2 Make submittals far enough in advance of scheduled dates for installation to provide time required for reviews, for securing necessary approvals, for possible revisions and re-submittals, and for placing orders and securing delivery.
- 3.3 In scheduling, allow at least ten working days for review by the Architect following his receipt of the submittal.
- 3.4 Unless otherwise specified, make submittals in complete groups containing all associated items to assure that information is available for checking each item when it is received.

1. Partial submittals may be rejected as not complying with the provisions of the Contract.
 2. The appropriate contractor may be held liable for delays so occasioned.
- 3.5 Review by the Architect and/or Engineer does not relieve the Contractor from responsibility for errors which may exist in the submitted data.
- 3.6 Revisions:
1. Make revisions required by the Architect.
 2. If the Contractor considers any required revision to be a change, he shall so notify the Architect as provided for in the General Conditions.
 3. Make only those revisions directed or approved by the Architect.

END OF SECTION 013400

SECTION 013500 - CERTIFICATE OF INSURANCE

The following two pages are AIA DOCUMENT G705, CERTIFICATE OF INSURANCE. The successful bidder is required to submit this document with the Performance and Payment Bond.

CERTIFICATE OF INSURANCE—CONSTRUCTION

AIA DOCUMENT G705

SEE EXPLANATORY NOTES (REFERENCED BY BRACKETED NUMBERS) ON REVERSE SIDE

This certificate is issued as a matter of information only and confers no rights under the policies indicated upon the addressee. It does not amend, extend or alter the coverage afforded by the policies listed below. This is to certify that the following described policies, subject to their terms, conditions and exclusions, have been issued to the named insured and are in force at this time.

Name and Address of Insured:				CODE	COMPANIES AFFORDING COVERAGE		
				A			
				B			
				C			
				D			
Addressee: (Owner)				E			

TYPE OF INSURANCE	CO. CODE	FORM [1]			POLICY NUMBER	[2] EFFECTIVE DATE	[3] EXPIRATION DATE	LIMITS OF LIABILITY IN THOUSANDS		
		COMP.	OCCUR.	CL. MADE		RETROACTIVE DATE	EXTENDED REPORTING DATE		EACH OCCURRENCE	AGGREGATE
[4] General Liability including: <input type="checkbox"/> Premises-Operations <input type="checkbox"/> Explosion and Collapse Hazard <input type="checkbox"/> Underground Hazard <input type="checkbox"/> Independent Contractors <input type="checkbox"/> Broad Form Property Damage <input type="checkbox"/> Contractual Liability <input type="checkbox"/> Products and Completed Operations <input type="checkbox"/> Personal Injury with Employment Exclusion Deleted								[5] GENERAL AGGREGATE, THIS PROJECT ONLY: <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A \$		
								Bodily Injury	\$	\$
								Property Damage	\$	\$
								Bodily Injury and Property Damage Combined	\$	\$
								Personal Injury		\$
Automobile Liability <input type="checkbox"/> Owned <input type="checkbox"/> Hired <input type="checkbox"/> Non-Owned								Bodily Injury (Each Person) Bodily Injury (Each Accident)	\$	
								Property Damage	\$	
								Bodily Injury and Property Damage Combined	\$	
Excess Liability <input type="checkbox"/> Umbrella Form <input type="checkbox"/> Other than Umbrella								Bodily Injury and Property Damage Combined	\$	\$
[6] A <input type="checkbox"/> Workers' Compensation <input type="checkbox"/> Voluntary Compensation								A	Statutory	
B Employer's Liability								B	\$	Each Accident
									\$	Disease—Policy Limit
									\$	Disease—Each Employee
Other (Specify):										

1—Requirement in General Conditions, AIA Document A201, Subparagraph 9.10.2 for Certificate evidencing continuation of Products-Completed Operations insurance for at least ____ years after final payment is hereby acknowledged. ☐

2—Has each of the above-listed policies been endorsed to include the company's obligation to notify addressee in the event of cancellation non-renewal? ☐ Yes ☐ No

Project Name and Location:	CERTIFICATION I hereby certify that I am an authorized representative of each of the insurance companies listed above, and that the coverages afforded under the policies listed above will not be cancelled or allowed to expire unless thirty (30) days written notice has been given to the addressee of this certificate.	
	(Name of Issuing Agency)	(Signature of Authorized Representative)
	(Address)	(Date of Issue)

EXPLANATORY NOTES

AIA DOCUMENT G705

- [1] FORM column indicates three types of policy forms: "Comp."—pre-1985 Comprehensive General Liability form; "Occur."—1985 et seq. Commercial General Liability form, occurrence basis; "Cl.Made"—1985 et seq. Commercial General Liability form, claims-made basis. Identify appropriate form for each separate policy listed.
- [2] If policy form is Comprehensive or Commercial General Liability, occurrence basis, indicate commencement date of policy. If policy form is Commercial General Liability, claims-made basis, indicate appropriate retroactive date which should be on or before commencement date for construction of identified project.
- [3] If policy form is Comprehensive or Commercial General Liability, occurrence basis, indicate expiration date of policy. If policy form is Commercial General Liability, claims-made basis, indicate appropriate Extended Reporting date, which should extend policy period to a date beyond termination of any coverages required to be carried after final payment on identified project.
- [4] In newer policy forms, several of the listed perils are covered within the policy terms without the specific designation. Regardless of policy form, when coverages are not included they must be added by endorsement. Appropriate check marks will indicate that required insurance is properly in place either by inclusion in basic policy terms or by endorsement.
- [5] If policy form contains a general aggregate limit of liability, the dollar amount of the general aggregate must be shown. In such case, indicate whether or not general aggregate applies only to this project.
- [6] If insured party is an organization exempt from Workers Compensation statutes and the construction contract requires the appropriate insurance regardless of exemption status, indicate that compliance is by means of Voluntary Compensation endorsement. Such indication shall refer to both Workers Compensation and Employer's Liability Coverages.

SECTION 013600 - APPLICATION AND CERTIFICATE FOR PAYMENT

The following page is AIA DOCUMENT G702, APPLICATION AND CERTIFICATE FOR PAYMENT.
The contractor is to use this document for monthly pay requests.

END OF SECTION 013600

Application and Certificate for Payment

TO OWNER:

PROJECT:

FROM
CONTRACTOR:

VIA
ARCHITECT:

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract.
Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM \$
 2. Net change by Change Orders \$
 3. CONTRACT SUM TO DATE (Line 1 ± 2) \$
 4. TOTAL COMPLETED & STORED TO DATE (Column G on G703) \$
 5. RETAINAGE:
 - a. 0 % of Completed Work
(Column D + E on G703) \$
 - b. 0 % of Stored Material
(Column F on G703) \$
- Total Retainage (Lines 5a + 5b or Total in Column I of G703) \$
6. TOTAL EARNED LESS RETAINAGE \$
(Line 4 Less Line 5 Total)
 7. LESS PREVIOUS CERTIFICATES FOR PAYMENT \$
(Line 6 from prior Certificate)
 8. CURRENT PAYMENT DUE \$
 9. BALANCE TO FINISH, INCLUDING RETAINAGE
(Line 3 less Line 6) \$

CHANGE ORDER SUMMARY		ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner		\$	\$
Total approved this Month		\$	\$
TOTALS		\$	\$
NET CHANGES by Change Order		\$	

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____ Date: _____

State of: _____

County of: _____

Subscribed and sworn to before
me this _____ day of _____

Notary Public:

My Commission expires: _____

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED \$

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract

SECTION 015050 - TEMPORARY FACILITIES

General Definitions:

Refer to General Conditions for basic commitments to provide temporary facilities.

Costs: Except as otherwise indicated, costs associated with temporary facilities are Contractor's (in Contract Sum), including power/fuel/water usage until time of substantial completion for each major area of project. Temporary facilities remain property of Contractor.

Temporary Construction Facilities:

The General Contractor shall maintain on the site telephone service.

Temporary Lighting: Provide lighting of intensity and quality sufficient for proper and safe performance of the work, and for access thereto and security thereof.

Miscellaneous Facilities: Provide miscellaneous facilities as needed, including temporary stairs, temporary treads on permanent stairs, ramps, ladders, runways, staging, shoring, scaffolding, bridges railings, bracing, barriers, closures, platforms, temporary partitions, waste chutes and similar items.

Drinking Water: Provide either pipe-connected potable water fountains or electric cooled bottled water fountains.

Toilets: Where permitted by governing regulations, provide single-occupant, self-contained units.

Telephones: Engage local telephone company to install and maintain telephones in field.

Security and Protection:

General: Provide facilities and services as necessary to effectively protect project from losses and persons from injury during the course of construction.

Barricades: Provide barricades at hazardous locations, complete with signs, general lighting, warning lights and similar devices where appropriate or required by regulations.

Lockup and Security: As construction of building structure or shell progresses and it becomes feasible to secure project against intrusion, provide temporary security enclosure, doors and locks as necessary to prevent unauthorized entrance.

Provide temporary fencing around all asphalt kettle locations.

Temporary Filters on Existing Rooftop Equipment: Contractor shall furnish and install temporary charcoal filters on all air intake points on existing HVAC rooftop units when mopping with 50'-0" of the unit. Change filters as required. Remove charcoal filters at completion of the project and re-install existing unit filters.

END OF SECTION 015050

SECTION 017050 - PROJECT CLOSEOUT

General Definitions:

The provisions of this section apply primarily to closeout of actual physical work, not to administrative matters such as final payment and changeover of insurances. Closeout requirements relate to both final completion and substantial completion of work, and apply to individual portions of complete work as well as the total work. Specific requirements in other sections have precedence over general requirements of this section.

Procedures at Substantial Completion:

Prerequisites: Comply with General Conditions and complete the following before requesting Architect's/Engineer's inspection of the work, or designated portion thereof, for substantial completion:

Submit executed warranties, workmanship bonds, maintenance agreements, inspection certificates and similar required documentation for specific units of work, enabling Owner's unrestricted occupancy and use.

Submit record documentation, maintenance manuals, tools, spare parts, keys and similar operational items.

Complete instruction of Owner's operating personnel, and start-up of systems.

Complete final cleaning, and remove temporary facilities and tools.

Inspection Procedures: Upon receipt of Contractor's request, Architect/Engineer will either proceed with inspection or advise Contractor of prerequisites not fulfilled. Following initial inspection, Architect/Engineer will either prepare certificate of substantial completion, or advise Contractor of work which must be performed prior to issuance of certificate of substantial completion. Results of completed inspection will form initial "punch-list" for final acceptance.

Procedures at Final Acceptance:

Re-inspection Procedure: Upon receipt of Contractor's notice that work has been completed, including punch-list items resulting from earlier inspections, and excepting incomplete items delayed because of acceptable circumstances, Architect/Engineer will re-inspect work.

Upon completion of re-inspection, Architect/Engineer will either recommend final acceptance and final payment, or advise Contractor of work not completed or obligations not fulfilled as required for final acceptance. If necessary, procedure will be repeated.

Record Documentation:

Record Drawings: Maintain a complete set of blue/black-line prints of contract drawings and shop drawings for record mark-up purposes throughout the Contract Time. Mark-up drawings during the course of the work to show changes and actual installation conditions, sufficient to form a complete record for Owner's purposes. Give particular attention to work which will be concealed and difficult to measure and record at a later date, and work which may require servicing or replacement during life of project. Require entities marking the prints to sign and date each mark-up. Bind prints into manageable sets, with durable paper covers, appropriately labeled.

Maintenance Manuals: Provide 3-ring vinyl-covered binders containing required maintenance manuals, properly identified and indexed. Include operating and maintenance instruction; extended to cover emergencies, spare parts, warranties, inspection procedures, diagrams, safety, security, and similar appropriate data for each system or equipment item.

General Closeout Requirements:

Operator Instructions: Require each Installer of systems requiring continued operation/maintenance by Owner's operating personnel, to provide on-location instruction to Owner's personnel, sufficient to ensure safe, secure, efficient, non-failing utilization and operation of systems.

Final Cleaning: At closeout time, clean or re-clean entire work to normal level for "first class" maintenance/cleaning of building projects of a similar nature. Remove non-permanent protection and labels, polish glass, cleaned exposed finishes, touch-up minor finish damage, clean or replace filters of mechanical systems, remove debris and broom-clean non-occupied spaces, sanitize plumbing/food service facilities, clean light fixtures and replace burned-out or dimmed lamps, sweep and wash paved areas, police yards and grounds, and perform similar cleanup operations needed to produce a "clean" condition as judged by Architect/Engineer.

Closeout checklist: The following checklist indicates documents that must be provided and/or executed by the General Contractor (to the Architect) prior to release of final retainage.

1. Statement indicating date(s) of Owner training on systems.
2. Statement indicating date that extra materials were delivered to Owner.
3. Statement indicating date of punch list completion.
4. Executed certificate of substantial completion (AIA G704).
5. Release of Liens from subcontractors & suppliers (AIA G706A).
6. Consent of surety (AIA G707).
7. Affidavit of payment of debts & claims (AIA G706).
8. Field mark-up drawings.
9. A/E approved close-out manuals (3 copies).
10. Executed Warranties.
11. Maintenance agreements (if applicable).
12. Final change order(s), AIA G701 (if applicable).
13. Final request for payment (AIA G702/G703).
14. Executed Kentucky Dept of Education form "BG-4".
15. Other documents required by the Owner, Architect or governing agencies that are necessary for project closeout.

END OF SECTION 017050

SECTION 017329 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes procedural requirements for cutting and patching, including but not limited to:
 - 1. Remove existing roof membrane, metal copings, miscellaneous sheet metal.
 - 2. Make the several parts fit properly.
 - 3. Uncover work to provide for installing, inspecting, or both, of ill-timed work;
 - 4. Remove and replace work not conforming to requirements of the Contract Documents, and
 - 5. Remove and replace defective work.
- B. Related Sections include the following:
 - 1. Divisions 02 through 49 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.3 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.

1.4 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least ten (10) days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
 - 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
 - 3. Products: List products to be used and firms or entities that will perform the Work.
 - 4. Dates: Indicate when cutting and patching will be performed.

5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.5 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.
- 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.
- 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.
- 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 Architect'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.

1.6 WARRANTY

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

PART 2 - PRODUCTS

2.1 MATERIALS

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

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. Temporary Support: Provide temporary support of Work to be cut.
- B. 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.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. 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 minimize interruption to occupied areas.

3.3 PERFORMANCE

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

END OF SECTION 017329

SECTION 024119 - SELECTIVE STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Demolition and removal of selected portions of building or structure.
 - 2. Demolition and removal of selected non-friable asbestos containing materials.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Detach items from existing construction and deliver them to Owner.
- C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Hazardous Materials: See "Pollution Controls" this section.
- C. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.
- D. Owner assumes no responsibility for actual condition of buildings to be selectively demolished.

- E. Asbestos: Asbestos containing material is not anticipated to be present in the building components to be selectively demolished.
- F. Storage or sale of removed items or materials on-site will not be permitted.

1.5 SUBMITTALS

- A. Proposed debris-control measures.
 - 1. Detailed sequence of selective demolition and removal work to ensure uninterrupted Progress of Owner's on-site operations.
 - 2. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

1.6 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Comply with requirements for access and protection specified in Division 01 Section "Temporary Facilities and Controls."
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
- C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
 - 1. Strengthen or add new supports when required during progress of selective demolition.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 - 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 - 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
 - 5. Maintain adequate ventilation when using cutting torches.
 - 6. Remove no more existing roofing than can be covered in one day by new roofing. See applicable Division 7 Section for new roofing requirements.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
 - 1. Do not allow demolished materials to accumulate on-site.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.6 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119



Moisture Diagnostic Scans – Building Envelope Surveys & Analysis – Project Management
Roof Design and Consulting – Preventative Maintenance Programs

Infrared Thermography Survey Report

Pembroke Elementary School 1600 Pembroke Oak Grove Rd. Pembroke, KY

Inspection Date: January 24th, 2022



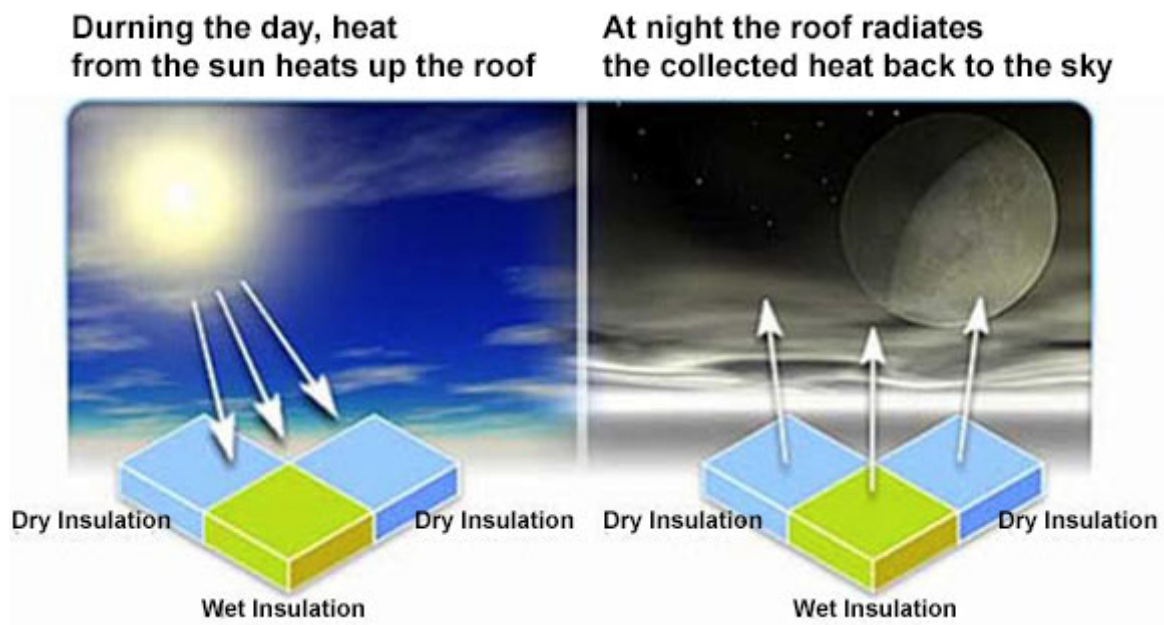
Building Management Consultants
6116 Shallowford Road, Ste. 104
Chattanooga, TN 37421

Introduction to Moisture Diagnostics

The purpose of conducting a moisture diagnostic survey is to determine if the underlying roof insulation has been compromised due to water infiltrating the roof assembly. The information provided by this survey helps determine whether a given roof needs complete replacement, partial replacement, restoration, or simply preventive maintenance. In this way, resources can be focused where they are needed.

Infrared technology measures temperature differentials. Wet insulation retains heat long after the roof has cooled, thus, the camera will show heat signatures that are much higher than the signature of dry insulation.

Physical verification is done following the detection of anomalies from the infrared images. This involves using an electronic moisture sensitive probe to examine the surfacing, felts, insulation, vapor barrier and the deck in all suspected areas.



Inspection Details

Jacob Hébert conducted a ground-based infrared survey. Jacob is a Certified Level 1 Infrared Thermographer. During the scan the roof surface was free from debris and ponding. The scan was performed using a FLIR E-85 camera with spectral range of 7.5-13 um. This report meets and exceeds the documentation requirements of the standards published by ASTM C1153.

Environmental Conditions

Scan Date	January 24 th , 2022
Time	5:15 pm till 8:30 pm
Temperature	50 F
Wind Speed	3 mph
Relative Humidity	50.5%
Overall Conditions	Partly Cloudy

Roof Area Breakdown

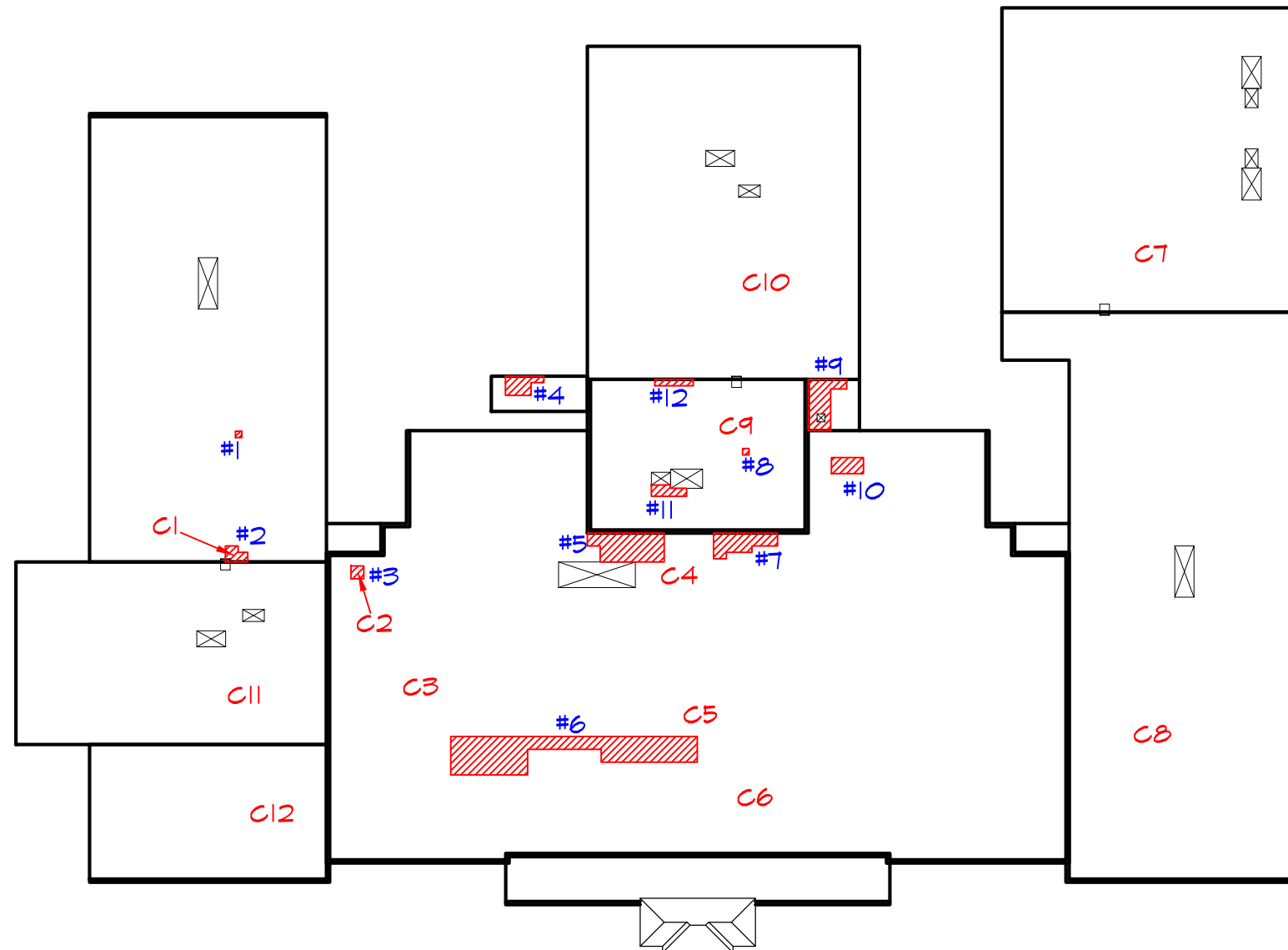
Roof Section	Total SQFT	Wet SQFT	% Wet
Entire Roof Area	83,555	1271	1.52%
TOTALS	83,555	1271	1.52%

*Wet square footage is approximate. % Wet is +/- 3%



LEGEND

- ===== PARAPET WALL
- ROOF EDGE
- ~~~~~ EXPANSION JOINT
- PIPING ON SUPPORTS
- VENT PIPE
- ⊙ VENT STACK
- ⊘ OBSOLETE VENT STACK
- ⊗ ROOF DRAIN
- C1 CORE SAMPLE AREA
- ▣ ROOF CURB
- ▤ ELEVATED UNIT
- PENETRATION POCKET
- ③ AREA DESIGNATION
- WET AREA(S)
- WALKWAY PAD
- ▢ ROOF HATCH
- ▢ LADDER
- ▢ STAIRS
- ▢ SKY LIGHTS



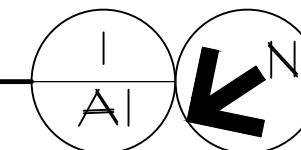
CORE SAMPLE RESULTS

C1, C7, C8, C10, C11, C12 = Modified Bitumen
1/2" Wood Fiber
2" Polyisocyanurate
2" Polyisocyanurate
Metal Deck

C2, C3, C4, C5, C6, C9 = Modified Bitumen
3/4" Perlite Insulation
1-1/2" Polyisocyanurate
Vapor Barrier
Cementitious Wood Fiber Deck (Tectum)

ROOF PLAN

SCALE: 1" = 50'-0"



TOTAL ROOF AREA=
± 83,555 SF

TOTAL WET AREA=
± 1,271 SF

#1	± 4 SF	#6	± 620 SF	#11	± 33 SF
#2	± 29 SF	#7	± 112 SF	#12	± 24 SF
#3	± 16 SF	#8	± 4 SF		
#4	± 56 SF	#9	± 127 SF		
#5	± 196 SF	#10	± 50 SF		

NOTES:
DRAWINGS ARE TO SCALE WHEN PRINTED
ON 11x17. CONTRACTOR IS RESPONSIBLE
FOR VERIFICATION OF CONDITIONS.



6116 Shallowford Rd.
Chattanooga, TN 37421
WWW.BMCUSA.NET

Pembroke Elementary School
1600 Pembroke Oak Grove Rd.
Pembroke, KY

ROOF PLAN

SCAN BY: JEH
DRN BY: JEH
DATE: 01-25-22
REV.: # DATE
- -
- -
SCALE: AS NOTED

DRAWING NO:

A1

Photo Rep



This is an overview of the roof area scanned.



This is an overview of the roof area scanned.

Photo Rep



This is an overview of the roof area scanned.



This is an overview of the roof area scanned.

Photo Report



Roof overview.



Roof overview.

Observations:

The roof is a modified bitumen membrane. There is storm damage to the front section of the roof. The roof drain predominately to a gutter edge with the large middle section draining to internal roof drains.

Roof Plan:



Roof area overview.

Photo Report



Core sample.

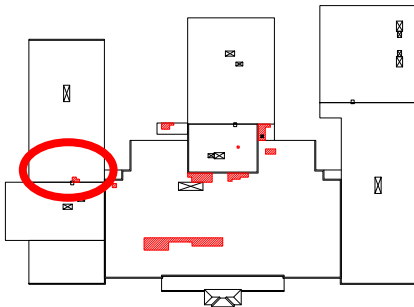


Repairs made at the core.

Observations:

The above photo shows the core taken during the scan. The composition of the roof is Modified Bitumen membrane over $\frac{1}{2}$ " wood fiber board over 2 layers of 2" of polyisocyanurate insulation over a metal deck. The core was taken at a suspected area of wet insulation, upon investigation it was determined that this area was compromised with water.

Roof Plan:



Core location.



Inside of the core showing the deck.

Photo Report



An area of wet insulation.

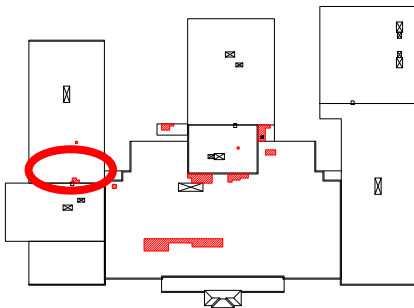


Photo of the same area.

Observations:

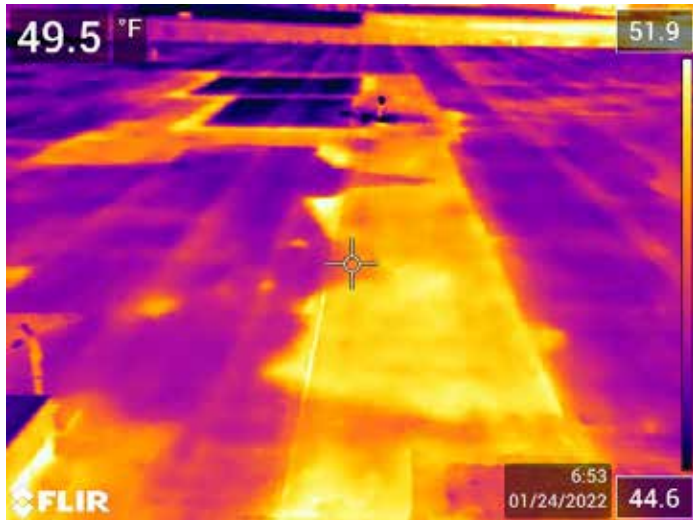
The above photo shows heat signatures consistent with wet insulation. The area at the base of the ladder was compromised with water infiltration. The core was taken in this area to verify the IR images.

Roof Plan:

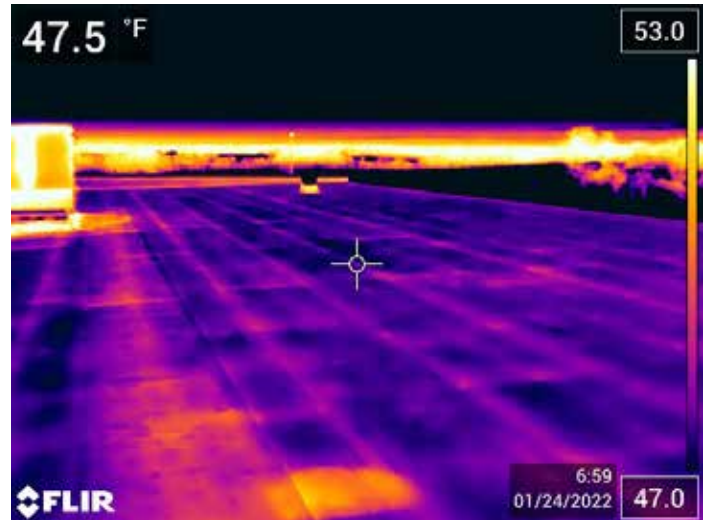


Area of wet insulation.

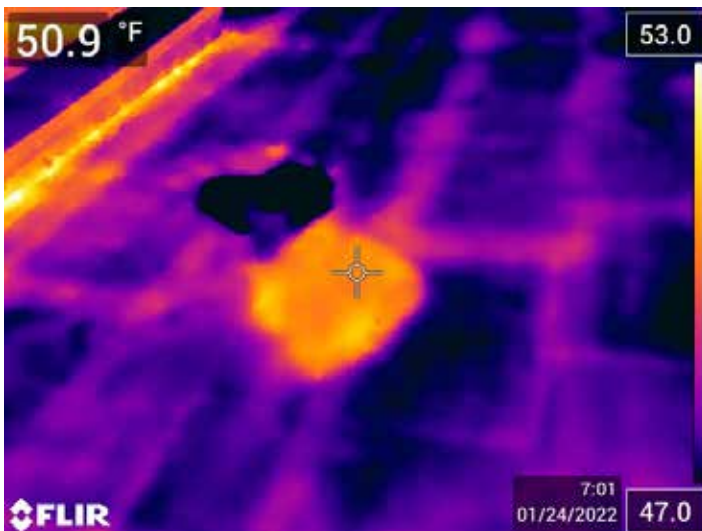
Photo Report



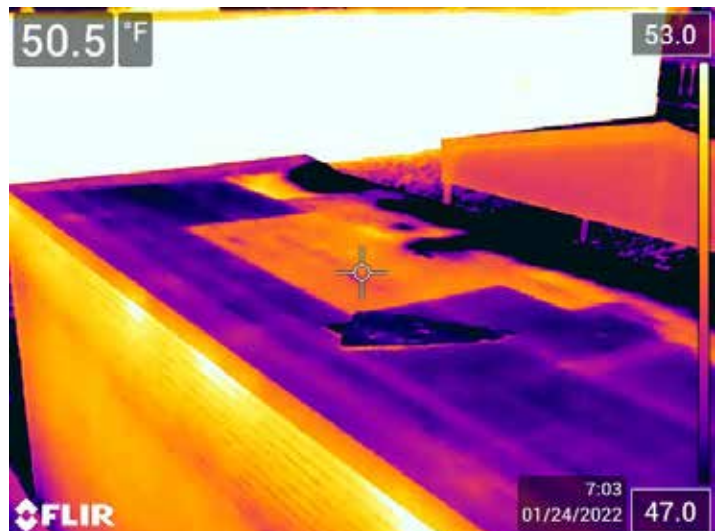
Wet area #6.



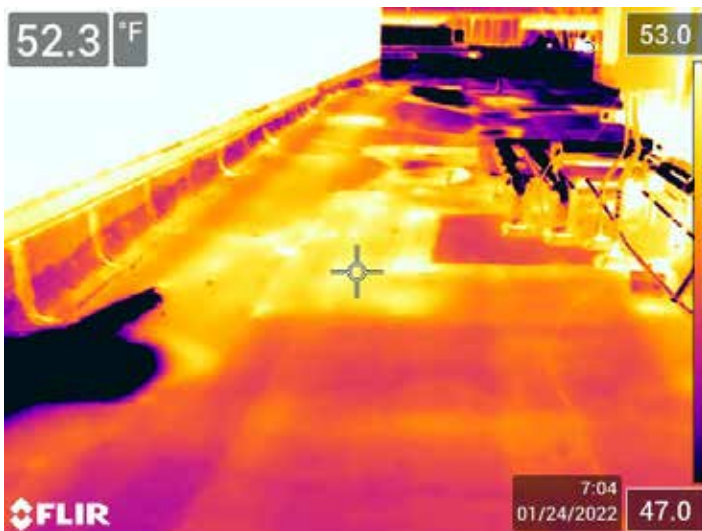
Wet area #1.



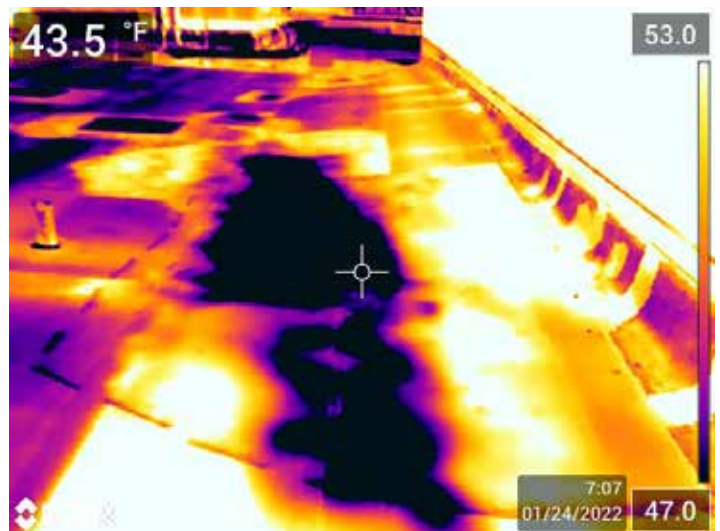
Wet area #3.



Wet area #4.

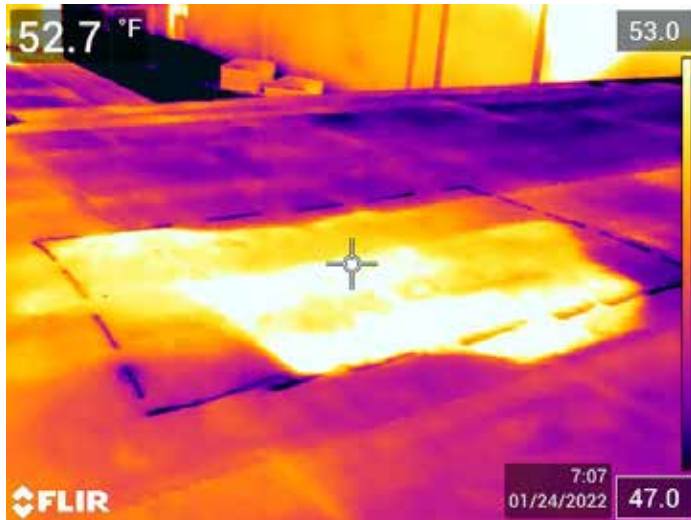


Wet area #5.



Wet area #7.

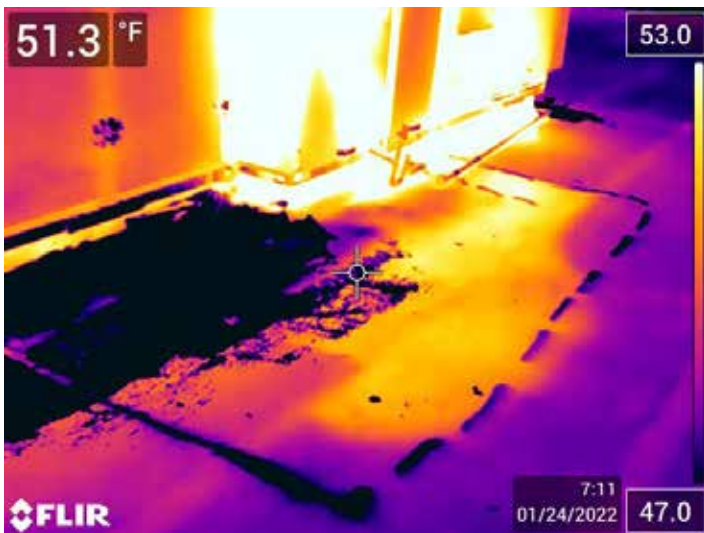
Photo Report



Wet area #10.



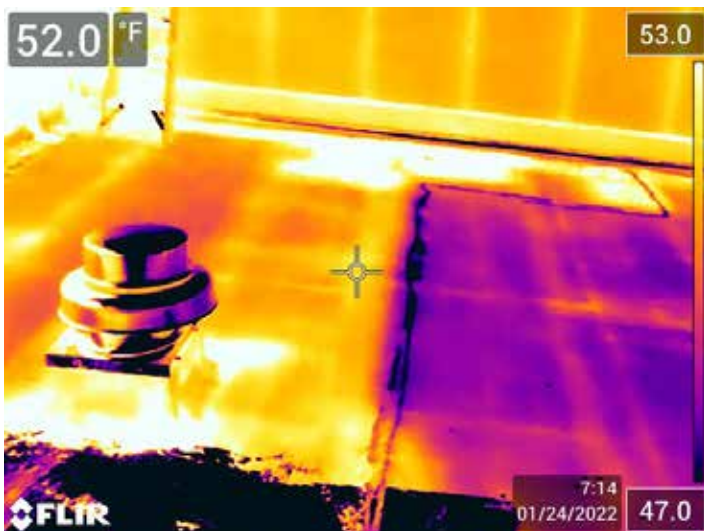
Wet area #8.



Wet area #11.

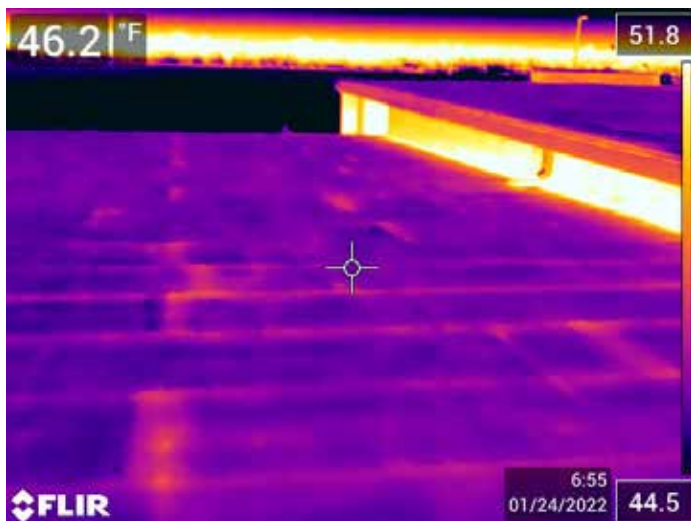


Wet area #12.



Wet area #9.

Photo Report



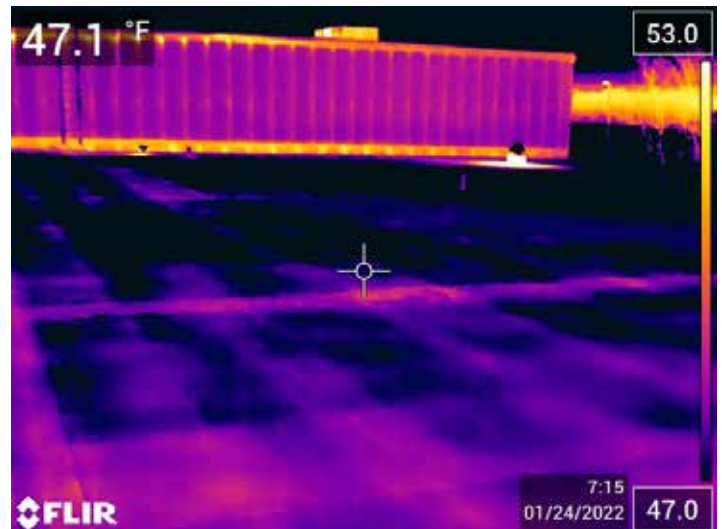
Infrared overview photo of the roof system. No anomalies identified.



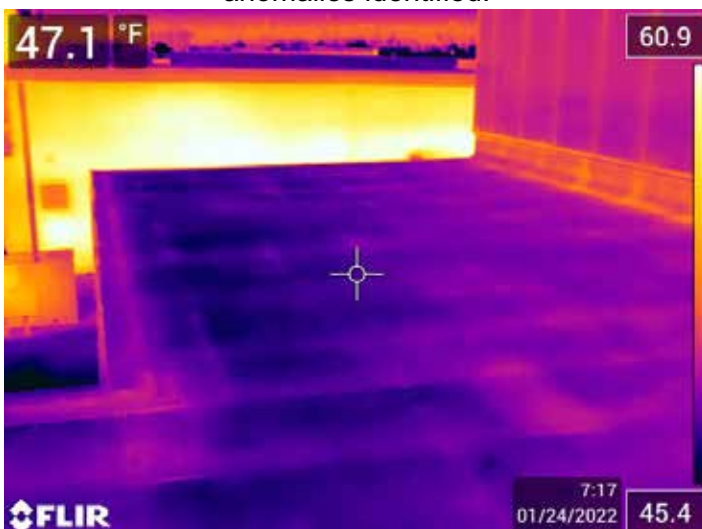
Infrared overview photo of the roof system. No anomalies identified.



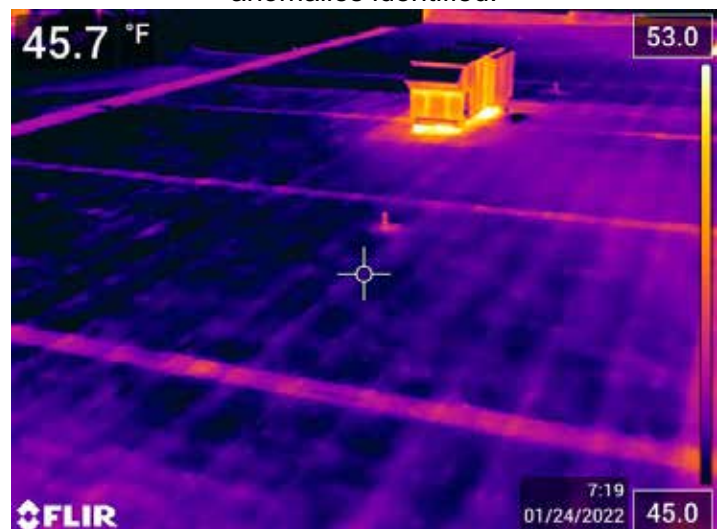
Infrared overview photo of the roof system. No anomalies identified.



Infrared overview photo of the roof system. No anomalies identified.

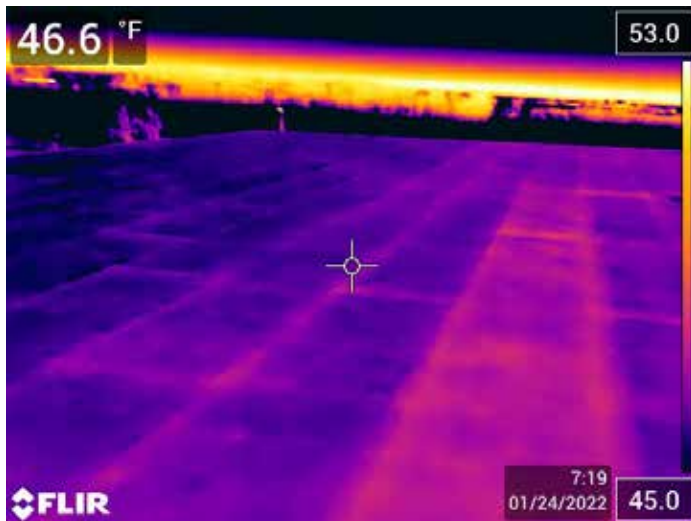


Infrared overview photo of the roof system. No anomalies identified.



Infrared overview photo of the roof system. No anomalies identified.

Photo Report



Infrared overview photo of the roof system. No anomalies identified.



Infrared overview photo of the roof system. No anomalies identified.



Infrared overview photo of the roof system. No anomalies identified.



Infrared overview photo of the roof system. No anomalies identified.

Inspection Summary

Core Info

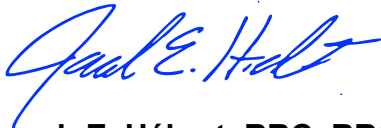
- Core #1 – Modified Bitumen membrane / ½" Wood Fiber / 2" Polyisocyanurate Insulation / 2" Polyisocyanurate Insulation / Metal Deck.
- Core #2 – Modified Bitumen membrane / ¾" Perlite Insulation / 1½" Polyisocyanurate Insulation / Cementitious Wood Fiber Deck.
- Core #3 – Modified Bitumen membrane / ¾" Perlite Insulation / 1½" Polyisocyanurate Insulation / Cementitious Wood Fiber Deck.
- Core #4 – Modified Bitumen membrane / ¾" Perlite Insulation / 1½" Polyisocyanurate Insulation / Cementitious Wood Fiber Deck.
- Core #5 – Modified Bitumen membrane / ¾" Perlite Insulation / 1½" Polyisocyanurate Insulation / Cementitious Wood Fiber Deck.
- Core #6 – Modified Bitumen membrane / ¾" Perlite Insulation / 1½" Polyisocyanurate Insulation / Cementitious Wood Fiber Deck.
- Core #7 – Modified Bitumen membrane / ½" Wood Fiber / 2" Polyisocyanurate Insulation / 2" Polyisocyanurate Insulation / Metal Deck.
- Core #8 – Modified Bitumen membrane / ½" Wood Fiber / 2" Polyisocyanurate Insulation / 2" Polyisocyanurate Insulation / Metal Deck.
- Core #9 – Modified Bitumen membrane / ¾" Perlite Insulation / 1½" Polyisocyanurate Insulation / Cementitious Wood Fiber Deck.
- Core #10 – Modified Bitumen membrane / ½" Wood Fiber / 2" Polyisocyanurate Insulation / 2" Polyisocyanurate Insulation / Metal Deck.
- Core #11 – Modified Bitumen membrane / ½" Wood Fiber / 2" Polyisocyanurate Insulation / 2" Polyisocyanurate Insulation / Metal Deck.
- Core #12 – Modified Bitumen membrane / ½" Wood Fiber / 2" Polyisocyanurate Insulation / 2" Polyisocyanurate Insulation / Metal Deck.
-

A thorough evaluation of surface material and insulation was scanned, probed, and visually inspected. A core sample was taken to determine the composition of the roof and to verify the heat signatures. The moisture probe was then used to confirm that the roof assembly was either wet or dry.

During the moisture survey conducted on the low slope roof assembly at the Pembroke Elementary School, it was determined that approximately **1.52%** of the insulation is currently holding moisture.

Refer to the roof drawing for approximate locations and sizes of wet insulation.

Prepared By:



Jacob E. Hébert, RRC, RRO, CITL1

Registered Roof Consultant

Registered Roof Observer

Certified Infrared Thermographer, Level 1

Project No. N4988.01

March 21, 2022

Christian County Public Schools
PO Box 609
603 North Drive
Hopkinsville, Kentucky 42240

Attention: Mr. Trevor Herndon | KSPMA Region 1 Director
Mobile 270-484-5754 | Email trevor.herndon@christian.kyschools.us

Re: Report of Wind Uplift Testing
Pembroke Elementary School
1600 Pembroke Oak Grove Road | Pembroke, Kentucky

Dear Mr. Herndon

In accordance with our agreement 513-268942R0, Architectural Testing, Inc., an Intertek company (Intertek), part of Intertek¹ Building Science Solutions, performed Wind Uplift Testing on the existing low sloped built-up roof systems at the above-referenced project. The results of this survey, together with our recommendations, are as follows:

PROJECT INFORMATION

Per the documentation provided to Intertek by Garland Industries, wind uplift testing was performed in general accordance with FM Global Property Loss Prevention Data Sheet 1-52 "Field Verification of Roof Wind Uplift Resistance". A total of 29 uplift tests were conducted. The purpose of the wind uplift testing was to verify the wind uplift resistance performance in relation to the provided Target Pressures for the various roof areas. This testing was requested in response to a recent tornadic event this past December. The following information was provided to Intertek, by Mr. John Losher with Garland Industries:

Roof Systems tested consist of the following built-up roof system over metal or tectum roof decks:

- Granule surfaced cap sheet membrane
- Multi-ply asphalt impregnated fiberglass felts
- ½" Wood Fiber or ¾" perlite rigid board insulation
- Two 2.0" Polyisocyanurate rigid board insulation
- Vapor barrier on Tectum deck only (Roof Area 6)

Please note that per Garland Industries, Roof Areas 5, 8 & 9 were not to be included as part of this contract.

Wind Uplift Testing Target Pressures as provided were as follows:

Roof Areas 1, 2, 3, 4, 7, 10, 11, 12:

Field Zone: -33 psf | Perimeter Zones: -41.8 psf | Corner Zones: -55 psf

^[1] Intertek is a brand name representing the Intertek Group plc legal entities, including but not limited to, Intertek Testing Services NA Inc., Professional Service Industries, Inc. ("INTERTEK-PSI"), Architectural Testing Inc. ("INTERTEK-ATI"), and MT Group Inc. ("INTERTEK-MT").





Roof Area 6 & 13:

Field Zone: -36.7 psf | Perimeter Zones: -46.5 psf | Corner Zones: -61.2 psf

A maximum 2" allowable deflection was applied as part of the test criteria.

SCOPE OF SERVICES

Twenty-nine (29) wind uplift tests were conducted on the subject roof systems at Pembroke Elementary School. Approximate test locations are noted on the attached Roof Plan.

Representative photographs of the testing equipment, failure investigations and test locations are included with this report. Destructive investigations were required as a result, of two failed wind uplift test locations.

FIELD TESTING METHODOLOGY

A 5-ft x 5-ft negative pressure chamber was utilized to conduct the wind uplift testing in general accordance with FM Global Property Loss Prevention Data Sheet 1-52: Field Verification of Roof Wind Uplift Resistance. Per this standard, an initial negative pressure of 15 pounds per square foot (PSF) is achieved within the negative pressure chamber. If no excessive deflection or separation of the roofing components occurs after maintaining the pressure for a duration of one minute, the pressure is gradually increased in increments of seven and one half (7.5) PSF. For each incremental increase, pressure is maintained for a duration of one minute until either failure occurs or until the established negative wind uplift pressure parameter is attained. During the test, vertical deflection of the roof cover is measured via a digital deflection gauge.

Based on the composition of the roof assembly, a test is considered a failure if deflection exceeds 1/4-inch or if the cover suddenly balloons.

Weather conditions at the time of the testing were clear to cloudy with ambient air temperatures between 50°F and 67°F, roof surface temperature range from 59°F and 98°F, relative humidity was between 55 and 60 percent, and wind speeds between 0 to 15 mph.

TEST RESULTS

A Roof Plan indicating the approximate test locations can be found attached to this report. Our observations and results for the wind uplift testing are as follows:

Test Number/ Roof Area	Test Location	Zone	Deflection Recorded (Inch)	Target Pressure (PSF)	Pass/Fail
1	Roof Area 7	Corner	1.83+	-55.0	Failed
2	Roof Area 7	Perimeter	0.014	-41.8	Pass
3	Roof Area 7	Field	0.011	-33.0	Pass
4	Roof Area 6	Corner	1.80+	-61.2	Failed
5	Roof Area 6	Perimeter	0.156	-46.5	Pass
6	Roof Area 6	Field	0.105	-36.7	Pass
7	Roof Area 12	Corner	0.165	-55.0	Pass
8	Roof Area 12	Perimeter	0.117	-41.8	Pass
9	Roof Area 12	Perimeter	0.114	-41.8	Pass
10	Roof Area 12	Corner	0.120	-55.0	Pass



11	Roof Area 12	Field	0.059	-33.0	Pass
12	Roof Area 11	Perimeter	0.094	-41.8	Pass
13	Roof Area 13	Corner	0.220	-61.2	Pass
14	Roof Area 13	Perimeter	0.148	-46.5	Pass
15	Roof Area 13	Field	0.111	-36.7	Pass
16	Roof area 4	Corner	0.223	-55.0	Pass
17	Roof Area 4	Field	0.059	-33.0	Pass
18	Roof Area 1	Corner	0.120	-55.0	Pass
19	Roof Area 1	Perimeter	0.116	-41.8	Pass
20	Roof Area 1	Field	0.107	-33.0	Pass
21	Roof Area 2	Corner	0.154	-55.0	Pass
22	Roof Area 2	Perimeter	0.116	-41.8	Pass
23	Roof Area 2	Field	0.058	-33.0	Pass
24	Roof Area 10	Perimeter	0.126	-41.8	Pass
25	Roof Area 3	Corner	0.106	-55.0	Pass
26	Roof Area 3	Perimeter	0.115	-41.8	Pass
27	Roof Area 3	Perimeter	0.168	-41.8	Pass
28	Roof Area 3	Corner	0.128	-55.0	Pass
29	Roof Area 3	Field	0.117	-33.0	Pass

OBSERVATIONS AND CONCLUSIONS

Twenty-seven (27) out of twenty-nine (29) tests achieved target test pressures without exhibiting excessive deflection or sudden ballooning of the membrane.

Test Locations #1 & #4, both Corner Zone locations failed at the interface of the multi-ply built-up roof membranes and the cap sheet membrane. See attached photographs depicting these failures and the subsequent repairs performed by Swift Roofing.

LIMITATIONS

Observations presented in this report are time-dependent and conditions may change. Any revisions made to the observations enumerated in this report should be brought to the attention of Intertek. If deviations from the noted construction or conditions are encountered during any remedial application, they should also be brought to the attention of Intertek-Architectural Testing, Inc.

Intertek warrants that these findings have been promulgated after being prepared in general accordance with FM Global Property Loss Prevention Data Sheet 1-52 and accepted roofing industry practices. No other warranties are expressed or implied.



CLOSURE

Intertek appreciates the opportunity to be of service to you on this project and we trust that the foregoing is of assistance to you currently. If you should have any questions or require additional information, please do not hesitate to contact Tony Ruggiero at (404) 900-8552 at your convenience. We look forward to working with you on this and future projects. Thank you again for giving us this opportunity to be of service.

For Intertek-Architectural Testing, Inc.

A handwritten signature in blue ink, appearing to read 'Tony Ruggiero', is placed over a light blue rectangular background.

Anthony J. Ruggiero, RRO
Senior Roof Consultant
Building Science Solutions

Attachments: Photographs
 Roof Plan

PHOTOS



1: Negative pressure bell chamber apparatus, typical set-up.



2: Instrument cluster, typical.



Photo 1: Typical test equipment set-up with 5'x5' negative pressure bell chamber. (Stock photograph)



Photo 2: Typical test area, marked and numbered.



Photo 3: Test #1 (T-1) failed.



Photo 4: T-1 – Mode of Failure noted between cap sheet and inter-ply membranes, poor adhesion as evidenced by smooth separation of the roof membranes.



Photo 5: T-1 – Alternate view, Mode of Failure noted between cap sheet and inter-ply membranes, poor adhesion as evidenced by smooth separation of the roof membranes.



Photo 6: Test #4 (T-4) failed.



Photo 7: T-1 – Mode of Failure noted between cap sheet and inter-ply membranes, water evident between roof membranes.



Photo 8: T-1 – Mode of Failure noted between cap sheet and inter-ply membranes, poor adhesion as evidenced by discolored areas of the roof membranes affected by moisture.



Photo 9: Repairs by Swift Roofing. 1-ply smooth surfaced modified bitumen roof membrane set in cold process adhesive.



Photo 10: Repairs by Swift Roofing. Completed 1-ply smooth surfaced modified bitumen roof membrane set in cold process adhesive.



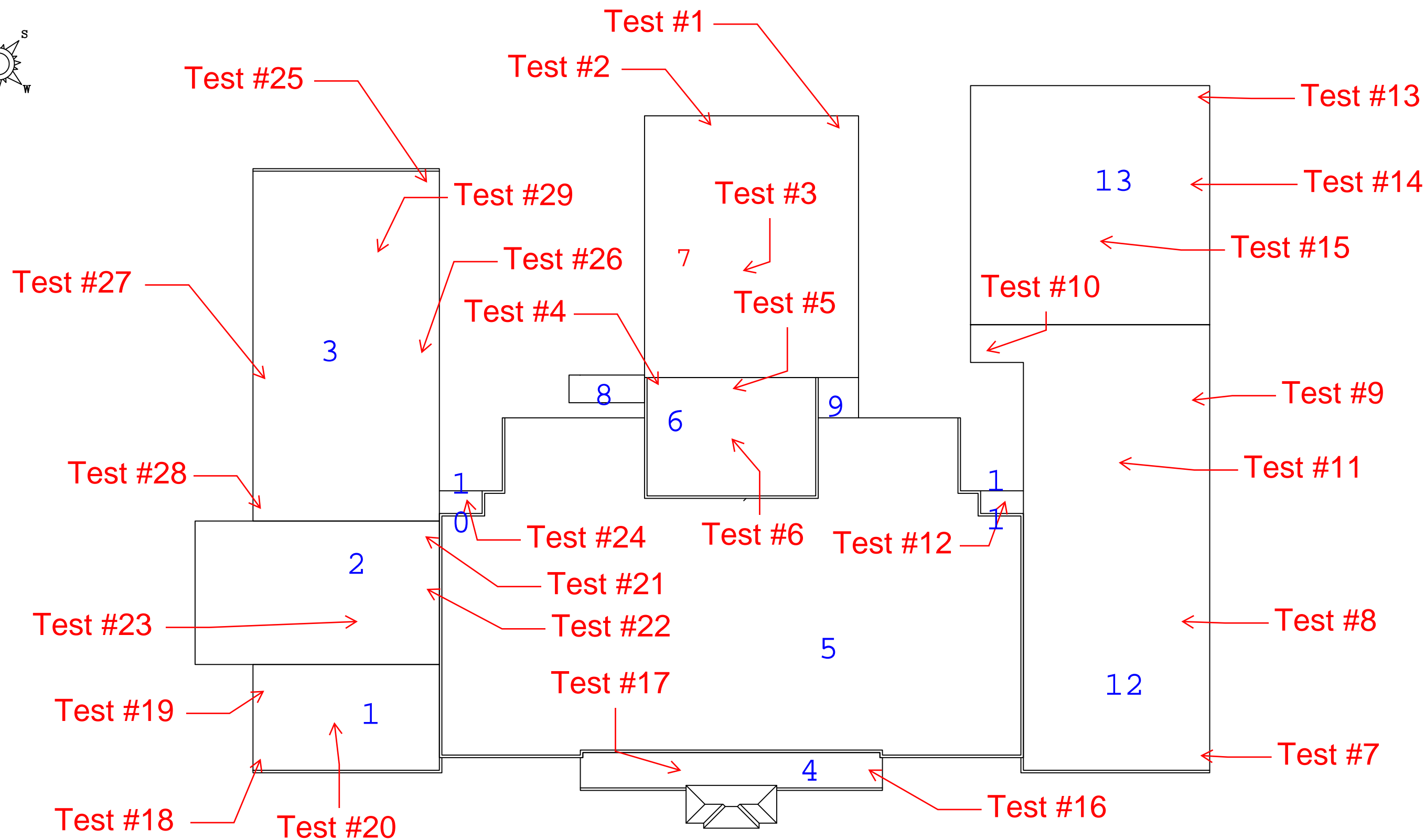
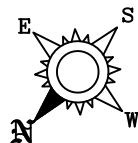
Photo 11: Repairs by Swift Roofing. 1-ply granule surfaced modified bitumen cap sheet set in cold process adhesive.



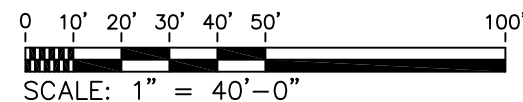
Photo 12: Repairs by Swift Roofing. Completed 1-ply granule surfaced modified bitumen cap sheet set in cold process adhesive.



Photo 13: Repairs by Swift Roofing. Finished repair with all laps sealed with a 5-courses of membrane and mastic.



Test Locations - Test #
Roof Area Designation - #



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PROJECT NAME: PEMBROKE ELEMENTARY SCHOOL		DRAWN BY: MER	DATE: 3/21/2022	CAD FILE: N4988.01-1
TITLE: ROOF PLAN		PROJECT MGR.: T. RUGGIERO	PROJECT NO.: N4988.01	DRAWING NO.: RP1

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Wood blocking, cants, and nailers.
- B. Related Sections include the following:
 - 1. Division 07 Section Roofing.

1.3 DEFINITIONS

- A. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.
- B. Lumber grading agencies, and the abbreviations used to reference them, include the following:
 - 1. NeLMA: Northeastern Lumber Manufacturers' Association.
 - 2. NLGA: National Lumber Grades Authority.
 - 3. RIS: Redwood Inspection Service.
 - 4. SPIB: The Southern Pine Inspection Bureau.
 - 5. WCLIB: West Coast Lumber Inspection Bureau.
 - 6. WWPA: Western Wood Products Association.

1.4 SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
 - 1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
 - 2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
 - 3. Include copies of warranties from chemical treatment manufacturers for each type of treatment.
- B. Fastener Patterns: Full-size templates for fasteners in exposed framing.

- C. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
- D. Research/Evaluation Reports: For the following, showing compliance with building code in effect for Project:
 - 1. Wood-preservative-treated wood.
 - 2. Power-driven fasteners.
 - 3. Powder-actuated fasteners.
 - 4. Expansion anchors.
 - 5. Metal framing anchors.

1.5 QUALITY ASSURANCE

- A. Source Limitations for Engineered Wood Products: Obtain each type of engineered wood product through one source from a single manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. Provide dressed lumber, S4S, unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: Pressure treat lumber for roof insulation blocking and nailers, for plates, sills, and the like shall be treated against decay. All pressure treated wood shall be "SBX (DOT)" (Sodium Borate disodium Octaborate Tetrahydrate) without NaSiO₂. Do not use ACQ.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat items indicated on Drawings, and the following:

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.

2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Comply with performance requirements in AWPAC C20 lumber and AWPAC C27 plywood.
 1. Use Interior Type A, unless otherwise indicated.
- B. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency acceptable to authorities having jurisdiction.
- C. Application: Treat items indicated on drawings.

2.4 DIMENSION LUMBER FRAMING

- E. Maximum Moisture Content: 19 percent.

2.5 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 1. Blocking.
 2. Nailers.
 3. Rooftop equipment bases and support curbs.
 4. Cants.
 5. Furring.
 6. Grounds.
- B. For items of dimension lumber size, provide Construction or No. 2 grade lumber with 19 percent maximum moisture content and the following species:
 1. Spruce, pine, fir (SPF) WCLIB.

2.6 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.

1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Power-Driven Fasteners: NES NER-272.
- D. Wood Screws: ASME B18.6.1.
- E. Lag Bolts: ASME B18.2.1 (ASME B18.2.3.8M).
- F. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.
- G. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
 1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
 2. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2 (ASTM F 738M and ASTM F 836M, Grade A1 or A4).

2.7 MISCELLANEOUS MATERIALS

- A. Adhesives for Gluing to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.
 1. Use adhesives that have a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.

- C. Metal Framing Anchors: Install metal framing to comply with manufacturer's written instructions.
- D. Do not splice structural members between supports, unless otherwise indicated.
- E. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
- F. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- G. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
 - 1. Use inorganic boron for items that are continuously protected from liquid water.
 - 2. Use copper naphthenate for items not continuously protected from liquid water.
- H. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. NES NER-272 for power-driven fasteners.
 - 2. Table 23-II-B-1, "Nailing Schedule," and Table 23-II-B-2, "Wood Structural Panel Roof Sheathing Nailing Schedule," in ICBO's Uniform Building Code.

3.2 WOOD GROUND, SLEEPER, BLOCKING, AND NAILER INSTALLATION

- A. Install where indicated and where required for screeding or attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.
- C. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

3.3 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.
- B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

**PARTIAL REROOFING & ROOF REPAIRS
PEMBROKE ELEMENTARY SCHOOL
PEMBROKE, KENTUCKY**

**03-31-2022
BG # 22-338
CONTRACT DOCUMENT**

END OF SECTION 061000

SECTION 072200 - ROOF INSULATION

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Provide all labor, equipment, and materials to install roof insulation over the properly prepared deck substrate.

1.2 RELATED SECTIONS

- A. Drawings and general provisions of the Contract, including General Supplementary Conditions and Division 1 Specification Sections apply to this section.
- B. Related work specified elsewhere:
1. Division 7 Section "Modified Bitumen Roofing."
 2. Division 7 Section "Flashing and Sheet Metal."

1.3 REFERENCES

ASTM A-167-94a	Specification for Stainless and Heat-Resisting Chromium Nickel Steel Plate, Sheet and Strip
ASTM A-653	Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanized) by the Hot-Dip Process
ASTM B-29	Pig Lead
ASTM B-32	Solder Metal
ASTM C-165-95	Test Method for Measuring Compressive Properties of Thermal Insulation
ASTM C-208-95	Specifications for Cellulosic Fiber Insulating Board
ASTM C-209-92	Test Method for Cellulosic Fiber Insulating Board
ASTM C-272-91	Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions
ASTM C-36	Specification for Gypsum Wallboard
ASTM C-518-91	Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
ASTM C-578-92	Specification for Rigid, Cellular, Polystyrene Thermal Insulation
ASTM C-728-91	Specification for Perlite Thermal Insulation Board
ASTM D-5	Test Method for Penetration of Bituminous Materials
ASTM D-36	Test Method for Softening Point of Bitumen (Ring and Ball Apparatus)
ASTM D-312	Specification for Asphalt Used in Roofing
ASTM D-412-92	Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension
ASTM D-1621-94	Test Method for Compressive Properties of Rigid Cellular Plastics

ASTM D-1622	Test Method for Apparent Density of Rigid Cellular Plastics
ASTM D-1863	Specification for Mineral Aggregate Used on Built-Up Roofs
ASTM D-2126-94	Test Method for Response of Rigid Cellular Plastics to Thermal Humid Aging
ASTM D-2178	Standard Specification for Asphalt Glass Felts used in Roofing and Waterproofing
ASTM D-4601-94	Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing
ASTM D-5147	Sampling and Testing Modified Bituminous Sheet Material
CISPI	Cast Iron Soil Pipe Institute, Washington, D.C.
FM	Factory Mutual System, Norwood, Massachusetts
NRCA	National Roofing Contractors Association, Chicago, IL
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SDI	Steel Deck Institute, St. Louis, Missouri
SPIB	Southern Pine Inspection Bureau, Pensacola, Florida
UL	Underwriter's Laboratories, Inc., Northbrook, Illinois
FS HH-I-1972	Insulation Board, Polyisocyanurate
FS LLL-1-535B	Insulation Board, Thermal (Fiberboard)
WH	Warnock Hersey International

1.4 QUALITY ASSURANCE

- A. Fire Classification, ASTM E-108
- B. Submit certification that the roof system furnished meets local or nationally recognized building codes for fire Class A.
- C. Wind Uplift: FM Data Sheet 1-49 and 1-90.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site with seals and labels intact, in manufacturer's original containers, dry and undamaged.
- B. Store all insulation materials in a manner to protect them from the wind, sun and moisture damage prior to and during installation. Any insulation that has been exposed to any moisture shall be removed from the project site.
- C. Keep materials enclosed in a watertight, ventilated enclosure (i.e., tarpaulins).
- D. Store materials off the ground. Any warped, broken or wet insulation boards shall be removed from the site.

PART 2 - PRODUCTS

2.1 APPROVED EQUIVALENT

- A. Contractor must submit any product not specified a minimum seven (7) days before the bid date to Architect in order for product to be considered for approval. The Architect will notify Contractor in writing of decision to accept or reject request.

2.2 INSULATION MATERIALS

- A. Provide thicknesses of insulation as indicated, provide combination of types and thicknesses to provide a complete system.

1. RIGID POLYISOCYANURATE ROOF INSULATION

- a. Rigid, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers.

1. R-Value: Minimum R-5.7 (per inch thickness).
2. Thickness = See drawings.
3. Provide tapered insulation crickets & saddles.
4. Provide tapered insulation where indicated on drawings.

- b. Manufacturers:

1. NRG Barriers, Inc.
2. Schuller Roofing Systems
3. GAF Building Materials, Corp.
4. Firestone Building Products
5. Atlas
6. Johns Manville
7. Approved Equivalent

- c. Insulation board shall meet the following requirements

1. UL or FM listed under Roofing Systems
2. Federal Specification HH-I-1972, Class 1
3. UL 1256 or FM 4450

- d. Physical Properties

Dimensional Stability	ASTM D-2126	2% max.
Compressive Strength	ASTM D-1621	25 psi min.
Vapor Permeability	ASTM E-96	1 perm max.
Foam Core Density	ASTM D-1622	2.0 pcf min.
Water Absorption	ASTM C-209	<1%
R-Factor HR per inch		
Thickness	ASTM C-518	5.6 (Design Value)

2. WOOD FIBER ROOF INSULATION BOARD (RECOVERY BOARD)

- a. Rigid, Wood Fiber insulation board, uncoated.

1. Board Size: 2' x 4'
2. Thickness: See drawings

- b. Manufacturers:
 - 1. Hueisert Fiberboard
 - 2. Blueridge Fiberboard, Inc./Celotex
 - 3. GAF Building Materials Corporation
 - 4. Firestone Building Products
 - 5. Approved Equivalent
- c. Insulation board shall meet the following requirements
 - 1. ASTM C208, Type II, Grade 1 & 2, UL 790, FM Class I

2.3 RELATED MATERIALS

- A. Fiber Cant and Tapered Edge Strips: Performed rigid insulation units of sizes/shapes indicated, matching insulation board or of wood fiber board as per the approved manufacturer.
 - 1. Acceptable Manufacturers
 - a. Huebert Fiberboard
 - b. GAF Building Materials Corporation
 - c. Blue Ridge Fiberboard, Inc./Celotex
 - d. Firestone Building Products
 - e. Approved Equivalent
- B. Roof Board Joint Tape: 6" wide glass fiber mat with adhesive compatible with insulation board facers.
- C. Asphalt: ASTM D-312, Type III Steep Asphalt.
- D. Fasteners
 - 1. Fasteners for the Type II Base Sheet will consist of fastener approved by roof manufacturer for use with the deck type and in compliance with FM requirements.

PART 3 - EXECUTION

3.1 INSPECTION OF SURFACES

- A. Roofing contractor shall be responsible for preparing an adequate substrate to receive insulation.
 - 1. Verify that work which penetrates roof deck has been completed.
 - 2. Verify that wood nailers are properly and securely installed.
 - 3. Examine surfaces for defects, rough spots, ridges, depressions, foreign material, moisture, and unevenness.
 - 4. Do not proceed until defects are corrected.
 - 5. Do not apply insulation until substrate is sufficiently dry.
 - 6. Broom clean substrate immediately prior to application.

7. Use additional insulation to fill depressions and low spots that would otherwise cause ponding water.
8. Verify that temporary roof has been completed.

3.2 INSTALLATION

A. Attachment with Bitumen

1. Mechanically fasten base insulation to existing deck with fasteners approved by the roofing manufacturer for the deck type and in accordance with FM-1-90 requirements.
2. Approved insulation shall be tapered around roof drains and scuppers. Tapered insulation sump shall start with a thickness of one-half at drain bowl to the specified dimension of three feet from the center line of the drain. Install tapered insulation sump in such a way to provide proper slope for runoff. Shape insulation with tool as required so completed surface is smooth and flush with ring of drain. Under no circumstances will the membrane be left unsupported in an area greater than $\frac{1}{4}$ ". Install recovery board over tapered insulation sump as required. Stagger joints between layers.
3. Approved recovery board $\frac{1}{2}$ " minimum thickness shall be installed over base insulation using hot asphalt at the rate of approximately 33 lbs. per square. Stagger end and side joints of insulation layers so all open joints will be eliminated.
4. All boards shall be cut and fitted where the roof deck intersects a vertical surface. The boards shall be cut to fit a minimum of $\frac{1}{4}$ " away from the vertical surface.
5. Install no more insulation at one time than can be roofed on the same day.
6. Install temporary water cut-offs at completion of each day's work and remove upon resumption of work.

3.3 CLEANING

- A. Remove debris and cartons from roof deck. Leave insulation clean and dry, ready to receive roofing membrane.

END OF SECTION 07220

SECTION 07550.1
MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. HOT / COLD Applied 2-Ply Thermoplastic Hybrid Roof System

1.2 RELATED SECTIONS

- A. Section 05300 - Metal Roof Deck.
- B. Section 06100 - Rough Carpentry.
- C. Section 06114 - Wood Blocking and Curbing: Wood nailers and cant strips.
- D. Section 07220 - Insulation Board: Insulation and fastening.
- E. Section 07620 - Sheet Metal Flashing and Trim: Weather protection for base flashings.
- F. Section 07710 - Manufactured Roof Specialties: Counter flashing gravel stops, and fascia.
- G. Section 07724 - Roof Hatches: Frame and integral curb; Counter flashing.
- H. Section 15120 - Piping Specialties: Roof Drains, Sumps.

1.3 REFERENCES

- A. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.
- B. ASTM D 312 - Standard Specification for Asphalt used in Roofing.
- C. ASTM D 451 - Standard Test Method for Sieve Analysis of Granular Mineral Surfacing for Asphalt Roofing Products.
- D. ASTM D 1970 - Specification for Sheet Materials, Self-Adhering Polymer Modified Bituminous, Used as Steep Roofing Underlayment for Ice Dam Protection.
- E. ASTM D 1079 Standard Terminology Relating to Roofing, Waterproofing and Bituminous Materials.
- F. ASTM D 1227 Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing.
- G. ASTM D 1863 Standard Specification for Mineral Aggregate Used as a Protective Coating for Roofing.
- H. ASTM D 2178 Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.
- I. ASTM D 2824 Standard Specification for Aluminum-Pigmented Asphalt Roof Coating.
- J. ASTM D 4586 Standard Specification for Asphalt Roof Cement, Asbestos-Free.
- K. ASTM D 4601 Standard Specification for Asphalt Coated Glass Fiber Base Sheet Used in

Roofing.

- L. ASTM D 5147 Standard Test Method for Sampling and Testing Modified Bituminous Sheet Materials.
- M. ASTM D 6162 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.
- N. ASTM D 6163 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.
- O. ASTM D 6164 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.
- P. ASTM D 6754 - Standard Specification for Ketone Ethylene Ester (KEE) Sheet Roofing.
- Q. ASTM D 6757 - Standard Specification for Underlayment Felt Containing Inorganic Fibers Used in Steep-Slope Roofing.
- R. ASTM E 108 - Standard Test Methods for Fire Test of Roof Coverings
- S. Factory Mutual Research (FM): Roof Assembly Classifications.
- T. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.
- U. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.
- V. Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.
- W. Warnock Hersey (WH): Fire Hazard Classifications.
- X. ANSI-SPRI ES-1 Wind Design Standard for Edge Systems used with Low Slope Roofing Systems.
- Y. ASCE 7, Minimum Design Loads for Buildings and Other Structures
- Z. UL - Fire Resistance Directory.
- AA. FM Approvals - Roof Coverings and/or RoofNav assembly database.
- BB. FBC - Florida Building Code.
- CC. Miami-Dade Building Code Compliance - N.O.A. (Notice of Acceptance).
- DD. California Title 24 Energy Efficient Standards.

1.4 DESIGN / PERFORMANCE REQUIREMENTS

- A. Perform work in accordance with all federal, state and local codes.
- B. Exterior Fire Test Exposure: Roof system shall achieve a UL, FM or WH Class rating for roof slopes indicated on the Drawings as follows:
 - 1. Factory Mutual Class A Rating.
 - 2. Underwriters Laboratory Class A Rating.
 - 3. Warnock Hersey Class A Rating.
- C. Design Requirements: TO BE VERIFIED FOR SPECIFIC PROJECT LOCATION AND

BUILDING CRITERIOA

1. Uniform Wind Uplift Load Capacity
 - a. Installed roof system shall withstand negative (uplift) design wind loading pressures complying with the following criteria.
 - 1) Design Code: ASCE 7, Method 2 for Components and Cladding.
 - 2) Importance Category:
 - a) I.
 - b) II.
 - c) III.
 - d) IV
 - 3) Importance Factor of:
 - a) 0.77
 - b) 1.0
 - c) 1.15
 - d) 2.0
 - 4) Wind Speed: ____ mph
 - 5) Ultimate Pullout Value: ____ pounds per each of the fastener
 - 6) Exposure Category:
 - a) B.
 - b) C.
 - c) D.
 - 7) Design Roof Height: ____ feet.
 - 8) Minimum Building Width: ____ feet.
 - 9) Roof Pitch: ____ :12.
 - 10) Roof Area Design Uplift Pressure:
 - a) Zone 1 - Field of roof ____ psf
 - b) Zone 2 - Eaves, ridges, hips and rakes ____ psf
 - c) Zone 3 - Corners ____ psf
 2. Snow Load: ____ psf.
 3. Live Load: 20 psf, or not to exceed original building design.
 4. Dead Load:
 - a. Installation of new roofing materials shall not exceed the dead load capacity of the existing roof structure.
- D. Energy Star: Roof System shall comply with the initial and aged reflectivity required by the U.S. Federal Government's Energy Star program.
- E. Roof System membranes containing recycled or bio-based materials shall be third party certified through UL Environment.
1. FM Approvals:
 - a. RoofNav Website

1.5 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 1. Preparation instructions and recommendations.
 2. Storage and handling requirements and recommendations.
 3. Installation instructions.
- B. Shop Drawings: Submit shop drawings including installation details of roofing, flashing, fastening, insulation and vapor barrier, including notation of roof slopes and fastening patterns of insulation and base modified bitumen membrane, prior to job start.
- C. Design Pressure Calculations: Submit design pressure calculations for the roof area in accordance with ASCE 7 and local Building Code requirements. Include a roof system attachment analysis report, certifying the system's compliance with applicable wind load requirements before Work begins.

- D. Recycled or Bio-Based Materials: Provide third party certification through UL Environment of roof System membranes containing recycled or bio based materials.
- E. Verification Samples: For each modified bituminous membrane ply product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
- F. Manufacturer's Certificates: Provide to certify products meet or exceed specified requirements.
- G. Test Reports: Submit test reports, prepared by an independent testing agency, for all modified bituminous sheet roofing, indicating compliance with ASTM D5147.
- H. Manufacturer's Fire Compliance Certificate: Certify that the roof system furnished is approved by Factory Mutual (FM), Underwriters Laboratories (UL), Warnock Hersey (WH) or approved third party testing facility in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.
- I. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work. Provide product warranty executed by the manufacturer. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.
- B. Manufacturer Qualifications: Company specializing in manufacturing products specified with documented ISO 9001 certification and minimum of twelve years of documented experience and must not have been in Chapter 11 bankruptcy during the last five years.
- C. Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience and a certified Pre-Approved Garland Contractor.
- D. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.
- E. Product Certification: Provide manufacturer's certification that materials are manufactured in the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.
- F. Source Limitations: Obtain all components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer. Upon request of the Architect or Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

1.7 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to commencing Work of this section.
- B. Review installation procedures and coordination required with related Work.
- C. Inspect and make notes of job conditions prior to installation:
 - 1. Record minutes of the conference and provide copies to all parties present.

2. Identify all outstanding issues in writing designating the responsible party for follow-up action and the timetable for completion.
3. Installation of roofing system shall not begin until all outstanding issues are resolved to the satisfaction of the Architect.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.
- B. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.
- C. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface except store KEE-Stone FB 60 rolls flat on a clean flat surface. No wet or damaged materials will be used in the application.
- D. Store at room temperature wherever possible, until immediately prior to installing the roll. During winter, store materials in a heated location with a 50 degree F (10 degree C) minimum temperature, removed only as needed for immediate use. Keep materials away from open flame or welding sparks.
- E. Avoid stockpiling of materials on roofs without first obtaining acceptance from the Architect/Engineer.
- F. Adhesive storage shall be between the range of above 50 degree F (10 degree C) and below 80 degree F (27 degree C). Area of storage shall be constructed for flammable storage.

1.9 COORDINATION

- A. Coordinate Work with installing associated metal flashings as work of this section proceeds.

1.10 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.11 WARRANTY

- A. Upon completion of the work, provide the Manufacturer's written and signed NDL Warranty, warranting that, if a leak develops in the roof during the term of this warranty, due either to defective material or defective workmanship by the installing contractor, the manufacturer shall provide the Owner, at the Manufacturer's expense, with the labor and material necessary to return the defective area to a watertight condition.
 1. Warranty Period:
 - a. 20, 30, or 40 years from date of acceptance.
- B. Upon completion of the work, provide the Manufacturer's written and signed Edge-To-Edge NDL System Warranty, warranting that, if a leak develops in the roof during the term of this warranty, due either to defective material or defective workmanship by the installer, the manufacturer shall provide the Owner, at the Manufacturer's expense, with the labor and material necessary to return the defective area to a watertight condition including Garland Metal Components.
 1. Warranty Period:
 - a. 20, 30, or 40 years from date of acceptance.

- 1) Must include roofing manufacturer's pre-manufactured edge systems including copings and or flashless metal edge components.
- C. Installer is to guarantee all work against defects in materials and workmanship for a period indicated following final acceptance of the Work.
1. Warranty Period:
 - a. 2 years from date of acceptance.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design: The Garland Company
- B. Tremco Inc.
- C. Ecology Roofing Systems.

2.2 HOT, COLD, OR HOT/COLD APPLIED 2-PLY ROOF SYSTEM

- A. Nailable Base Sheet: One ply fastened to the deck per wind uplift calculations.
 1. Garland approved generic Type II base sheet
- B. Base (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
 1. StressBase 80:
- C. Modified Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
 1. Base Bid:
 - a. VersiPly Mineral
 2. 30 year Upgrade:
 - a. VersiPly Mineral with Garla-Brite Coating
 - b. Stress Ply EUV FR Mineral
 - c. VersiPly 80 With Flood & Gravel Surfacing
 3. 40 year Upgrade:
 - a. OptiMax Mineral
 - b. OptiMax Mineral With Flood & Gravel Surfacing
- D. Interply Adhesive: (1 and 2)
 1. Weatherking Plus WC:
 2. Generic Type III Asphalt:
 3. Generic Type IV Asphalt:
- E. Flashing Base Ply: One ply bonded to the prepared substrate with Interply Adhesive:
 1. StressBase 80:
- F. Flashing Cap (Ply) Sheet: One ply bonded to the prepared substrate with Interply Adhesive:
 1. Base Bid
 - a. VersiPly Mineral:
 2. 30 Year Upgrade:
 - a. VersiPly Mineral with Garla-Brite Coating
 - b. Stress Ply EUV FR Mineral
 3. 40 Year Upgrade:
 - a. Optimax Mineral
- G. Flashing Ply Adhesive:
 1. Weatherking Flashing Adhesive:
 2. Flashing Bond:

- H. Surfacing: Requires 30 day wait before applying.
 - 1. Base Bid:
 - a. Mineral Cap
 - 2. 30 Year Upgrade:
 - a. Garla-Brite Aluminum Coating
 - b. Sun Burst White Minerals
 - c. Flood Coat/Aggregate:
 - 1) Weatherscreen:
 - a) With Flashing Coatings: Garla-Brite
 - 2) Black-Knight Cold:
 - a) With Flashing Coatings: Garla-Brite
 - 3. 40 Year Upgrade:
 - a. OptiMax Minerals
 - b. OptiMax Smooth with Flood Coat and Gravel.
 - 1) Weatherscreen.
 - 2) Black-Knight Cold
 - a) With Flashing Coatings: Garla-Brite

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Inspect and approve the deck condition, slopes and fastener backing if applicable, parapet walls, expansion joints, roof drains, stack vents, vent outlets, nailers and surfaces and elements.
- C. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.
- D. If substrate preparation and other conditions are the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. General: Clean surfaces thoroughly prior to installation.
 - 1. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
 - 2. Fill substrate surface voids that are greater than 1/4 inch wide with an acceptable fill material.
 - 3. Roof surface to receive roofing system shall be smooth, clean, free from loose gravel, dirt and debris, dry and structurally sound.
 - 4. Wherever necessary, all surfaces to receive roofing materials shall be power broom and vacuumed to remove debris and loose matter prior to starting work.
 - 5. Do not apply roofing during inclement weather. Do not apply roofing membrane to damp, frozen, dirty, or dusty surfaces.
 - 6. Fasteners and plates for fastening components mechanically to the substrate shall provide a minimum pull-out capacity of 300 lbs. (136 k) per fastener. Base or ply sheets attached with cap nails require a minimum pullout capacity of 40 lb. per nail.
 - 7. Prime decks where required, in accordance with requirements and recommendations of the primer and deck manufacturer.

3.3 INSTALLATION - GENERAL

- A. Install modified bitumen membranes and flashings in accordance with manufacturer's instructions and with the recommendations provided by the National Roofing Contractors Association's Roofing & Waterproofing Manual, the Asphalt Roofing Manufacturers Association, and applicable codes.
- B. General: Avoid installation of modified bitumen membranes at temperatures lower than 40-45 degrees F. When work at such temperatures unavoidable use the following precautions:
 - 1. Take extra care during cold weather installation and when ambient temperatures are affected by wind or humidity, to ensure adequate bonding is achieved between the surfaces to be joined. Use extra care at material seam welds and where adhesion of the applied product to the appropriately prepared substrate as the substrate can be affected by such temperature constraints as well.
 - 2. Unrolling of cold materials, under low ambient conditions must be avoided to prevent the likelihood of unnecessary stress cracking. Rolls must be at least 40 degrees F at the time of application. If the membrane roll becomes stiff or difficult to install, it must be replaced with roll from a heated storage area.
- C. Commence installation of the roofing system at the lowest point of the roof (or roof area), working up the slope toward the highest point. Lap sheets shingle fashion so as to constantly shed water
- D. All slopes greater than 2:12 require back-nailing to prevent slippage of the ply sheets. Use ring or spiral-shank 1 inch cap nails, or screws and plates at a rate of 1 fastener per ply (including the membrane) at each insulation stop. Place insulation stops at 16 ft o.c. for slopes less than 3:12 and 4 feet o.c. for slopes greater than 3:12. On non-insulated systems, nail each ply directly into the deck at the rate specified above. When slope exceeds 2:12, install all plies parallel to the slope (strapping) to facilitate backnailing. Install 4 additional fasteners at the upper edge of the membrane when strapping the plies.

3.1 INSTALLATION HOT APPLIED ROOF SYSTEM

- A. Base/Felt Ply(s): Install base sheet or felt plies in twenty five (25) lbs (11.3kg) per square of bitumen shingled uniformly to achieve one or more plies over the entire prepared substrate. Shingle in direction of slope of roof to shed water on each area of roof. Do not step on base rolls until asphalt has cooled, fish mouths should be cut and patched.
 - 1. Lap ply sheet ends 8 inches (203 mm). Stagger end laps 2 inches (304mm) minimum.
 - 2. Install base flashing ply to all perimeter and projection details after membrane application.
 - 3. Extend plies 2 inches beyond top edges of cants at wall and projection bases.
 - 4. Install base flashing ply to all perimeter and projection details.
 - 5. Allow the one ply of base sheet to cure at least 30 minutes before installing the modified membrane. However, the modified membrane must be installed the same day as the base plies.
- B. Modified Cap Ply(s): Solidly bond the modified membrane to the base layers with specified material at the rate of 25 to thirty 30 lbs. (11-13kg) per 100 square feet.
 - 1. Roll must push a puddle of hot material in front of it with material slightly visible at all side laps. Use care to eliminate air entrapment under the membrane. Exercise care during application to eliminate air entrapment under the membrane.
 - 2. Apply pressure to all seams to ensure that the laps are solidly bonded to substrate.
 - 3. Install subsequent rolls of modified membrane as above with a minimum of 4 inch (101 mm) side laps and 8 inch (203 mm) end laps. Stagger end laps. Apply membrane in the same direction as the previous layers but stagger the laps so they do not coincide with the laps of the base layers.
 - 4. Apply hot material no more than 5 feet (1.5 m) ahead of each roll being embedded.
 - 5. Extend membrane 2 inches (50 mm) beyond top edge of all cants in full moppings of the specified hot material.

3.2 INSTALLATION COLD APPLIED ROOF SYSTEM

- A. Base Ply: Cut base ply sheets into 18 foot lengths and allow plies to relax before installing. Install base sheet in Interply Adhesive: applied at the rate required by the manufacturer. Shingle base sheets uniformly to achieve one ply throughout over the prepared substrate. Shingle in proper direction to shed water on each large area of roofing.
1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
 2. Solidly bond to the substrate and adjacent ply with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
 3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Use care to eliminate air entrapment under the membrane.
 4. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
 5. Extend plies 2 inches beyond top edges of cants at wall and projection bases.
 6. Install base flashing ply to all perimeter and projection details.
 7. Allow the one ply of base sheet to cure at least 30 minutes before installing the modified membrane. However, the modified membrane must be installed the same day as the base plies.
- B. Modified Cap Ply(s): Cut cap ply sheets into 18 foot lengths and allow plies to relax before installing. Install in interplay adhesive applied at the rate required by the manufacturer. Shingle sheets uniformly over the prepared substrate to achieve the number of plys specified. Shingle in proper direction to shed water on each large area of roofing.
1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
 2. Solidly bond to the base layers with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
 3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Care should be taken to eliminate air entrapment under the membrane.
 4. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
 5. Allow cold adhesive to set for 5 to 10 minutes before installing the top layer of modified membrane.
 6. Extend membrane 2 inches beyond top edge of all cants in full moppings of the cold adhesive as shown on the Drawings.
- C. Fibrous Cant Strips: Provide non-combustible perlite or glass fiber cant strips at all wall/curb detail treatments where angle changes are greater than 45 degrees. Cant may be set in approved cold adhesives, hot asphalt or mechanically attached with approved plates and fasteners.
- D. Wood Blocking, Nailers and Cant Strips: Provide wood blocking, nailers and cant strips as specified in Section 06114.
1. Provide nailers at all roof perimeters and penetrations for fastening membrane flashings and sheet metal components.
 2. Wood nailers should match the height of any insulation, providing a smooth and even transition between flashing and insulation areas.
 3. Nailer lengths should be spaced with a minimum 1/8 inch gap for expansion and contraction between each length or change of direction.
 4. Nailers and flashings should be fastened in accordance with Factory Mutual "Loss Prevention Data Sheet 1- 49, Perimeter Flashing" and be designed to be capable of resisting a minimum force of 200 lbs/lineal foot in any direction.

- E. Metal Work: Provide metal flashings, counter flashings, parapet coping caps and thru-wall flashings as specified in Section 07620 or Section 07710. Install in accordance with the SMACNA "Architectural Sheet Metal Manual" or the NRCA Roofing Waterproofing manual.
- F. Termination Bar: Provide a metal termination bar or approved top edge securement at the terminus of all flashing sheets at walls and curbs. Fasten the bar a minimum of 8 inches (203 mm) o/c to achieve constant compression. Provide suitable, sealant at the top edge if required.
- G. Flashing Base Ply: Install flashing sheets by the same application method used for the base ply.
 - 1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
 - 2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
 - 3. Adhere to the underlying base ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
 - 4. Solidly adhere the entire flashing ply to the substrate. Secure the tops of all flashings that are not run up and over curb through termination bar fastened at 6 inches (152 mm) O.C. and sealed at top.
 - 5. Seal all vertical laps of flashing ply with a three-course application of trowel-grade mastic and fiberglass mesh.
 - 6. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
 - 7. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work.
 - 8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.
- H. Flood Coat/Aggregate:
 - 1. Install after cap sheets and modified flashing, tests, repairs and corrective actions have been completed and approved.
 - 2. Apply flood coat materials in the quantities recommended by the manufacturer.
 - 3. Uniformly embed aggregate in the flood coat of cold adhesive at a rate recommended by the manufacturer.
 - 4. Aggregate must be dry and placed in a manner required to form a compact, embedded overlay. To aid in embedment, lightly roll aggregate.
- I. Flashing Cap Ply:
 - 1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
 - 2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
 - 3. Adhere to the underlying base flashing ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
 - 4. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
 - 5. Coordinate roof accessories, miscellaneous sheet metal accessory items with the roofing system work.

6. All stripping shall be installed prior to flashing cap sheet installation.
7. Heat and scrape granules when welding or adhering at cut areas and seams to granular surfaces at all flashings.
8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or nailed 4 inches on center and covered with an acceptable counter flashing.

J. Surface Coatings:

1. Base Bid:
 - a. No Surface coatings
2. 30 Year Upgrade:
 - a. Bright White Mineral Cap Option: No Surface coatings.
or
 - b. Aluminum Surface Option: Apply aluminum coating over top of base bid cap sheet. Apply 2 coats at ½ gallon per 100 SF in perpendicular directions.
or
 - c. Flood & Gravel Option: Aluminum surface coatings over all flashings only. Apply 2 coats at ½ gallon per 100 SF in perpendicular directions.
3. 40 Year Upgrade:
 - a. Mineral Cap Option: No Surface Coatings.
 - b. Flood & Gravel Option: Aluminum surface coatings over all flashings only. Apply 2 coats at ½ gallon per 100 SF in perpendicular directions.

K. Roof Walkways: Provide walkways in areas indicated on the Drawings.

3.3 CLEANING

- A. Clean-up and remove daily from the site all wrappings, empty containers, paper, loose particles and other debris resulting from these operations.
- B. Remove asphalt markings from finished surfaces.
- C. Repair or replace defaced or disfigured finishes caused by Work of this section.

3.4 PROTECTION

- A. Provide traffic ways, erect barriers, fences, guards, rails, enclosures, chutes and the like to protect personnel, roofs and structures, vehicles and utilities.
- B. Protect exposed surfaces of finished walls with tarps to prevent damage.
- C. Plywood for traffic ways required for material movement over existing roofs shall be not less than 5/8 inch (16 mm) thick.
- D. In addition to the plywood listed above, an underlayment of minimum 1/2 inch (13 mm) recover board is required on new roofing.
- E. Special permission shall be obtained from the Manufacturer before any traffic shall be permitted over new roofing.

3.5 FIELD QUALITY CONTROL

- A. Inspection: Provide manufacturer's field observations at start-up and at intervals of approximately 2-3 days per week until 90 percent completion. Provide a final inspection upon completion of the Work.

1. Warranty shall be issued upon manufacturer's acceptance of the installation.
2. Field observations shall be performed by a Sales Representative employed full-time by the manufacturer and whose primary job description is to assist, inspect and approve membrane installations for the manufacturer.
3. Provide observation reports from the Sales Representative indicating procedures followed, weather conditions and any discrepancies found during inspection.
4. Provide a final report from the Sales Representative, certifying that the roofing system has been satisfactorily installed according to the project specifications, approved details and good general roofing practice.

3.6 SCHEDULES

A. Base (Ply) Sheet:

1. StressBase 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim, performance requirements according to ASTM D 5147.
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 100 lbf/in XD 100 lbf/in
 - 2) 50mm/min. @ -17.78 +/- 2 deg. C MD 17.5 kN/m XD 17.5 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 110 lbf XD 100 lbf
 - 2) 50mm/min. @ 23 +/- 2 deg. C MD 489 N XD 444 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 4 % XD 4 %
 - 2) 50mm/min @ -17.78 +/- 2 deg. C MD 4 % XD 4 %
 - d. Low Temperature Flexibility, ASTM D 5147, Passes -40 deg. F (-40 deg. C)

B. Thermoplastic/Modified Cap (Ply) Sheet:

1. Base Bid:
VersiPly Mineral: 145 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane with dual fiberglass reinforced scrim. ASTM D6163, Type III Grade S
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 220 lbf/in XD 220 lbf/in
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 38.5 kN/m XD 38.5 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 1335 N XD 1335 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 4.5% XD 4.5%
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 4.5% XD 4.5%
 - d. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C)
2. 30 year Aluminized Upgrade:
VersiPly Mineral: 145 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane with dual fiberglass reinforced scrim. ASTM D6163, Type III Grade S
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 220 lbf/in XD 220 lbf/in
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 38.5 kN/m XD 38.5 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 1335 N XD 1335 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 4.5% XD 4.5%

- 2) 50 mm/min. @ 23 +/- 2 deg. C MD 4.5% XD 4.5%
 - d. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C)
- 3. 30 year Flood & Gravel Upgrade:
VersiPly 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing membrane with dual fiberglass reinforced scrim. ASTM D 6163, Type III Grade G
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 220 lbf/in XD 220 lbf/in
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 38.5 kN/m XD 38.5 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 1335 N XD 1335 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 4.5% XD 4.5%
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 4.5% XD 4.5%
 - d. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34.4 deg. C)
- 4. 30 Year Bright White Mineral Upgrade:
StressPly EUV FR Mineral: 160 mil SBS and SIS (Styrene-Butadiene-Styrene and Styrene-Isoprene-Styrene) rubber modified membrane incorporating post-consumer recycled rubber, fire retardant additives and reinforced with a fiberglass and polyester composite scrim. Surfaced with the highly reflective Sunburst white mineral. ASTM D 6162, Type III Grade G
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 700 lbf/in XD 750 lbf/in
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 122.5 kN/m XD 131.25 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 1300 lbf XD 1400 lbf
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 5783 N XD 6227 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 6.0% XD 6.0%
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 6.0% XD 6.0%
 - d. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C)
 - e. Reflectivity, ASTM C 1549: 73%
- 5. 40 year Mineral Cap Upgrade:
OptiMax FR Mineral: 145 mil mineral surfaced, polyurethane modified roofing membrane with fire retardant characteristics, and dual fiberglass reinforced scrim. ASTM D 6163, Type III Grade G
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 205 lbf/in XD 215 lbf/in
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 36.0 kN/m XD 38 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 1334 N XD 1334 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 4.7% XD 5.0%
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 4.7% XD 5.0%
 - d. Low Temperature Flexibility, ASTM D 5147, Passes 0 deg. F (-18 deg. C)
- 6. 40 Year Flood & Gravel Upgrade:
OptiMax: 80 mil mineral surfaced, polyurethane modified roofing membrane with fire retardant characteristics, and dual fiberglass reinforced scrim. ASTM D 6163, Type III Grade S
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 215 lbf/in XD 225 lbf/in

- 2) 50 mm/min. @ 23 +/- 2 deg. C MD 38.0 kN/m XD 39 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 1334 N XD 1334 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 4.7% XD 5.0%
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 4.7% XD 5.0%
 - d. Low Temperature Flexibility, ASTM D 5147, Passes 0 deg. F (-18 deg. C)
- C. Interply Adhesive:
 - 1. Weatherking: Rubberized, polymer modified cold process asphalt roofing bitumen V.O.C. compliant ASTM D 3019. Performance Requirements:
 - a. Non-Volatile Content ASTM D 4479 70%
 - b. Density ASTM D1475 8.9 lbs./gal.
 - c. Viscosity Stormer ASTM D562 400-500 grams
 - d. Flash Point ASTM D 93 100 deg. F min. (37 deg. C)
 - e. Slope: up to 3:12
 - 2. Weatherking Plus WC: Rubberized, polymer modified cold process asphalt roofing bitumen V.O.C. compliant ASTM D 3019. Performance Requirements:
 - a. Non-Volatile Content ASTM D 4479 78%
 - b. Density ASTM D1475 9.0 lbs./gal.
 - c. Viscosity Stormer ASTM D562 900-1100 grams
 - d. Flash Point ASTM D 93 100 deg. F min. (37 deg. C)
 - e. Slope: up to 2:12
 - f. V.O.C. ASTM D 3960 Less than 250 g/l
 - g. Flash Point ASTM D 93 105 deg. F
 - h. Slope maximum 1:12
 - 3. Generic Type III Asphalt: Hot Bitumen, ASTM D 312, Type III steep asphalt having the following characteristics:
 - a. Softening Point 185 deg. F - 205 deg. F
 - b. Flash Point 500 deg. F
 - c. Penetration @ 77 deg. F 15-35 units
 - d. Ductility @ 77 deg. F 2.5 cm
 - 4. Generic Type IV Asphalt: Hot Bitumen, ASTM D 312, Type IV special steep asphalt having the following characteristics:
 - a. Softening Point 210 deg. F - 225 deg. F
 - b. Flash Point 500 deg. F
 - c. Penetration @ 77 deg. F 15-25 units
 - d. Ductility @ 77 deg. F 1.5 cm
- D. Flashing Base Ply:
 - 1. StressBase 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim, performance requirements according to ASTM D 5147.
 - a. Tensile Strength, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 100 lbf/in XD 100 lbf/in
 - 2) 50 mm/min. @ -17.78 +/- 2 deg. C MD 17.5 kN/m XD 17.5 kN/m
 - b. Tear Strength, ASTM D 5147
 - 1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 110 lbf XD 100 lbf
 - 2) 50 mm/min. @ 23 +/- 2 deg. C MD 489 N XD 444 N
 - c. Elongation at Maximum Tensile, ASTM D 5147
 - 1) 2 in/min. @ 0 +/- 3.6 deg. F MD 4 % XD 4 %
 - 2) 50 mm/min. @ -17.78 +/- 2 deg. C MD 4 % XD 4 %
 - d. Low Temperature Flexibility, ASTM D 5147
 - 1) Passes -40 deg. F (-40 deg. C)

E. Flashing Ply Adhesive:

1. Flashing Bond: Asphalt roofing mastic V.O.C. compliant, ASTM D 4586, Type II trowel grade flashing adhesive.
 - a. Non-Volatile Content ASTM D 4479 70 min.
 - b. Density ASTM D 1475 8.3 lbs./gal. (1kg/l)
 - c. Flash Point ASTM D 93 103 deg. F (39 deg. C)
2. Weatherking Flashing Adhesive: Brush grade flashing adhesive.
 - a. Non-Volatile Content ASTM D 4479 70 min.
 - b. Density ASTM D 1475 8.6 lbs./gal. (1kg/l)
 - c. Flash Point ASTM D 93 100 deg. F (37 deg. C)
3. Flashing Cap (Ply) Sheet:
 - a. VersiPly Mineral: 145 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane with dual fiberglass reinforced scrim. ASTM D6163, Type III Grade S
 - 1) Tensile Strength, ASTM D 5147
 - a) 2 in./min. @ 73.4 +/- 3.6 deg. F MD 220 lbf/in XD 220 lbf/in
 - b) 50 mm/min. @ 23 +/- 2 deg. C MD 38.5 kN/m XD 38.5 kN/m
 - 2) Tear Strength, ASTM D 5147
 - a) 2 in./min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
 - b) 50 mm/min. @ 23 +/- 2 deg. C MD 1335 N XD 1335 N
 - 3) Elongation at Maximum Tensile, ASTM D 5147
 - a) 2 in./min. @ 73.4 +/- 3.6 deg. F MD 4.5% XD 4.5%
 - b) 50 mm/min. @ 23 +/- 2 deg. C MD 4.5% XD 4.5%
 - 4) Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C)

F. Surfacing:

1. Base Bid:
 - a. Mineral Cap
2. 30 Year Aluminum Coating Upgrade:
 - a. Garla-Brite: ASTM D 2824 aluminum coating non-fibered aluminum roof coating non-fibered aluminum roof coating having the following characteristics:
 - 1) Flash Point 103 deg. F (39 deg. C) min.
 - 2) Weight/Gallon 7.9 lbs./gal. (1.0 g/cm³)
3. 30 or 40 Year Upgrade Flood Coat/Aggregate:
 - a. Weatherscreen: Asphalt protective roof coating, Weatherscreen; heavy-bodied, fiber reinforced, cold process roof coating having the following characteristics:
 - 1) Weight/Gallon 9.1 lbs./gal. (1.1 g/cm³)
 - 2) Non-Volatile % (ASTM D 4479) Typical 75
 - 3) Viscosity Brookfield RVT;
 - 4) Spindle #5; 10RPM @ 71 deg. F 20,000-25,000 cPs
 - 5) Roofing Aggregate: ASTM D 1863
 - a) Slag.
 - b) Pea gravel.
 - c) White spar.
 - b. Black-Knight/Black-Stallion Cold: Coal Tar protective roof coating; heavy-bodied, fiber reinforced, cold process polymer modified, coal tar roof coating having the following characteristics:
 - 1) Weight/Gallon 9.0 lbs./gal. (1.07 g/cm³)
 - 2) Solids by weight 87%
 - 3) Viscosity; Brookfield Heliopath, 2.5 rpm 120,000 cPs
 - 4) Roofing Aggregate: ASTM D 1863
 - a) Slag.

- b) Pea gravel.
- 5) White spar.
- c. Flashing Coatings:
 - 1) Garla-Brite: ASTM D 2824 aluminum coating non-fibered aluminum roof coating non-fibered aluminum roof coating having the following characteristics:
 - a) Flash Point 103 deg. F (39 deg. C) min.
 - b) Weight/Gallon 7.9 lbs./gal. (1.0 g/cm³)

END OF SECTION

SECTION 075630
FLUID APPLIED ROOFING RESTORATION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Mineral Modified Bitumen Surface Roof Restoration
- B. Edge Treatment and Roof Penetration Flashings

1.2 RELATED SECTIONS

- A. Section 06100 - Rough Carpentry: Roof blocking installation and requirements.

1.3 REFERENCES

- A. ASTM C 78 - Standard Test Method for Flexural Strength of Concrete.
- B. ASTM C 92 - Standard Test Methods for Sieve Analysis and Water Content of Refractory Materials.
- C. ASTM C 109 - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars.
- D. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants.
- E. ASTM D 93 - Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester.
- F. ASTM D 562 - Standard Test Method for Consistency of Paints Measuring Krebs Unit (KU) Viscosity Using a Stormer-Type Viscometer.
- G. ASTM D 624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers
- H. ASTM D 1002 - Standard Test Method for Apparent Shear Strength of Single-Lap-Joint Adhesively Bonded Metal Specimens by Tension Loading (Metal-to-Metal).
- I. ASTM D 1475 - Standard Test Method For Density of Liquid Coatings, Inks, and Related Products.
- J. ASTM D 2196 - Standard Test Methods for Rheological Properties of Non-Newtonian Materials by Rotational (Brookfield type) Viscometer.
- K. ASTM D 2369 - Standard Test Method for Volatile Content of Coatings.
- L. ASTM D 3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.
- M. ASTM D 4212 - Standard Test Method for Viscosity by Dip-Type Viscosity Cups.
- N. ASTM D 4402 - Standard Test Method for Viscosity Determination of Asphalt at Elevated Temperatures Using a Rotational Viscometer.
- O. ASTM D 4479 - Standard Specification for Asphalt Roof Coatings - Asbestos-Free.

- P. ASTM E 1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces
- Q. SRI - Solar Reflectance Index calculated according to ASTM E 1980.
- R. SMACNA Architectural Sheet Metal Manual.
- S. National Roofing Contractors Association (NRCA) - Roofing and Waterproofing Manual.

1.4 SYSTEM DESCRIPTION

- A. Mineral Modified Bitumen Surface Roof Restoration: Renovation work includes:
 - 1. Surface preparation: Remove dirt, and debris.
 - 2. Fascia Edges: Cut back edges. Prime, coat with mastic, cover with fabric.
 - 3. Parapets and Vertical Surfaces: Cut back and replace fabric base flashings. Prime, coat with mastic, cover with fabric.
 - 4. Metal Flashings: Repair/Replace metal flashings, pitch pockets, etc.
 - 5. Roof Repairs: Repair blisters, stressed or cracked membrane. Cut back, patch with primer/mastic/membrane.
 - 6. Primer: Prime surface of new asphalt only.
 - 7. Full Reinforcement: Apply base coat and install full fabric reinforcement and topcoat over entire roof surface.
 - 8. Coating: Apply coating over entire roof surface.
 - 9. Install roofing mineral or reflective surfacing into the coating while it is wet or let coating cure for 30 days and then paint with reflective coating.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work. Provide product warranty executed by the manufacturer. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with manufacturer's current Application and Installation Guidelines and the NRCA Roofing and Waterproofing Manual.
- B. Manufacturer Qualifications: Manufacturer: Company specializing in manufacturing products specified in this section with documented ISO 9001 certification and minimum twelve years and experience.
- C. Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience and a certified Pre-Approved Garland Contractor.
- D. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.
- E. Product Certification: Provide manufacturer's certification that materials are manufactured in

the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.

- F. Source Limitations: Obtain all components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer. Upon request of the Architect or Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

1.7 PRE-INSTALLATION CONFERENCE

- A. Convene a pre-roofing conference approximately two weeks before scheduled commencement of roofing system installation and associated work.
- B. Require attendance of installers of deck or substrate construction to receive roofing, installers of rooftop units and other work in and around roofing which must precede or follow roofing work including mechanical work, Architect, Owner, roofing system manufacturer's representative.
- C. Objectives include:
 - 1. Review foreseeable methods and procedures related to roofing work, including set up and mobilization areas for stored material and work area.
 - 2. Tour representative areas of roofing substrates, inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work.
 - 3. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.
 - 4. Review roofing system requirements, Drawings, Specifications and other Contract Documents.
 - 5. Review and finalize schedule related to roofing work and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
 - 6. Review required inspection, testing, certifying procedures.
 - 7. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing.
 - 8. Record conference including decisions and agreements reached. Furnish a copy of records to each party attending.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.
- B. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.
- C. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface. No wet or damaged materials will be used in the application.
- D. Storage temperatures should be between 60 degrees F to 80 degrees F (15.6 degrees to 26.7 degrees C). Indoor ventilated storage is recommended. Ensure jobsite storage is in a shaded and ventilated area. Do not store in direct sunlight Keep materials away from open flame or welding sparks.
- E. Avoid stockpiling of materials on roofs without first obtaining acceptance from the

Architect/Engineer.

1.9 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- B. Weather Condition Limitations: Product application must not be done when rain or other conditions such as fog or heavy dew are possible within a 24 hour period. Roof surface must be at least 6 Fahrenheit degrees or 3 Celsius degrees above the dew point and rising.
- C. Proceed with roofing work only when existing and forecasted weather conditions will permit unit of work to be installed in accordance with manufacturer's recommendations and warranty requirements.
- D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.
- E. When applying materials with spray equipment, take precautions to prevent over spray and/or solvents from damaging or defacing surrounding walls, building surfaces, vehicles or other property. Care should be taken to do the following:
 - 1. Close air intakes into the building.
 - 2. Have a dry chemical fire extinguisher available at the jobsite.
 - 3. Post and enforce "No Smoking" signs.
- F. Avoid inhaling spray mist; take precautions to ensure adequate ventilation.
- G. Protect completed roof sections from foot traffic for a period of at least 48 hours at 75 degrees F (24 degrees C) and 50 percent relative humidity or until fully cured.
- H. Take precautions to ensure that materials do not freeze.
- I. Minimum temperature for application for most products is 40 degrees F (4 degrees C) and rising for solvent based materials and 50 degrees F (10 degrees C) and rising for water based.

1.10 WARRANTY

- A. Warranty Period: 10 years.
 - 1. Upon completion of the work, provide the Manufacturer's written and signed limited labor and materials Warranty, warranting that, if a leak develops in the roof during the term of this warranty, due either to defective material or defective workmanship by the installing contractor, the manufacturer shall provide the Owner, at the Manufacturer's expense, with the labor and material necessary to return the defective area to a watertight condition.
 - a. Mineral Modified Bitumen Surface Roof Restoration:
- B. Warranty Period: Installer is to guarantee all work against defects in materials and workmanship for a period indicated following final acceptance of the Work.
 - 1. Warranty Period:
 - a. 2 years from date of acceptance.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Garland Company, Inc. (The); 3800 E. 91st St., Cleveland, OH

44105. ASD. Toll Free: 800-321-9336. Phone: 216-641-7500. Fax: 216-641-0633. Web Site: <http://www.garlandco.com>.

- B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 MINERAL MODIFIED BITUMEN SURFACE ROOF RESTORATION

- A. Revitalizer:
 - 1. Primer: Garla-Prime.
 - 2. Coating: Revitalizer.
 - 3. Flashing: Replace flashings.
 - 4. Reinforcement: full fabric reinforcement.
 - a. Grip Polyester Firm.
 - 5. Surfacing/Non-Slip/Reflective:
 - a. Garla-Brite

2.3 ACCESSORIES:

- A. Roof Insulation: In accordance with Section 07220.
- B. Nails and Fasteners: Non-ferrous metal or galvanized steel, except that hard copper nails shall be used with copper; aluminum or stainless steel nails shall be used with aluminum; and stainless steel nails shall be used with stainless steel, Fasteners shall be self-clinching type of penetrating type as recommended by the deck manufacturer. Fasten nails and fasteners flush-driven through flat metal discs not less than 1 inch (25 mm) diameter. Omit metal discs when one-piece composite nails or fasteners with heads not less than 1 inch (25 mm) diameter are used.
- C. Urethane Sealant - Tuff-Stuff MS: One part, non-sag sealant as approved and furnished by the membrane manufacturer for moving joints.
 - 1. Tensile Strength, ASTM D 412: 250 psi
 - 2. Elongation, ASTM D 412: 950%
 - 3. Hardness, Shore A ASTM C 920: 35
 - 4. Adhesion-in-Peel, ASTM C 92: 30 pli
- D. Urethane Adhesive - Green-Lock Structural Adhesive: Single component, 100% solids structural adhesive as furnished and recommended by the membrane manufacturer.
 - 1. Elongation, ASTM D 412: 300%
 - 2. Hardness, Shore A, ASTM C 920: 50
 - 3. Shear Strength, ASTM D 1002: 300 psi
- E. Silicone Dampproofing - Seal-A-Pore HP: Transparent and colorless solution designed to damp-proof above grade masonry surfaces as recommended and furnished by the membrane manufacturer.
 - 1. Density @77 degrees F 8.4 lb/gal min.
 - 2. Viscosity (Zahn #2 cup) Typical 14 sec.
- F. Acrylic Damp-Proofing Tuff-Coat: Damp-proofing that provides heavy body protection while bridging small hair line cracks and masonry imperfections as recommended and furnished by the membrane manufacturer.
 - 1. Density @77 degrees F 12.25 lb/gal typical
 - 2. Viscosity, ASTM D 562: 95 KU
- G. Butyl Tape: 100% solids, asbestos free and compressive tape designed to seal as recommended and furnished by the membrane manufacturer.

- H. Non-Shrink Grout: GarRock all-weather fast setting chemical action concrete material to fill pitch pans.
 - 1. Flexural Strength, ASTM C 78: (modified) 7 days 1100psi
 - 2. High Strength, ASTM C 109: (modified) 24 days 8400lbs (3810kg)
- I. Pitch Pocket Sealer - Universal Pitch-Pocket Sealer: Two-part, 100% solids, self-leveling, polyurethane sealant.
- J. Glass Fiber Cant - Glass Cant: Continuous triangular cross Section made of inorganic fibrous glass used as a cant strip as recommended and furnished by the membrane manufacturer.

2.4 EDGE TREATMENT AND ROOF PENETRATION FLASHINGS

- A. Pitch pans, Rain Collar 24 gauge stainless or 20oz (567gram) copper. All joints should be welded/soldered watertight. See details for design.
- B. Drain Flashing should be 4lb (1.8kg) sheet lead formed and rolled.
- C. Plumbing stacks should be 4lb (1.8kg) sheet lead formed and rolled.
- D. Manufactured Roof Specialties: Manufactured copings, fascia, gravel stops, control joints, expansion joints, joint covers and related flashings and trim are specified in Section 07710.
 - 1. Manufactured roof specialties shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the NRCA "Roofing and Waterproofing Manual" as applicable.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 ROOF PREPARATION AND REPAIR

- A. General: All necessary field and flashing repairs must be done according to good construction practices, including the removal of all wet insulation and defective materials as identified through a moisture detection survey such as an infrared scan and replacement with like-materials.
 - 1. Remove damaged roof flashings from curbs and parapet walls down to the surface of the roof. Remove damaged existing flashings at roof drains and roof penetrations.
 - 2. Remove all wet, deteriorated, blistered or delaminated roofing membrane or insulation and fill in any low spots with like materials occurring as a result of removal work to create a smooth, even surface for application of new roof membranes.
 - 3. Install new wood nailers as necessary to accommodate insulation/recovery board or new nailing patterns.
 - 4. When mechanically attached, the fastening pattern for the insulation/recovery board shall be as recommended by the specific product manufacturer.
 - 5. Existing roof surfaces shall be primed as necessary and allowed to dry prior to installing the roofing system.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the

best result for the substrate under the project conditions.

- C. Repair all defects such as deteriorated roof decks, saturated materials, loose or brittle membrane or membrane flashings, etc. Verify that existing conditions meet the following requirements :
 - 1. Existing membrane is either fully adhered or that the membranes mechanical fasteners are secured and functional.
 - 2. Application of roofing materials over a brittle, damaged or poor condition roof membrane is not permitted.
- D. Remove all loose dirt and foreign debris from the roof surface. Do not damage roof membrane in cleaning process.
- E. Repair existing roof membrane as necessary to provide a sound substrate for the liquid membrane. All surface defects must be repaired/renovated and be made watertight. Any repairs must be with be only with materials compatible with the fluid-applied roofing restoration system.

3.3 INSTALLATION

- A. General Installation Requirements:
 - 1. Install in accordance with manufacturer's current Application and Installation Guidelines and the NRCA Roofing and Waterproofing Manual.
 - 2. Cooperate with manufacturer, inspection and test agencies engaged or required to perform services in connection with installing the roof system.
 - 3. Insurance/Code Compliance: Where required by code, install and test the roofing system to comply with governing regulation and specified insurance requirements.
 - 4. Protect work from spillage of roofing materials and prevent materials from entering or clogging drains and conductors. Replace or restore adjacent work damaged by installation of the roofing system.
 - 5. All primers must be top coated within 24 hours of application. Re-prime if more time passes after priming.
 - 6. Keep roofing materials dry during application.
 - 7. Coordinate counter flashing, cap flashings, expansion joints and similar work with work specified in other Sections under Related Work.
 - 8. Coordinate roof accessories and miscellaneous sheet metal accessory items, including piping vents and other devices with work specified in other Sections under Related Work.
- B. Mineral Modified Bitumen Surface Roof Restoration: Renovation work includes:
 - 1. Surface preparation: Remove dirt, and debris.
 - a. Previously coated roofs with well-adhered polyurethane or polyurea coating surfacing must be solvent-wiped with acetone after cleaning to reactivate surface for overcoating.
 - 2. Flashings:
 - a. Fascia Edges: Cut back edges. Prime, coat with mastic, cover with membrane.
 - b. Parapets and Vertical Surfaces: Cut back and replace fabric base flashings. Prime, coat with mastic, cover with fabric.
 - c. Metal Flashings: Repair/Replace metal flashings, pitch pockets, etc.
 - 3. Primer: Prime roof surfaces at a rate of 0.5 gallons per 100 SF.
 - 4. Full Reinforcement with Base Coat: Install full fabric reinforcement in base coat on the entire roof surface.
 - a. Begin reinforcement at flashing laps and penetration details.
 - b. Where required to reduce the height of the overlaps, apply additional coating or a bead of Green Lock XL or Tuff-Stuff MS into side and end laps and allow to skin over.
 - c. On field surfaces run fabric parallel to the low edge using a shingling method up

- the slope with minimum 3 inch fabric laps.
- d. After positioning reinforcement to roll out, apply Coating 40 inches wide to surface where reinforcement ply is to be applied at a rate of 3.5 gallons per 100 SF for mineral modified bitumen.
- e. Do not apply coating too far ahead of fabric so coating does not dry before fabric can be embedded.
- f. Immediately roll a 40 inch width of reinforcement into wet coating.
- g. Ensure roller is fully saturated with coating and backroll over the reinforcement surface to fully saturate fabric.
- h. Use care to lay the fabric tight to the roof surface without air pockets, wrinkles, fishmouths, etc.
- i. Lap adjacent rolls of reinforcement 3 inches and end laps 3 inches.
- j. Allow to dry, but no more than 72 hours before applying top coat. If not coated within 72 hours, solvent wipe with acetone, let dry and immediately apply coating.
- 5. Surfacing Reflective: Apply Garla-Brite surfacing in 2 coats; first coat at 3/4 gal per 100 SF over the entire roof surface and let dry. Apply second coat at 3/4 gal per 100 SF over the entire roof surface.

3.4 REPAIR OF EDGE TREATMENT AND ROOF PENETRATION FLASHING

- A. General
 - 1. Repair flashing in accordance with the requirements/recommendations of the Membrane manufacturer and as indicated on the manufacturer's standard drawings. Provide system with base flashing, edge flashing, penetration flashing, counter flashing, and all other flashings required for a complete watertight system.
 - 2. Install and repair flashings concurrently with the roofing as the job progresses.
 - 3. Terminate flashings as required by the membrane manufacturer.
- B. Manufactured Roof Specialties: Manufactured copings, fascia, gravel stops, control joints, expansion joints, joint covers and related flashings and trim are provided as specified in Section 07710.
 - 1. Manufactured roof specialties shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the National Roofing Contractor's Association "Roofing and Waterproofing Manual" as applicable.
- C. Repairs of Existing Roof Penetrations and Flashings
 - 1. Metal Edge:
 - a. Inspect the nailers to assure proper attachment and configuration.
 - b. Run one ply over the edge. Assure coverage of all wood nailers. Fasten plies with ring shank nails at 8 inches (203 mm) o.c.
 - c. Install continuous cleat and fasten at 6 inches (152 mm) o.c.
 - d. Install new metal edge hooked to continuous cleat and set in bed of roof cement. Fasten flange to wood nailers every 3 inches (76 mm) o.c. staggered.
 - e. Prime metal edge at a rate of 100 square feet per gallon and allow to dry.
 - f. Strip in flange with base flashing ply covering entire flange in bitumen with 6 inches (152 mm) on to the field of roof. Assure ply laps do not coincide with metal laps.
 - g. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Seal outside edge with rubberized cement.
 - 2. Roof Edge With Gutter:
 - a. Inspect the nailer to assure proper attachment and configuration. Increase slope at metal edge by additional degree of slope in first board.
 - b. Run one ply over the edge. Assure coverage of all wood nailers. Fasten plies with ring shank nails at 8 inches (203 mm) o.c.

- c. Install gutter and strapping.
 - d. Install continuous cleat and fasten at 6 inches (152 mm) o.c.
 - e. Install new metal edge hooked to continuous cleat and set in bed of roof cement. Fasten flange to wood nailer every 3 inches (76 mm) o.c. staggered.
 - f. Prime metal edge at a rate of 100 square feet per gallon and allow to dry.
 - g. Strip in flange with base flashing ply covering entire flange in bitumen with 6 inches (152 mm) onto the field of the roof. Assure ply laps do not coincide with metal laps.
 - h. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof.
3. Scupper Through Roof Edge:
- a. Inspect the nailer to assure proper attachment and configuration.
 - b. Run one ply over the edge. Assure coverage of all wood nailers. Fasten plies with ring shank nails at 8 inches (203 mm) o.c.
 - c. Install a scupper box in a 1/4 inch (6 mm) bed of mastic. Assure all box seams are soldered and have a minimum 4 inch (101 mm) flange. Make sure all corners are closed and soldered. Prime scupper at a rate of 100 square feet per gallon and allow to dry.
 - d. Fasten flange of scupper box to nailer every 3 inches (76mm) o.c. staggered.
 - e. Strip in edge with base flashing ply covering entire area in bitumen with 6 inches (152 mm) on to the field of the roof.
 - f. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all seams.
4. Scupper Through Wall:
- a. Inspect the nailer to assure proper attachment and configuration.
 - b. Run one ply over nailer, into scupper hole and up flashing as in typical wall flashing detail. Assure coverage of all wood nailers.
 - c. Install a scupper box in a 1/4 inch (6 mm) bed of mastic. Assure all box seams are soldered and have a minimum 4 inch (101 mm) flange. Make sure all corners are closed and soldered. Prime scupper at a rate of 100 square feet per gallon and allow to dry.
 - d. Fasten flange of scupper box every 3 inches (76 mm) o.c. staggered.
 - e. Strip in flange of scupper box with base flashing ply covering entire area with 6 inch (152 mm) overlap on to the field of the roof and wall flashing.
 - f. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all seams.
5. Coping Cap:
- a. Minimum flashing height is 8 inches (203 mm) above finished roof height. Maximum flashing height is 24 inches (609 mm). Prime vertical wall at a rate of 100 square feet per gallon and allow to dry.
 - b. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
 - c. Install base flashing ply covering entire wall and wrapped over top of wall and down face with 6 inches (152 mm) on to field of the roof and set in cold asphalt. Nail membrane at 8 inches (203 mm) o.c.
 - d. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all seams and allow to cure and aluminize.
 - e. Install coping cap per manufacturer's recommendations.
6. Surface Mounted Counterflashing/Coping Cap:
- a. Minimum flashing height is 8 inches (203 mm) above finished roof height. Prime vertical wall at a rate of 100 square feet per gallon and allow to dry.
 - b. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).

- c. Install base flashing ply covering wall set in bitumen with 6 inches (152 mm) on to field of roof.
 - d. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all seams and allow to cure and aluminize.
 - e. Apply butyl tape to wall behind flashing. Secure termination bar through flashing, butyl tape and into wall. Alternatively use caulk to replace the butyl tape.
 - f. Secure counterflashing set on butyl tape above flashing. Fasten 8 inches (203 mm) o.c. and caulk top of counterflashing.
 - g. Attach tapered board to top of wall (minimum slope 1/4 -12). Do not use organic fiberboard or perlite.
 - h. Cover tapered board and all exposed wood with base flashing ply. Fasten inside and out at 8 inches (203 mm) o.c.
 - i. Install continuous cleat and fasten at 6 inches (152 mm) o.c. to outside wall.
 - j. Install new metal coping cap hooked to continuous cleat.
 - k. Fasten inside of cap 24 inch (609 mm) o.c. with approved fasteners and neoprene washers.
7. Surface Mounted Counterflashing:
- a. Minimum flashing height is 8 inches (203 mm) above finished roof height. Maximum flashing height is 24 inches (609 mm). Prime vertical wall at a rate of 100 square feet per gallon and allow to dry.
 - b. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
 - c. Install base flashing ply covering wall set in bitumen with 6 inches (152 mm) on to field of the roof.
 - d. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
 - e. Apply butyl tape to wall behind flashing. Secure termination bar through flashing, butyl tape and into wall. Alternatively use caulk to replace the butyl tape.
 - f. Secure counterflashing set on butyl tape above flashing at 8 inches (203 mm) o.c. and caulk top of counterflashing.
8. Base Flashing For Non-Supported Deck:
- a. Inspect the nailer to assure proper attachment and configuration. The wood cant strip should be mechanically attached to the vertical and horizontal wood nailers.
 - b. Install compressible insulation in neoprene cradle between wall and vertical wood nailer.
 - c. Prime vertical wall at a rate of 100 square feet per gallon and allow to dry.
 - d. Install base flashing ply covering entire wall and wrapped to top of wood nailer with 6 inches (152 mm) on to field of the roof. Nail membrane at 8 inches (203 mm) o.c.
 - e. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
 - f. Attach counterflashing through wall flashing at a spacing of 24 inches (609 mm) o.c.
9. Expansion Joint:
- a. Minimum curb height is 8 inches (203 mm) above finished roof height. Chamfer top of curb. Prime vertical curb at a rate of 100 square feet per gallon and allow to dry.
 - b. Mechanically attach wood cant to expansion joint nailers. Run all field plies over

- cant a minimum of 2 inches (50 mm).
 - c. Install compressible insulation in neoprene cradle.
 - d. Install base flashing ply covering curb set in bitumen with 6 inches (152 mm) on to field of the roof.
 - e. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Attach top of membrane to top of curb and nail at 8 inches (203 mm) o.c. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
 - f. Install pre-manufactured expansion joint cover. Fasten sides at 12 inches (609 mm) o.c. with fasteners and neoprene washers. Furnish all joint cover laps with butyl tape between metal covers.
10. Equipment Support:
- a. Minimum curb height is 8 inches (203 mm) above finished roof height. Prime vertical at a rate of 100 square feet per gallon and allow to dry.
 - b. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
 - c. Install base flashing ply covering curb set in bitumen with 6 inches (152 mm) on to field of the roof.
 - d. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Attach top of membrane to top of curb and nail at 8 inches (203 mm) o.c. Apply a three-course application of mastic and mesh at all vertical seams and allow to cure and aluminize.
 - e. Install pre-manufactured cover. Fasten sides at 24 inches (609 mm) o.c. with fasteners and neoprene washers. Furnish all joint cover laps with butyl tape between metal covers.
 - f. Set equipment on neoprene pad and fasten as required by equipment manufacturer.
11. Skylight:
- a. Minimum curb height is 8 inches (203 mm) above finished roof height. Prime vertical at a rate of 100 square feet per gallon and allow to dry.
 - b. Set cant in bitumen. Run all field plies over cant a minimum of 2 inches (50 mm).
 - c. Install base flashing ply covering curb set in bitumen with 6 inches (152 mm) on to field of the roof.
 - d. Install a second ply of modified flashing ply in bitumen over the base flashing ply, 9 inches (228 mm) on to the field of the roof. Attach top of membrane to top of wood nailer and apply a three-course application of mastic and mesh. Allow to cure and aluminize.
 - e. Install pre-manufactured lens and fasten flashing sides at 8 inches (203 mm) o.c. with fasteners and neoprene washers.
12. Roof Drain:
- a. Plug drain to prevent debris from entering plumbing.
 - b. Taper insulation to drain minimum of 24 inches (609 mm) from center of drain.
 - c. Run roof system plies over drain. Cut out plies inside drain bowl.
 - d. Set lead/copper flashing (30 inch square minimum) in 1/4 inch bed of mastic. Run lead/copper into drain a minimum of 2 inches (50 mm). Prime lead/copper at a rate of 100 square feet per gallon and allow to dry.
 - e. Install base flashing ply (40 inch square minimum) in bitumen.
 - f. Install modified membrane (48 inch square minimum) in bitumen.
 - g. Install clamping ring and assure that all plies are under the clamping ring.
 - h. Remove drain plug and install strainer.
13. Roof Drain Alternate:
- a. Plug drain to prevent debris from entering plumbing.
 - b. Taper insulation to drain minimum of 24 inches (609 mm) from center of drain.
 - c. Install two base flashing plies (40 inch square minimum) in bitumen.
 - d. Set lead/copper flashing (30 inch square minimum) in 1/4 inch (6 mm) bed of

- mastic. Run lead/copper into drain a minimum of 2 inches (50 mm). Prime lead/copper at a rate of 100 square feet per gallon and allow to dry.
 - e. Run roof system plies over drain. Cut out plies inside drain bowl.
 - f. Install modified membrane (48 inch square minimum) in bitumen.
 - g. Install clamping ring and assure that all plies are under the clamping ring.
 - h. Remove drain plug and install strainer.
 - 14. Plumbing Stack:
 - a. Minimum stack height is 12 inches (609 mm).
 - b. Run roof system over the entire surface of the roof. Seal the base of the stack with elastomeric sealant.
 - c. Prime flange of new sleeve. Install properly sized sleeves set in 1/4 inch (6 mm) bed of roof cement.
 - d. Install base flashing ply in bitumen.
 - e. Install membrane in bitumen.
 - f. Caulk the intersection of the membrane with elastomeric sealant.
 - g. Turn sleeve a minimum of 1 inch (25 mm) down inside of stack.
 - 15. Heat Stack:
 - a. Minimum stack height is 12 inches (609 mm).
 - b. Run roof system over the entire surface of the roof. Seal the base of the stack with elastomeric sealant.
 - c. Prime flange of new sleeve. Install properly sized sleeves set in 1/4 inch (6 mm) bed of roof cement.
 - d. Install base flashing ply in bitumen.
 - e. Install modified membrane in bitumen.
 - f. Caulk the intersection of the membrane with elastomeric sealant.
 - g. Install new collar over cape. Weld collar or install stainless steel draw band.
 - 16. Pitch Pocket:
 - a. Run all plies up to the penetration.
 - b. Place the pitch pocket over the penetration and prime all flanges.
 - c. Strip in flange of pitch pocket with one ply of base flashing ply. Extend 6 inches (152 mm) onto field of roof.
 - d. Install second layer of modified membrane extending 9 inches (228 mm) onto field of the roof.
 - e. Fill pitch pocket half full with non-shrink grout. Let this cure and top off with pourable sealant.
 - f. Caulk joint between roof system and pitch pocket with roof cement.
- D. Liquid Flashing:
 - 1. Mask target area on roof membrane with tape.
 - 2. Clean all non-porous areas with isopropyl alcohol.
 - 3. Apply 32 wet mil base coat of liquid flashing over masked area.
 - 4. Embed polyester reinforcement fabric into the base coat of the liquid flashing.
 - 5. Apply 48-64 wet mil top coat of the liquid flashing material over the fabric extending 2 inches (51 mm) past the scrim in all directions.
 - 6. Apply minerals immediately or allow the liquid flashing material to cure 15-30 days and then install reflective coating.

3.5 CLEANING

- A. Clean-up and remove daily from the site all wrappings, empty containers, paper, loose particles and other debris resulting from these operations.
- B. Remove coating markings from finished surfaces.
- C. Repair or replace defaced or disfigured finishes caused by Work of this section.

3.6 PROTECTION

- A. Provide traffic ways, erect barriers, fences, guards, rails, enclosures, chutes and the like to protect personnel, roofs and structures, vehicles and utilities.
- B. Protect exposed surfaces of finished walls with tarps to prevent damage.
- C. Plywood for traffic ways required for material movement over existing roofs shall be not less than 5/8 inch (16 mm) thick.
- D. In addition to the plywood listed above, an underlayment of minimum 1/2 inch (13 mm) recover board is required on new roofing.
- E. Special permission shall be obtained from the Manufacturer before any traffic shall be permitted over new roofing.

3.7 FIELD QUALITY CONTROL

- A. Require attendance of roofing materials manufacturers' representatives at site during installation of the roofing system.
- B. Perform field inspection and [and testing] as required under provisions of Section 01410.
- C. Correct defects or irregularities discovered during field inspection.

3.8 FINAL INSPECTION

- A. At completion of roofing installation and associated work, meet with Contractor, Architect, installer, installer of associated work, roofing system manufacturer's representative and others directly concerned with performance of roofing system.
- B. Walk roof surface areas, inspect perimeter building edges as well as flashing of roof penetrations, walls, curbs and other equipment. Identify all items requiring correction or completion and furnish copy of list to each party in attendance.
- C. If core cuts verify the presence of damp or wet materials, the installer shall be required to replace the damaged areas at his own expense.
- D. Repair or replace deteriorated or defective work found at time above inspection as required to produce an installation that is free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- E. Notify Architect upon completion of corrections.
- F. Following the final inspection, provide written notice of acceptance of the installation from the roofing system manufacturer.

3.9 SCHEDULES

- A. Primers:
 - 1. Primer: Garla-Prime: Non-fibered, quick drying, asphalt based roof primer having the following characteristics:
 - a. Viscosity by Zahn Cup #2 ASTM D 4212: 18-21 sec
 - b. Flash Point: ASTM D 93 100 degrees F (37.70C)
 - c. Non-Volatile (ASTM D 2369): 47.6%
 - d. V.O.C. ASTM D 3960 470 g/l
- B. Reinforcement:
 - 1. Grip Polyester Firm: Strong, rigid polyester reinforcing fabric.
 - a. Tensile Strength ASTM D 3766, 75.3 lbs (34.2 kg).

- b. Tear Strength, 17.4 lbs (7.89 kg).
 - c. Elongation ASTM D 3786, 44.25%
 - d. Weight per Area, 3 oz./sq yd. (102 g/m²)
 - e. Mullen Burst, ASTM D 3786: 139 lbs. (63 kg)
- C. Coatings:
 - 1. Coating: Revitalizer: Multi-purpose liquid waterproofing membrane designed to restore existing smooth surfaced SBS, aged APP, and built-up roof surfaces.
 - a. Non-Volatile, ASTM D 4479: Typical 69%
 - b. Density, ASTM D 1475: 7.99 lbs./gal
 - c. Viscosity @ 77 degrees F (25 degrees C), Stormer round blade 16-20 sec
 - d. Flash Point, ASTM D 93: Minimum 105 degrees F (40.6 degrees C)
 - e. Asphalt Content ASTM D 4479: 62%
 - f. Compound Stability: Passes 200 degrees F (93.3 degrees C)
 - g. Wet Film Thickness @ 6 gal. 96 mils
 - h. VOC: 300 g/l
- D. Surfacing: Topping.
 - 1. Surfacing: Reflective/Non-Skid
 - a. Garla-Brite/Reflective.
 - 1) Flash Point, ASTM D 93: 103 degrees F (39 degrees C)
 - 2) Density, ASTM D 1475: 8.51 lbs./gal
 - 3) Typical Drying Time, Overnight
 - 4) Service Temperature, -20 degrees F to 230 degrees F
 - 5) Non-Volatile, ASTM D 4479: Typical 68 percent
 - 6) VOC: 500 g/l
 - 7) Reflectance, Initial 0.74, 3 year 0.65
 - 8) SRI, Initial 77, 3 year 60

END OF SECTION

SECTION 075650 - PREPARATION FOR RE-ROOFING

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. See drawing sheet A-3.0 for scopes of work.

1.2 PRE-INSTALLATION CONFERENCE

- A. Review installation procedures and coordination required with related work.

1.3 ENVIRONMENTAL REQUIREMENTS

- A. Do not remove existing roofing system or damaged decking when weather conditions threaten the integrity of the building contents or intended continued occupancy. Maintain continued temporary protection prior to installation of the new roofing system. Do not remove more existing roofing than can be reroofed during that days work.

1.4 PROTECTION

- A. It shall be the Contractor's responsibility to respond immediately to correction of roof leakage during construction. A four (4) hour time limit shall be given from the time of notification of emergency conditions. In the event of water penetration during rain or a storm, the Contractor shall provide for repair or protection of the building contents and interior. If the Contractor does not respond or cannot be contacted, the Owner will effect repairs or emergency action and the Contractor shall be back charged for all expenses and damages, if any.

1.5 SCHEDULING

- A. Schedule work to coincide with commencement of installation of new roofing system.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Temporary protection: Sheet Polyethylene. Provide weights or fasteners to retain sheeting in position.
- B. Base Sheet: ASTM D-4601 Type II. Provide weights or fasteners to retain sheeting in position.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. The Roofing Contractor is to verify existing site conditions, including roof dimensions.

- B. The Roofing Contractor must verify that the existing roof surface is clear and ready for work of the section 075500.1 Modified Bituminous Membrane Roofing.

3.2 MATERIALS REMOVAL

- A. Remove all gravel, membrane, cant strips, base flashings, and any other items shown on the drawings. In addition, complete removal of all nails and other debris is required to leave a smooth, even surface for re-roofing.
- B. Under certain conditions, it will be necessary and desirable to incorporate one or more of the following methods for removal of dirt, silt, gravel, debris, roof membrane and insulation from the roof surface in order to preserve the ecology, eliminate unsightly conditions, and protect the building surfaces:
1. Roof vacuum systems.
 2. Crane and hopper with dump truck system.
 3. Enclosed chutes with protective shrouds on the building and ground surfaces.
- C. All debris dumped from the roof shall be transported from the roof via chutes into dumpsters or trucks and this debris shall be removed from the premises when vehicles are full at the Contractors cost. No debris shall be transported from the area being worked on over a previously finished roof without an underlayment of 3/4" plywood.
- D. All roof equipment not in use or left filled will be parked on the column lines on 3/4" plywood.
- E. Repair building and/or ground damage caused by the removal or installation of the roof system will be the sole responsibility of the Contractor.

3.3 TEMPORARY PROTECTION

- A. Provide temporary protective sheeting over uncovered surfaces.
- B. Turn sheeting up and over parapets and curbing. Retain sheeting in position with weights or temporary fasteners.
- C. Provide for surface drainage from sheeting to existing drainage facilities.
- D. Do not permit traffic over unprotected deck surface.

END OF SECTION 075650

SECTION 076000 - FLASHING AND SHEET METAL

PART 1 - GENERAL

1.1 SCOPE OF WORK:

- A. Provide all labor, equipment, and materials fabricate and install the following.
1. Edge strip and flashing.
 2. Fascia, scuppers, and trim.
 3. Counterflashings over bituminous base flashing.
 4. Counterflashings for roof accessories.
 5. Counterflashings at roof mounted equipment and vent stacks.
 6. Base flashing coverings.
 7. Expansion joint and area divider covers.
 8. Fascia, edge metal and coping caps.
 9. Gutters, scuppers and down spouts.
 10. Counterflashings at walls and penetrations.
 11. Lead flashing for bituminous membranes.
 12. Other components.

1.2 RELATED SECTIONS

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

1.3 REFERENCES

ASTM A-446	Specification for steel sheet
ASTM B-209	Specification for aluminum sheet
ASTM B-221	Specification for aluminum extruded shape
FS QQ-L-201	Specification for Lead Sheet
ASTM A792	Steel Sheet, Aluminum-Zinc Alloy-Coated, by the Hot-Dip Process
ASTM B32	Solder Metal
ASTM B209	Aluminum and Alloy Sheet and Plate
ASTM B486	Paste Solder
ASTM D226	Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing
ASTM D486	Asphalt Roof Cement, Asbestos-free
FS O-F-506	Flux, Soldering, Paste and Liquid
WH	Warnock Hersey International, Inc. Middleton, WI.
FM	Loss Prevention Data Sheet
NRCA	National Roofing Contractors Association – Roofing Manual

SMACNA Architectural Sheet Metal Manual

1.4 QUALITY CONTROL

A. Reference Standards

1. Comply with details and recommendations of SMACNA Manual for workmanship, methods of joining, anchorage, provisions for expansion, etc.
2. Factory Mutual Loss Prevention Data Sheet 1-49 windstorm resistance 1-90.

B. Manufacturer's Warranty

1. Pre-finished metal material shall require a written 20-year non-prorated warranty covering fade, chalking and film integrity. The material shall not show a color change greater than 5 NBS color units per ASTM D-2244 or chalking excess of 8 units per ASTM D-659. If either occurs material shall be replaced per warranty, at no cost to the Owner.

C. Contractor's Warranty

1. The Contractor shall provide the Owner with a notarized written warranty assuring that all sheet metal work including caulking and fasteners to be watertight and secure for a period of two years from the date of final acceptance of the building. Warranty shall include all materials and workmanship required to repair any leaks that develop, and make good any damage to other work or equipment caused by such leaks or the repairs thereof.

1.5 QUALIFICATIONS

- A. Fabricator and Installer:** Owner/Architect reserves the right to request documentation indicating the Bidder is a company specializing in sheet metal flashing work with 5 years experience.

1.6 DELIVERY, STORAGE, AND HANDLING

- A.** Deliver materials in manufacturer's original, unopened containers or packages with labels intact and legible.
- B.** Stack pre-formed and pre-finished material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- C.** Prevent contact with materials which may cause discoloration or staining.

PART 2 - PRODUCTS

2.1 APPROVED EQUIVALENT

- A. Contractor must submit any product not specified a minimum seven days before the bid date to Architect in order for product to be considered for approval. The Architect will notify Contractor, in writing, of decision to accept or reject request.

2.2 MATERIALS

A. MATERIALS AND GAUGES

- 1. Where sheet metal is required, and no material or gage is indicated on the drawings, provide the highest quality and gage commensurate with the referenced standards.
- 2. All flashings and counterflashings associated with the membrane roofing system shall be as approved by the membrane roofing system manufacturer.

B. GALVANIZED IRON

- 1. Provide sheet metal or sheet iron of a standard brand of open-hearth copper-bearing steel, copper-molybdenum iron, or pure iron sheets.
- 2. Zinc coating:
 - A. Where galvanizing is required, provide zinc coating by hot-dip galvanize to all surfaces.
 - B. Weight:
 - 1. Provide not less than 1-1/4 oz. per sq. ft., nor more than 1-1/2 oz. per sq. ft., to surfaces required to be galvanized.
 - C. Comply with ASTM A93.

C. GALVANIZED SHEET METAL COUNTERFLASHING

- 1. Provide galvanized sheet metal counterflashing in conformance with SMACNA design recommendations.
 - A. Counterflashings shall be 24 gage unless noted otherwise.
 - B. All exposed edges shall be hemmed.
 - C. Joints shall be pop riveted and sealed.
- D. All sheet metal shall be factory applied Kynar 500 finish.
- E. Colors: All factory finishes for materials listed above shall be provided in colors selected by Owner from manufacturer's

standard or custom colors.

- F. If not indicated, minimum gauge of steel or thickness of sheet metal to be specified in accordance with Architectural Sheet Metal Manual, Sheet Metal and Air Conditioning Contractor's National Association, Inc., recommendations.

2.3 RELATED MATERIALS

- A. Metal Primer: Zinc chromate type.
- B. Plastic Cement: ASTM D 4586
- C. Sealant: Specified in Section 07900 or on drawings.
- D. Lead: Meets Federal Specification QQ-L-201, Grade B, four pounds per square foot.
- E. Solder: ANSI/ASTM B32; 95/05 type.
- F. Flux: FS O-F-506.
- G. Underlayment: ASTM D2178, No15 asphalt saturated roofing felt.
- H. Slip Sheet: Rosin sized building paper.
- I. Fasteners:
 - 1. Corrosion resistant screw fastener as recommended by metal manufacturer. Finish exposed fasteners same as flashing metal.
 - 2. Fastening shall conform to Factory Mutual 1-90 requirements or as stated on section details, whichever is more stringent.
- J. Termination Bars:
 - 1. Shall be aluminum unless otherwise recommended by membrane manufacturers.
 - 2. Material shall be .125" x 1" (minimum) aluminum conforming to ASTM B-221, mill finish. Bar shall have caulk cup.
- K. Gutter and Downspout Anchorage Devices: Type as indicated on drawings and 1/8" X 1" wide pre-finished gutter brackets at 4'-0" c/c.

PART 3 - EXECUTION

3.1 PROTECTION

- A. Protect contact areas of dissimilar metals with heavy asphalt or other approved coating, specifically made to stop electrolytic action.

3.2 GENERAL

- A. Install work watertight, without waves, warps, buckles, fastening stress, or distortion, allowing for expansion and contraction.
- B. Fastening of metal to walls and wood blocking shall comply with SMACNA Architectural Sheet Metal Manual, Factory Mutual 1-90 and 1-49 wind uplift specifications and/or manufacturer's recommendations whichever is of the highest standard.
- C. All accessories or other items essential to the completeness of sheet metal installation, whether specifically indicated or not, shall be provided and of the same material as item to which applied.
- D. Metal fascia and copings shall be secured to wood nailers at the bottom edge with a continuous cleat. Cleats shall be at least one gauge heavier than the metal it secures.
- E. Fabrication – sheet metal with flat-lock seams; solder with type solder and flux recommended by manufacturer, except seal aluminum seams with epoxy metal seam cement, and where required for strength, rivet seams and joints.
- F. Coat back-side of fabricated sheet metal with 15-mil sulfur-free bituminous coating, FS TT-C494, or SSPC-Paint 12, where required to separate metals from corrosive substrates including cementitious materials, wood or other absorbent materials; or provide other permanent separation.
- G. Provide for thermal expansion of running sheet metal work, by overlaps or expansion joints in fabricated work. Where required for water-tight construction, provide hooked flanges filled with polyisobutylene mastic for 1” embedment of flanges. Space joints at intervals of not more than 50’ for steel. 30’ for aluminum or as specifically stated on plans or in the specification. Conceal expansion provisions where possible.

3.3 INSPECTION

- A. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, cant strips and reglets are in place, and nailing strips located.
- B. Verify membrane termination and base flashings are in place, sealed, and secure.
- C. Beginning of installation means acceptance of existing conditions.
- D. Field measure site conditions prior to fabricating work.

3.4 SHOP FABRICATED SHEET METAL (Note: Coping caps shall be manufactured not shop fabricated.)

- A. Installing Contractor shall be responsible for determining if the sheet metal systems are in general conformance with roof manufacturer's recommendations.
- B. Metal work shall be shop fabricated to configurations and forms in accordance with recognized sheet metal practices.
- C. Hem exposed edges.
- D. Angle bottom edges of exposed vertical surfaces to form drip.
- E. All corners for sheet metal shall be lapped with adjoining pieces fastened and set in sealant.
- F. Joints for gravel stop fascia system, cap flashing, and surface-mount counterflashing shall be formed with a 1/4" opening between sections. The opening shall be covered by a cover plate or backed by an internal drainage plate formed to the profile of fascia piece. The cover plate shall be embedded in mastic, fastened through the opening between the sections and loose locked to the drip edges.
- G. Install sheet metal to comply with Architectural Sheet Metal manual, Sheet Metal and Air Conditioning Contractor's National Associations, Inc.

3.5 INSTALLATION REQUIREMENTS

- A. Anchor work in place with noncorrosive fasteners, adhesives, setting compounds, tapes and other materials and devices as recommended by manufacturer of each materil or system. Provide for thermal expansion and building mvoements. Comply with recommendations of "Architectural Sheet Metal Manual" by SMACNA.
- B. Seal moving joints in metal work with elastomeric sealants, comply with FS SS-T-00227, -00230, or -001543.
- C. Clean metal surfaces of soldering flux and other substances which could cause corrosion.

3.6 PERFORMANCE

- A. Water-tight/weatherproof performance of flashing and sheet metal work is required.

END OF SECTION 076000

SECTION 079000 - JOINT SEALERS

PART 1 - GENERAL

- 1.1 Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division One Specification sections, apply to work of this section.
- 1.2 Furnish "sealant" for exterior and high moisture area use.
- 1.3 Furnish "caulking" for dry interior use only.

PART 2 - PRODUCTS

- 2.1 Colors: Manufacturer's standard highest-performance color; except "black" where exposed to view as selected by Architect.
- 2.02 Compatibility: Provide materials selected for compatibility with each other and with substrates in each joint system; confirm with manufacturer.
- 2.03 General Characteristics: Provide type, grade, class, hardness and similar characteristics of material as indicated or, where not indicated, to comply with manufacturer's recommendations relative to exposures, traffic, weather conditions and other factors of the joint system for best possible overall performance. Except as otherwise indicated, joint sealers are required to permanently maintain airtight and waterproof seals, without failures in joint movement accommodation, cohesion, adhesion (where applicable), migration, staining, and other performances as specified.

Elastomeric Sealants: For exterior use.

- 2.04 One-Part Low Modulus Silicone Waterproofing Sealant for exterior building joints, equal to GE "SilPruf", or equal product by Dow Corning, Sonneborn or Pecora.

Joint Fillers and Sealants Backers:

- 2.05 Expanded Polyethylene Joint Filler: Flexible, closed-cell, 10 psi compression for 25% deflection, except higher if needed for installation forces, 0.1-lbs. per sq. ft. surface water absorption.
- 2.06 Sealant Backer Rod: Non-absorptive closed-cell (or jacketed open cell) compressible/flexible plastic or rubber rod stock which is compatible with sealant (polyethylene, butyl, neoprene, polyurethane, PVC).

PART 3 - EXECUTION

- 3.01 Weather Conditions: Install exterior elastomeric sealants when temperature is in lower third of temperature range recommended by manufacturer for installation.
- 3.02 Clean Joint Surfaces: and prime or seal as recommended by sealant manufacturer.
- 3.03 Support sealants from back with construction as shown, or with joint filler, or with back rod.

END OF SECTION 07900