

SPECIFICATIONS
PARTIAL ROOF REPLACEMENT FOR
ESSEX ELEMENTARY SCHOOL
CENTERBROOK, CT

FOR THE
TOWN OF ESSEX

PREPARED BY



HIBBARD & ROSA ARCHITECTS, L.L.C.
363 MAIN STREET
MIDDLETOWN, CT. 06457

DATE: MAY 1, 2015

State Project # TMP-050-BTJV

PROJECT MANUAL DIRECTORY

PROJECT: Partial Roof Replacement for Essex Elementary School
108 Main Street
Centerbrook, CT 06409
203-234-7611

ALL QUESTIONS REGARDING THIS PROJECT MUST BE DIRECTED TO THE ARCHITECT

OWNER: Town of Essex

ARCHITECT: Hibbard & Rosa Architects, L.L.C. Office # (860) 346-1809
363 Main Street Fax # (860) 704-8248
Middletown, Connecticut 06457
Thomas F. Hibbard
Project Architect

Mandatory Pre-Bid Tour of Building
For General Contractors:
Date: May 20, 2015
Time: 2:00 P.M.
Essex Elementary School
108 Main Street
Centerbrook, Connecticut 06409

Bid Due Date
Date: May 29, 2015
Time: 2:00 P.M. EST
Essex Town Hall
29 West Ave.
Essex, CT 06426

PROJECT MANUAL

PARTIAL ROOF REPLACEMENT
ESSEX ELEMENTARY SCHOOL
CENTERBROOK, CT

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ROOF REPLACEMENT FOR ESSEX ELEMENTARY SCHOOL

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INVITATION TO BIDDERS
PARTIAL ROOF REPLACEMENT FOR
ESSEX ELEMENTARY SCHOOL
CENTERBROOK, CT

1. The Town of Essex will receive sealed bids until 2:00 PM EST on May 29, 2015 at the Town of Essex Finance Department, 29 West Street, Essex, CT 06426 at which time they will be opened and read aloud. All bids shall be sealed and clearly labeled "Partial Roof Replacement Essex Elementary School".
2. Work required pursuant to this contract includes the following:
 - a. Furnishing all labor, materials, equipment, services and incidentals necessary for the removal of existing roof systems down to the existing deck and the installation of a new TPA membrane roof system of approximately 82,000 sq. ft. on 1/4" per ft. tapered insulation. The new roof system shall have a 25 year non pro-rated, no dollar limit labor and material warranty.
 - b. Other significant work includes limited expansion of the primary roof drain system and installation of a new overflow roof drain system.
 - c. General and Subcontract Bids shall consist of but are not limited to: general construction, carpentry, sheet metal work, painting, electrical work, site restoration and all other work necessary for or incidental to the full completion of the entire project, including all equipment, labor, material, and incidentals in connection therewith.
3. The work of this contract must be substantially complete by August 21, 2015. If not substantially complete by August 21, 2015 the contractor shall face a penalty of \$500 for every calendar day beyond the substantial completion date.
4. At the time of bid submission the Contractor must be Pre-Qualified as a Roofing Contractor with the State of Connecticut Department of Administrative Services. In accordance with Connecticut General Statute Sections 4a-100 and 4b-91, a responsible bid must also contain the following two (2) documents: The Contractor Prequalification Certificate and the Update (Bid) Statement. The classification ROOFING is required as a minimum.
5. The Contractor shall be required to submit with the Bid a Bid Bond in the amount of 10% of the Bid made out to the Town of Essex. Winning bidder will be required to post a 100% performance bond and provide a certificate of insurance.

6. Plans and specifications will be available electronically on May 18, 2015 on the web at www.das.ct.gov and www.essexct.gov
7. Questions regarding the availability of plans shall be directed to Ms. Kelly Sterner, Finance Director, Town of Essex, 29 West Street, Essex, CT 06409. E-mail: ksterner@essexct.gov
8. Questions regarding the bid or the Contract Documents are due by 12:00 PM EST on May 26, 2015 and may be directed to Mr. Paul Drummey, Project Manager, CREC Construction Division, 147 Charter Oak Ave., Hartford, CT. 06106, E-mail: pdrummey@crec.org
9. Addendums will be distributed via email to all bidders that sign in at the mandatory walkthrough
10. A **mandatory** pre-bid conference and tour of the site located at 108 Main Street, Centerbrook, CT 06409 will be held on May 20, 2015 at 2:00 PM Representatives of all interested bidders are required to attend.
11. All bid proposals must be complete and submitted on designated forms. No bid shall be withdrawn before thirty (30) calendar days after the date of the bid opening. The Town of Essex, CT reserves the right to reject any and all bids in full or in part and to waive any informality in the bids received.

DRAFT AIA[®] Document A701[™] - 1997

Instructions to Bidders

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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ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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

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ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement or Invitation to Bid, Instructions to Bidders, Supplementary Instructions to Bidders, the bid form, and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications and all Addenda issued prior to execution of the Contract.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, AIA Document A201, or in other Contract Documents are applicable to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect prior to the execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or from which Work may be deleted for sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment or services or a portion of the Work as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 The Bidder by making a Bid represents that:

§ 2.1.1 The Bidder has read and understands the Bidding Documents or Contract Documents, to the extent that such documentation relates to the Work for which the Bid is submitted, and for other portions of the Project, if any, being bid concurrently or presently under construction.

§ 2.1.2 The Bid is made in compliance with the Bidding Documents.

§ 2.1.3 The Bidder has visited the site, become familiar with local conditions under which the Work is to be performed and has correlated the Bidder's personal observations with the requirements of the proposed Contract Documents.

§ 2.1.4 The Bid is based upon the materials, equipment and systems required by the Bidding Documents without exception.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 COPIES

§ 3.1.1 Bidders may obtain complete sets of the Bidding Documents from the issuing office designated in the Advertisement or Invitation to Bid in the number and for the deposit sum, if any, stated therein. The deposit will be refunded to Bidders who submit a bona fide Bid and return the Bidding Documents in good condition within ten days after receipt of Bids. The cost of replacement of missing or damaged documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the Bidding Documents and the Bidder's deposit will be refunded.

§ 3.1.2 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the Advertisement or Invitation to Bid, or in supplementary instructions to bidders.

§ 3.1.3 Bidders shall use complete sets of Bidding Documents in preparing Bids; neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

§ 3.1.4 The Owner and Architect may make copies of the Bidding Documents available on the above terms for the purpose of obtaining Bids on the Work. No license or grant of use is conferred by issuance of copies of the Bidding Documents.

§ 3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

§ 3.2.1 The Bidder shall carefully study and compare the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is submitted, shall examine the site and local conditions, and shall at once report to the Architect errors, inconsistencies or ambiguities discovered.

§ 3.2.2 Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request which shall reach the Architect at least seven days prior to the date for receipt of Bids.

§ 3.2.3 Interpretations, corrections and changes of the Bidding Documents will be made by Addendum. Interpretations, corrections and changes of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon them.

§ 3.3 SUBSTITUTIONS

§ 3.3.1 The materials, products and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution.

§ 3.3.2 No substitution will be considered prior to receipt of Bids unless written request for approval has been received by the Architect at least ten days prior to the date for receipt of Bids. Such requests shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for an evaluation. A statement setting forth changes in other materials, equipment or other portions of the Work, including changes in the work of other contracts that incorporation of the proposed substitution would require, shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.3 If the Architect approves a proposed substitution prior to receipt of Bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.

§ 3.3.4 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 ADDENDA

§ 3.4.1 Addenda will be transmitted to all who are known by the issuing office to have received a complete set of Bidding Documents.

§ 3.4.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Each Bidder shall ascertain prior to submitting a Bid that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 PREPARATION OF BIDS

§ 4.1.1 Bids shall be submitted on the forms included with the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and figures. In case of discrepancy, the amount written in words shall govern.

§ 4.1.4 Interlineations, alterations and erasures must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change."

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall make no additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name of the Bidder and the nature of legal form of the Bidder. The Bidder shall provide evidence of legal authority to perform within the jurisdiction of the Work. Each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder.

§ 4.2 BID SECURITY

§ 4.2.1 Each Bid shall be accompanied by a bid security in the form and amount required if so stipulated in the Instructions to Bidders. The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and will, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. The amount of the bid security shall not be forfeited to the Owner in the event the Owner fails to comply with Section 6.2.

§ 4.2.2 If a surety bond is required, it shall be written on AIA Document A310, Bid Bond, unless otherwise provided in the Bidding Documents, and the attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of the power of attorney.

§ 4.2.3 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until either (a) the Contract has been executed and bonds, if required, have been furnished, or (b) the specified time has elapsed so that Bids may be withdrawn or (c) all Bids have been rejected.

§ 4.3 SUBMISSION OF BIDS

§ 4.3.1 All copies of the Bid, the bid security, if any, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.2 Bids shall be deposited at the designated location prior to the time and date for receipt of Bids. Bids received after the time and date for receipt of Bids will be returned unopened.

§ 4.3.3 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.4 Oral, telephonic, telegraphic, facsimile or other electronically transmitted bids will not be considered.

§ 4.4 MODIFICATION OR WITHDRAWAL OF BID

§ 4.4.1 A Bid may not be modified, withdrawn or canceled by the Bidder during the stipulated time period following the time and date designated for the receipt of Bids, and each Bidder so agrees in submitting a Bid.

§ 4.4.2 Prior to the time and date designated for receipt of Bids, a Bid submitted may be modified or withdrawn by notice to the party receiving Bids at the place designated for receipt of Bids. Such notice shall be in writing over the signature of the Bidder. Written confirmation over the signature of the Bidder shall be received, and date- and time-stamped by the receiving party on or before the date and time set for receipt of Bids. A change shall be so worded as not to reveal the amount of the original Bid.

§ 4.4.3 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.

§ 4.4.4 Bid security, if required, shall be in an amount sufficient for the Bid as resubmitted.

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 OPENING OF BIDS

At the discretion of the Owner, if stipulated in the Advertisement or Invitation to Bid, the properly identified Bids received on time will be publicly opened and will be read aloud. An abstract of the Bids may be made available to Bidders.

§ 5.2 REJECTION OF BIDS

The Owner shall have the right to reject any or all Bids. A Bid not accompanied by a required bid security or by other data required by the Bidding Documents, or a Bid which is in any way incomplete or irregular is subject to rejection.

§ 5.3 ACCEPTANCE OF BID (AWARD)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest qualified Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's own best interests.

§ 5.3.2 The Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the low Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 CONTRACTOR'S QUALIFICATION STATEMENT

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request, a properly executed AIA Document A305, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted as a prerequisite to the issuance of Bidding Documents.

§ 6.2 OWNER'S FINANCIAL CAPABILITY

The Owner shall, at the request of the Bidder to whom award of a Contract is under consideration and no later than seven days prior to the expiration of the time for withdrawal of Bids, furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. Unless such reasonable evidence is furnished, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 SUBMITTALS

§ 6.3.1 The Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, after notification of selection for the award of a Contract, furnish to the Owner through the Architect in writing:

- .1 a designation of the Work to be performed with the Bidder's own forces;
- .2 names of the manufacturers, products, and the suppliers of principal items or systems of materials and equipment proposed for the Work; and
- .3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder in writing if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, (1) withdraw the Bid or (2) submit an acceptable substitute person or entity with an adjustment in the Base Bid or Alternate Bid to cover the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 BOND REQUIREMENTS

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Bonds may be secured through the Bidder's usual sources.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 If the Owner requires that bonds be secured from other than the Bidder's usual sources, changes in cost will be adjusted as provided in the Contract Documents.

§ 7.2 TIME OF DELIVERY AND FORM OF BONDS

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to be commenced prior thereto in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond. Both bonds shall be written in the amount of the Contract Sum.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney.

ARTICLE 8 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

Unless otherwise required in the Bidding Documents, the Agreement for the Work will be written on AIA Document A101, Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment Is a Stipulated Sum.

DRAFT 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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ADDITIONS AND DELETIONS:
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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), 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 Prior to commencement of the Work, the Contractor may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner’s obligations under the Contract. Thereafter, the Contractor may only request such evidence if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) a change in the Work materially changes the Contract Sum; or (3) the Contractor identifies in writing a reasonable concern regarding the Owner’s ability to make payment when due. The Owner shall furnish such evidence as a condition precedent to commencement or continuation of the Work or the portion of the Work affected by a material change. After the Owner furnishes the evidence, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 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 which 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. 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.

§ 7.2 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 as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. 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 if provided for in the Contract Documents.

§ 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.

§ 9.4 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, 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.

§ 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.

§ 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.

§ 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 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 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract.

§ 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.

§ 13.2 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 the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the 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, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures 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.

ADVERTISEMENT AND BID DOCUMENTS
SUPPLEMENTARY CONDITIONS

The General Conditions of this contract are stated in the AIA document A201, “General Conditions of the Contract for Construction” – 2007; a copy of which is bound in with this specification.

These supplementary Conditions contain changes and or additions to the General Conditions, which where they are not specifically herein modified remain in full effect.

Article 1. – General Provisions

1.1.1 Delete the last sentence beginning “Unless specifically enumerated.” and substitute the following:

The Contract Documents also include the Contract Proposal Form and the General Bidding Instructions and all other documents listed in 1.1.7 (PROJECT MANUAL).

1.2 Add the following subparagraph 1.2.3.1:

When applied to materials and equipment required for work, the words “furnish”, “install”, and “provide” shall mean the following. The word provide shall mean to furnish, pay for, deliver, install, adjust, clean, and otherwise make materials and equipment fit and ready for their intended use. The word “furnish” shall mean to secure, pay for deliver to site, unload, and uncrate materials and equipment. The word “install” shall mean to unload, uncrate, place in position, incorporate in the work, adjust clean, make fit and ready for use, and perform all services for materials and/or equipment furnished by others. The phrase “furnish and install” shall be equivalent to the word “provide”. Each shall be interpreted to mean “the Contractor shall furnish all labor, material, and equipment and install...”

Add the following subparagraph 1.2.3.2:

In the event of a conflict between the documents, the following shall be the order of precedence:

1. Amendments and addenda shall take precedence over the Specifications.
2. The Specification shall take precedence over the drawings.
3. Stated dimensions shall take precedence over small scale dimensions.
4. Large scale detail drawings shall take precedence over small scale drawings.
5. Schedules shall take precedence over other data on the drawings.

Add the following subparagraph 1.2.3.3:

In case of a difference between Drawings and Specifications or within either document itself in describing the work, the better quality, greater quantity, or more costly work will be assumed to be and shall be included in the contract price. Refer the matter to the Architect's attention for resolution prior to bid opening.

Add the following subparagraph 1.2.4:

Before ordering any material or doing any work, the Contractor in all cases shall verify all locations, types, quantities and conditions of materials and shall be responsible for correctness of same.

Add the following subparagraph 1.2.6:

All work shown or referred to in the contract Documents shall be included in the Contract excepting those items which are specifically noted as being "provided under another contract", or "provided by the Owner" or "not in the contract (NIC)"

Add the following subparagraph 1.2.7:

Parties to the contract shall not take advantage of obvious errors or apparent discrepancies in Contract Documents. Notice of discovered error or discrepancy shall immediately be given in writing to the Architect to make such corrections and interpretations as he may deem necessary for completion of the work in a satisfactory and acceptable manner.

Article 2. – Owner

2.2 Information and Services Required of the Owner

2.2.5 Delete completely and substitute the following:

Three (3) sets of plans and specifications will be furnished to the bidder or bidders upon award of the contract. Additional sets may be purchased from the Town of Essex for \$100.00 for one set of plans and one set of specifications.

2.3 Owner's Right to Stop the Work

Add the following subparagraph 2.3.2:

All work and practices of an unsafe nature and not in accordance with the terms of the contract will be disallowed by the Owner or Owner's Representative. The Contractor shall promptly improve on said practices to the satisfaction of the Owner or the Owner's Representative.

Add the following subparagraph 2.3.3:

Neither the final payment nor any partial payment relieves the Contractor of responsibility for faulty materials or workmanship, and unless otherwise specified, they shall make right any defect due therefrom which occurs within the same area.

Add the following subparagraph 2.3.4:

The Owner or Owner's Representative have the authority to stop work whenever the continuation of work threatens the building environment or creates an unsafe condition and the Contractor has not taken appropriate actions to correct deficiencies even when notified and given time to respond.

Article 3. – Contractor

3.6.1 Taxes

Add the following subparagraph 3.6.2:

Under the terms of the regulation 16, referring to Contractors and Subcontractors, issued by the State Tax Commission in administration of the State Sales and Use Tax, to which bidder is referred, the Contractor may purchase materials or supplies to be consumed in the performance of the Contract without payment of tax and shall not include in his bid nor change any use or sales tax thereon.

3.7 Permits, Fees, Notices

Add the following subparagraph 3.7.1:

The Town of Essex will waive that portion of the cost of the Building Permit Fee designated for the Town of Essex. Any portion of the fee due to the State of Connecticut will be due and collected by the Town of Essex for this project. The Contractor shall pay costs charged by utility companies for service connections, inspections and tests, and related utility company fees normally assessed as a part of the construction process.

Add the following subparagraph 3.7.1.1:

Contractor shall post building permit at job site.

Add the following subparagraph 3.7.5:

It is the Contractor's responsibility to secure all necessary permits and send out proper notifications. Contractor shall bear the cost of all fees above and beyond local building permits. The Contractor shall be responsible for obtaining Certificate of Occupancy and/or Compliance as might be required by the regulating authorities.

3.9 Superintendent

Add the following subparagraph 3.9.4:

The superintendent shall be called a Site Supervisor for purposes of this contract. He will also serve as a competent person per OSHA 29 CFR 1926.1101.

Add the following subparagraph 3.9.5:

The Site Supervisor/Competent Person will be present whenever work of any type is being performed on this project.

3.10 Contractor's Construction Schedules:

Add the following subparagraph 3.10.4:

Liquidated damages of \$100.00 per calendar day will be assessed for late completion of the work.

3.12 Use of the Site

Add the following subparagraph 3.12.11:

Contractor shall submit letter of certification to the Architect for materials and assemblies which are required to have a flame spread or fire rating as described and required by applicable codes and the specifications.

3.17 Royalties and Patents

Add the following subparagraph 3.17.2:

The Contractor shall bear all costs for Patent Infringement penalties, fees and legal costs. The Contractor is responsible for his own licensing on Patents or be prepared to fully defend his discussion on the issue.

3.18 Indemnification

Add the following subparagraph 3.18.2.1:

To the fullest extent permitted by the law, prior to commencing work, the Contractor shall ensure that each subcontractor shall enter into an agreement under which it shall indemnify and hold harmless The Town of Essex, its officers, agents, servants and employees from and against all claims, damages, losses and expenses, including but not limited to attorneys fees, arising out of or resulting from the performance or lack or performance of the work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of

tangible property including loss of use resulting therefrom and (2) is caused in whole or in part by any negligent act or omission of the subcontractor, any subcontractor, or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person. If any and all claims against anyone hereunder by an employee of the subcontractor, or sub-subcontractor, or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under this section shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the subcontractor or any sub-subcontractor under the Worker's Compensation Acts, Disability Benefits Acts or other employee benefits act.

Article 7 – Changes in Work

7.1 Changes

7.1.1 Delete completely and substitute the following:

Changes in work may be accomplished after the execution of the Contract, and without invalidating the Contract, by Change Order.

7.1.2 Delete paragraph completely.

7.2 Change Orders

7.2.2 Add the following subparagraph 7.2.2 :

If the cost or credit to the Town of Essex resulting from a change in the work is determined under clause 7.3.3.1 or 7.3.3.3, the following value of such cost or credit shall be determined as follows:

1. The cost of labor performed and material used by the Contractor with his own forces.
2. The cost of workman's compensation, Federal Social Security, and Connecticut Unemployment Compensation in established rates, actual additional cost of payment and performance bond.
3. Actual cost of rental rates for equipment employed and used directly on the work. The cost of the Contractor's own equipment shall be based upon rates set forth in the Associated Equipment Dealer's green book.
4. Ten percent (10%) of .1, .2, and .3 above-mentioned for overhead, superintendence, and profit; however, if the work to be performed results in a credit to the Town of Essex, no percentage of overhead and profit will apply.

5. On work to be performed by a Subcontractor, the Contractor's allowance is to be ten (10%) applied to a total cost of Subcontractor's work, including his allowance as per Paragraph 7.
6. On any changes involving the Contractor, Subcontractor, or any Contractor of theirs, their total cost and/or omissions shall be combined as one before the application of the percentage allowed for the Contractor's overhead and profit in accordance with Paragraph .5 above.
7. On work to be performed by a subcontractor, the Subcontractor's allowance is to be ten percent (10%) for his overhead and profit applied to paragraphs .1, .2, and .3 above.
8. The Contractor, when performing work under .3 shall, when requested, promptly furnish in a form satisfactory to the Town of Essex, itemized statements of the cost of the work so ordered, including but not limited to, certified payrolls and copies of accounts, bills and vouchers to substantiate the above estimates.

7.3 Construction Change Directives

Add the following:

7.3.5 The "mutually acceptable fixed or percentage fee" referred to in paragraph 7.3.3.3 and the "reasonable allowance for overhead and profit" referred to in 7.3.6 shall be as follows: For work performed by General Contractor, cost to Owner may include allowance for overhead and profit not to exceed 15 % of the net cost of the work as defined above.

7.3.8 Delete paragraph completely

Article 8 – Time

8.3.1 Delete the following from subparagraph 8.3.1:

"or by delay authorized by the owner pending mediation and arbitration"

Article 9 – Payments and Completion

9.3 Applications for Payment

9.3.1.1 Delete paragraph completely

9.4 Certificates for Payment

9.4.1 In first sentence of paragraph change "seven" to "ten".

Add the following subparagraph 9.4.1.1:

The amount paid the contractor shall be the amount due less five percent (5%) retainage. The retainage will be held by the Owner until the completion of the work.

Add the following subparagraph 9.4.1.2:

The Owner will within thirty (30) calendar days after approval of the application for Payment by the Permanent Project Building Committee , pay the Contractor the due amount, as approved by the Project Architect.

9.5 Decisions to Withhold Certification

Add the following subparagraph 9.5.2.1:

All prior payments are subject to corrections, adjustments made for such corrections may be made only by submission of a corrected Application for Payment.

9.6 Progress Payments

Add the following subparagraph 9.6.8:

No interest is to be allowed or paid by the Town of Essex upon any moneys retained under the provisions of this contract.

Add the following subparagraph 9.6.9:

four (4) copies of the Application for Payment shall be forwarded to Mr. Thomas Hibbard, Architect, Town of Essex. The Contractor shall include two (2) copies of the Certified Payrolls and OSHA 10 cards along with each submission for payment.

9.7 Failure of Payment

9.7.1 In the first sentence of the paragraph, change “seven” to “ten” and “ten” to “fifteen”

9.10 Final Completion and Final Payment

Add the following subparagraph 9.10.1.1:

Upon notice, verbal or written, from the Contractor that the work is complete, the Architect or other designated representative will make a final inspection of the work with the Contractor and will notify him of any defective work and the corrective measure to be taken. The Contractor shall immediately take steps to rectify any defective work.

Add the following subparagraph 9.10.1.2:

After the Contractor has completed any such corrections to the satisfaction of the Architect or other designated representative and delivered all documents as required by the Contract Documents, the Contractor may make application for final payment following the procedure for progress payment. The final application for payment shall be accompanied by such supporting data as the Architect or other designated representative may require, such as legally effective releases or waivers of all liens arising from the Contract Documents for Labor Services, material and equipment furnished hereunder.

Add the following subparagraph 9.10.1.3:

If, on the basis of his observations and review of the work during construction, his final inspection and his approval of the final application for payment, the Architect is satisfied that the work has been completed and that the Contractor has fulfilled all his obligations under the Contract Documents, he will within ten (10) days present the Application for Payment. Otherwise, he will return the application to the Contractor, indicating his reasons for refusal in writing, in which case the Contractor will make the necessary corrections and resubmit the application.

Add the following subparagraph 9.10.1.4:

Before issuance, and as a condition of final payment, the Contractor shall deliver the Certificate of Occupancy to the Owner. If a certificate of Occupancy is not required, deliver a letter from the Building Official saying so.

Article 11 – Insurance and Bonds

11.1 Contractor's Liability Insurance

Delete the semicolon at the end of clause 11.1.1.1 and add:

including private entities performing work at the site and exempt from coverage on account of the number of employees or occupation, which entities shall maintain voluntary compensation coverage at the same limits specified for mandatory coverage for the duration of the project;

Delete the semicolon at the end of clause 11.1.1.2 and add:

persons or entities excluded by statute from the requirements of clause 11.1.1.1 but required by the Contract Documents to provide the insurance required by that clause.

Add the following subparagraph 11.1.1.9:

Liability insurance shall include all major divisions of coverage and be on a comprehensive basis including:

1. Premise operations (including X, C and U coverage's as applicable)
2. Independent Contractors' Protective.
3. Products and Completed Operations.
4. Personal Injury Liability with Employment Exclusion deleted.
5. Contractual, including specified provision for Contractor's obligation under paragraph 3.18
6. Owned, non-owned and hired motor vehicles.
7. Broad Form Property Damage including Completed Operations.

Add the following subparagraph 11.1.1.10:

If the General Liability coverage's are provided by a Commercial General Liability Policy on a claims-made basis, the policy date or retroactive date shall predate the contract; the termination date of the policy or applicable extended reporting period shall be no earlier than the termination date of coverage's required to be maintained after final payment, certified in accordance with subparagraph 9.10.2.

Add the following subparagraph 1.1.1.11:

General Liability Insurance shall be as follows:

Premise and Operations.
Explosions, Collapse, and Underground Hazards.
Independent Contractors.
Broad Form Property Damage.
Contractual Liability.
Products and Completed Operations.
Personal Injury with Employment Exclusion Deleted.
Occurrence basis.

Bodily Injury:

Each person:	\$1,000,000.00
Each occurrence:	\$1,000,000.00

Property damage:

Each occurrence:	\$1,000,000.00
Aggregate:	\$1,000,000.00

Comprehensive Automobile Liability Insurance shall include non-owned and hired automobiles. Coverage's shall be as follows:

Bodily Injury:

Each person	\$1,000,000.00
Each occurrence	\$1,000,000.00

Property damage:

Each accident:	\$1,000,000.00
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Workman's Compensation:

Connecticut Statutory Coverage

Employer's Liability:

Each person:	\$1,000,000.00
Each occurrence:	\$1,000,000.00

Thirty (30) day notice of cancellation on all policies is required.

All certificates shall be made out to the Contractor and all liability policies shall name the Town of Essex, as an additional insured.

Add the following subparagraph 11.1.12:

Submit ACORD insurance certificates with AIA Document C715 Attachment in triplicate. Answer all questions. Include title of authorized representative who signed certificate and the following statement " A copy of this certificate is on file in the office of the insurance company which underwrites the policy".

11.2 Owner's Liability Insurance

Add the following subparagraph 11.2.2:

Until the work is completed and accepted by the Owner, the Contractor shall purchase and maintain property insurance upon the whole work at the Site to the full insurance value thereof.

11.3 Property Insurance

Add the following subparagraph 11.3.1.6:

All losses defined which are not recoverable by virtue of the \$10,000 Deductible clause shall be absorbed by the Contractor. Equipment and tools of the trade are at the risk of the Contractor. Other losses not covered by this policy will be absorbed by the Contractor.

11.4 Performance Bond and Payment Bond

Add the following subparagraph 11.4.3:

Furnish Performance Bond and Payment Bond for 100% of the Contract Amount, written by a surety licensed to do business in the State of Connecticut.

Article 13 – Miscellaneous Provisions

13.1 Governing Law

Add the following subparagraph 13.1.2:

The Contract shall comply with all applicable laws, regulations, and requirements, Federal, State of Connecticut and Local. All State, County and Town codes and ordinances are applicable. The Contractor shall adhere to all OSHA job safety requirements, and otherwise observe safe working practices. All details of the work shall be made in strict accordance with the latest edition of the National Electrical code.

13.6 Interest

Delete paragraph 13.6 in its entirety

13.8 Expenses Incurred as a Result of Default or Breach

Add the following paragraph 13.8:

If any party of this contract shall default or breach any of its Obligations, the defaulting or breaching party shall pay to the non- defaulting/breaching party all reasonable cost and expenses incurred in enforcing this contract, including a reasonable attorney fee.

13.9 Prevailing Wage Requirements

Add the following paragraphs 13.9.1:

Attention is called to the fact that no less than the prevailing wage rates set forth by the State of Connecticut pursuant to section 31-53/31-54 of the Connecticut General Statutes as amended and as referenced in the Specifications must be paid on this project. Such schedule will be furnished to any person requesting the same at no cost. Attention is called to the requirements for Workman's Compensation and Condition of Employment.

Add the following subparagraph 13.9.2:

A list of applicable prevailing wage rates must be posted in a conspicuous location at the work site for all of the Contractor's employees to see.

Article 14 – Termination or Suspension of the Contract

14.1 Termination by the Contractor

Add the following subparagraph 14.1.1.5:

Fails to remedy defective work.

Add the following subparagraph 14.1.1.6:

Third party claims against owner or reasonable evidence indicating probability of filing of such claim or claims.

Add the following subparagraph 14.1.1.7:

Reasonable evidence that work will not be completed within the Contract time.

Add the following subparagraph 14.1.1.8:

Persistent failure to carry out the work in accordance with the Contract Documents.

Add the following subparagraph 14.1.1.9:

Unnecessary or unreasonable delay in performing the work.

Add the following subparagraph 14.1.1.10:

This contract may be terminated if the Contractor is adjudged bankrupt, or, if he makes a general assignment for the benefit of his creditors, or if a receiver is appointed on account of his insolvency.

14.2 Termination by the Owner for Cause

Delete completely and substitute the following subparagraph 14.2.2.3:

Furnish the work by whatever reasonable method the Owner may deem expedient.

14.3 Termination by the Owner for convenience

14.4.3 Delete completely and substitute the following:

14.4.3 In the 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 executed.

End of Supplementary Conditions

ADVERTISEMENT AND BID DOCUMENTS
SPECIAL CONDITIONS

1. PROJECT SITE:

- A. The existing Site is known as Essex Elementary School, 108 Main Street, Essex, Connecticut. All work shall be performed as indicated on the Drawings, dated May 1, 2015, and designated as Commission No. 1516.

2. CONTRACTORS QUALIFICATIONS:

- A. The Contractor shall be Pre-Qualified and registered with The State of Connecticut Department of Administrative Services as a Roofing Contractor. The Pre-Qualification must be in place at the time of bid submission and remain active and in good standing throughout the project. The Contractor must meet all current State of Connecticut Department of Administrative Services requirements.
- B. The Contractor shall have successfully completed five roof replacement projects of a similar scope and size (\$1,500,000) within the last three years to be considered for award of the contract.

3. GENERAL SCOPE OF THE WORK:

- A. The Contractor shall include in his Bid Proposal all labor, materials, equipment appliances, and services necessary for the performance and completion of all work, and all such work shall be performed in strict accordance with the Contract Documents.

4. PRE-CONSTRUCTION MEETING:

- A. The Contractor shall schedule a Pre-Construction meeting with the Owner, Architect, building staff and all other interested parties to review the project and scope of work. The Pre-Construction meeting will be scheduled after the notice of award and prior to the start of any work. The Pre-Construction meeting will be held at the site and will at a minimum include the following:
 - 1. Review scope of work.
 - 2. Review project logistics including but not limited to; site access, storage of materials, removal of debris, interruptions to building operations.
 - 3. Working hours.
 - 4. Contractor's personnel who will have access to the building interior.
 - 5. Staff points of contact.

B. The Architect will prepare and distribute minutes of the meeting.

4. SUBSTANTIAL COMPLETION:

A. The work of this contract must be substantially complete by August 21, 2015. If not substantially complete by August 21, 2015 the contractor shall face a penalty of \$100.00 for every calendar day beyond the substantial completion date.

5. RESTORATION WORK:

A. In addition to the work specified, the Contractor shall include the restoration of all existing work, including but not limited to sidewalks, structures, driveways, streets, parking areas, lawns, plants, shrubs, and all other existing Buildings and Site Improvements, which are damaged or destroyed by encroaching upon areas within or beyond the project "Limits of Contract". All restoration work shall be done in a manner so as to restore all work to its original condition, using similar materials and construction and all such work shall be performed to the complete satisfaction of the Owner.

6. EXISTING OCCUPANCY OF NEIGHBORING BUILDINGS:

A. Attention is directed to the fact that the existing Buildings surrounding the site are Tenant occupied and shall continue to be continuously Tenant occupied throughout the period required for the Contractor to perform the work, and the Contractor shall perform all required work in a manner, form, schedule, and sequence, so that the normal occupancy of the surrounding buildings shall be maintained without causing any undue inconvenience or interruptions to the safety, use, and function of the Buildings and Tenants.

7. ELECTRIC UTILITIES:

A. The Contractor shall be responsible to coordinate with the Local Electric Utility for installation/connection of electric service and other services provided by the Utility. The Utility shall be responsible for installation/connection of the electric service and associated equipment to the building(s) in accordance with the contract documents. The Contractor shall be responsible for all associated cost for all services provided by the Electric Utility.

8. TELEPHONE:

A. The Contractor shall be responsible to coordinate with the Local Telephone Utility for installation/connection of telephone service and all other services provided by the Utility. The utility shall be responsible for installation/connection of the telephone service to the building(s) in accordance with the contract documents. The Contractor shall be responsible for all associated cost for all services provided by the telephone utility.

9. UNDERGROUND UTILITIES:

- A. The Contractor shall be responsible to coordinate with the Local Municipality for installation/connection of water and sanitary sewer lines. The Contractor shall be responsible for all associated cost for all services provided by the Local Municipality.

10. UNDERGROUND GAS SERVICE:

- A. The Contractor shall be responsible to coordinate with the Local Gas Utility/Company for installation/connection of gas service. The utility shall be responsible for installation/connection of the gas service to the Building(s) in accordance with the contract documents. The Contractor shall be responsible for all associated cost for all services provided by the gas utility.

11. CABLE:

- A. The Contractor shall be responsible to coordinate with the Local Cable Company for installation/connection of cable service and all other services provided by the Utility. The Local Cable Company shall be responsible to install/connect cable service to the building(s) in accordance with the contract documents. The Contractor shall be responsible for all associated cost for all services provided by the cable utility.

12. COORDINATION OF SERVICES PROVIDED BY UTILITIES:

- A. The Contractor shall be responsible to coordinate with the Local Utilities for installation/connection of service(s). The Contractor shall be responsible for all associated cost for services provided by the Local Utilities.

End of Special Conditions

Town of Essex
29 West Street
Essex. CT

TO: Ms. Kelly Sterner
Finance Director
Town of Essex

The undersigned _____ doing business in the Town of _____, County of _____, State of _____, submits herewith, in conformity with the specifications dated _____, 2015, the following proposal.

PARTIAL ROOF REPLACEMENT FOR ESSEX ELEMENTARY SCHOOL

Work shall include all labor and materials required to install the new TPA membrane roof system of approximately 78,510 sq. ft. as specified, including, but not limited to demolition, hazardous material abatement and disposal, carpentry, sheet metal work and all other miscellaneous items of work required for a complete installation in accordance with the requirements of the contract documents.

1. BASE BID

\$ _____
(_____)
written figures

2. The Contractor shall quote in his Bid Proposal the following unit prices which may be as selected by the Owner.

	Unit	Added
1. Repair/patch metal roof deck	Sq. Ft.	_____
2. Repair/patch tectum roof deck	Sq. Ft.	_____
3. Replace wood blocking with P.T. wood blocking.	Ln. Ft.	_____
4. Re-pointing of masonry joints	Sq. Ft.	_____

3. Name of Subcontractor(s) to be utilized.

Name of Bidder: _____

By _____

Title _____

Address of Bidder _____

Telephone No. _____

Fax No. _____

4. Receipt of Addenda: Receipt of the following Addenda is hereto acknowledged:

	Addendum	Signature	Date
No. 1	_____	_____	_____
No. 2	_____	_____	_____
No. 3	_____	_____	_____
No. 4	_____	_____	_____

Bid Bond

CONTRACTOR:

(Name, legal status and address)

<< >>< >
<< >>

SURETY:

(Name, legal status and principal place of business)

<< >>< >
<< >>

OWNER:

(Name, legal status and address)

<< >>< >
<< >>

BOND AMOUNT: \$ << >>

PROJECT:

(Name, location or address, and Project number, if any)

<< >>
<< >>
<< >>

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, 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.

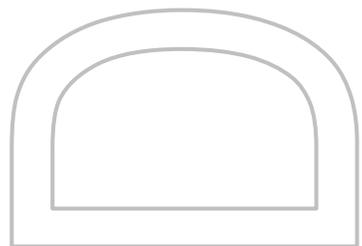
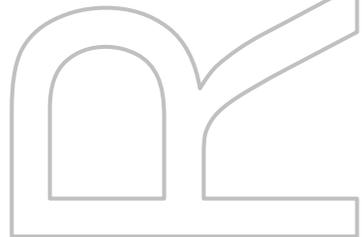


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Signed and sealed this « » day of « », « »

(Witness)

(Witness)

« »

(Contractor as Principal) (Seal)

« »

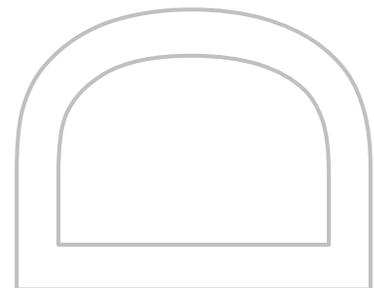
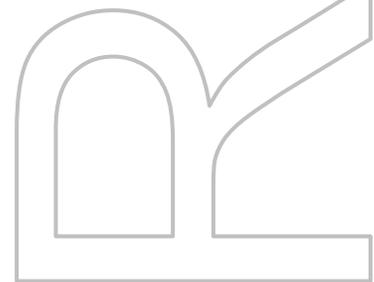
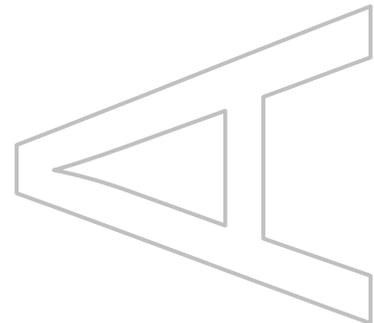
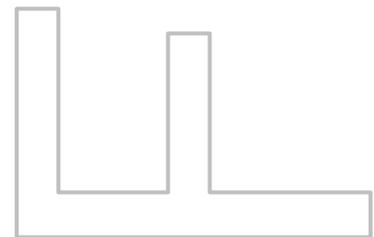
(Title)

« »

(Surety) (Seal)

« »

(Title)



DRAFT AIA[®] Document A312[™] - 1984

Performance Bond

CONTRACTOR (Name, Legal Status and Address):

[Redacted]

SURETY (Name, Legal Status and Principal Place of Business):

[Redacted]

OWNER (Name, Legal Status and Address):

[Redacted]

CONSTRUCTION CONTRACT

Date:

Amount: \$

Description (Name and Location):

[Redacted]

BOND

Date (Not earlier than Construction Contract Date):

Amount: \$

Modifications to this Bond: None See Section 13

CONTRACTOR AS PRINCIPAL

Company: (Corporate Seal)

SURETY

Company: (Corporate Seal)

Signature: _____

Name and

Title:

(Any additional signatures appear on the last page)

[Redacted]

Signature: _____

Name and

Title:

[Redacted]

(FOR INFORMATION ONLY - Name, Address and Telephone)

AGENT or **BROKER**:

[Redacted]

OWNER'S REPRESENTATIVE

(Architect, Engineer or other party):

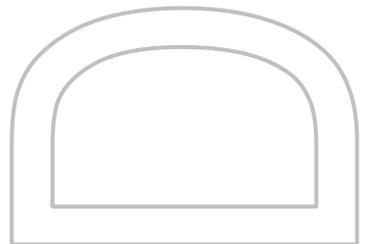
[Redacted]

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§ 1 The Contractor and the 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 to participate in conferences as provided in Section 3.1.

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

§ 3.1 The Owner has notified the Contractor and the Surety at its address described in Section 10 below that the Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with the Contractor and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Construction Contract. 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; and

§ 3.2 The Owner has declared a Contractor Default and formally terminated the Contractor's right to complete the contract. Such Contractor Default shall not be declared earlier than twenty days after the Contractor and the Surety have received notice as provided in Section 3.1; and

§ 3.3 The Owner has agreed to pay the Balance of the Contract Price to the Surety in accordance with the terms of the Construction Contract or to a contractor selected to perform the Construction Contract in accordance with the terms of the contract with the Owner.

§ 4 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:

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

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

§ 4.3 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 the 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 6 in excess of the Balance of the Contract Price incurred by the Owner resulting from the Contractor's default; or

§ 4.4 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, tender payment therefor to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner citing reasons therefor.

§ 5 If the Surety does not proceed as provided in Section 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen 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 4.4, and the Owner refuses the payment tendered 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.

§ 6 After the Owner has terminated the Contractor's right to complete the Construction Contract, and if the Surety elects to act under Section 4.1, 4.2, or 4.3 above, 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. To the limit of the amount of this Bond, but subject to commitment by the Owner of the Balance of the Contract Price to mitigation of costs and damages on the Construction Contract, the Surety is obligated without duplication for:

§ 6.1 The responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

§ 6.2 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 4; and

§ 6.3 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.

§ 7 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 or successors.

§ 8 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.

§ 9 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 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.

§ 10 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page.

§ 11 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 here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 12 DEFINITIONS

§ 12.1 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.

§ 12.2 Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

§ 12.3 Contractor Default: Failure of the Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Construction Contract.

§ 12.4 Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

§ 13 MODIFICATIONS TO THIS BOND ARE AS FOLLOWS:

<< >>

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

CONTRACTOR AS PRINCIPAL

Company: _____
(Corporate Seal)

Signature: _____
Name and Title: _____
Address: _____

SURETY

Company: _____
(Corporate Seal)

Signature: _____
Name and Title: _____
Address: _____

DRAFT 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)

<<>>
<< >>

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:)

<< >>
<< >>
<< >>
<< >>
<< >>
<< >>

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§ 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.

§ 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:

<< >>

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

CONTRACTOR AS PRINCIPAL

Company: _____ (Corporate Seal)

Signature: _____
Name and Title: << >><< >>
Address: << >>

SURETY

Company: _____ (Corporate Seal)

Signature: _____
Name and Title: << >><< >>
Address: << >>

NON-COLLUSIVE AFFIDAVIT

AFFIDAVIT
(Prime Bidder)

State of _____)

ss

County of _____)

_____, being first duly sworn,
deposes and says:

1. That he/she is a () Partner; () Officer; () Owner of the firm of:

the party making the foregoing proposal or bid;
2. He/she is fully informed respecting the preparation and contents of the attached proposal or bid and all circumstances regarding the same;
3. Said proposal or bid is genuine and is not a collusive or sham proposal or bid;
4. Neither the said bidder nor any of its officers, partners, owners, agents, representatives, employees, or parties-in-intrest, including this affiant has in any way colluded, conspired, connived or agreed, directly or indirectly, with any bidder, or person, to put in a sham bid or to refrain from bidding, and has not in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any person, to fix the bid price or affiance or of any other bidder, or to fix any overhead, profit or cost element of said bid price, or of that of any other bidder, or to secure any advantage against the Town of Hampton or any person interested in the proposed contract.
5. The price or prices quoted in the attached proposal or bid are fair and proper and are not tainted by any collusion, conspricy, connivance or unlawful agreement on the part of this Bidder or any of its agents, representatives, owners, employees, or parties-in-interest, including this affiant; and

6. All statements in said proposal or bid are true.

(Signed): _____

(Title): _____

Subscribed and sworn to before me

This _____ day of _____, 20____.

Notary Public

My Commission expires _____, 20____.

DRAFT AIA® Document A305™ - 1986

Contractor's Qualification Statement

The Undersigned certifies under oath that the information provided herein is true and sufficiently complete so as not to be misleading.

SUBMITTED TO:

ADDRESS:

SUBMITTED BY:

NAME:

ADDRESS:

PRINCIPAL OFFICE:

- Corporation
- Partnership
- Individual
- Joint Venture
- Other

NAME OF PROJECT: *(if applicable)*

TYPE OF WORK: *(file separate form for each Classification of Work)*

- General Construction
- HVAC
- Electrical
- Plumbing
- Other: *(Specify)*

§ 1. ORGANIZATION

§ 1.1 How many years has your organization been in business as a Contractor?

§ 1.2 How many years has your organization been in business under its present business name?

§ 1.2.1 Under what other or former names has your organization operated?

§ 1.3 If your organization is a corporation, answer the following:

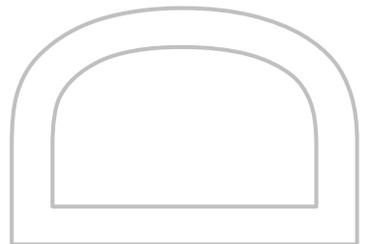
- § 1.3.1 Date of incorporation:
- § 1.3.2 State of incorporation:
- § 1.3.3 President's name:
- § 1.3.4 Vice-president's name(s)

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This form is approved and recommended by the American Institute of Architects (AIA) and The Associated General Contractors of America (AGC) for use in evaluating the qualifications of contractors. No endorsement of the submitting party or verification of the information is made by AIA or AGC.



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§ 1.3.5 Secretary's name:

§ 1.3.6 Treasurer's name:

§ 1.4 If your organization is a partnership, answer the following:

§ 1.4.1 Date of organization:

§ 1.4.2 Type of partnership (if applicable):

§ 1.4.3 Name(s) of general partner(s)

§ 1.5 If your organization is individually owned, answer the following:

§ 1.5.1 Date of organization:

§ 1.5.2 Name of owner:

§ 1.6 If the form of your organization is other than those listed above, describe it and name the principals:

§ 2. LICENSING

§ 2.1 List jurisdictions and trade categories in which your organization is legally qualified to do business, and indicate registration or license numbers, if applicable.

§ 2.2 List jurisdictions in which your organization's partnership or trade name is filed.

§ 3. EXPERIENCE

§ 3.1 List the categories of work that your organization normally performs with its own forces.

§ 3.2 Claims and Suits. (If the answer to any of the questions below is yes, please attach details.)

§ 3.2.1 Has your organization ever failed to complete any work awarded to it?

§ 3.2.2 Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against your organization or its officers?

§ 3.2.3 Has your organization filed any law suits or requested arbitration with regard to construction contracts within the last five years?

§ 3.3 Within the last five years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a construction contract? (If the answer is yes, please attach details.)

§ 3.4 On a separate sheet, list major construction projects your organization has in progress, giving the name of project, owner, architect, contract amount, percent complete and scheduled completion date.



§ 3.4.1 State total worth of work in progress and under contract:



§ 3.5 On a separate sheet, list the major projects your organization has completed in the past five years, giving the name of project, owner, architect, contract amount, date of completion and percentage of the cost of the work performed with your own forces.



§ 3.5.1 State average annual amount of construction work performed during the past five years:



§ 3.6 On a separate sheet, list the construction experience and present commitments of the key individuals of your organization.



§ 4. REFERENCES

§ 4.1 Trade References:



§ 4.2 Bank References:



§ 4.3 Surety:

§ 4.3.1 Name of bonding company:



§ 4.3.2 Name and address of agent:



§ 5. FINANCING

§ 5.1 Financial Statement.

§ 5.1.1 Attach a financial statement, preferably audited, including your organization's latest balance sheet and income statement showing the following items:

Current Assets (e.g., cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory and prepaid expenses);

Net Fixed Assets;

Other Assets;

Current Liabilities (e.g., accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries and accrued payroll taxes);

Other Liabilities (e.g., capital, capital stock, authorized and outstanding shares par values, earned surplus and retained earnings).

§ 5.1.2 Name and address of firm preparing attached financial statement, and date thereof:

[Redacted]

§ 5.1.3 Is the attached financial statement for the identical organization named on page one?

[Redacted]

§ 5.1.4 If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g., parent-subsidiary).

[Redacted]

§ 5.2 Will the organization whose financial statement is attached act as guarantor of the contract for construction?

[Redacted]

§ 6. SIGNATURE

§ 6.1 Dated at this [Redacted] day of

Name of Organization:

By:

Title:

§ 6.2

[Redacted]

M [Redacted] being duly sworn deposes and says that the information provided herein is true and sufficiently complete so as not to be misleading.

Subscribed and sworn before me this [Redacted] day of

Notary Public:

My Commission Expires:

DRAFT 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.

ADDITIONS AND DELETIONS:
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AIA Document A201[™]-2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS**
- 2 THE WORK OF THIS CONTRACT**
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION**
- 4 CONTRACT SUM**
- 5 PAYMENTS**
- 6 DISPUTE RESOLUTION**
- 7 TERMINATION OR SUSPENSION**
- 8 MISCELLANEOUS PROVISIONS**
- 9 ENUMERATION OF CONTRACT DOCUMENTS**
- 10 INSURANCE AND BONDS**

ARTICLE 1 THE CONTRACT DOCUMENTS

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

Portion of Work

Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.
(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

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.

§ 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.)

<< >>

§ 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.)

Table with 3 columns: Item, Units and Limitations, Price Per Unit (\$0.00)

§ 4.4 Allowances included in the Contract Sum, if any:
(Identify allowance and state exclusions, if any, from the allowance price.)

Table with 2 columns: Item, Price

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.

(Federal, state or local laws may require payment within a certain period of time.)

§ 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 [REDACTED] percent ([REDACTED] %). 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;
- .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 [REDACTED] percent ([REDACTED] %);
- .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.

§ 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 requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)
- .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.

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

(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Sections 5.1.6.1 and 5.1.6.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)

§ 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, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 60 days after the issuance of the Architect's final Certificate for Payment, or as follows:

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, 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.)*

[Redacted area]

§ 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, 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
- Litigation in a court of competent jurisdiction
- 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.

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

ARTICLE 8 MISCELLANEOUS PROVISIONS

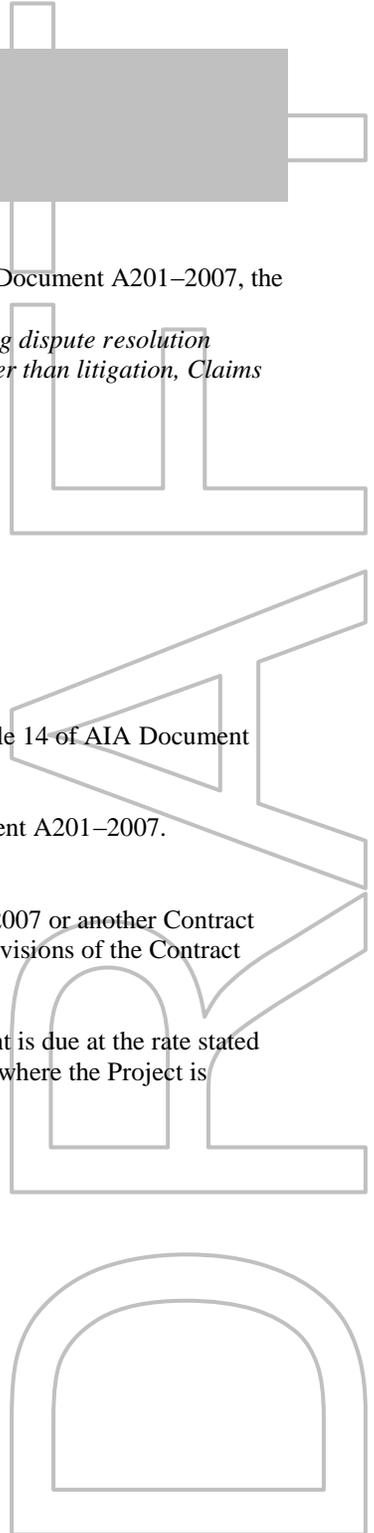
§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

[Redacted] %

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



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

§ 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.

§ 9.1.2 The General Conditions are AIA Document A201-2007, General Conditions of the Contract for Construction.

§ 9.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

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

Section	Title	Date	Pages

§ 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:

Number	Date	Pages

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:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201–2007 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.)

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.

(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201–2007.)

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)*

(Printed name and title)

CONTRACTOR *(Signature)*

(Printed name and title)

**CURRENT PREVAILING WAGE RATES
FOR
ESSEX, CT**

**IN COMPLIANCE WITH SECTION 31-53 OF
THE CONNECTICUT GENERAL STATUTES (C.G.S.)**

SHALL BE INSERTED

PRIOR TO RELEASE FOR BIDDING

ANNUAL ADJUSTMENTS OF WAGE RATES

WILL BE AS REQUIRED

PER C.G.S. SECTION 31-55a

SECTION 01 00 00
GENERAL REQUIREMENTS

1.1 GENERAL SCOPE:

- A. The General Conditions, Supplementary General Conditions, Supplementary Instructions to Bidders, and all other parts set forth in Part 1 of the Specifications is hereby made a part hereof unless specifically accepted.

1.2 QUALIFICATIONS:

- A. The Contractor shall have been regularly engaged in construction and the installation and fabrication of the type work set forth in the Contract Documents for a period of not less than five (5) years prior to the Bid date set forth in the Contract Documents.
- B. The Contractor shall have adequate Plant & Equipment facilities for the proper performance of the work set forth in the Contract Documents, and all such Plant & Equipment facilities shall be subject to the approval of the Owner.
- C. The Owner shall be the sole judge and shall have the final privilege to approve or disapprove the qualifications of the Contractor, and to approve or disapprove his Plant & Equipment facilities available to perform the work required by the Contract Documents.

1.3 EXAMINATION OF SITE:

- A. The Contractor is required to attend the Pre-Bid meeting and to fully acquaint himself with the Site and with the existing conditions, so that he may fully understand the facilities, difficulties, and restrictions attending the execution of the work under the Contract. The failure of the Contractor to visit the Site and acquaint himself with the conditions there existing in connection with the existing Site conditions, shall in no way relieve the Contractor from any obligations with respect to the work included in the Contract. The submission of a Bid by the Contractor shall be taken as prima facie evidence of compliance with this Section.
- B. The Contractor shall include in his Bid, all costs for the full completion of all work under the Contract as indicated on the Drawings and specified in the Specifications, including all items of work required and necessary due to existing conditions encountered in-the-field during the process of performing the work; all costs in connection with encountered existing conditions shall be performed by the Contractor at no additional cost to the Owner.

1.4 INSPECTIONS:

- A. The Contractor shall be responsible for the proper inspection of his work during its installation by his workmen, his sub-contractors, all lawful authorities, other workmen which may be engaged by the Owner, and the Contractor shall obtain and pay for all necessary permits, fees, and other requirements.
- B. The Contractor shall comply with all laws relative to persons employed by him or his sub-contractors.

1.5 INTENT:

- A. It is the intention of the Drawings and Specifications that all work shall be fully completed, tested, and placed into final operation for the use intended. All materials, equipment, apparatus, appliance workmanship, etc., shall be new and of first-class quality.
- B. Any apparatus, appliance, material, or work not indicated on the drawings but mentioned in the Specifications, or vice versa, or all miscellaneous materials and workmanship not indicated on the Drawings or mentioned in the Specifications but necessary and required by the Owner to make the work complete and finished in all respects and made ready for use intended by the Owner, even if not particularly specified in the Drawings and Specifications, shall be provided by the Contractor without additional cost to the Owner.

1.6 APPROVAL OF MATERIALS:

- A. The materials, workmanship, design, and arrangement of all work installed under the Contract shall be subject to the approval of the Architect.
- B. Within twenty one (21) days after the Notice to Proceed with the work has been issued to the Contractor and prior to the submission of any shop drawings for approval, the Contractor shall submit to the Architect for approval, a complete list of Manufacturers of all equipment and materials proposed for use in the work. No approvals will be rendered by the Architect on any shop drawing submitted before the complete "List of Manufactures" is approved. Any item of equipment or materials not submitted for approval on the "List of Manufacturers" within the twenty one (21) day period will not be approved unless it shall be of the exact make and characteristic specified in the Contract Documents.

1.7 SHOP DRAWINGS:

- A. Prior to delivery to the job site, but sufficiently in advance of requirements necessary to allow the Architect ample time for review, the Contractor shall submit for review six (6) copies each of shop drawings of all equipment, materials, tapered insulation, piping, wiring, hardware, fixtures, equipment, etc., and further shall obtain review approval for same from the Architect before installing any of the same in the work of the Project.

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- B. The review shall be only for general conformance with the design concept and general Compliance with the information given in the Contract Documents. It shall not include review of quantities, dimensions, weights or gauges, fabrication processes, construction methods, etc., all of which shall be the sole responsibility of the Contractor. The Contractor shall not be relieved from furnishing materials or work as may be required for the completion of all items of work intended by the Owner.
- C. Prior to submission of shop drawings, the Contractor shall thoroughly check each shop drawing and shall reject those not conforming to the Contract Documents, and he shall indicate by his signature thereon that the shop drawings submitted in his opinion meet the full requirements of the Contract Documents. The requirements herein for shop drawings shall be in addition to the requirements set forth in the General Conditions.

1.8 SHUTDOWNS:

- A. The temporary shutdown by the Contractor of the existing systems, construction, equipment, etc., shall be performed at such time as shall be agreed to by the Owner.
- B. The Owner shall be notified of estimated duration of the shutdown period at least ten (10) days in advance of the date the work is to be performed. The maximum duration of any shut down shall not exceed two (2) hours.
- C. Work shall be arranged for continuous performance, including overtime periods if so required, to assure that existing operating services, equipment, passageways, construction, etc., shall be shut down only during the time actually required to make necessary connections.

1.9 RENOVATION WORK:

- A. The Contractor shall disconnect, remove, relocate, replace, reconnect, rebuild, reconstruct, etc., all encountered existing equipment, materials, piping, wiring, electrical systems, heating systems, plumbing systems, boilers, valves, tanks, pumps, foundation walls and/or footings, piers, walls, and all other items of existing construction, including all site improvements such as lawns, curbs, walks, etc., encountered during the performance of the work under the Contract.
- B. The Contractor shall construct, build, re-construct, rebuild, and restore and replace to its original condition or with new and/or existing similar materials, all items of surface and subsurface construction which has been interrupted, changed, or altered in any way by and during the performance of the work under the Contract.

1.10 WORK SCHEDULE:

- A. The Contractor shall submit a Work Schedule for approval by the Owner which shall set forth the date and time for each area and/or phase of site work, the commencement of any work under the contract. The Contractor shall schedule his work so that the installation of new work shall be fully completed as soon as possible. The Contractor shall prepare the Work Schedule in accordance with the limits of Contract Time set forth in the Contract Documents.
- B. The Contractor shall schedule his work in a manner to provide not less than three (3) days written notice to Essex Board of Education prior to the performance of work under the contract. The Contractor shall take precautions to ensure all walkways and entrances/exits remain clear and unobstructed for use by the occupants. The Contractor shall conform to the Work Schedule approved by the Owner.
- C. The Contractor shall coordinate all aspects of the roof replacement work and the roof top unit/HVAC replacement work. The Contractor shall be responsible to ensure all roof top equipment is in good working order at the end of each day.

1.11 OCCUPANCY OF BUILDING:

- A. Attention is directed to the fact that the Buildings on the site will be continuously occupied throughout the period required for the Contractor to perform the work set forth in the Contract Documents. The Contractor shall limit the hours of work from 7:00 AM to 7:00 PM local time.
- B. The Contractor shall perform his work in a manner, form, schedule, and sequence, so that the normal occupancy of the Buildings on the site shall be maintained in continuous operation without causing any undue inconvenience or interruption to the safety, use, and function of the Buildings by the occupants.

1.12 CODES AND REGULATIONS:

- A. The Contractor shall comply with all codes and regulations of the local Municipality, the State of Connecticut, all Utility Companies, Telephone Company, Cable Company and all other governing Agencies having jurisdiction over the project.
- B. The Contractor shall, prior to the acceptance of all work by the Owner, furnish written proof of the acceptance of all work by the local Municipality, the Utility Companies, the State of Connecticut, Town of Essex and all other governing Agencies having jurisdiction over the Project.
- C. The Contractor shall pay for all fees in connection with the installation of the work and he shall pay for all fees charged by the local Municipality, by Utility Companies, and all other governing Agencies having jurisdiction over the Project.

1.13 EXISTING IMPROVEMENTS:

- A. Maintain in operating condition, all active utilities, driveways, streets, parking areas, sidewalks, lighting systems, electric services, plumbing systems, heating systems, telephone systems, cable systems, fire alarm systems, and all other active utilities and improvements.
- B. The Contractor shall make interruptions to the existing systems only when necessary and shall maintain interruptions to the existing systems to an absolute minimum and only upon approval by the owner, and he shall provide the Owner with complete information as to the time, location, sequence and length of each system interruption. Unless otherwise permitted by the owner, the Contractor shall maintain continuous service of all existing and new system or systems at all times to all adjacent tenant occupied buildings and areas.
- C. Maintain vehicular traffic through streets as per local Municipality requirements; do not completely block passage of vehicles and maintain at all times open traffic lanes for access by all types of vehicular traffic. Provide temporary barricades, enclosures, separators, signs, etc., as may be required for streets, sidewalks, vehicles, pedestrians, and other type traffic. The Contractor shall comply with all rules, regulations, and laws governing the work and for the continued customary use of the Buildings and all areas of the Project Site.

1.14 SAMPLES:

- A. When so requested by the Owner and prior to commencement of work under the Contract, the Contractor shall submit samples for review and approval by the Owner. The Contractor shall deliver the samples to the office of the Owner or to such other location stipulated by the Owner, and the samples shall be complete with not less than five (5) copies of the Manufacturer's literature, printed data, etc.
- B. The Owner shall be the sole judge and shall have the final privilege to approve, disapprove, or reject samples submitted by the Contractor.
- C. The Contractor shall furnish affidavits certifying that materials used in the Project comply with the Specifications. Affidavits shall be in the form and manner approved by the Architect; submitted in duplicate, properly executed, signed as required for each item of material used in the performance of the Contract.

1.15 SLEEVES, ETC.:

- A. The Contractor shall provide and shall be held responsible for the location of and maintaining in proper position, all sleeves, inserts, anchor bolts, openings, holes, etc., required for the work.
- B. All sleeves shall have an internal diameter of one (1) inch larger than the outside diameter of the pipe, conduit, raceway, duct, etc., passing through the construction.

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- C. Sleeves through outside exposed to the weather construction shall be of Schedule 40 galvanized steel pipe. Sleeves through interior partitions of non-masonry construction shall be of not less than No. 22 gauge galvanized sheet steel. All sleeves shall be set flush with the finished surfaces of floors, roofs, walls, partitions, etc.
- D. The space between the sleeve and the pipe (both interior and exterior sleeves) shall be packed with non-staining Ethafoam plastic rope, and shall be surface caulked with a waterproof sealant meeting the approval of the Architect. Provide all sleeves located in exposed to view areas with escutcheon plates.

1.16 ESCUTCHEONS:

- A. Where exposed to view pipes, conduits, sleeves, etc., pass through floors, walls, partitions, ceilings, etc., they shall be fitted with neat, heavy spun or stamped escutcheon plates firmly secured to the pipes, conduits, etc. All escutcheon plates shall be of sufficient outside diameter to amply cover the sleeve openings. All escutcheon plates shall be non-ferrous metal and shall be chrome plated.

1.17 SCAFFOLDING, RIGGING, HOISTING EQUIPMENT, ETC.:

- A. The Contractor shall provide and remove when no longer necessary, all scaffolding, rigging, hoisting equipment, temporary coverings, and other service necessary for the performance of all work under the Contract.
- B. Install and remove all temporary coverings and leave all existing construction neat, clean, and free of all debris.

1.18 CLEANING, REMOVAL OF DEBRIS:

- A. The Contractor shall periodically or as directed during the progress of the work, remove and properly dispose of all debris, and shall keep the premises clean and clear of all obstructions. Upon completion of the work, he shall remove all temporary construction, facilities and materials, and shall leave the Building and the Project Site in a neat and clean condition.
- B. All debris due to removal and installation of new work shall be removed daily from the job Site by the Contractor.

1.19 RENOVATIONS TO EXISTING CONSTRUCTION:

- A. All changes, additions, alterations, renovations, deletions, removal, replacements, reconstruction, etc., which are necessary and required for the installation of new work shall be included in the Contract. The items of work throughout the various Divisions of the Contract Documents shall be coordinated under this Division of the work to the extent that all alterations, changes, additions, deletions, reconstruction, replacements, etc., to the existing construction work shall be fully completed for the use intended by the Owner, and all such work shall be performed by the Contractor at no additional cost to the Owner.
- B. The Contractor shall remove, replace, reconstruct, reduce, enlarge, alter, cut, patch, repair, drill, and cover, etc., all existing items of work. Include all site improvements, general construction, mechanical construction, electrical work, heating and ventilating work, plumbing systems, fire alarm systems, telephone systems, cable systems etc., which have been damaged or disturbed by and during the performance of the work under the Contract, and all of which shall be restore to their original condition and use by the Contractor at no additional cost to the Contract.
- C. Exercise proper care in the removal of existing construction so that structural stability of the existing construction will not be impaired; protect existing construction from damage and take all necessary precautions to avoid undue damage to all finishes.
- D. All existing construction shall be patched, adjusted and repaired using similar materials to match the original condition and construction insofar as possible. Patch and repair walls, floors, roofs, ceilings, concrete and brick work, and all other existing finishes and construction.
- E. All penetrations through floors, ceilings, walls, etc., shall be properly sealed (and fire rated where required) with proper non-combustible sealant materials.

1.20 CASH ALLOWANCE & UNIT PRICES:

- A. The Contractor shall include in the Contract Sum, all allowances and Unit Price set forth in the Contract Documents, and he shall perform the work with his own personnel or by other sub-contractors engaged by him within the amounts set forth in the Contract Documents.
- B. The Contractor accepts and declares that the Contract Sum includes all amounts for expenses and profit on account of the Cash Allowance and Unit Prices set forth in the Contract Documents; no demand by the Contractor for expenses or profit other than the amount set forth Cash Allowances and the Unit Prices shall be allowed to the Contractor.
- C. Unless specified otherwise in the Contract Documents, the Owner reserves the right to select and approve the materials, equipment, method of performance and installation, for which the Cash Allowances and Unit Prices are specified.

D. The approved selected Sub-Contractor or other personnel selected to perform the work herein stated, shall assume the status of a Sub-Contractor under the Contractor, and the Documents. The Contractor shall not be required to employ for any such work included under the Cash Allowances and Unit Prices, persons against whom he has a reasonable objection.

1.21 CO-ORDINATION OF WORK WITH OTHERS:

- A. Attention is directed to the fact that the Owner may award a separate Contract or Contracts for various items of work throughout the Project.
- B. The Contractor shall coordinate his work with the Contractors or Contractor engaged by the Owner so that each and all Contractors performing work for the Owner shall share equally in the advantages and disadvantages of performing the work under their various Contracts.
- C. Each Contractor shall notify and shall coordinate all items of work with each other individual Contractor. Coordinate temporary interruptions to the heating system, shutdowns, temporary connections and services, removal and replacements of existing work, installation of new work, and all other items for work, so that the combined effort of all Contractors or Contractor will produce the full completion of the Owner intended work set forth under the Contract.

1.22 MISCELLANEOUS CUTTING, PATCHING, ETC.:

- A. The Contractor shall perform all items of concrete work, masonry work, carpentry work, excavating and backfilling work, mechanical work, electrical work, and all other type construction due to the installation of work under the Contract.
- B. During the performance of miscellaneous cutting, patching etc., the Contractor shall maintain all operational heating and plumbing lines, electrical lines, service lines, and all other necessary services in operating condition during the performance of work required by the Contract. The Contractor shall maintain all required services to each occupied area, so that all areas shall be habitable and can be occupied for normal customary use by the occupants. Provide all temporary connections, construction, supports, etc. required, and all such work shall be completely removed when no longer required.

1.23 INTERPRETATION OF DRAWINGS & SPECIFICATIONS:

- A. Any questions or disagreements arising as to the true intent of this specification or the Drawings, or the kind and quality of work required thereby, shall be decided by the Architect, whose interpretations thereof shall be final, conclusive, and binding on all parties.
- B. In the case of any discrepancies between Drawings and Specifications, or within either document itself, the better quality, greater quantity or more costly work shall be included in the Contract Price, and shall be furnished and installed in the performance of the required work.

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- C. In the case of any discrepancies between Part 1 and part 2 of the Specification Manual, the requirements as specified in Part 2 of the Specification Manual shall prevail.

1.24 APPROVAL:

- A. The materials, workmanship, design and arrangement of all work installed under the Contract shall be subject to the approval of the Architect. If material or equipment is installed before it is approved, the Contractor shall be liable for the removal and replacement, at no extra cost to the Owner, if, in the opinion of the Architect, the material or equipment does not meet the intent of the Drawings and Specifications.

1.25 SUBSTITUTIONS:

- A. Substitutions of equipment or materials other than those indicated on the Drawings or in the Specifications, shall be confined to only those manufacturer's listed, or those otherwise indicated, and may be made only upon written approval from the Architect.
- B. The Contractor shall submit his substitution for approval before releasing order for fabrication and/or shipment. Submittal will be forwarded with a letter of transmittal or cover letter listing all items for approval. The Architect reserves the right to disapprove such substitution, provided, in his opinion, the item offered is not equal to the item specified.
- C. Where a Contractor proposes to use an item of material or equipment other than that specified or detailed on Drawings, and which requires any redesign of the roof and/or structure, or architectural lay-out, all such redesign and all new drawings and details required thereof shall, with the approval of the Architect be prepared by the Contractor at his own expense.
- D. Where such approved deviation requires a different quantity and arrangement of material and equipment from that specified or indicated on the drawings, subject to the approval of the Architect, the Contractor shall provide any such material, structural supports, and any other items at no additional cost to the Owner.

1.26 APPROVAL OF INSTALLATION:

- A. The materials, workmanship, design, and arrangement of all work installed under the contract shall be subject to the approval of the Architect. If material or equipment is installed before layout and design of same is approved, the contractor shall be liable for the removal and replacement of all such unapproved work at no extra cost to the Owner.

1.27 ROYALTIES & PATENTS:

- A. The Contractor shall pay all royalties and shall defend all suits or claims for infringement of any patent Windsor rights and shall save the Owner harmless from loss on account thereof.

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- B. If the Contractor observes that a process or article specified is an infringement of a patent, he shall promptly notify the Architect in writing, and any necessary changes shall be adjusted as provided in the Contract for changes in the work. If the Contractor performs any work specified, knowing it is to be an infringement of a patent, he shall bear all costs arising therefrom.

1.28 PROTECTION OF WORK & PROPERTY:

- A. The Contractor shall be responsible for the maintenance and protection of all equipment, materials, and tools, supplied by him and stored or installed on the job site, from loss or damage of all causes, until final acceptance.
- B. The Contractor shall be responsible for the protection of any finished work of other trades from damage or defacement by his operations and must remedy any such injury at his own expense.

1.29 ACCESSIBILITY:

- A. The Contractor shall install all work so that all parts required are easily accessible for inspection, operation, maintenance and repair. Minor deviations from Drawings may be made to accomplish this, but changes of magnitude shall not be made without prior written approval from the Architect.

1.30 TESTS:

- A. All equipment shall be tested as specified under the various sections of the work. Labor, materials, instruments, and power required for testing shall be furnished by the Contractor, unless otherwise indicated under the particular section of the Specifications.
- B. Tests shall be performed in the presence and to the satisfaction of the Architect, and such other parties as may have legal jurisdiction.
- C. All defective work shall be promptly repaired or replaced and the tests shall be repeated until the particular system and component parts thereof receive the approval of the Architect.
- D. Any damages resulting from tests shall be repaired and damaged materials replaced, all to the satisfaction of the Architect.
- E. The duration of tests shall be as determined by all Authorities having jurisdiction, but in no case less than that prescribed in each section of the Specification.

- F. Equipment and systems which normally operate during certain seasons of the year shall be tested during the appropriate season. Tests shall be performed on individual equipment, systems and their controls. Wherever the equipment of systems under test is inter-related with, and depends upon, the operation of other equipment, systems, and controls for proper operation, functioning and performance, the latter shall be operated simultaneously with the equipment or system being tested.
- G. All costs in connection with tests shall be paid for by the Contractor.

1.31 AS-BUILT DRAWINGS:

- A. The Contractor shall keep concurrent with the installation of the progress of the work, an accurate record of the as-built location and condition of all work performed under the Contract. All as-built information shall be recorded on a clean set of Black and White Contract Drawings and shall indicate the final location of all items of work complete with Dimensions, sizes, notations, etc.
- B. Upon completion of all work and prior to Final Acceptance of all work under the Contract, the Contractor shall transfer all as-built information to clean set of Black and White Zerox Contract Documents. Submit all final as built Drawings to the Architect for final approval and acceptance.

1.32 OWNERSHIP OF DRAWINGS & SPECIFICATIONS:

- A. All Drawings, Specifications, and copies thereof furnished by the Architect are his property and they are not to be used on other work, and shall be returned to the Architect at the completion of the work.
- B. On the award of the Contract, the Architect will issue to the Contractor Three (3) stamped and signed copies of the drawings and specifications for permit application. Contractor may acquire additional copies through County Reproductions

1.33 TEMPORARY SERVICES:

- A. Refer to specification section 01 50 00, "Temporary Facilities and Controls" for information on the following items:
 - 1. Temporary Electricity
 - 2. Temporary Lighting
 - 3. Temporary Telephone Service
 - 4. Temporary Water Service
 - 5. Temporary Sanitary Facilities
 - 6. On-site Parking

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1.34 GUARANTY:

- A. The Contractor shall guaranty all work performed under the Contract for a period of two (2) years from the date of final acceptance by the Owner of all work under the Contract. Final acceptance will be as set forth in a written notice by the Owner to the Contractor. This Owner will give notice of observed defects to the Contractor with reasonable promptness and the Contractor shall remove, patch, repair, and adjust all defective work immediately in accordance with the terms of the Contract.
- B. The above guaranty shall be in addition to all work guarantees and warranties required under the Contract.

1.35 CONTRACTOR'S PERSONNEL:

- A. Smoking and the consumption of food and beverages throughout the Buildings and on the site shall not be permitted. The consumption of alcoholic beverages shall not be permitted on-site at any time. The use of radios, boom boxes and similar type units shall not be permitted on-site at any time.

END OF SECTION

SECTION 01 22 00
UNIT PRICES

1.1 SUMMARY:

- A. This section includes: Procedures for Identification and description of Unit Prices for various building components and systems which shall be used to establish cost of change in the scope of the work which may occur.
- B. Related Sections
 - 1. Bidding form: Quotation of the cost of proposed unit prices.
 - 2. Owner-Contractor agreement: Incorporation of unit prices into the Work.
 - 3. Sections of the Specifications listed under the respective unit prices.

1.2 COORDINATION:

- A. Coordinate pertinent related work and modify surrounding work required to properly integrate the work provided by unit prices, and to provide the complete construction required by Contract Documents.

1.3 DESCRIPTION OF UNIT PRICES:

- A. Unit price and rules of measurement as listed in Bid Form shall be used in evaluating additions and deductions to the Contract Price and shall be used for all classifications of the work irrespective of the quantity involved.
- B. The Contractor shall quote his Base Bid Proposal the Unit Prices included in the bid form, which may be as selected by the Owner.

END OF SECTION

SECTION 01 31 13
COORDINATION

1.1 GENERAL SCOPE:

- A. The General Conditions, Special Conditions, Instructions to Bidders, and all other parts set forth in Part 1 of the Specifications are hereby made a part hereof unless specifically excepted.

1.2 COORDINATION:

- A. Coordinate scheduling, submittals and work of the various Specification sections to assure efficient and orderly sequence of installation of interdependent construction elements with provisions for accommodating items installed later.
- B. Verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate work of various specification sections having interdependent responsibilities installing, connecting, and placing such equipment and utilities in service.
- C. Coordinate completion and clean up of work of separate sections of Specifications in preparation for completion of all portions of Work.

1.3 CUTTING AND PATCHING:

- A. Employ skilled and experienced installers to perform cutting and patching.
- B. Submit written request in advance of cutting or altering elements which effect the following:
 - 1. Structural integrity of element.
 - 2. Integrity of weather-exposed or moisture-resistant elements.
 - 3. Performance, efficiency, maintenance and safety of element.
 - 4. Visual qualities of exposed-to-view elements.
 - 5. Work of Owner and separate contractors.
- C. Execute cutting, fitting, and patching to complete Work, and to:
 - 1. Fit the several parts together and to integrate with other work.
 - 2. Uncover Work to install or correct ill-timed Work.
 - 3. Remove and replace defective and non-conforming work.
 - 4. Remove samples of installed work for testing.

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5. Provide openings in elements of work for penetrations of mechanical and electrical work.
- D. Execute work by methods which will avoid damage to other work, and provide proper surfaces to receive patching and finishing.
1. Provide required protection and support for existing surfaces and components.
 2. Cut rigid materials using masonry saw or core drill.
- E. Restore work with new products in accordance with requirements of Contract Documents.
1. Fit new and existing work tight to pipes, sleeves ducts, conduits, and other penetrations through surfaces.
 2. All finish or new/disturbed grades shall be made to blend smoothly and evenly into existing work on the property.
 3. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection. For an assembly, refinish entire unit.
- F. In the event hazardous substances or conditions are exposed during the work, identify such hazards to the Architect for decision or remedy.

End of Section

SECTION 01 31 19
PROJECT MEETINGS

1.1 GENERAL SCOPE:

- A. The General Conditions, Special Conditions, Instructions to Bidders, and all other parts set forth in Part 1 of the Specifications are hereby made a part hereof unless specifically excepted.

1.2 MEETING REQUIREMENTS:

- A. Schedule regular job Site meetings at intervals of approximately one (1) week.
- B. Arrange for special meetings as may be required due to progress of the work.
- C. Meetings shall be held at the Project Site.
- D. Attendance shall be by: Owner's Representative, Architect, Contractor, Sub-Contractors, Suppliers, and such other Persons or Companies appropriate to the project construction work. All Persons attending the meetings shall be qualified, familiar with the Project, and authorized to conclude matters relating to the Project.

1.3 SUGGESTED AGENDA:

- A. Project job Site meeting shall in general contain the following agenda:
 - 1. Review of progress report and construction schedule.
 - 2. Review of off-site fabrication, delivery schedules.
 - 3. Review submittal schedules.
 - 4. Review of follow-up list of problems and incompletions.
 - 5. Field observations, problems, conflicts.
 - 6. Maintenance of quality standards.
 - 7. Review proposed changes for effect on construction schedule, completion date and other contracts.
 - 8. Other business pertinent to the work of the Project.

END OF SECTION

SECTION 01 33 00
SUBMITTALS

1.1 GENERAL SCOPE:

- A. The General Conditions, Special Conditions, Instructions to Bidders, and all other parts set forth in Part 1 of the Specifications are hereby made a part hereof unless specifically excepted.

1.2 SUBMITTAL PROCEDURES:

A. Transmittals to Architect:

1. Transmit each submittal to Architect with sequentially numbered transmittal forms. Number re-submittals with original number and an alphabetic suffix.
2. Identify Project, Contractor, subcontractor, supplier, pertinent drawing and detail numbers, and specification section numbers as appropriate.
3. Provide space for Contractor and Architect review stamps.
4. Identify deviations from Contract Documents.

- B. Contractor's review: Apply Contractor's stamp, signed or initialed certifying that review, verification of products required, field dimensions, adjacent construction work, and coordination of information, is in accordance with the requirements of the Work and the Contract Documents.

C. Submittals:

1. Schedule submittals to expedite the Project. Deliver to the Architect in compliance with Construction Progress Schedule.
2. Coordinate submission or related item.
3. Submit all items relating to color selection within 30 days after award of contract. Color selection will not be made until all color related submittals have been received.

- D. Revise and resubmit submittals as required, identify changes made since previous submittal.

- E. Distribute copies of reviewed submittals to appropriate parties.

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1.3 CONSTRUCTION PROGRESS SCHEDULE:

A. Submittals:

1. Submit initial progress schedule in duplicate within 15 days after date of Notice to Proceed for Architect review
2. Revise and resubmit as required.
3. Submit revised schedules with each Application for Payment, identifying changes made since from previous version.

B. Format – One of the following:

1. Computer generated horizontal bar chart with separate line for each major section of work or operation, identifying first work day of each week.
2. Computer generated network analysis diagram using the critical path method, generally as outlined in Associated General Contractors of America AGC, publication "The Use of CPM in Construction – A Manual for General Contractors and the Construction Industry."

C. Indicate the following:

1. Indicate complete sequence of construction by activity, identifying work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.
2. Indicate estimated percentage of completion for each item of work at each submission.
3. Indicate submittal dates required for shop drawings, product data samples, and product delivery dates.
4. Indicate delivery dates for items furnished by Owner and under Allowances.

1.4 SCHEDULE OF VALUES:

A. Submittal:

1. Submit initial schedule in duplicate with 15 days after date of Owner- Contractor Agreement. After review by Architect revise and resubmit as required.
2. Submit revised schedule with each Application for Payment, reflecting changes since previous submittal.

B. Format:

1. Submit typed schedule on AIA Form G703 – Application and Certificate for Payment Continuation Sheet. Contractor's standard form or media-driven printout will be considered on request.
2. Utilize the table of Contents of this Project Manual. Identify each line item with number and title of the major specification Section.
3. Identify Site mobilization.

C. For Unit Cost Allowance, identify quantities taken from Contract Documents multiplied by the unit cost to achieve the total for the item.

D. Include separately from each line item a directly proportional amount of Contractor's overhead and profit.

1.5 PROPOSED PRODUCTS LIST:

A. Within 10 days after date of Notice to Proceed, submit complete list of major products proposed for us, with name of manufacturer, trade name, and model number of each product.

B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standard.

1.6 PRODUCT DATA:

A. Submit the number of copies which the Contractor requires, plus two copies which will be retained by the Architect.

B. Mark each copy to identify applicable products, models, options, and other data. Supplement Manufacturers standard data to provide information unique to this product.

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C. After review, distribute in accordance with Submittal Procedures above. Provide copies for Record Documents described in Section 01 70 00 Contract Closeout.

1.7 SHOP DRAWINGS:

A. Submit the number of opaque reproductions which the Contractor requires, plus two copies which will be retained by the Architect.

B. After review, distribute in accordance with Submittal procedures above and for Record Documents described in Section 01 70 00.

1.8 SAMPLES:

A. Submit samples to illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittal for interfacing work.

B. Submit samples of finishes in selected custom or standard colors, patterns, and textures for Architect selection.

C. Identify each sample. Include full Project information.

D. Submit the number of samples specified in individual specification sections or the number required by Contractor, plus one which will be retained by the Architect. Observe Submittal Procedures, above, relating to color submittals.

E. Reviewed samples which may be used in the Work are indicated in individual specification sections.

1.9 MANUFACTURER'S INSTRUCTIONS:

A. When specified in individual Specification Sections, submit manufacturer's printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for Product Data.

B. Identify conflicts between manufacturer's instructions and Contract Documents.

1.10 MANUFACTURER'S CERTIFICATES:

A. When specified in individual specification sections, submit manufacturer's certificate to Architect for review, in quantities specified for Project Data.

B. Indicate that material or product conforms to or exceeds specified requirements. Submit supporting references date, affidavits, and certifications as appropriate.

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1.11 DOCUMENT REVIEW:

- A. When required by individual Specification Section, require installer and agent of manufacturer of product system to:
 - 1. Review the Contract Documents.
 - 2. Verify that systems are appropriate for the intended use.
 - 3. Submit a statement of concurrence signed by installer and manufacturer.
- B. Submit three copies of the statement of concurrence to Architect for review and acceptance.
- C. Do not proceed with installation until Architect has reviewed and accepted statement of concurrence.

END OF SECTION

SECTION 01 45 00
QUALITY CONTROL

1.1 GENERAL SCOPE:

- A. The General Conditions, Special Conditions, Instruction to Bidders, and all other parts set forth in Part 1 of Specifications are hereby made a part hereof unless specifically excepted.

1.2 QUALITY ASSURANCE:

- A. Monitor quality control over suppliers, manufacturers, products, services, Site conditions and workmanship, to produce Work of specified quality.
- B. Comply fully with manufacturers' approved instructions including each step in sequence. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Use only skilled mechanics thoroughly trained and experienced in the necessary crafts to produce workmanship of specified quality.
- E. Secure products in place with positive anchorage devices designed and size to withstand stresses, vibration, physical distortion and disfigurement.

1.3 REFERENCES:

- A. Conform to specified standards by date of issue as follows:
 - 1. Code listings: For standards which are part of the Building Code in effect for this product, comply with the edition date published in the Building Code.
 - 2. Non-code listings: For standards which are not a part of the Building Code in effect for this Product, use the edition in effect at the date of Notice to Proceed, except where otherwise specified in product sections.

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- B. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in reference documents.

1.4 MANUFACTURERS' FIELD SERVICES AND REPORTS:

- A. When specified in individual Specification Sections, required material supplier or manufacturer to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, and quality of workmanship; to start-up equipment: to test, adjust and balance equipment as applicable; and to initiate instructions when necessary.
- B. Require observer to report observations, Site decisions and Site instructions given to applicators or installers that are supplemental or contrary to manufacturer's written instructions.
- C. Submit to Architect a written report by observer in duplicate within 7 days of observation.

1.5 TESTING LABORATORY SERVICES:

- A. Employ and pay for services of an Independent Testing Laboratory to perform inspections, tests, and other services required by individual Specification Sections. Select laboratory and submit to Architect for approval.
- B. Direct Laboratory to perform services in accordance with requirements of governing authorities and with specified standards.
- C. Submit reports to Architect in duplicate, giving observations and results of tests, indicating compliance or non-compliance with specified standards and with Contract Documents.
- D. Cooperate with Testing laboratory personnel: furnish tools, samples of materials, design mix, equipment, storage and assistance as requested.
 - 1. Notify Architect and Testing Laboratory 24 hours prior to expected time for operations requiring testing services.
 - 2. Make arrangements with Testing Laboratory and pay for additional samples and tests for Contractor's convenience.

END OF SECTION

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SECTION 01 50 00
TEMPORARY FACILITIES AND CONTROLS

1.1 GENERAL SCOPE:

- A. The General Conditions, Special Conditions, Instructions to Bidders, and all other parts set forth in Part 1 of the Specifications are hereby made a part hereof unless specifically excepted.

1.2 TEMPORARY UTILITIES:

A. Electricity:

1. Contractor shall provide all electrical power and such additional power outlets as may be required for construction operations, with branch wiring and distribution boxes. Provide flexible power cords as required. Contractor shall be responsible for all cost associated with electrical power.
2. Provide main service disconnect and over current protection at convenient location.
3. Permanent Building convenience receptacles shall not be utilized during construction. Coordinate use with Owner personnel.
4. Electrical power required shall not be furnished to the Contractor by the Owner.

B. Temporary lighting:

1. Provide and maintain adequate lighting for construction operations.
2. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.
3. Maintain lighting and provide routine repairs.
4. Permanent Building lighting may be utilized during construction.
5. All temporary wiring, lighting fixtures and accessory parts shall be removed when no longer needed and the permanent systems in each area has been installed.

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C. Temporary Water Service:

1. The Owner shall provide non-potable temporary water to the Contractor from outside spigot/bibb(s) designated by the Owner. The Owner shall be responsible to pay for all non-potable water used by the Contractor. The Contractor shall be responsible to provide drinking water for consumption by his employees and sub-contractors.
2. The Contractor shall provide all temporary additional water lines as may be required for construction operations, with all branch lines, fittings, and fixtures as required. Contractor shall be responsible for all cost associated with temporary additional water lines.
3. The Contractor shall provide backflow preventers at convenient location(s) if required. The Contractor shall be responsible for all cost associated with backflow preventers.
4. The Contractor shall make every effort to conserve water. Failure of the Contractor to conserve water may result in forfeiture of the right to use Town of Essex facilities.

D. Temporary sanitary facilities:

1. The Contractor shall provide all temporary toilet and sanitary facilities as may be required for construction operations. Contractor shall be responsible for all cost associated with temporary toilets and sanitary facilities.
2. Permanent Building toilets and sanitary facilities shall not be used during construction.

1.3 ENVIRONMENTAL CONTROLS:

A. Comply with applicable Federal, State, and local laws, regulations, and ordinances and the following requirements for environmental pollution control and abatement in performing construction activities throughout the Building.

B. Rubbish Disposal:

1. Do not burn, bury or dispose of debris and waste materials on the Project Site in an unauthorized manner. The Contractor shall provide dumpsters for the disposal of all waste materials generated from the project. The Contractor is not allowed to utilize Board of Education dumpsters. The Contractor is responsible for all cost associated with dumpsters and disposal of waste materials

C. Dust:

1. Keep dust within acceptable levels at all times, including non-working hours, weekends and holidays, in conformance with State and local regulations.

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2. Only wet grinding or cutting of concrete, masonry, and asphaltic concrete will be allowed on exterior surfaces. Dry cutting or grinding may be used on interior surfaces provided openings are covered.
3. Mechanical dry sweeping not permitted: Vacuuming, wet mopping, approved limited dry hand, wet or damp sweeping is acceptable.
4. During loading operations, water down debris and waste materials to allay dust.
5. Select method of dust control and pay all costs incurred.

D. Air pollution:

1. Do not permit or cause air pollution from mist, smoke, vapor, gas, odorous substances and particulate matter.
2. Do not operate any gasoline or diesel-powered vehicle or equipment on the Building Site which emits visible smoke.

E. Noise: Muffle internal combustion engine-powered equipment to minimize noise and properly maintain to reduce noise to acceptable levels.

F. Others

1. If spray application is allowed under the other Specification Sections, use 'airless spray' process only.
2. Where the requirements of other Project Manual Sections are in conflict with this Section, the more stringent requirement shall govern.
3. Suspension of work: Violation of any of these requirements or any other pollution control requirements which may be specified in other sections may cause suspension of the work creating such violation. No additional compensation will be allowed for remedial measures to correct the offense and no extension of time will be granted for delays caused by such suspensions. If no corrective action is taken by the Contractor within 72 hours after a suspension is ordered, the Owner reserves the right to take whatever action is necessary to correct the situation and to deduct costs incurred in taking such action from monies due the Contractor.

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1.4 TEMPORARY CONTROLS:

A. Barriers:

1. Provide barriers to prevent unauthorized entry to construction areas to allow for Owner's use of Site, and to protect existing Building facilities and adjacent properties from damage from construction operations and demolition.
2. Provide barricades required by governing authorities for public rights-of-way and for public access to existing Building and facilities.
3. Protect non-owned vehicular traffic, stored materials, Site and other structures and facilities from damage.
4. Contractor shall be responsible for all cost associated with the construction, maintenance, and removal of all barriers and fences.

B. Protection:

1. Protect installed work and existing improvements. Provide special protection where specified in individual Specification Sections.
2. Control traffic and activity to prevent damage to components and services.
3. Provide temporary and removable protection for installed products.
4. Landscaping:
 - a. Protect existing and new landscaping against damage from construction operations on the property.
 - b. Do not dispose of paint, petroleum products, dirty water or other deleterious materials on or around roots.
 - c. Do not burn trash under or near shrubs or trees.
 - d. Do not permit compaction of root areas within drip line by foot, vehicle or machine traffic, or by the storage of equipment, gravel, earth fill, supplies or materials.

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- e. Do not damage trunks or limbs by maneuvering vehicles or stacking material and equipment too close.
- f. Do not allow puddling or continuous running water under trees or on landscaped areas.
- g. Do not allow traffic on landscaped areas.

1.5 CONSTRUCTION FACILITIES:

A. Security:

- 1. Provide security and facilities, to protect Work, and existing improvements, and Owner's operations from unauthorized entry, vandalism, and theft.
- 2. Coordinate with Owner's security program for all facilities.

B. Access:

- 1. Maintain access to fire hydrants free of obstructions.
- 2. Only designated Site paved areas may be used for construction traffic.

C. Parking:

- 1. Arrange with Owner's personnel for designated Site parking areas to accommodate construction personnel.

D. Progress Cleaning:

- 1. Maintain areas free of waste materials, debris, and rubbish. Maintain Site in a clean and orderly condition.
- 2. Remove debris and rubbish prior to enclosing pipe chases, plenums, attics, crawl spaces and other closed or remote spaces.
- 3. Broom and vacuum clean areas prior to start of surface finishing. Continue cleaning to eliminate dust.
- 4. Remove waste material, debris, and rubbish from construction areas daily. Dispose of debris in an authorized manner.

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1.6 REMOVAL OF TEMPORARY UTILITIES AND FACILITIES:

- A. Remove temporary utilities, equipment, facilities and materials prior to Final Inspection.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing facilities used during construction to original condition. Restore permanent new facilities used during construction to specified condition.

1.7 ENVIRONMENTAL CONTROLS:

- A. Comply with applicable Federal, State, and Local Laws, regulations and ordinances and the following requirements for environmental pollution control and abatement in performing construction activities.
- B. Hazardous Materials: Abatement will be performed as part of this contract. Comply with all requirements of the Contract.
- C. Coordinate Construction work with abatement work. Contractor is responsible for the abatement/removal and disposal of asbestos and PCBs and all associated costs. Verify abatement schedules with the Owner's representative and the Architect.

END OF SECTION

SECTION 01 70 00
CONTRACT CLOSEOUT

1.1 GENERAL SCOPE:

- A. The General Conditions, Special Conditions, Instructions to Bidders, and all other parts set forth in Part 1 of the Specifications are hereby made a part hereof unless specifically excepted.

1.2 CLOSEOUT PROCEDURES:

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Architect's final review.
- B. Provide submittals to Architect/Owner that are required by governing or other authorities.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- D. Owner will occupy portions or all of the Buildings and site specified in section 01 00 00.
- E. Comply with requirements for Final Observation of the Work as set forth in Special Conditions, Section B; coordinate with the requirements set forth in this Section 01 70 00.

1.3 FINAL CLEANING:

- A. Execute final cleaning prior to final review by the Architect.
- B. Clean equipment, site and fixtures to a sanitary condition.
- C. Remove waste and surplus materials, rubbish, and construction facilities from the Building(s) and from the site.

1.4 ADJUSTING:

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

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1.5 PROJECT RECORD DOCUMENTS:

A. Maintenance of documents and samples:

1. Maintain on Site one set of the following record documents:
 - a. Contract Drawings.
 - b. Specifications.
 - c. Addenda.
 - d. Change Orders and other Modifications to the Contract.
 - e. Reviewed shop drawings, product data, and samples.
2. Store Record Documents separate from Documents used for construction.

B. Recording:

1. Record concurrently with construction progress on reproducible drawings provided for this purpose. Do not conceal Work until actual revisions to the Work are recorded.
2. Specifications: Legibly mark and record at each product section description of actual products installed,
including the following:
 - a. Manufacturer's name and product model number.
 - b. Product substitution or alternates utilized.
 - c. Changes made by Addenda and Modifications.
3. Record documents and shop drawings: Legibly mark each item to record actual construction including the following:
 - a. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - b. Field changes of dimension and detail.
 - c. Details not on original Contract Drawings.
4. Other documents: Maintain manufacturer's certifications, inspection certifications and field test records required by individual Specifications Sections.
5. Delete Architect title block from all Record Documents.

C. Submittals:

1. At Contract close-out, submit Record Documents with transmittal letter in duplicate, containing date, project title, list of documents and contractor's name, address, and signature. Arrange documents in sequence with index.
2. Submit the marked-up reproducible and two prints for each record drawing and three copies of each 8 1/2" x 11 drawing.

1.6 OPERATION AND MAINTENANCE DATA:

A. Prepare and submit two sets of operating and maintenance manuals prior to final inspection.

1. 8 1/2 x 11 inch three D side ring binders with durable plastic covers.
2. Prepare binder covers with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when more than one binder is required.
3. Internally subdivide the binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.

B. Contents of manuals:

1. Prepare a Table of Contents for each volume with each Product or system description identified.
2. Part 1: Directory, listing names, addresses, and telephone numbers of Architect, Contractor, Subcontractors, and major equipment suppliers.
3. Part 2: Operation and maintenance instructions, arranged by system and subdivided by Specification Section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
 - a. Significant design criteria.
 - b. List of equipment.
 - c. Parts list for each component.
 - d. Operating instructions.

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- e. Maintenance instructions for special finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.

4. Part 3: Project documents and certificates including the following:

- a. Shop drawings and product data.
- b. Certificates.
- c. Photocopies of warranties and bonds.

D. Submittal:

- 1. Submit one copy of completed volumes in final form 15 days prior to final review with Architect comments. Revise content of documents as required prior to final submittal.
- 2. Submit final volumes revised within ten days after final review.

1.7 WARRANTIES:

A. Provide notarized copies of each warranty and bond.

- 1. Execute and assemble documents from subcontractors, suppliers, and manufacturers.
- 2. Assemble in three D side ring binder with durable plastic cover.
- 3. Prepare binder covers with printed title "WARRANTIES AND BONDS" and title of project.
- 4. Provide Table of Contents.

B. Submit prior to final Application for payment.

C. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.8 STATEMENT OF APPLICATION:

- A. When required by individual Specification Section, upon completion of the work and as condition of its acceptance, submit a statement in duplicate signed by the product installer stating the following:
1. Materials conform to Specifications.
 2. Products were installed in accordance with Specifications and the manufacturers' written instructions.
 3. Installation was proper and adequate for the conditions of installation and performance.
- B. When required by individual Specification Section, Contractor shall jointly execute statement of application.

1.9 SPARE PARTS AND MAINTENANCE MATERIALS:

- A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual Specification Sections.
- B. Deliver to Project Site and place in location as directed. Obtain receipt prior to final payment.

END OF SECTION

SECTION 02 41 14.13
REMOVAL AND SALVAGE OF CONSTRUCTION MATERIALS

PART I- GENERAL

1.1 Related Documents

The provisions of the Contract, the General Conditions, the Supplementary Conditions and other Division I Specification Sections, apply to the work in this section.

1.2 Work Included

Demolition work shall include, but is not limited to the following:

- A. Removal of the existing built-up/modified built-up roof membrane system and gravel, related flashings, sheet metal and deteriorated wood blocking and insulation.
- B. Removal of existing fascia/gravel stops, edge trim and associated parts.
- C. Removal of the existing metal flashings and removal of lead flashings must be accomplished by workers who have completed OSHA Lead Training (4 hr course) in accordance with OSHA regulations 1926.62.
- D. Two acceptable practices shall be utilized for these projects - Crane or Elephants Trunk

1.3 Coordination

- A. It is the responsibility of the Contractor to coordinate the work of this section with all other work on the Project.

1.4 Job Conditions

- A. The Contractor shall inspect the premises prior to the submittal of its bid for conditions which may affect its work.
- B. Demolition, storage of materials, removal of debris and construction operations shall not interfere with the Owner's use of the property.

1.5 Permits

- A. The Contractor shall obtain, at its expense, all permits required by governing authorities, including any required for disposal of demolition debris or for use or blockage of streets or sidewalks.

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1.6 Sequence of Operations

- A. The Contractor shall submit for approval the complete sequence of operations for demolition and show how this Work is coordinated with all other aspects of the Project. Work shall not begin until such a schedule has been approved in writing by the Owner or his authorized representatives.
- B. The Contractor shall schedule a pre-construction meeting to review the procedures for the removal, handling, storage and transportation of all hazardous materials. The Contractor shall notify the personal assigned to remove the hazardous materials, the Owner and Architect of the time, date and location of the meeting.
- C. The Contractor shall ensure personal handling hazardous materials shall have the proper hazardous material/OSHA training. All personal when handling hazardous materials will be equipped and dressed in OSHA approved garments.

PART II- PRODUCTS

Not Applicable

PART III- EXECUTION

3.1 Protection

- A. Before starting demolition, the Contractor shall be solely responsible for making the necessary arrangements and for performing the necessary work involved in connection with the discontinuance or interruption of public and private utilities or services or components of said utilities or services under the jurisdiction of the Owner, utility companies or corporations, Police Department, Fire Department and Public Works Department including but not limited to gas, electricity, telephone, police signal, fire alarm, water, sanitary sewer, storm drainage and other systems which will be affected by the work to be performed under this Contract.
- B. The Contractor shall preserve in operating condition active utilities traversing the work site and shall protect manholes, catch basins, valve boxes and other apparatus. He shall repair damage to any such utility, due to work under this Contract, to the satisfaction of the Owner or his authorized representatives.
- C. Adequate protection of persons and property shall be provided at all times. The work shall be executed in a manner to avoid interference with the use of adjacent buildings, areas or properties, and to avoid interruption of free passage to or from such buildings, areas or properties.

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- D. Investigate and comply with any rules or regulations relative to providing and paying for uniformed Police to regulate or control traffic on existing streets which are affected by the Contractor's operation.
- E. Furnish signs, lights, barricades and other equipment as may be necessary for the safe execution of the work.
- F. Lead coated copper if not recycled must be disposed of as hazardous material/construction debris in accordance with all applicable local, state and federal regulations.
- G. The Contractor shall notify DEEP/DPH prior to the removal and disposal of asbestos and PCBs. All hazardous materials shall be disposed of in accordance with all governing local, State and Federal laws and regulations.
- H. Hazardous Materials: In the event the Contractor finds any undocumented asbestos, PCBs or other hazardous materials which require abatement the Contractor shall stop work immediately and notify the Architect and Owners Representative

3.2 Removal

- A. Remove the existing built-up roof system, flashings, membrane roof system, membrane flashing and sheet metal. Carefully inspect and repair exposed surfaces, utilities, roof penetrations, etc., for damage and repair or replace as required.
- B. Removal shall result in a smooth, consistent substrate for application of wood blocking, membrane and membrane flashing.
- C. A thorough inspection of the existing substrate and adjoining materials shall be made to determine if any repairs are required. If conditions are uncovered or created that would be detrimental to the application of specified work, immediately notify the Owner's Representative of such conditions for determination of treatment.
- D. All Hazardous materials once abated will be stored and removed from the site in accordance with all governing local, State and Federal laws and regulations.

3.3 Pollution Control

- A. The Contractor shall be aware that the facility must remain in use throughout the course of construction and that any disruption or inconvenience sustained by the Owner, employees, visitors and patrons must be kept to an absolute minimum. To this end, the Contractor shall provide, if necessary, a water spray and impermeable barrier to minimize dust and debris infiltration. Also the Contractor shall select equipment and procedures to mitigate noise discomfort.
- B. Debris shall be considered the property of the Contractor and shall be removed for the site in its entirety on a daily basis and be legally disposed. On site storage of discarded material will only be permitted when stored in a covered container.

3.4 On-Site Storage

- A. Equipment or materials stored on the roof shall be distributed in such a manner that no structural building components are over stressed.
- B. Ground level storage areas, if available, will be provided adjacent to the facility for equipment and new materials. Size and location of area shall be coordinated with the Owner.
- C. No debris or waste material shall be stored on or within the building, unless otherwise designated.

3.5 Repair of Damages

- A. The Contractor shall provide a list of damaged or deteriorated elements of the building and adjacent areas to the Owner prior to demolition and shall be responsible for repair or replacement of damaged or deteriorated items not on that list when the operations of the Contractor are substantially complete.
- B. Damage to any portion of the building which results in disruption of or inconvenience to the Owner, employees or patrons shall be immediately repaired or replaced by the Contractor. If such restitution is not promptly made, the Owner shall have the necessary work performed by an outside agency at the Contractor's expense. Such work shall be completed to the satisfaction of the Owner prior to the release of final payment.

3.6 Environmental Requirements

- A. Do not apply roofing membrane during inclement weather or when a 20% chance of precipitation is expected.

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- B. Do not apply roofing insulation or membrane to damp deck surface.
- C. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.

3.7 Clean-Up

- A. The building and adjacent areas shall be left in a broom clean condition at the end of each day.
- B. On completion of the work of this section and after removal of debris, the site shall be left in a clean and safe condition, satisfactory to the Owner or his authorized representative.

END OF SECTION



HIBBARD & ROSA ARCHITECTS, L.L.C.

363 MAIN STREET - SUITE 409 - TEL. (860) 346-1809 -FAX. (860) 704-8248
MIDDLETOWN, CT 06457

Summary of roof core cuts taken on April 29, 2015 at Essex Elementary School,
Centerbook, CT

Core cut #1:

Ballasted EPDM on 1-1/2" EPS
insulation on tectum deck



Core cut #2:

Ballasted EPDM on 2" EPS
insulation on light weight
concrete on tectum deck



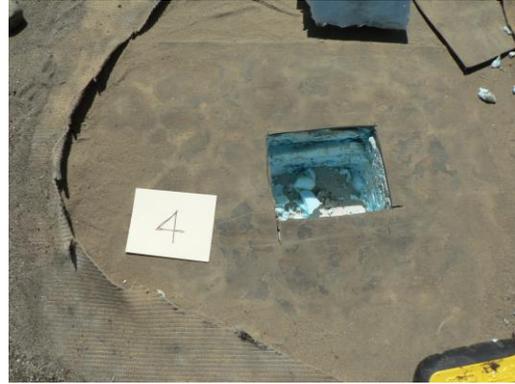
Core cut #3:

Ballasted EPDM on 2" EPS
insulation on light weight
concrete on tectum deck

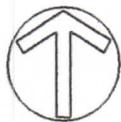


Core cut #4:

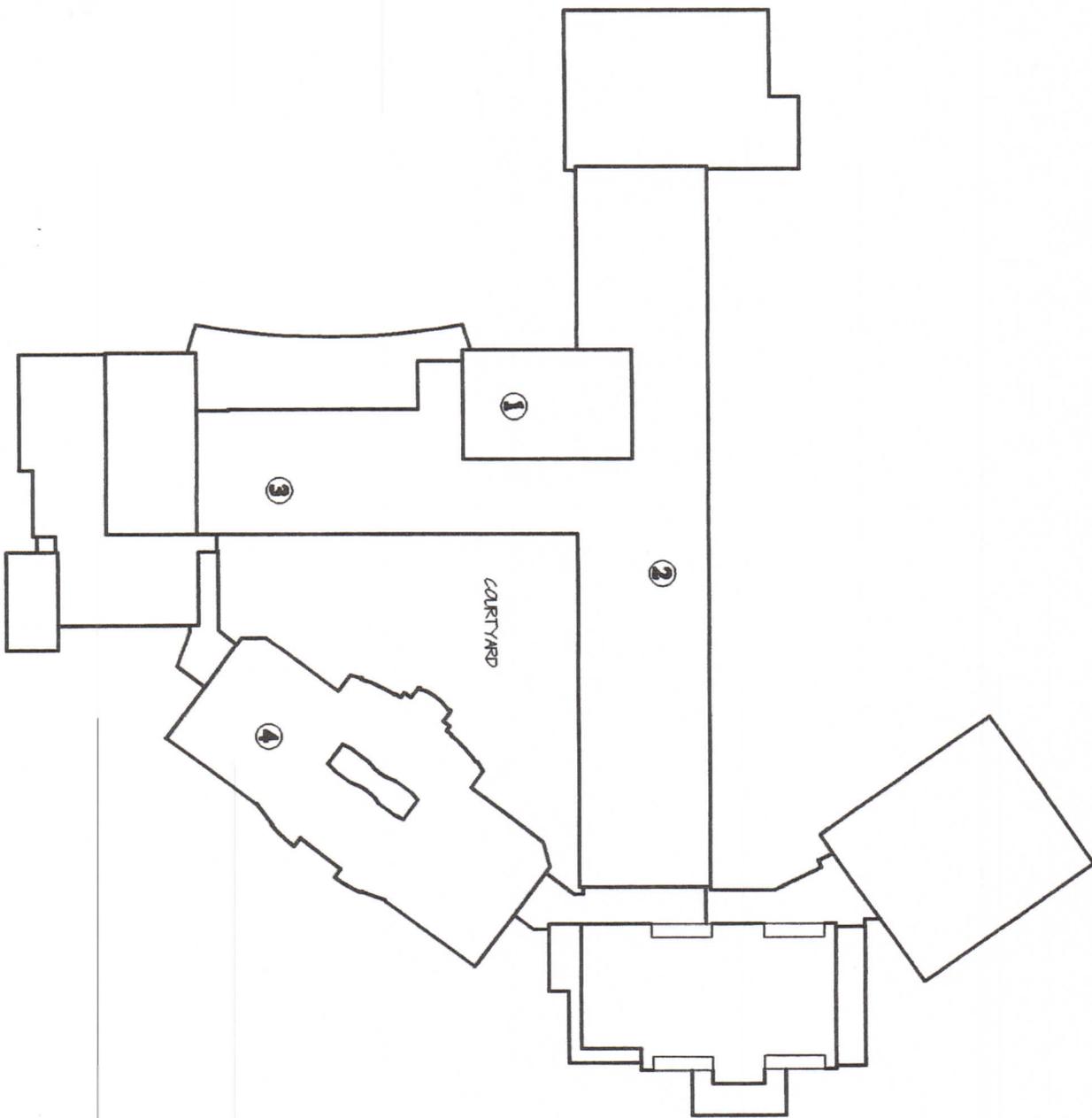
Ballasted EPDM on 3-1/2" EPS insulation on 1/2" gypsum board on tectum deck.



Summary prepared by T. Hibbard.



PROJECT
NORTH



CORE CUT LOCATION MAP

NOT TO SCALE

PARTIAL ROOF REPLACEMENT FOR
ESSEX ELEMENTARY SCHOOL
108 MAIN STREET - CENTERBROOK, CT

PROJECT DATA:

STATE: TN
PROJECT: TN-200-51W

DATE: 05-01-85

OWNER: HRA

HRA

HEPNER &
ROSA

ARCHITECTS

300 MAIN STREET
MIDDLETOWN, CT
PHONE: (860) 344-8509
FAX: (860) 344-8502

SECTION 06 10 00
ROUGH CARPENTRY

PART I - GENERAL

1.1 RELATED DOCUMENTS:

The provisions of the Contract, the General Conditions, the Supplementary Conditions and other Division I Specification Sections, apply to the work in this section.

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.

B. Related Sections

1. Section 07 22 18 - Preparation for Re-Roofing
2. Section 07 27 00 - Roof and Deck Insulation
3. Section 07 54 00 - Thermoplastic Membrane Roofing
4. Section 07 62 00 - Sheet Metal Flashing and Trim

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM)

1. ASTM C-209 Water Absorption, % by Volume
2. ASTM C-1289, Type V
3. ASTM D-2126 Dimensional Stability Change
4. ASTM D-16121 Compression Resistance
5. ASTM E96 Moisture Vapor Transmission
6. ASTM E-108 Class A fire resistance rating

B. Federal Specification

1. HH-1-1972/Gen and HH-1-1972/2

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1.4 DELIVERY, STORAGE AND HANDLING

- A. Time delivery and installation of carpentry work to avoid delaying other trades whose work is dependent on or affected by the carpentry work.
Keep materials dry during delivery
- B. Store lumber, plywood and insulated nail board in stacks with provisions for air circulation within stacks. Protect bottom of stacks against contact with damp or wet surfaces.
- C. Protect exposed materials against water and wind. Remove damaged or unsuitable material from the job site.

1.5 QUALITY ASSURANCE

- A. Comply with governing codes & regulations. Use experienced installers.
- B. Lumber Standards: American Softwood Lumber Standard PS 20-70 by the U.S. Department of Commerce.
- C. Plywood Standards: U.S. product Standard PSI-74/ANSI A 199.1 or latest APA Performance Standards for American Plywood Association.
- D. Factory Marking: Mark each piece of lumber or plywood to indicate type, grade, agency providing inspection service.
- E. Size and Shape: Dress lumber 4 sides (S4S) and work to shapes and patterns shown. Nominal sizes shown and specified refer to undressed lumber dimensions. Detailed dimensions show actual lumber size required.

1.6 SCOPE OF WORK

- A. Add wood blocking to meet new insulation heights according to drawings.
- B. Replace deteriorated trim in kind and install new wood.

PART II - PRODUCTS

2.1 DIMENSIONAL LUMBER AND PLYWOOD

- A. Construction Lumber: Standard Grade Douglas Fir, Western Larch, Western Hemlock (WWPA or WCLB) or No. 2 dimension Southern Pine (SPIB).
- B. Exterior Type Plywood: APA Rated sheathing, EXT.
- C. Bucks, Nailers, Blocking, Etc.: No. 2 common grade of any WWPA or WCLA species or No. 2 Southern Pine (SPIB).
- D. Anchorage and Fastenings: Proper type, size material and finish for each application.
- E. Quality: Sound, seasoned, well manufactured materials of longest practical lengths and sizes to minimize joints. Free from warp which cannot be easily corrected by anchoring and attachment. Discard material with defects which would impair quality of work.

2.2 WOOD TREATMENT

- A. Wood Preservative (Pressure Treatment): AWPA Treatment C1 using water bourn preservative with 0.25 pcf retention.
- B. Shop Preservative treated wood materials indicated on drawings.

PART III - EXECUTION

3.1 EXAMINATION

- A. Verify measurements and dimensions shown before proceeding with carpentry work.
- B. Examine supporting structure and conditions under which carpentry work is to be Installed. Do not proceed with installation until unsatisfactory conditions have been corrected.
- C. Correlate location of nailers, blocking and similar supports for attached work.

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- D. Scribe and cope as required for accurate fit of carpentry work to other work.

3.2 Protection

- A. Protect installed work from damage by other trades until acceptance of work.

3.3 Installation of Lumber and plywood products

- A. Provide all nailers, blocking and sleepers where shown on the drawings or required for attachment of other work. Minimum flashing height of eight (8) inches is required. Coordinate with location with other work involved; refer to shop drawings of such work.
- B. Attach to substrate securely as required to support applied loading. Countersink bolts and nuts flush with surfaces.
- C. Securely attach wood nailers to substrates in accordance with Factory Mutual Loss Prevention Data Sheet 1-49 and as required by recognized standards.
- D. Provide washers under bolt heads and nuts in contact with wood.
- E. Do not wax or lubricate fasteners that depend on friction for holding power.
- F. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish material.
- G. Make tight connections between members. Install fasteners without splitting of wood; predrill as required. Do not drive threaded friction type fasteners; turn into place. Tighten bolts and lag screws at installation and retighten as required for tight connections prior to closing in or at completion of work.

END OF SECTION

SECTION 07 22 18
PREPARATION FOR RE-ROOFING

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Remove the following existing roofing systems:
 - 1. Existing built-up/modified built-up roof system, base flashings, sheet metal, vent stack flashings, existing roofing system, and rigid insulation down to the deck, clean walls, conduits, and any remains of any types of roofing systems. Sweep or clean all debris off of the deck and walls.

1.2 PRE-INSTALLATION CONFERENCE

- A. Refer to Section 01 31 13
- B. Review installation procedures and coordination required with related work.

1.3 ENVIRONMENTAL REQUIREMENTS

- A. Do not remove existing roofing systems 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.

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.
- B. Extra protection to be taken when work is being conducted over sensitive areas. Protection such as tarps or polyethylene sheathing shall be lined on surface.

1.5 SCHEDULING

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

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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.

3.2 MATERIALS REMOVAL

- A. Remove all gravel, membrane, cant strips, rigid insulation, expansion joints, base flashings, walls, 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 $\frac{3}{4}$ " plywood.

- D. All roof equipment not in use or left filled will be parked on the column lines on ¾" plywood.
- E. 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 deck 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.

3.4 INTERIOR TEMPORARY PROTECTION

- A. Provide temporary protective sheeting over Gymnasium floors, kitchen equipment, computer labs while working over these areas with Ramboard Floor Protection System.
- B. Contractor responsible for cleaning all dust and any fallen debris from interior of the Gymnasium Floor, kitchen and computer labs.
- C. Owner shall close access to the gymnasium, kitchen, media center and computer labs during the roof replacement of that section. The Gymnasium, kitchen, media center and computer labs shall remain closed until proper clean-up and acceptance by the Owner.

END OF SECTION

SECTION 07 27 00
ROOF DECK AND INSULATION

PART 1 — GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes roof insulation over the properly prepared deck substrate.
- B. Related Sections:
 - 1. Section 07 62 00 - Sheet Metal Flashing and Trim.

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM A167 Standard Specification for Stainless and Heat-Resisting Chromium Nickel Steel Plate, Sheet and Strip.
 - 2. ASTM A653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanized) by the Hot-Dip Process.
 - 3. ASTM B29 Standard Specification for Refined Lead.
 - 4. ASTM B32 Standard Specification for Solder Metal.
 - 5. ASTM C165 Standard Test Method for Measuring Compressive Properties of Thermal Insulation.
 - 6. ASTM C208 Standard Specification for Cellulosic Fiber Insulating Board.
 - 7. ASTM C209 Standard Test Method for Cellulosic Fiber Insulating Board.
 - 8. ASTM C272 Standard Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions.
 - 9. ASTM C1396 Standard Specification for Gypsum Wallboard.
 - 10. ASTM C518 Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.

11. ASTM C578 Standard Specification for Perlite Thermal Insulation Board.
 12. ASTM C728 Standard Test Methods for Fire Test of Roof Coverings.
 13. ASTM C1289 Standard Specification for Faced Rigid Polyisocyanurate Thermal Insulation
 14. ASTM D5 Standard Test Method for Penetration of Bituminous Materials.
 15. ASTM D36 Standard Test Method for Softening Point of Bitumen (Ring and Ball Apparatus).
 16. ASTM D312 Standard Specification for Asphalt Used in Roofing.
 17. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.
 18. ASTM D1621 Standard Test Method for Compressive Properties of Rigid Cellular Plastics.
 19. ASTM D1622 Standard Test Method for Apparent Density of Rigid Cellular Plastics.
 20. ASTM D1863 Standard Specification for Mineral Aggregate Used on Built-Up Roofs.
 21. ASTM D2126 Standard Test Method for Response off Rigid Cellular Plastics to Thermal Humid Aging.
 22. ASTM D2178 Standard Specification for Asphalt Glass Felts used in Roofing and Waterproofing.
 23. ASTM D4601 Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing.
 24. ASTM D5147 Standard Sampling and Testing Modified Bituminous Sheet Material.
- B. Cast Iron Soil Pipe Institute, Washington, D.C. (CISPI)
- C. Factory Mutual Research (FM):
1. Roof Assembly Classifications.
- D. National Roofing Contractors Association (NRCA):
1. Roofing and Waterproofing Manual.

- E. Underwriters Laboratories, Inc. (UL):
 - 1. Fire Hazard Classifications.
- F. Warnock Hersey (WH):
 - 1. Fire Hazard Classifications.
- G. Sheet Metal and Air Conditioning Contractors National Association (SMACNA)
- H. Steel Deck Institute, St. Louis, Missouri (SDI)
- I. Southern Pine Inspection Bureau, Pensacola, Florida (SPIB)
- J. Insulation Board, Polyisocyanurate (FS HH-I-1972)
- K. Insulation Board, Thermal (Fiberboard) (FS LLL-1-535B)

1.4 SUBMITTALS

- A. Product Data: Provide manufacturer's specification data sheets for each product in accordance with Division 01 Section Submittal Procedures.01 33 00.
- B. Provide approval letters from insulation manufacturer for use of their insulation within this particular roofing system type.
- C. Provide a sample of each insulation type.
- D. Shop Drawings
 - 1. Submit manufacturer's shop drawings indicating complete installation details of tapered/flat stock insulation system, including identification of each insulation block, sequence of installation, layout, drain locations, roof slopes, thicknesses, crickets and saddles.
 - 2. Shop drawing shall include: Outline of roof, location of drains, complete board layout of tapered/flat stock insulation components, thickness and the average "R" value for the completed insulation system.
- E. Certification
 - 1. Submit roof manufacturer's certification that insulation fasteners furnished are acceptable to roof manufacturer.

2. Submit roof manufacturer's certification that insulation furnished is acceptable to roofing manufacturer as a component of roofing system and is eligible for roof manufacturer's system warranty.

1.5 QUALITY ASSURANCE

- A. Fire Classification, ASTM E-108.
- B. Manufacturer's Certificate: Certify that roof system furnished is approved by Factory Mutual, Underwriters Laboratories, Warnock Hersey or approved third party testing facility in accordance with ASTM E108, Class A for external fire and meets local or nationally recognized building codes.
- C. Manufacturer's Certificate: Certify that the roof system is adhered properly to meet or exceed the requirements of FM 1-90.
- D. Pre-installation Meeting: Refer to Division 07 roofing specifications for pre-installation meeting requirements.

1.6 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 PRODUCTS, GENERAL

- A. Refer to Division 01 Section Requirements
- B. Basis of Design: Materials, manufacturer's product designations, and/or manufacturer's names specified herein shall be regarded as the minimum standard of quality required for work of this Section. Comply with all manufacturer and contractor/fabricator quality and performance criteria specified in Part 1.
- C. Substitutions: Products proposed as equal to the products specified in this Section shall be submitted in accordance with Bidding Requirements and Division 01 provisions.

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1. Proposals shall be accompanied by a copy of the manufacturer's standard specification section. That specification section shall be signed and sealed by a professional engineer licensed in the state in which the installation is to take place. Substitution requests containing specifications without licensed engineer certification shall be rejected for non-conformance.
2. Include a list of three (3) projects of similar type and extent, located within a one hundred mile radius from the location of the project. In addition, the three projects must be at least five (5) years old and be available for inspection by the Architect, Owner or Owner's Representative.
3. Equivalency of performance criteria, warranty terms, submittal procedures, and contractual terms will constitute the basis of acceptance.
4. The Owner's decision regarding substitutions will be considered final. Unauthorized substitutions will be rejected.

2.2 INSULATION MATERIALS

A. Thermal Insulation Properties and Approved Insulation Boards.

1. Tapered Polyisocyanurate Roof Insulation; ASTM C-1289:
 - a. Qualities: Factory Tapered, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers.
 - b. Thickness: Varies
 - c. Average R-Value: Average **24** +/-
 - d. Tapered Slope: 1/4:" per foot (where noted on drawings)
 - e. Cricket Slope: 1/2" per foot
 - f. Compliances: UL, WH or FM listed under Roofing Systems Federal Specification HH-I-1972, Class 1
 - g. Acceptable Products:
 - 1) E'NRG'Y-2; Johns Manville
 - 2) Ultra Gard Gold; Johns Manville
 - 3) GAFTEMP Isotherm R; GAF
 - 4) Approved Equivalent

2. Flat Stock Polyisocyanurate Roof Insulation; ASTM C-1289:
 - a. Qualities: Factory Tapered, closed cell polyisocyanurate foam core bonded to heavy duty glass fiber mat facers. For installation as **base layer under tapered insulation**. Minimum thickness of insulation installations shall be 1-1/2"
 - b. Thickness: 1.5 in
 - c. Cricket Slope: 1/2" per ft
 - d. Insulation board shall meet the following requirements:
UL, WH or FM listed under Roofing Systems Federal Specification HH-I-1972, Class 1
 - e. Acceptable Products:
 1. E'NRG'Y-2; Johns Manville
 2. Ultra Gard Gold; Johns Manville
 1. GAFTEMP Isotherm R; GAF
 4. Approved Equivalent

3. Glass Reinforced Gypsum Composites
 - a. Qualities: Moisture resistant, noncombustable gypsum board with glass mat facings for use on roofing applications.
 1. Board Size: 4' x 4'
 2. Thickness: Minimum 1/2 in.
 - b. Source
 1. Georgia Pacific
 2. U. S. Gypsum
 3. JM (Johns Manville) Corp.
 4. Approved Equivalent
 - c. Gypsum board with glass mat facings shall meet the following requirements
 1. UL, WH, FM listed under Roofing Systems.
 2. Federal Specification LLL-I-535-B.
 - d. Physical Properties

Thickness	1/2"
Specific Gravity	2.2 – 2.4
Solubility in Water	0.2% @ 22 deg C
pH	6-8
Flame Spread	0 – 25
Smoke Development	0 - 20

2.3 RELATED MATERIALS

A. Fiber Cant and Tapered Edge Strips: Performed rigid insulation units of sizes/shapes indicated, matching insulation board or of perlite or organic fiberboard, as per the approved manufacturer.

1. Acceptable Manufacturers:

- a. Celotex
- b. Johns Manville
- c. GAF
- d. Approved Equivalent

B. Protection Board: Premolded semi-rigid asphalt composition board one half (1/2) inch.

C. Roof Board Joint Tape: Six (6) inches wide glass fiber mat with adhesive compatible with insulation board facers.

D. Asphalt: ASTM D312, Type III Steep Asphalt.

E. Roof Deck Insulation Adhesive: Two component, foam adhesive as recommended by insulation manufacturer and approved by FM indicated ratings.

- 1. Tensile Strength (ASTM D412)250 psi
- 2. Density (ASTM D1875)8.5 lbs./gal.
- 3. Viscosity (ASTM D2556).....16,000 to 24,000 cP.
- 4. 2 `Peel Strength (ASTM D903).....17 lb/in.
- 5. 3 `Flexibility (ASTM D816)Pass @ -70°F

F. Fasteners: Corrosion resistant screw fastener as recommended by roof membrane manufacturer.

- 1. Factory Mutual Tested and Approved with three (3) inches coated disc for 1-90 rating, length required to penetrate metal deck one inch.

PART 3 — EXECUTION

3.1 EXECUTION, GENERAL

A. Comply with requirements of Division 01 Section Requirements.

3.2 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.

3.3 INSTALLATION

A. Attachment with Mechanical Fasteners.

1. Approved insulation board, at concealed metal decks first layer shall be fully attached to the metal deck with an approved mechanical fastening system. At tectum deck the first layer shall be fully attached to the tectum deck with a two part urethane adhesive. As a minimum, the amount of fasteners shall be in accordance with manufacturer's recommendation for FM 1-90 system (a minimum of one fastener per two square feet shall be installed. Additional layres of insulataion shall be fully adhered in insulation adhesive..
2. Spacing pattern of fasteners shall be as per manufacturer's recommendations to meet the FM requirements. Placement of any fastener from edge of insulation board shall be a minimum of three inches, and a maximum of six (6) inches.

3. Filler pieces of insulation shall be set in a two-part urethane insulation adhesive. Application rate shall be in accordance with manufacturer's recommendation for FM 1-90 system.
4. Minimum penetration into deck shall be as recommended by the fastener manufacturer. There is a one (1) inch minimum for metal roof deck and wood where not specified by the manufacturer.
5. Approved 1/2 " glass reinforced gypsum board shall be set in a two part urethane adhesive. Application rate shall be in accordance with manufacturer's recommendation for FM 1-90 system.

B. Attachment over Tectum Decking

1. Embed base layer of rigid insulation board in a two part urethane adhesive at the rate and temperature recommended by insulation manufacturer. Stagger end joints of boards so all open joints will be eliminated. Walk in each piece of insulation and leave boards completely adhered to deck. Each insulation board shall be butt firmly against adjoining panels. All open joints shall be eliminated.
2. Embed all additional layers of insulation board set in a two part urethane adhesive after first layer has been attached as recommended by insulation manufacturer. Stagger end joints of boards so all open joints will be eliminated. Walk in each piece of insulation and leave boards completely adhered to base felt or deck. Each insulation board shall be butt firmly against adjoining panels. All open joints shall be eliminated.
3. Approved insulation shall be tapered around roof drains and scuppers as specified. 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 one quarter (1/4) inch. Install recovery board over tapered insulation sump as required.
4. Approved glass reinforced gypsum board, one half (1/2) inch thickness shall be installed over base tapered insulation using hot asphalt at the rate of approximately thirty three (33) pounds per square.
5. 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 one quarter (1/4) inch away from the vertical surface.
6. Install no more insulation at one time than can be roofed on the same day.
7. Install temporary water cut-offs at completion of each day's work and remove upon resumption of work.

8. Cant Strips/Tapered Edge Strips: Install preformed forty five (45) degree cant strips at junctures of vertical surfaces. Provide preformed, tapered edge strips at perimeter of edges of roof that do not terminate at vertical surfaces and/or indicated on the drawings. Tape joints of insulation as per manufacturer's requirements.

3.4 CLEANING

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

3.5 CONSTRUCTION WASTE MANAGEMENT

- A. Remove and properly dispose of waste products generated during installation. Comply with requirements of authorities having jurisdiction

END OF SECTION

SECTION 07 54 00
THERMOPLASTIC MEMBRANE ROOFING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, Including General and Supplementary Conditions and Division 1 Specifications Sections, apply to this section.

1.2 SUMMARY

- A. This Section includes the following **Metal Deck** installation work:

1. Thermal Plastic membrane roofing system on **Metal Deck** including but not limited to:
 - a. Removal and legal disposal of indicated asbestos containing materials, roof membranes, insulations and flashings down to deck.
2. Install Polyisocyanurate insulation adhered in ribbons of low rise foam insulation adhesive. Average R-Value of 24 +/- . ¼":12" Tapered assembly as indicated on drawings.
3. **Gypsum Fiber Board, 1/2 inch** thick cover board adhered in ribbons of low rise foamed insulation adhesive.
4. Thermoplastic Fleece Back white single ply membrane roofing system adhered in cold applied single ply bonding adhesive and heat welded seam details.
5. Metal flashing components and miscellaneous accessories as required.

- B. This Section includes the following **Tectum Deck** installation work.:

1. Thermal Plastic membrane roofing system on **Tectum Deck**, including but not limited to:
 - a. Removal and legal disposal of indicated asbestos containing materials, roof membranes, insulations and flashings down to deck.
2. Install Polyisocyanurate insulation adhered in ribbons of low rise foam insulation adhesive. Average R-Value of 24 +/- . ¼":12" Tapered assembly as indicated on drawings.
3. **Gypsum Fiber Board, 1/2 inch** thick cover board adhered in ribbons of low rise foamed insulation adhesive.

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4. Thermoplastic Fleece Back white single ply membrane roofing system adhered in cold applied single ply bonding adhesive and heat welded seam details.
5. Metal flashing components and miscellaneous accessories as required.

C. Related Sections include the following:

1. Section 06 10 00 – Rough Carpentry
2. Section 07 27 00 – Roof Deck and Insulation
3. Section 07 62 00 - Sheet Metal Flashing and Trim
4. Section 07 92 13 – Joint Sealants

1.3 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

1.4 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed membrane roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Membrane roofing and base flashings shall remain watertight.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing membrane manufacturer based on testing and field experience.
- C. FMG Listing: Provide roofing membrane, base flashings, and component materials that comply with requirements in FMG 4450 and FMG 4470 as part of a membrane roofing system and that are listed in FMG's "Approval Guide" for Class 1 or noncombustible construction, as applicable. Identify materials with FMG markings.
1. Fire/Windstorm Classification: Class 1A- 90.
- D. Flashings: Comply with requirements of 07 62 00 "Sheet Metal Flashing and Trim" and "Manufactured Roof Specialties." Provide base flashings, perimeter flashings, detail flashings and component materials that comply with requirements and recommendations of the following:

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1. FMG 1-49 Loss Prevention Data Sheet for Perimeter Flashings.
2. FMG 1-29 rev. August 2007: Loss Prevention Data Sheet for Above Deck Roof Components, for insulation attachment requirements.
3. NRCA Roofing and Waterproofing Manual (Fifth Edition) for construction details and recommendations.
4. SMACNA Architectural Sheet Metal Manual (Fifth Edition) for construction details.

1.5 SUBMITTALS

- A. LEED Submittals:
 1. Product Test Reports for Credit SS 7.2: For roof materials, indicating that roof materials comply with Solar Reflectance Index requirement.
- B. Product Data: For each type of product indicated.
- C. Shop Drawings: For roofing system. Include plans, elevations, sections, details in compliance with performance requirements, and attachments to other Work.
 1. Base, perimeter, and detail flashings, cants, and membrane terminations.
 2. Tapered insulation, including slopes.
 3. Crickets, saddles, and tapered edge strips, including slopes.
 4. Insulation fastening patterns.
- D. Samples for Verification: For the following products:
 1. 8-by-10-inch square of sheet roofing, of color specified, including T-shaped side and end lap seam.
 2. 8-by-10-inch square of roof insulation.
 3. 8-by-10-inch square of walkway pads or rolls.
 4. 12-inch length of metal termination bars.
- E. Installer Certificates: Signed by roofing system manufacturer certifying that Installer is approved, authorized, or licensed by manufacturer to install roofing system.
- F. Qualification Data: For Installer and manufacturer, and manufacturer's technical representative.
- G. Maintenance Data: For roofing system to include in maintenance manuals.

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- H. Applicator/Roofing Contractor Warranty: Submit roofing installer's written warranty, signed by the installer, covering work of this section, including but not limited to, roof plies and adhesive, insulation layers, base flashings, roof insulations, wood components, fasteners, and all roof system metal components for two years from the date of substantial completion. The warranty shall guarantee material and workmanship for water tightness, and against all leaks. During the two-year period, the contractor shall respond and fix all reported leaks within 24 hours from time of notification, and fix all leaks without any cost to the Owner.
- I. Inspection Reports: Provide copies of the roofing system manufacturer's inspection photo reports noted during and at the completion of the new roof installation. Manufacturer's Technical (non-sales) Representative must inspect conventional roof installation every other day and report progress to Owner's representative. Provide progress photos for application of each operation of roofing system. In addition to regular inspections, Manufacturer's Technical (non-sales) Representative shall be present for roof work starts at each section. Manufacturer's Technical Representative shall provide proof of no less than 10 years experience in the Roofing Industry.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer to perform Work of this Section who has specialized in installing cold process roofing systems; who is approved, authorized, or licensed by the roofing system manufacturer to install manufacturer's product; and who is eligible to receive and issue the standard roofing manufacturer's warranty. Applicators to include a list of three (3) projects completed within the the last five (5) years, of similar size and within 50 miles of project site. Include names and addresses of Architects and Owners, and other information with bid. Manufacturer Qualifications: A qualified manufacturer that has FMG approval for membrane roofing system identical to that used for this Project.
- B. Manufacturer's Technical Representative Qualifications: An authorized full-time employee representative of manufacturer experienced in the installation and maintenance of the specified roofing system and qualified to determine Installer's compliance with the requirements of this Project. (Also, as noted above in 1.5I)

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1. If manufacturer does not employ full time technical personnel, inspection personnel shall be certified as a Registered Roof Observer by the Roof Consultants Institute, and shall be experienced in the installation and maintenance of the specified roofing system and qualified to determine Installer's compliance with the requirements of this Project.
- C. Source Limitations: Obtain components for membrane roofing system from or approved by roofing membrane manufacturer.
- D. Fire-Test-Response Characteristics: Provide membrane roofing materials with the fire-test-response characteristics indicated as determined by testing identical products per test method below by UL, FMG, or another testing and inspecting agency acceptable to authorities having jurisdiction. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.
1. Exterior Fire-Test Exposure: Class A; ASTM E 108, for application and roof slopes indicated.
 2. Fire-Resistance Ratings: ASTM E 119, for fire-resistance-rated roof assemblies of which roofing system is a part.
- E. Preliminary Roofing Conference: Before starting reroofing preparation, conduct conference at Project site. Comply with requirements for preinstallation conferences in Division 1 Section "Project Management and Coordination." Review methods and procedures related to reroofing preparation and roofing system including, but not limited to, the following:
1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, and installers whose work interfaces with or affects roofing including installers of roof accessories and roof-mounted equipment.
 2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
 5. Review structural loading limitations of roof deck during and after roofing.

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6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
 7. Review governing regulations and requirements for insurance and certificates if applicable.
 8. Review temporary protection requirements for roofing system during and after installation.
 9. Review roof observation and repair procedures after roofing installation.
- F. Preinstallation Conference: Conduct conference at Project site. Comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to roofing system including, but not limited to, the following:
1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, and installers whose work interfaces with or affects roofing including installers of roof accessories and roof-mounted equipment.
 2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
 5. Review structural loading limitations of roof deck during and after roofing.
 6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
 7. Review governing regulations and requirements for insurance and certificates if applicable.
 8. Review temporary protection requirements for roofing system during and after installation.
 9. Review roof observation and repair procedures after roofing installation.

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1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 - 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.8 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
- B. Prevent dust, vapors, gases and odors from entering the building during roof installation. When shutting down or blocking air intakes, provide makeup air or additional intake air from sources away from the work area. Coordinate these procedures with owner's representative.

1.9 WARRANTY

- A. Warranty, General: Warranties specified shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

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- B. Manufacturer's Standard Roofing Warranty: Submit a written warranty, signed by the roofing system manufacturer and the roofing contractor agreeing to promptly repair any leaks in the roof membrane system resulting from defects in materials or workmanship including, but not limited to, roof plies and adhesive, base flashings, roof insulations and adhesives, wood components, fasteners, and all roof system metal components for the indicated warranty period.
1. Manufacturer's 20-Year Systems Warranty.
 2. Indicate a wind speed warranty of 74 M.P.H., as reported by the certified weather reporting station nearest to the site for the Newtown, CT region. Provide a sample copy of standard roofing manufacturer's warranty, stating obligations, remedies, limitations, and exclusions of warranty.
 3. Bidders to provide a copy of the Manufactures warranty with Bid.
 4. Inspections required by the manufacturer to provide this warranty shall be performed at no additional cost to the Owner.
 5. Warranty shall run for a continuous 20 years.
 6. Warranty will not be accepted that contains any requirement(s) for Owner to renew the warranty at any time during the 20 year period.
 7. Upon successful completion of the work and prior to receipt of final payment, the manufacturer's warranty as stated above shall be issued to the Owner.
 8. Include all components and accessories in providing a complete weather tight roofing system.
- C. Applicator/Roofing Contractor Warranty: Submit roofing installer's written warranty, signed by the installer, covering work of this section, including but not limited to, roof plies and adhesive, insulation layers, base flashings, roof insulations, wood components, fasteners, and all roof system metal components for two years from the date of substantial completion. The warranty shall guarantee material and workmanship for watertightness, weathertightness, and against all leaks. During the two-year period, the contractor shall respond and fix all reported leaks within 24 hours from time of notification, and fix all leaks without any cost to the Owner.
1. Warranty Period: Two years from date of Substantial Completion.

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PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Manufacturer/Product: The roof system specified in this section is based upon Tremco, Inc. products named in other Part 2 articles. Subject to compliance with requirements, provide the named product or an approved comparable product by one of the following:
 - 1. Tremco, Inc. (Basis of Design System, 80 mil TPA FB) or approved equal
- B. Approved Manufacturer's Thermoplastic Membrane and Adhesive:
 - 1. Manufacturer / TPA Sheet / Cold Single Ply Adhesive
 - a. Tremco, Inc. / TPA FB / TPA LV Bonding Adhesive
- C. Approved Manufacturer's Insulation Adhesive:
 - 1. Manufacturer / Solvent-Free Non-Foamed Insulation Adhesive
 - a. OMG Olybond / Low Rise Foam Adhesive

2.2 PVC ROOFING MEMBRANE

- A. Ethylene Interpolymer (EIP) PVC Sheet: Basis of design, TPA (Tri-Polymer Alloy) Roof Membrane: ASTM D 4434, Type IV, fabric reinforced and fabric backed, with the following properties:
 - 1. Membrane Thickness: 60 mils, nominal.
 - 2. Exposed Face Color: White.

2.3 AUXILIARY MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing.
 - 1. Liquid-type auxiliary materials shall meet VOC limits of authorities having jurisdiction.
- B. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as PVC sheet membrane.
- C. Bonding Adhesive: Asbestos free, solvent-based adhesive for membrane and flashings.
 - 1. VOC 199.4 g/L ASTM D 3960
 - 2. Color: amber/yellow

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- D. Metal Termination Bars: Manufacturer's standard predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.
- E. Fasteners: Factory-coated steel fasteners and metal plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening membrane to substrate, and acceptable to membrane roofing system manufacturer.
- F. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, termination reglets, cover strips, and other accessories.

2.4 ROOF INSULATION

- A. General: Provide preformed roof insulation boards that comply with requirements and referenced standards, selected from manufacturer's standard sizes and of thicknesses indicated.
- B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 1, Grade 2, HCFC-free, with felt or glass-fiber mat facer on both major surfaces. Average R Value of 24.
- C. Insulation: Provide factory-tapered insulation boards fabricated to slope of 1/4 inch per 12 inches, as indicated.
- D. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Cricket & saddle sloped to 1/2:12 sloped.

2.5 INSULATION ACCESSORIES

- A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatible with built-up roofing.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation to substrate and acceptable to roofing manufacturer.
- C. Insulation Adhesive: Tremco Low Rise Foam Insulation Adhesive, Two-component, solvent-free, low odor, bio-based elastomeric urethane adhesive formulated to adhere

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roof insulation to substrate, USDA BioPreferred listed, with the following physical properties:

1. Flame Spread Index, ASTM E 84: 15.
2. Smoke Developed Index, ASTM E 84: 50.
3. Asbestos Content, EPA 600/R13/116: None.
4. Volatile Organic Compounds (VOC), maximum, ASTM D 3960: 0 g/L.
5. Tensile Strength, minimum, ASTM D 412: 200 psi (1380 kPa).
6. Peel Adhesion, minimum, ASTM D 903: 17 lbf/in (2.98 kN/m).
7. Flexibility, 70 deg. F (39 deg. C), ASTM D 816: Pass.
8. Bio-based material content, ASTM D 6866 (USDA): Not less than 45 percent by volume.

- D. Insulation Cant Strips: ASTM C 208, Type II, Grade 1, cellulosic-fiber insulation board.
- E. Wood Cant Strips: Comply with requirements in Division 06 Section "Rough Carpentry."
- F. Tapered Edge Strips: ASTM C 208, Type II, Grade 1, cellulosic-fiber insulation board.
- G. Cover Board: Fiberglass Reinforced Gypsum Fiber Roof Board:
ASTM C 1278/C 1278M, cellulosic-fiber-reinforced, water-resistant gypsum substrate
1/2 inch.

2.6 WALKWAYS

- A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, solid-rubber, slip-resisting, surface-textured walkway, and acceptable to membrane roofing system manufacturer.
1. 80 mils.
 2. Color: Gray.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:

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1. Verify that roof openings and penetrations are in place and set and braced and that roof drains are securely clamped in place.
2. Verify that wood cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
3. Verify that surface plane flatness and fastening of steel roof deck comply with requirements in Division 5 Section "Steel Deck."
4. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- C. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.3 INSTALLATION, GENERAL

- A. Install roofing system in accordance with manufacturer's recommendations.
- B. Install roofing membrane, base flashings, and component materials in compliance with requirements in FMG 4450 and FMG 4470.
- C. Comply with recommendations in FMG Loss Prevention Data Sheet 1-49.
- D. Install roofing system in accordance with NRCA Manual Plates and NRCA recommendations.

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3.4 INSULATION MATERIALS

- A. **Metal Deck: Mechanically Fastened and Adhered Insulation:** Install first layer of insulation to metal deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.
1. Fasten first layer of insulation according to **requirements in FM Approvals' "RoofNav"** for specified Windstorm Resistance Classification.
 2. Fasten first layer of insulation to **resist uplift pressure** at corners, perimeter, and field of roof.
 3. Set each additional layer of insulation in **ribbons of bead-applied insulation adhesive**, firmly pressing and maintaining insulation in place.
- B. **Tectum Deck: Adhered Insulation:** Install first layer and all subsequent layers of insulation to tectum deck using ribbons of bead applied insulation adhesive, firmly pressing and maintaining insulation in place.
1. Fasten first layer of insulation according to **requirements in FM Approvals' "RoofNav"** for specified Windstorm Resistance Classification.
 2. Fasten first layer of insulation to **resist uplift pressure** at corners, perimeter, and field of roof.
 3. Set each additional layer of insulation in **ribbons of bead-applied insulation adhesive**, firmly pressing and maintaining insulation in place.
- C. Comply with roofing manufacturer's written instructions for installing roof insulation.
- D. Install tapered insulation under area of roofing to conform to slopes indicated.
- E. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with insulation.
1. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
- F. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inches or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.

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- G. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- H. Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces.
- I. Adhered Insulation: Install each layer of insulation and adhere to substrate as follows:
 - 1. Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.
- J. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction. Loosely butt cover boards together.
 - 1. Set cover board in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining cover in place.

3.5 ADHERED ROOFING MEMBRANE INSTALLATION

- A. Install roofing membrane over area to receive roofing according to membrane roofing system manufacturer's written instructions. Unroll roofing membrane and allow to relax before installing.
 - 1. Install sheet according to ASTM D 5036.
- B. Start installation of roofing membrane in presence of membrane roofing system manufacturer's technical personnel.
- C. Accurately align roofing membrane and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- D. Bonding Adhesive: Apply solvent-based bonding adhesive to substrate and underside of roofing membrane at rate required by manufacturer and allow to partially dry before installing roofing membrane. Do not apply bonding adhesive to splice area of roofing membrane.
- E. In addition to adhering, mechanically fasten membrane roofing securely at terminations, penetrations, and perimeter of roofing.

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- F. Apply roofing membrane with side laps shingled with slope of roof deck where possible.
- G. Seams: Clean seam areas, overlap roofing membrane, and hot-air weld side and end laps of roofing membrane according to manufacturer's written instructions to ensure a watertight seam installation.
 - 1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roofing membrane.
 - 2. Verify field strength of seams a minimum of twice daily and repair seam sample areas.
 - 3. Repair tears, voids, and lapped seams in roofing membrane that does not meet requirements.
- H. Spread sealant or mastic bed over deck drain flange at deck drains and securely seal roofing membrane in place with clamping ring.

3.6 BASE FLASHING

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
- B. Apply solvent-based bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply bonding adhesive to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with sheet flashing.
- D. Clean seam areas and overlap and firmly roll sheet flashings into the adhesive. Weld side and end laps to ensure a watertight seam installation.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.
 - 1. Install metal counterflashing to cover flashing termination.

3.7 WALKWAY INSTALLATION

- A. Flexible Walkways: Install walkway products in locations indicated on drawings. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

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3.8 FIELD QUALITY CONTROL

- A. Manufacturer's Technical (non-sales) Representative must inspect roof installation every other day and report progress to Owner's representative.
- B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Architect. Manufacture shall verify watertightness of roof system by performing a nondestructive infrared moisture survey.
 - 1. Notify Architect or Owner 48 hours in advance of date and time of inspection.
- C. Repair or remove and replace components of roofing system where test results or inspections indicate that they do not comply with specified requirements.
- D. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.9 PROTECTING AND CLEANING

- A. Protect membrane roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove membrane roofing system that does not comply with requirements, repair substrates, and repair or reinstall membrane roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.10 MAINTENANCE SERVICE AGREEMENT

- A. Roof Management and Maintenance Specification: The following services will be provided to the building owner in the 2nd, 5th, 10th, and 15th year of the warranty, for a period of 20 years, utilizing roofing manufacturer's technical, non-sales employees, at no additional cost to the building Owner.

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- B. Roof Inspection Report: Provide report of roof conditions based upon roof inspections.
- C. Storm Reports, Monitoring and Follow-up: Complete roof inspection at building owner request of roof areas after major storm activity.
- D. Roof preventative maintenance completed by manufacturer's representative to include:
 - 1. Metal Edge Flashing Components: Tears, splits, and breaks in the membrane flashings will be repaired with appropriate repair mastics and membranes. Open flashing strip-ins will be repaired with appropriate mastics and membranes. Metal edge cleats and clips will be re-secured.
 - 2. Parapet Wall and Counterflashing Systems: Tears, splits and breaks in the flashings will be repaired with the appropriate repair mastics and membranes. Breaks, tears and splits in flashing strip-ins will be repaired with appropriate repair mastics and membranes. Coat all exposed reinforcing membranes with approved mastics. Exposed fasteners will be re-sealed. Void in termination bars, counterflashings and parapet caps will be cleaned and re-sealed. Re-secure termination bars and counterflashings. Check and re-secure loose metal coping caps to cleats.
 - 3. Equipment/Projection Flashing Components: Tears, splits and breaks in the flashings will be repaired with appropriate mastics and membranes. Open or split flashing strip-ins will be repaired with appropriate mastic and membrane. Unsecured roof top equipment will be secured. Exposed fasteners will be tightened and re-sealed. Termination bars and counterflashings will be sealed. Metal projections (hood and clamps) will be checked and re-sealed.
 - 4. Roof Membrane Preventative Maintenance Repair: Tears, splits and breaks in the roof membrane will be repaired with the appropriate repair mastic and membranes. All membrane repairs will follow the Manufacturer's written repair and maintenance guidelines. Dress up reflective coatings on flashings. Coat all exposed reinforcing membranes with approved mastics.
 - 5. Drains: Check and re-secure drain bolts and clamping rings. Advise owner of missing drain dome strainers. Check strip-ins around drain leads/copper, coat with approved mastic.
- E. Leak response responsibilities of the manufacturer to Building Owner:
 - 1. In the event that a leak should occur:
 - a. Provide toll free telephone number for Owner to call in leaks.
 - b. Provide a response to Owner on all leak calls within twenty-four (24) hours of when call is made.

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- c. Provide a repair crew, at the building site, within two (2) business days of the call.
- d. Provide follow-up inspection to ensure that repairs were made properly.

END OF SECTION

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Thermoplastic
Membrane Roofing

SECTION 07 62 00
SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES:

- 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.

1.3 RELATED SECTIONS

- A. RELATED SECTIONS
 - 1. Section 06 10 00 - Rough Carpentry
 - 2. Section 07 54 00 – Thermoplastic Membrane Roofing
 - 3. Section 07 92 00 - Joint Sealants

1.3 REFERENCES

- A. The publications listed below for a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - 1. A167-99(R 2004): Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip

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2. A653/A653M-05: Steel Sheet Zinc-Coated (Galvanized) or Zinc Alloy Coated (Galvanized) by the Hot- Dip Process
 3. B32-04: Solder Metal
 4. B209-04: Aluminum and Aluminum-Alloy Sheet and Plate
 5. B370-03: Copper Sheet and Strip for Building Construction
 6. D173-03: Bitumen-Saturated Cotton Fabrics Used in Roofing and Waterproofing
 7. D412-98 (R2002): Vulcanized Rubber and Thermoplastic Elastomers-Tension
 8. D1187-97 (R2002): Asphalt Base Emulsions for Use as Protective Coatings for Metal
 9. D1784-03: Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
 10. D3656-04: Insect Screening and Louver Cloth Woven from Vinyl-Coated Glass Yarns
 11. D4586-00: Asphalt Roof Cement, Asbestos Free
- C. American National Standards Institute/Single Ply Roofing Institute (ANSI/SPRI):
1. ES-1-2003: Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems
- D. Sheet Metal and Air Conditioning Contractors National Association (SMACNA): Architectural Sheet Metal Manual (Fifth Edition, 1993).
- E. National Association of Architectural Metal Manufacturers (NAAMM):
1. AMP 500 Series: Metal Finishes Manual
- F. American Architectural Manufacturers Association (AAMA):
1. 605-98: Voluntary Specification for High Performance Organic Coatings on Architectural Extrusions Panels
- G. Federal Specification (Fed. Spec):
1. A-A-1925A: Shield, Expansion; (Nail Anchors)
 2. UU-B-790A: Building Paper, Vegetable Fiber
- H. International Building Code (IBC):
1. 2003 Edition
 - 2.

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1.4 SUBMITTALS

- A. Submit in accordance with Section 01 33 00, Shop Drawings, Product Data, and Samples.
- B. Shop drawings:
 - 1. Flashings.
 - 2. Copings.
 - 3. Gravel Stop-Fascia.
 - 4. Gutter and Conductors.
 - 5. Expansion joints.
 - 6. Fascia-cant.
 - 7. Manufacturer's Literature and Data.
 - 8. Two-piece counter-flashing.
 - 9. Thru wall flashing.
 - 10. Expansion joint cover, each type.

1.5 APPLICABLE PUBLICATIONS

- A. The publications listed below for a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - 1. A167-99(R 2004): Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
 - 2. A653/A653M-05: Steel Sheet Zinc-Coated (Galvanized) or Zinc Alloy Coated (Galvanized) by the Hot-Dip Process
 - 3. B32-04: Solder Metal
 - 4. B209-04: Aluminum and Aluminum-Alloy Sheet and Plate
 - 5. B370-03: Copper Sheet and Strip for Building Construction
 - 6. D173-03: Bitumen-Saturated Cotton Fabrics Used in Roofing and Waterproofing
 - 7. D412-98 (R2002): Vulcanized Rubber and Thermoplastic Elastomers-Tension
 - 8. D1187-97 (R2002): Asphalt Base Emulsions for Use as Protective Coatings for Metal
 - 9. D1784-03: Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
 - 10. D3656-04: Insect Screening and Louver Cloth Woven from Vinyl-Coated Glass Yarns

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11. D4586-00: Asphalt Roof Cement, Asbestos Free

C. American National Standards Institute/Single Ply Roofing Institute (ANSI/SPRI):

1. ES-1-2003: Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems

D. Sheet Metal and Air Conditioning Contractors National Association (SMACNA): Architectural Sheet Metal Manual (Fifth Edition, 1993).

E. National Association of Architectural Metal Manufacturers (NAAMM):

1. AMP 500 Series: Metal Finishes Manual

F. American Architectural Manufacturers Association (AAMA):

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G. Federal Specification (Fed. Spec):

1. A-A-1925A: Shield, Expansion; (Nail Anchors)
2. UU-B-790A: Building Paper, Vegetable Fiber

H. International Building Code (IBC):

1. 2003 Edition

PART 2 - PRODUCTS

2.1 MATERIALS

A. Solder: ASTM B32; flux type and alloy composition as required for use with metals to be soldered.

B. Copper ASTM B370, cold-rolled temper.

C. Aluminum Sheet: ASTM B209, alloy 3003-H14. // Except alloy used for color anodized aluminum shall be as required to produce specified color. Alloy required to produce specified color shall have the same structural properties as alloy 3003-H14.

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D. Fasteners

1. Use copper, copper alloy, bronze, brass, or stainless steel for copper and copper clad stainless steel, and stainless steel for stainless steel and aluminum alloy. Use galvanized steel or stainless steel for galvanized steel.
2. Nails:
 - a. Minimum diameter for copper nails: 3 mm (0.109 inch).
 - b. Minimum diameter for aluminum nails 3 mm (0.105 inch).
 - c. Minimum diameter for stainless steel nails: 2 mm (0.095 inch) and annular threaded.
 - d. Length to provide not less than 7/8" penetration into anchorage.
3. Rivets: Not less than 3 mm (1/8 inch) diameter.
4. Expansion Shields: Fed Spec A-A-1925A.

E. Sealant: As specified in Section SEALANTS AND CAULKING for exterior locations.

F. Insect Screening: ASTM D3656, 18 by 18 regular mesh.

G. Roof Cement: ASTM D4586.

2.2 SHEET METAL THICKNESS

A. Except as otherwise shown or specified use thickness or weight of sheet metal as follows:

B. Exposed Locations:

1. Thickness of aluminum is specified with each item

2.3 FABRICATION

A. Jointing:

1. In general, copper, stainless steel and copper clad stainless steel joints, except expansion and contraction joints, shall be locked and soldered.
2. Jointing of copper over 20 oz weight or stainless steel over 0.018 inch thick shall be done by lapping, riveting and soldering.
3. Joints shall conform to following requirements:
 - a. Flat-lock joints shall finish not less than 3/4 inch wide.

- b. Lap joints subject to stress shall finish not less than one inch wide and shall be soldered and riveted.
 - c. Unsoldered lap joints shall finish not less than 4 inches wide.
- 4. Flat and lap joints shall be made in direction of flow.
 - 5. Edges of bituminous coated copper, copper covered paper, nonreinforced elastomeric sheeting and polyethylene coated copper shall be jointed by lapping not less than 4 inches in the direction of flow and cementing with asphalt roof cement or sealant as required by the manufacturer's printed instructions.
 - 6. Soldering:
 - a. Pre tin both mating surfaces with solder for a width not less than 1 1/2 inches of uncoated copper, stainless steel, and copper clad stainless steel.
 - b. Wire brush to produce a bright surface before soldering lead coated copper.
 - c. Treat in accordance with metal producers recommendations other sheet metal required to be soldered.
 - d. Completely remove acid and flux after soldering is completed.

B. Expansion and Contraction Joints:

- 1. Fabricate in accordance with the Architectural Sheet Metal Manual recommendations for expansion and contraction of sheet metal work in continuous runs.
- 2. Space joints as shown or as specified.
- 3. Space expansion and contraction joints for copper, stainless steel, and copper clad stainless steel at intervals not exceeding 24 feet
- 4. Space expansion and contraction joints for aluminum at intervals not exceeding 5400 mm (18 feet), except do not exceed 10 feet for gravel stops and fascia-cant systems.
- 5. Fabricate slip-type or loose locked joints and fill with sealant unless otherwise specified.
- 6. Fabricate joint covers of same thickness material as sheet metal served.

C. Cleats:

- 1. Fabricate cleats to secure flashings and sheet metal work over 12 inches wide and where specified.
- 2. Provide cleats for maximum spacing of 12 inch centers unless specified otherwise.

3. Form cleats of same metal and weights or thickness as the sheet metal being installed unless specified otherwise.
4. Fabricate cleats from 2 inch wide strip. Form end with not less than 3/4 inch wide loose lock to item for anchorage. Form other end of length to receive nails free of item to be anchored and end edge to be folded over and cover nail heads.

D. Edge Strips or Continuous Cleats:

1. Fabricate continuous edge strips where shown and specified to secure loose edges of the sheet metal work.
2. Except as otherwise specified, fabricate edge strips or minimum // 24 oz copper // 0.024 inch thick stainless steel // 0.050 inch thick aluminum. //
3. Use material compatible with sheet metal to be secured by the edge strip.
4. Fabricate in 10 feet maximum lengths with not less than 3/4 inch loose lock into metal secured by edge strip.
5. Fabricate Strips for fascia anchorage to extend below the supporting wood construction to form a drip and to allow the flashing to be hooked over the lower edge at least 3/4 inch.
6. Fabricate anchor edge maximum width of 3 inches or of sufficient width to provide adequate bearing area to insure a rigid installation using 32 oz copper // 0.031 inch thick stainless steel // 0.0625 inch thick aluminum.

E. Drips:

1. Form drips at lower edge of sheet metal counter-flashings (cap flashings), fascias, gravel stops, wall copings, by folding edge back 1/2 inch and bending out 45 degrees from vertical to carry water away from the wall.
2. Form drip to provide hook to engage cleat or edge strip for fastening for not less than 3/4 inch loose lock where shown.

F. Edges:

1. Edges of flashings concealed in masonry joints opposite drain side shall be turned up 1/4 inch to form dam, unless otherwise specified or shown otherwise.
2. Finish exposed edges of flashing with a 1/4 inch hem formed by folding edge of flashing back on itself when not hooked to edge strip or cleat. Use 1/4 inch minimum penetration beyond wall face with drip for through-wall flashing exposed edge.
3. All metal roof edges shall meet requirements of IBC 2003
- 4.

G. Metal Options:

1. Where options are permitted for different metals use only one metal throughout.
2. Stainless steel may be used in concealed locations for fasteners of other metals exposed to view.
3. Where copper gravel stops, copings and flashings will carry water onto cast stone, stone, or architectural concrete, or stainless steel

2.4 FINISH

- A. Use same finish on adjacent metal or components and exposed metal surfaces unless specified or shown otherwise.
- B. In accordance with NAAMM Metal Finishes Manual, unless otherwise specified.
- C. Finish exposed metal surfaces as follows, unless specified otherwise:
 1. Aluminum:
 - a. Manufacturer's finish: Kynar.

2.5 THROUGH-WALL FLASHINGS

- A. Form through-wall flashing to provide a mechanical bond or key against lateral movement in all directions. Install a sheet having 1/16 inch deep transverse channels spaced four to every one inch, or ribbed diagonal pattern, or having other deformation unless specified otherwise.
 1. Fabricate in not less than 8 feet lengths; 10 feet maximum lengths.
 2. Fabricate so keying nests at overlaps.
- B. For Masonry Work When Concealed Except for Drip:
 1. Either copper, stainless steel, or copper clad stainless steel.
 2. Form an integral dam at least 3/16 inch high at back edge.
 3. Form exposed portions of flashing with drip, approximately 1/4 inch projection beyond wall face.
- C. For Masonry Work When Exposed Edge Forms a Receiver for Counter Flashing:
 1. Use same metal and thickness as counter flashing.
 2. Form an integral dam at least 3/16 inch high at back edge.

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3. Form exposed portion as snap lock receiver for counter flashing upper edge.
- D. For Flashing at Architectural Precast Concrete Panels or Stone Panels.
1. Use plan flat sheet of stainless steel.
 2. Form exposed portions with drip as specified or receiver.
- E. Window Sill Flashing and Lintel Flashing:
1. Use either copper, stainless steel, copper clad stainless steel plane flat sheet, or nonreinforced elastomeric sheeting, bituminous coated copper, copper covered paper, or polyethylene coated copper.
 2. Fabricate flashing at ends with folded corners to turn up 3/16 inch in first vertical masonry joint beyond masonry opening.
 3. Turn up back edge as shown.
 4. Form exposed portion with drip as specified or receiver.
- F. Door Sill Flashing:
1. Where concealed, use either 20 oz copper, 0.018 inch thick stainless steel, or 0.018 inch thick copper clad stainless steel.
 2. Where shown on drawings as combined counter flashing under threshold, sill plate, door sill, or where subject to foot traffic, use either 24 oz copper, 0.024 inch stainless steel, or 0.024 inch thick stainless steel.
 3. Fabricate flashing at ends to turn up 3/16 inch in first vertical masonry joint beyond masonry opening with folded corners

2.6 BASE FLASHING

- A. Use metal base flashing at vertical surfaces intersecting built-up roofing without cant strips or where shown.
1. Use either copper, or stainless steel, thickness specified unless specified otherwise.
 2. When flashing is over 10 inches in vertical height or horizontal width use either 20 oz copper or 0.018 inch stainless steel.
 3. Use stainless steel at aluminum roof curbs where flashing contacts the aluminum.
 4. Use either copper, or stainless steel at pipe flashings.
- B. Fabricate metal base flashing up vertical surfaces not less than 8 inch nor more than 16 inch.

- C. Fabricate roof flange not less than 4 inches wide unless shown otherwise. When base flashing length exceeds 8 feet form flange edge with 1/2 inch hem to receive cleats.
- D. Form base flashing bent from strip except pipe flashing. Fabricate ends for riveted soldered lap seam joints. Fabricate expansion joint ends as specified.
- E. Pipe Flashing: (Other than engine exhaust or flue stack)
 - 1. Fabricate roof flange not less than 4 inches beyond sleeve on all sides.
 - 2. Extend sleeve up and around pipe and flange out at bottom not less than 1/2 inch and solder to flange and sleeve seam to make watertight.
 - 3. At low pipes 8 inch to 18 inch above roof:
 - a. Form top of sleeve to turn down into the pipe at least one inch.
 - b. Allow for loose fit around and into the pipe.
 - 4. At high pipes and pipes with goosenecks or other obstructions which would prevent turning the flashing down into the pipe:
 - a. Extend sleeve up not less than 12 inch above roofing.
 - b. Allow for loose fit around pipe

2.7 COUNTERFLASHING (CAP FLASHING OR HOODS)

- A. Either copper or stainless steel, unless specified otherwise.
- B. Fabricate to lap base flashing a minimum of 4 inches with drip.
 - 1. Form lock seams for outside corners. Allow for lap joints at ends and inside corners.
 - 2. In general, form flashing in lengths not less than 8 feet and not more than 10 feet.
 - 3. Two-piece, lock in type flashing may be used in lieu of one piece counterflashing.
 - 4. Manufactured assemblies may be used.
 - 5. Where counterflashing is installed at new work use an integral flange at the top designed to be extended into the masonry joint or reglet in concrete.
 - 6. Where counterflashing is installed at existing work use surface applied type, formed to provide a space for the application of sealant at the top edge.

- C. One-piece Counterflashing.
1. Back edge turned up and fabricate to lock into reglet in concrete.
 2. Upper edge formed to extend full depth of masonry unit in mortar joint with back edge turned up 1/4 inch.
- D. Two-Piece Counterflashing:
1. Receiver to extend into masonry wall depth of masonry unit with back edge turned up 1/4 inch and exposed edge designed to receive and lock counterflashing upper edge when inserted.
 2. Counterflashing upper edge designed to snap lock into receiver.
- E. Surface Mounted Counterflashing; one or two piece:
1. Use at existing or new surfaces where flashing cannot be inserted in vertical surface.
 2. One piece fabricate upper edge folded double for 1 1/2 inches with top 3/4 inch bent out to form "V" joint sealant pocket with vertical surface. Perforate flat double area against vertical surface with horizontally slotted fastener holes at 16 inch centers between end holes. Option: One piece surface mounted counter-flashing (cap flashing) may be used. Fabricate as detailed on Plate 51 of SMACNA Architectural Sheet Metal Manual.
 3. Two pieces: Fabricate upper edge to lock into surface mounted receiver. Fabricate receiver joint sealant pocket on upper edge and lower edge to receive counterflashing, with slotted fastener holes at 16 inch centers between upper and lower edge.
- F. Pipe Counterflashing:
1. Form flashing for water-tight umbrella with upper portion against pipe to receive a draw band and upper edge to form a "V" joint sealant receiver approximately 3/4 inch deep.
 2. Fabricate 4 inch over lap at end.
 3. Fabricate draw band of same metal as counter flashing. Use 24 oz copper or 0.013 inch thick stainless steel or copper coated stainless steel.
 4. Use stainless steel bolt on draw band tightening assembly.
 5. Vent pipe counter flashing may be fabricated to omit draw band and turn down one inch inside vent pipe.
- G. Where vented edge decks intersect vertical surfaces, form in one piece, shape to slope down to a point level with and in front of edge-set notched plank; then, down vertically, overlapping base flashing.

2.8 GRAVEL STOPS

A. General:

1. Fabricate in lengths not less than 8 feet long and maximum of 10 feet.
2. Fabricate internal and external corners as one-piece with legs not less than 2 feet or more than 4 feet long.
3. Fabricate roof flange not less than 4 inches wide.
4. Fabricate top edge to extend above roof not less than one inch for embedded gravel aggregate and not less than 4 inches for loose laid ballast.
5. Fabricate lower edge outward at an angle of 45 degrees to form drip and as fascia or as counter flashing as shown.
 - a. Fabricate of one-piece material of suitable width for fascia height of 10 inch maximum or counterflashing lap of not less than 4 inch over base flashing.
 - b. Fabricate bottom edge of formed fascia to receive edge strip.
 - c. When fascia bottom edge forms counter flashing over roofing lap roofing not less than 6 inches.

B. Formed Flat Sheet Metal Gravel Stops and Fascia:

1. Fabricate as shown of .040 Aluminum
2. When fascia exceeds 6 inches in depth, form one or more horizontal stops not less than 1/2 inch high in the fascia.
3. Fabricate as two-piece fascia when fascia depth exceeds 10 inches.
4. At joint between ends of sheets, provide a concealed clip soldered or welded near one end of each sheet to hold the adjoining sheet in lapped position. The clip shall be approximately 4 inches wide and shall be the full depth of the fascia less one inch at top and bottom. Clip shall be of the same thickness as the fascia.
5. Provide edge strip as specified with lower hooked edge bent outward at an angle of 45 degrees.

C. Formed (Corrugated Sheet) Sheet Metal Gravel Stops and Fascia:

1. Fabricate as shown of .040 inch thick aluminum.
2. Sheets shall have 1/16 inch deep corrugations either transversely or diagonally rolled into the sheet. Crimped sheets are not acceptable.
3. Factory fabricated prepackaged system, complete with fastenings.
4. Provide concealed flashing splice plate at joints not less than 6 inches long and continuous edge strip at lower edge of fascia made from same metal.
5. Fabricate as two-piece fascia when fascia depth exceeds 7 inches.

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2.9 BITUMEN STOPS

- A. Fabricate bitumen stops for bituminous roofing edges for use with formed sheet metal gravel stops, pipe penetrations, and other penetrations through roof deck without a curb.
- B. Fabricate with 3/4 inch vertical legs and 3 inch horizontal legs.
- C. When used with gravel stop or metal base flashing use same metal for bitumen stop in thickness specified for concealed locations.

2.10 COPINGS

- A. Fabricate of 0.050 inch thick aluminum sheets 8 to 10 feet long.
- B. Fabricate coping to profile shown.
- C. Use continuous edge strips with drips at bottom edges on exterior wall side. Use slotted holes for fasteners on roof wall side if continuous cleats or edge strips are not used.
- D. Form joints between sections with either alternate 4 or 5 as shown on plate 68, SMACNA, unless shown otherwise.
- E. Fabricate corners with mitered joints, riveted and soldered locked and sealed if aluminum.
- F. Fabricate ends of coping terminating at vertical building surfaces to form a slot for the installation of sealant.
- G. Fabricate exterior ends of coping closures of same appearance as exterior wall side

2.11 HANGING GUTTERS

- A. Fabricate gutters of not less than 0.040 inch thick Aluminum
- B. Fabricate hanging gutters in sections not less than 8 feet long, except at ends of runs where shorter lengths are required
- C. Building side of gutter shall be not less than 1 1/2 inches higher than exterior side same height as exterior side.
- D. Gutter Bead: Stiffen outer edge of gutter by folding edge over approximately 3/4 inch toward roof and down approximately 3/4 inch unless shown otherwise.

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E. Gutter Spacers:

1. Fabricate of same material and thickness as gutter.
2. Fabricate one inch wide strap and fasten to gutters not over 36 inches on center.
3. Turn back edge up one inch and lap front edge over gutter bead.
4. Rivet and solder to gutter except rivet and seal to aluminum.

F. Outlet Tubes:

1. Form outlet tubes to connect gutters to conductors of same metal and thickness as gutters extend into the conductor 3 inch. Flange upper end of outlet tube 1/2 inch.
2. Lock and solder longitudinal seam // except use sealant in lieu of solder with aluminum. //
3. // Solder tube to gutter //. Seal aluminum tube to gutter and rivet to gutter.
4. Fabricate basket strainers of same material as gutters.

G. Gutter Brackets:

1. Fabricate of same metal as gutter. Use 1/8 inch by 1 inch or 1/4 inch by 1 inch copper, 3 mm x 25 mm //3 mm x 40 mm (// 1/8 by one // 1/8 by 1 1/2 // inch) stainless steel, // 5 mm x 25 mm //6 mm x 25 mm (3/16 by one // 1/4 by one // inch) aluminum.
2. Fabricate to gutter profile.
3. Drill two 3/16 inch diameter holes in anchor leg for countersunk flat head screws.

2.12 CONDUCTORS (DOWNSPOUTS)

- A. Fabricate conductors of same metal and thickness as gutters in sections approximately 10 feet long // with 3/4 inch wide flat locked seams. // //Fabricate open face channel shape with hemmed longitudinal edges.
- B. Fabricate elbows by mitering, riveting, and soldering except seal aluminum in lieu of solder. Lap upper section to the inside of the lower piece.
- C. Fabricate conductor brackets or hangers of same material as conductor, 1/16 inch thick by one inch minimum width. Form to support conductors one inch from wall surface in accordance with Architectural Sheet Metal Manual Plate 34, Design C for rectangular shapes and E for round shapes.

D. Conductor Heads:

1. Fabricate of same material as conductor.
2. Fabricate conductor heads to not less than 10 inch wide by 8 inch deep by 200 mm (8 inches) from front to back.
3. Form front and side edges channel shape not less than 1/2 inch wide flanges with edge hemmed.
4. Slope bottom to sleeve to conductor or downspout at not less than 60 degree angle.
5. Extend wall edge not less than one inch above front edge.
6. Solder joints for water tight assembly.
7. Fabricate outlet tube or sleeve at bottom not less than 2 inches long to insert into conductor.

2.13 SPLASH PANS

- A. Fabricate of 0.050 inch thick aluminum.
- B. Fabricate in accordance with Architectural Sheet Metal Manual Plate 35 with not less than two ribs as shown in alternate section.

2.14 REGLETS

- A. Fabricate reglets of one of the following materials:
 1. 16 oz copper.
 2. Plastic coated extruded aluminum, not less than 1.4 mm (0.055 inch) thick prefilled with butyl rubber sealer and complete with plastic wedges inserted at 1000 mm (40 inches) on centers.
- B. Fill open-type reglets with fiberboard or other suitable separator, to prevent crushing of the slot during installation.
- C. Bend edges of reglets for setting into concrete to an angle of not less than 45 degrees, and make wide enough to provide firm anchorage in the concrete.
- D. Fabricate reglets for building into horizontal masonry mortar joints not less than 3/4 inch deep, nor more than one inch deep.
- E. Fabricate mitered corners, fittings, and special shapes as may be required by details.
- F. Reglets for concrete may be formed to receive flashing and have a 3/8 inch, 45 degree snap lock

2.15 INSULATED EXPANSION JOINT COVERS

- A. Either type optional, use only one type throughout.
- B. Types:
 - 1. Construct of two preformed, stainless steel strips, not less than 0.015 inch thick, mechanically and adhesively bonded to both sides of a 1/16 inch thick neoprene or butyl sheet, or to a 0.4 mm (32 mil) thick reinforced chlorinated polyethylene sheet. Adhesively attach a 3/8 inch thick sheet of closed cell, neoprene foam insulation, to the underside of the neoprene, butyl, or chlorinated polyethylene sheet.
 - 2. Constructed of a 1/16 inch thick vinyl sheet, flanged at both sides with stainless steel strips not less than 0.015 inch thick. Vinyl sheet locked and encased by the stainless steel strip and prepunched for nailing. A 3/8 inch thick closed cell polyvinyl chloride foam insulating strip shall be heat laminated to the underside of the vinyl sheet between the stainless steel strips.
- C. Expansion joint covers shall have factory fabricated mitered corners // crossing // tees // and other necessary accessories. Furnish in the longest available lengths.
- D. Metal flange of sufficient width to extend over the top of the curb and down curb sides 2 inches with hemmed edge for lock to edge strip

2.16 FLUE OR STACK FLASHING

- A. Flashing at penetrations through roofing shall consist of a metal collar, sheet metal flashing sleeve and hood.
- B. Fabricate collar with roof flange of 0.047 inch minimum thick black iron or galvanized steel sheet.
 - 1. Fabricate inside diameter of collar 4 inches larger than the outside diameter of the item penetration the roofing.
 - 2. Extend collar height from structural roof deck to not less than 14 inches above roof surface.
 - 3. Fabricate collar roof flange not less than 4 inches wide.
 - 4. Option: Collar may be of steel tubing 0.125 inch minimum wall thickness, with not less than four, 2 inch by 4 inch by 0.125 inch thick tabs bottom edge evenly spaced around tube in lieu of continuous roof flange. Full butt weld joints of collar.

- C. Fabricate sleeve base flashing with roof flange of either copper, stainless steel, or copper clad stainless steel.
 - 1. Fabricate sleeve roof flange not less than 4 inches wide.
 - 2. Extend sleeve around collar up to top of collar.
 - 3. Flange bottom of sleeve out not less than 1/24 inch and soldered to 4 inch wide flange to make watertight.
 - 4. Fabricate interior diameter 2 inch greater than collar.
- D. Fabricate hood counter flashing from same material and thickness as sleeve.
- E. Fabricate the same as pipe counter flashing except allow not less than 4 inch lap below top of sleeve and to form vent space minimum of 4 inch wide.
- F. Hem bottom edge of hood 1/2 inch.
- G. Provide a 2 inch deep drawband.
- H. Fabricate insect screen closure between sleeve and hood. Secure screen to sleeve with sheet metal screws

2.17 SCUPPERS (COPPER)

- A. Fabricate scuppers with minimum of 4 inch wide flange, with full and solid corners.
- B. Provide flange at top on through wall scupper to extend to top of base flashing.
- C. Fabricate exterior wall side to project not less than 1/2 inch beyond face of wall with drip at bottom outlet edge.
- D. Fabricate not less than 4 inch wide flange to lap behind gravel stop fascia.
- E. Fabricate exterior wall flange for through wall scupper not less than one inch wide on top and sides with edges hemmed.
- F. Fabricate gravel stop bar of one by one inch angle strip soldered to bottom of scupper.
- G. Fabricate scupper not less than 8 inches wide and not less than 5 inches high for through wall scupper.
- H. Solder joints watertight.

2.18 GOOSENECK ROOF VENTILATORS

- A. Form of 1.3 mm (0.0508 inch) thick sheet aluminum, reinforce as necessary for rigidity, stiffness, and connection to curb, and to be watertight.
 - 1. Form lower-edge to sleeve to curb.
 - 2. Curb:
 - a. Form for 4 inch high sleeve to ventilator.
 - b. Form for concealed anchorage to structural curb and to bear on structural curb.
 - c. Form bottom edge of curb as counter-flashing to lap base flashing.
- B. Provide open end with 16 gauge, stainless steel wire guard of 1/2 inch square mesh.
 - 1. Construct suitable aluminum angle frame to retain wire guard.
 - 2. Rivet angle frame to end of gooseneck

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General:
 - 1. Install flashing and sheet metal items as shown in Sheet Metal and Air Conditioning Contractors National Association, Inc., publication, ARCHITECTURAL SHEET METAL MANUAL, except as otherwise shown or specified.
 - 2. Apply sheet metal and other flashing material to surfaces which are smooth, sound, clean, dry and free from defects that might affect the application.
 - 3. Remove projections which would puncture the materials and fill holes and depressions with material compatible with the substrate. Cover holes or cracks in wood wider than 1/4 inch with sheet metal compatible with the roofing and flashing material used.
 - 4. Coordinate with masonry work for the application of a skim coat of mortar to surfaces of unit masonry to receive flashing material before the application of flashing.
 - 5. Apply a layer of 15 pound saturated felt followed by a layer of rosin paper to wood surfaces to be covered with copper. Lap each ply 2 inch with the slope and nail with large headed copper nails.

6. Confine direct nailing of sheet metal to strips 12 inch or less wide. Nail flashing along one edge only. Space nails not over 4 inches on center unless specified otherwise.
7. Install bolts, rivets, and screws where indicated, specified, or required in accordance with the SMACNA Sheet Metal Manual. Space rivets at 3 inch on centers in two rows in a staggered position. Use neoprene washers under fastener heads when fastener head is exposed.
8. Coordinate with roofing work for the installation of metal base flashings and other metal items having roof flanges for anchorage and watertight installation.
9. Nail continuous cleats on 3 inch on centers in two rows in a staggered position.
10. Nail individual cleats with two nails and bend end tab over nail heads. Lock other end of cleat into hemmed edge.
11. Install flashings in conjunction with other trades so that flashings are inserted in other materials and joined together to provide a water tight installation.
12. Where required to prevent galvanic action between dissimilar metal isolate the contact areas of dissimilar metal with sheet lead, waterproof building paper, or a coat of bituminous paint.
13. Isolate aluminum in contact with dissimilar metals others than stainless steel, white bronze or other metal compatible with aluminum by:
 - a. Paint dissimilar metal with a prime coat of zinc-chromate or other suitable primer, followed by two coats of aluminum paint.
 - b. Paint dissimilar metal with a coat of bituminous paint.
 - c. Apply an approved caulking material between aluminum and dissimilar metal.
 - d. Paint aluminum in contact with or built into mortar, concrete, plaster, or other masonry materials with a coat of bituminous paint.
 - e. Paint aluminum in contact with absorptive materials that may become repeatedly wet with two coats of bituminous paint or two coats of aluminum paint.
14. Bitumen Stops:
 - a. Install bitumen stops for built-up roof opening penetrations through deck and at formed sheet metal gravel stops.
 - b. Nail leg of bitumen stop at 12 inch intervals to nailing strip at roof edge before roofing material is installed.

3.2 THROUGH-WALL FLASHING

A. General:

1. Install continuous through-wall flashing between top of concrete foundation walls and bottom of masonry building walls; at top of concrete floors; under masonry, concrete, or stone copings and elsewhere as shown.
2. Where exposed portions are used as a counterflashings, lap base flashings at least 4 inches and use thickness of metal as specified for exposed locations.
3. Exposed edge of flashing may be formed as a receiver for two piece counter flashing as specified.
4. Terminate exterior edge beyond face of wall approximately 1/4 inch with drip edge where not part of counter flashing.
5. Turn back edge up 1/4 inch unless noted otherwise where flashing terminates in mortar joint or hollow masonry unit joint.
6. Terminate interior raised edge in masonry backup unit approximately 1 1/2 inch into unit unless shown otherwise.
7. Under copings terminate both edges beyond face of wall approximately 1/4 inch with drip edge.
8. Lap end joints at least two corrugations, but not less than 4 inches. Seal laps with sealant.
9. Where dowels, reinforcing bars and fastening devices penetrate flashing, seal penetration with sealing compound.
10. Coordinate with other work to set in a bed of mortar above and below flashing so that total thickness of the two layers of mortar and flashing are same as regular mortar joint.
11. Where ends of flashing terminate turn ends up one inch and fold corners to form dam extending to wall face in vertical mortar or veneer joint.
12. Turn flashing up not less than 8 inch between masonry or behind exterior veneer.
13. When flashing terminates in reglet extend flashing full depth into reglet and secure with lead or plastic wedges spaced 6 inch on center.
14. Continue flashing around columns:
 - a. Where flashing cannot be inserted in column reglet hold flashing vertical leg against column.
 - b. Counterflash top edge with 3 inch wide strip of saturated cotton unless shown otherwise. Secure cotton strip with roof cement to column. Lap base flashing with cotton strip 1 1/2 inch

- B. Flashing at Top of Concrete Foundation Walls Where concrete is exposed. Turn up not less than 8 inch high and into masonry backup mortar joint or reglet in concrete backup as specified.
- C. Flashing at Top of Concrete Floors (except where shelf angles occur): Place flashing in horizontal masonry joint not less than 8 inch below floor slab and extend into backup masonry joint at floor slab 1 1/2 inch.
- D. Flashing at Cavity Wall Construction: Where flashing occurs in cavity walls turn vertical portion up against backup under waterproofing, if any, into mortar joint. Turn up over insulation, if any, and horizontally through insulation into mortar joint.
- E. Flashing at Veneer Walls:
 - 1. Install near line of finish floors over shelf angles or where shown.
 - 2. Turn up against sheathing.
 - 3. At stud framing, hem top edge 3/4 inch and secure to each stud with stainless steel fasteners through sheathing.
 - 4. At concrete backing, extend flashing into reglet as specified.
 - 5. Coordinate with installation of waterproofing or asphalt felt for lap over top of flashing.
- F. Lintel Flashing when not part of shelf angle flashing:
 - 1. Install flashing full length of lintel to nearest vertical joint in masonry over veneer.
 - 2. Turn ends up one inch and fold corners to form dam and extend end to face of wall.
 - 3. Turn back edge up to top of lintel; terminate back edge as specified for back-up wall.
- G. Window Sill Flashing:
 - 1. Install flashing to extend not less than 4 inch beyond ends of sill into vertical joint of masonry or veneer.
 - 2. Turn back edge up to terminate under window frame.
 - 3. Turn ends up one inch and fold corners to form dam and extend to face of wall.

H. Door Sill Flashing:

1. Install flashing under bottom of plate sills of doors over curbs opening onto roofs. Extend flashing out to form counter flashing or receiver for counter flashing over base flashing. Set in sealant.
2. Extend sill flashing 8 inch beyond jamb opening. Turn ends up one inch in vertical masonry joint, extend end to face of wall. Join to counter flashing for water tight joint.
3. Where doors thresholds cover over waterproof membranes install sill flashing over water proof membrane under thresholds. Extend beyond opening to cover exposed portion of waterproof membrane and not less than 6 inch beyond door jamb opening at ends. Turn up approximately 1/4 inch under threshold.

I. Flashing at Masonry, Stone, or Precast Concrete Copings:

1. Install flashing with drips on both wall faces unless shown otherwise.
2. Form penetration openings to fit tight against dowel or other item with edge turned up. Seal penetrations with sealant

3.3 BASE FLASHING

A. Install where roof membrane type base flashing is not used and where shown.

1. Install flashing at intersections of roofs with vertical surfaces or at penetrations through roofs, to provide watertight construction.
2. Install metal flashings and accessories having flanges extending out on top of the built-up roofing before final bituminous coat and roof aggregate is applied.
3. Set flanges in heavy trowel coat of roof cement and nail through flanges into wood nailers over bituminous roofing.
4. Secure flange by nailing through roofing into wood blocking with nails spaced 3 inch on centers or, when flange over 4 inch wide terminate in a 1/2 inch folded edge anchored with cleats spaced 8 inch on center. Secure one end of cleat over nail heads. Lock other end into the seam.

B. For long runs of base flashings install in lengths of not less than 8 feet nor more than 3000 mm (ten feet). Install a 3 inch wide slip type, loose lock expansion joint filled with sealant in joints of base flashing sections over 8 feet in length. Lock and solder corner joints at corners.

C. Extend base flashing up under counter flashing of roof specialties and accessories or equipment not less than 3 inch

3.4 COUNTERFLASHING (CAP FLASHING OR HOODS)

A. General:

1. Install counterflashing over and in conjunction with installation of base flashings, except as otherwise specified or shown.
2. Install counterflashing to lap base flashings not less than 4 inch.
3. Install upper edge or top of counterflashing not less than 9 inch above top of the roofing.
4. Lap joints not less than 4 inch. Stagger joints with relation to metal base flashing joints.
5. Use surface applied counterflashing on existing surfaces and new work where not possible to integrate into item.
6. When fastening to concrete or masonry, use screws driven in expansion shields set in concrete or masonry. Use screws to wood and sheet metal. Set fasteners in mortar joints of masonry work.

B. One Piece Counterflashing:

1. Where flashing is installed at new masonry, coordinate to insure proper height, embed in mortar, and end lap.
2. Where flashing is installed in reglet in concrete insert upper edge into reglet. Hold flashing in place with lead wedges spaced not more than 8 inches apart. Fill joint with sealant.
3. Where flashing is surface mounted on flat surfaces.
 - a. When top edge is double folded anchor flat portion below sealant "V" joint with fasteners spaced not over 16 inch on center.
 - b. Locate fasteners in masonry mortar joints.
 - c. Use screws to sheet metal or wood.
 - d. Fill joint at top with sealant.
4. Where flashing or hood is mounted on pipe.
 - a. Secure with draw band tight against pipe.
 - b. Set hood and secure to pipe with a one by 1 x 1/8 inch bolt on stainless steel draw band type clamp, or a stainless worm gear type clamp.
 - c. Completely fill joint at top with sealant.

C. Two-Piece Counterflashing.

1. Where receiver is installed at new masonry coordinate to insure proper height, embed in mortar, and lap.

2. Surface applied type receiver:
 - a. Secure to face construction in accordance, with manufacturer's instructions.
 - b. Completely fill space at the top edge of receiver with sealant.
3. Insert counter flashing in receiver in accordance with fabricator or manufacturer's instructions and to fit tight against base flashing.
- D. Where vented edge occur install so lower edge of counterflashing is against base flashing.
- E. When counter flashing is a component of other flashing install as shown.

3.5 REGLETS

- A. Install reglets in a manner to provide a watertight installation.
- B. Locate reglets not less than 9 inch nor more than 16 inch above roofing, and not less than 125 mm (5 inch) nor more than 13 inch above cant strip.
- C. Butt and align end joints or each section of reglet and securely hold in position until concrete or mortar are hardened.
 1. Coordinate reglets for anchorage into concrete with formwork construction.
 2. Coordinate reglets for masonry to locate horizontally into mortar joints

3.6 GRAVEL STOPS

- A. General:
 1. Install gravel stops and fascias with allowance for expansion at each joint; minimum of 1/4 inch.
 2. Extend roof flange of gravel stop and splice plates not less than four inches out over roofing and nail or screw to wood nailers. Space fasteners on 3 inch centers in staggered pattern.
 3. Install continuous cleat for fascia drip edge. Secure with fasteners as close to lower edge as possible on 3 inch centers.
 4. Where ends of gravel stops and fascias abut a vertical wall, provide a watertight, flashed and sealant filled joint.
 5. Set flange in roof cement when installed over built-up roofing.
 6. Edge securement for low-slope roofs: Low-slope membrane roof systems metal edge securement, except gutters, shall be designed in accordance

with ANSI/SPRI ES-1, except the basic wind speed shall be determined from Figure 1609, of IBC 2003.

B. Sheet metal gravel stops and fascia:

1. Install with end joints of splice plates sheets lapped three inches.
2. Hook the lower edge of fascia into a continuous edge strip.
3. Lock top section to bottom section for two piece fascia.

C. Corrugated sheet gravel stops and fascia:

1. Install 12 inch wide sheet flashing centered under joint. A combination bottom and cover plate, extending above and beneath the joint, may be used.
2. Hook lower edge of fascia into a continuous edge strip.

D. Scuppers:

1. Install scupper with flange behind gravel stops; leave 1/4 inch joint to gravel stop.
2. Set scupper at roof water line and fasten to wood blocking.
3. Use sealant to seal joint with fascia gravel stops at ends.
4. Coordinate to lap over conductor head and to discharge water into conductor head.

3.7 COPINGS

A. General:

1. On walls topped with a wood plank, install a continuous edge strip on the front // and rear // edge of the plank. Lock the coping to the edge strip with a 3/4 inch loose lock seam.
2. Where shown turn down roof side of coping and extend down over base flashing as specified for counter-flashing. Secure counter-flashing to lock strip in coping at continuous cleat.
3. Install ends adjoining existing construction so as to form space for installation of sealants.

B. Aluminum Coping:

1. Install with 1/4 inch joint between ends of coping sections.
2. Install joint covers, centered at each joint, and securely lock in place.

- C. Stainless steel // Copper // Copings:
 - 1. Join ends of sheets by a 3/4 inch locked and soldered seam, except at intervals of 32 feet, provide a 1 1/2 inch loose locked expansion joint filled with sealant or mastic.
 - 2. At straight runs between 24 feet and 64 feet locate expansion joint at center.
 - 3. At straight runs that exceed 32 feet and form the leg of a corner locate the expansion joint not more than 16 feet from the corner.

3.8 EXPANSION JOINT COVERS, INSULATED

- A. Install insulated expansion joint covers at locations shown on curbs not less than 8 inch high above roof surface.
- B. Install continuous edge strips of same metal as expansion joint flange, nailed at not less than 3 inch centers.
- C. Install insulated expansion joint covers in accordance with manufacturer's directions locking edges to edge strips.

3.9 EXHAUST PIPE OR STACK FLASHING

- A. Set collar where shown and secure roof tabs or flange of collar to structural deck with 1/2 inch diameter bolts.
- B. Set flange of sleeve base flashing not less than 4 inch beyond collar on all sides as specified for base flashing.
- C. Install hood to above the top of the sleeve 2 inch and to extend from sleeve same distance as space between collar and sleeve beyond edge not sleeve.
 - 1. Install insect screen to fit between bottom edge of hood and side of sleeve.
 - 2. Set collar of hood in high temperature sealant and secure with one by 3 mm (1/8 inch) bolt on stainless steel draw band type, or stainless steel worm gear type clamp. Install sealant at top of head.

3.10 HANGING GUTTERS

- A. Hang gutters with high points equidistant from downspouts. Slope at not less than 1:200 (1/16 inch per foot).
- B. Lap joints, except for expansion joints, at least one inch in the direction of flow. Rivet and seal or solder lapped joints.

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- C. Support gutters in brackets spaced not more than 600 mm (24 inch) on centers, brackets attached to facial or wood nailer by at least two screws or nails.
 - 1. For copper or copper clad stainless steel gutters use brass or bronze brackets.
 - 2. For stainless steel gutters use stainless steel brackets.
 - 3. For aluminum gutters use aluminum brackets or stainless steel brackets.
 - 4. Use brass or stainless steel screws.
- D. Secure brackets to gutters in such a manner as to allow free movement of gutter due to expansion and contraction
- E. Gutter Expansion Joint:
 - 1. Locate expansion joints midway between outlet tubes.
 - 2. Provide at least a one inch expansion joint space between end baffles of gutters.
 - 3. Install a cover plate over the space at expansion joint.
 - 4. Fasten cover plates to gutter section on one side of expansion joint only.
 - 5. Secure loose end of cover plate to gutter section on other side of expansion joint by a loose-locked slip joint.
- F. Outlet Tubes: Set bracket strainers loosely into gutter outlet tubes

3.11 CONDUCTORS (DOWNSPOUTS)

- A. Where scuppers discharge into downspouts install conductor head to receive discharge with back edge up behind drip edge of scupper. Fasten and seal joint. Sleeve conductors to gutter outlet tubes and fasten joint and joints between sections.
- B. Set conductors plumb and clear of wall, and anchor to wall with two anchor straps, located near top and bottom of each section of conductor. Strap at top shall be fixed to downspout, intermediate straps and strap at bottom shall be slotted to allow not less than 1/2 inch movement for each 10 feet of downspout.
- C. Install elbows, offsets and shoes where shown and required. Slope not less than 45 degrees.

3.12 SPLASH PANS

- A. Install where downspouts discharge on low slope roofs unless shown otherwise.

- B. Set in roof cement prior to pour coat installation or sealant compatible with single ply roofing membrane.

3.13 GOOSENECK ROOF VENTILATORS

- A. Install on structural curb not less than 8 inch high above roof surface.
- B. Securely anchor ventilator curb to structural curb with fasteners spaced not over 12 inch on center.
- C. Anchor gooseneck to curb with screws having neoprene washers at 6 inch on center

END OF SECTION 07 62 00

SECTION 07 72 33
ROOF HATCHES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, Including General and Supplementary Conditions and Division 1 Specifications Sections, apply to this section.

1.2 SUMMARY

- A. Section includes prefabricated roof hatches, operable hardware, and Counterflashings.
- B. Related Sections: The following sections contain requirements that relate to this section.
 - 1. Section 07 54 00 Thermoplastic Membrane Roofing
 - 2. Section 07 62 00 Sheet Metal Flashing and Trim

1.3 QUALITY ASSURANCE

- A. Qualifications of installers: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and methods needed for the proper performance of the work of this section.

1.4 SUBMITTALS

- A. Product Data: Submit data on unit construction, sizes, configuration, jointing methods and locations when applicable, and attachment method.
- B. Submit manufacturer's recommended installation procedures.

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1.5 WARRANTY

- A. Provide five (5) year manufacture's warranty against all defects in material and workmanship.

PART 2 PRODUCTS

2.1 ROOF HATCHES

- A. Acceptable Manufacturers:

1. Bilco.
2. Babcock-Davis Hatchways.
3. Substitutions: As approved by Architect.

2.2 COMPONENTS

- A. Product Description: Shop fabricated roof hatches operating hardware equal to Bilco

1. Type "E" Roof Scuttle: Unit 3'-0" x 3'-0" size, single leaf type; listed by UL.
One (1) roof hatch located in corridor adjacent to custodians office.

- B. Integral Aluminum Curb: Aluminum with rigid foam insulation; integral cap flashing to receive roof flashing; extended flange for mounting.

- C. Cover: Aluminum; foam insulation; sandwiched by aluminum interior liner; continuous neoprene gasket to provide weatherproof seal.

- D. Safety Post: LadderUP Safety Post attached at the two top rungs of the existing ladder.

- E. Hardware:

1. Compression spring operator and shock absorbers.
2. Steel manual pull handle for interior operation; padlock hasp.
3. Steel hold open arm with vinyl covered grip handle for easy release.
4. Hinges: Manufacturer's recommended type for specific type of hatch.
5. Ladder safety post

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2.3 FABRICATION

- A. Fabricate components free of visual distortion or defects. Weld corners and joints.
- B. Fit components for weather tight assembly.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install curb assembly, fastening securely to roof decking. Flash curb assembly into roof system.
- B. Place roof hatch and secure to curb assembly. Install integral setting sealant and counterflashing as required.
- C. Coordinate with installation of roofing system and related flashings for weather tight installation.
- D. Apply bituminous paint on surfaces of units in contact with cementitious materials or dissimilar metals.
- E. Install ladder safety post in accordance with manufacturer's instructions.

END OF SECTION

SECTION 07 92 13
JOINT SEALERS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes surface preparation, joint sealing, sealants and joint backing.
- B. Related Sections: The following sections contain requirements that relate to this section.
 - 1. Section 07 62 00 - Sheet Metal Flashing and Trim

1.3 REFERENCES

- A. American Society for Testing and Materials, ASTM.
 - 1. ASTM C920 Specification for Elastomeric Joint Sealants.

1.4 SUBMITTALS

- A. Product Data: Submit data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.
- B. Provide sample installation on site for Architect's inspection and approval.
- C. Certificates: Upon completion of work, furnish written statement signed by the Contractor, applicator, and manufacturer stating sealant application complies with drawings, specifications, and manufacturer's recommendations and was proper and adequate for conditions requiring sealant.

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1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Delivery: Deliver sealants and related accessories in factory sealed, unopened containers bearing manufacturer's name, batch number, and product designation.
- B. Storage: Store in unopened containers. Follow manufacturer's recommendations for storage temperature and shelf life.
- C. Handling: Follow manufacturer's recommendations for handling product containing toxic materials. Keep flammable materials away from heat, sparks, and open flame. Use recommended solvents and cleaning agents for cleaning tools, equipment, and skin.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.7 PROTECTION

- A. Use masking tape where required to control lap of materials on adjacent surfaces and remove upon completion.

PART 2 PRODUCTS

2.1 MATERIALS

- A. General
 - 1. Sealant systems shall be compatible with contacting surfaces and premolded joint fillers.
 - 2. Sealant systems shall not stain adjacent exposed surfaces.
 - 3. Manufacturer's standard color range shall permit matching sealants to color of contacting surfaces.

2.2 MANUFACTURER

- A. All sealants and accessory parts shall be as manufactured by Pecora Corp.
- B. Substitutions: As approved by Architect

2.3 MATERIALS:

A. General

1. Sealant systems shall be compatible with contacting surfaces and premolded joint filler.
2. Sealant systems shall not stain adjacent exposed surfaces.
3. Manufacturer's standard color range shall permit matching sealants to color of contacting surfaces

B. ELASTOMERIC SEALANTS

1. Sealant Type 1: Multi-component acrylic latex sealant; comply with ASTM C C-834-95: Pecora AC-20 + Silicone.
2. Sealant Type 2: Two-part Polyurethane sealant; comply with Fed Spec TT-S-00227E, Class A, Type II: ASTM C-920, Type M, Grade NS, Class 25, Use M: Pecora Dynatrol II
3. Sealant Type 3: One-part Medium-Modulus Silicone Building Sealant; comply with Fed Spec. TT-S-1543A; TT-s-230C Type II, Class A; CGSB 19-13.M82; ASTM C- 920, Class 25, Type S, Grade NS, use M: Pecora 895
4. Sealant Type 4: Polyurethane Traffic-Grade Sealant; comply with Fed Spec. TT-S-00227E, Class A, Type I; SS-S-195B and SS-S-159B, and ASTM C- 920-95, Class 25, Type M, Grade P, Use T: Pecora UREXPAN NR-200

2.4 ACCESSORIES

- A. Primers, sealers, surface conditioners and solvents: As recommended by sealant manufacturer to suit application. Sealants shall be non-staining. Solvents shall be residue free
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

- C. Joint Backing: Round foam rod compatible with sealant; ASTM D1056, sponge or expanded rubber; oversized 30 to 50 percent larger than joint width. Incompressible materials or acrylic-, asphalt-, oil-, or solvent containing materials will not be permitted.
- D. Bond Breaker: Polyethylene film, pressure sensitive tape recommended by sealant manufacturer to suit application.
- E. Rags: Dry cleaned white cotton.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Inspect joints and spaces to receive sealant and verify the following:
 - 1. Verify substrate surfaces and joint openings are ready to receive work.
 - 2. Verify surfaces are free from bituminous materials, from release agents, bond breakers, deleterious curing compounds, water repellants, or other surface treatments.
 - 3. Verify metallic surfaces are free from rust, mill, scale, coatings, oil and grease
 - 4. Verify removal of protective materials from aluminum surfaces.
 - 5. Verify concrete, plaster, or masonry surfaces have properly cured.
 - 6. Verify joints and spaces requiring sealing are at correct or normal width.
 - 7. Verify joint backing and release tapes are compatible with sealant.
- B. Do not start application until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Cleaning
 - 1. Remove loose materials and foreign matter which might impair adhesion of sealant.
 - 2. Clean and prime joints.
 - 3. Perform preparation in accordance with ASTM C 1193.
- B. Remove moisture.

- C. Verify proper surface and ambient temperatures.
- D. Primers.
 - 1. Make preliminary tests to insure primers will not stain exposed materials or deteriorate back up material.
 - 2. Prime surfaces immediately prior to sealing
 - 3. Prime concrete, stone, copper, steel and masonry surfaces before installing sealant.
- E. In all other respects, prepare surfaces in accordance with manufacturer's recommendations.

3.3 INSTALLATION

- A. Perform installation in accordance with ASTM C 1193.
- B. Perform acoustical sealant application work in accordance with ASTM C 919.
- C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- D. Install bond breaker where joint backing is not used, or where required to confine adhesion of sealant to surface materials.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- G. Tooling:
 - 1. Using tooling agent recommended by sealant manufacturer. Neatly tool joints to compress material, improve adhesion to surfaces joined, and achieve slightly concave surface.
 - 2. Repair air pockets exposed by tooling.
 - 3. Use masking tape where required to facilitate tooling and remove upon completion.

3.4 APPLICATION, PENETRATION SEAL

- A. Installation: Comply with the manufacturer's written instructions to properly form and dam penetration openings to produce a tight foamed in place penetration seal. After curing inspect for tightness of seal. Make necessary repairs.
- B. Provide penetration seals at mechanical and electrical duct, pipe and conduit penetrations through floor slabs.

3.5 PATCHING

- A. Patch or replace defective and damaged sealants as directed by the Architect.

3.6 CLEANING

- A. Clean adjacent surfaces soiled in applying sealants in accordance with sealant manufacturer's recommendations.
- B. Remove wet material from adjacent surfaces before it has set.
- C. Do not use cleaning agents.

3.7 SCHEDULE

- A. Sealant Joints:
 - 1. Joints in finish carpentry and trim: Sealant #2
 - 2. Metal/metal joints: Sealant #2
 - 3. Masonry joints: Sealant #2
 - 4. Concrete joints: Sealant #2
 - 5. Glass/metal joints: Sealant #3
 - 6. Metal/masonry joints: Sealant #2
 - 7. Metal/wood joints: Sealant #1
 - 8. Metal/stone joints: Sealant #2
 - 9. Exterior wall seismic & expansion joints: Sealant #2
 - 10. Exterior concrete walks: Sealant #4
 - 11. Interior concrete slabs: Sealant #4

END OF SECTION

SECTION 08 62 00
PLASTIC GLAZED UNIT SKYLIGHTS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, Including General and Supplementary Conditions and Division 1 Specifications Sections, apply to this section.

1.2 SUMMARY

- A. Section includes all skylight materials including;
 - 1. Deck mounted impact plastic glazed skylights complete with integral welded, insulated aluminum curb.
and doubled glazed.
 - 2. All curb frames to have integral counterflashing.
- B. Related Sections: The following sections contain requirements that relate to this section.
 - 1. Section 06 10 00 Rough carpentry
 - 2. Section 07 54 00 Thermoplastic Membrane Roofing
 - 3. Section 07 62 00 Sheet Metal Flashing and Trim

1.3 REFERENCES

- A. Structural criteria: Glazed skylights must meet the requirements of American Architectural manufacturers Association (AAMA) publication " Voluntary Uniform Load Structural Standard for Plastic Domed Skylights" which requires skylight dome thickness adequate to withstand a positive and negative test pressure of 60 PSF.

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- B. Thermal Performance: Plastic impact glazed skylights shall have been tested by an independent certified test laboratory per the American Manufacturers Association (AAMA) "Voluntary Test Method for Thermal Transmittance of Skylights" (AAMA 1603.1-1980). The total thermal loss of the entire product due to conductivity and air infiltration in the specified 7-1/2 MPH wind test shall not exceed 3.9 BTU/HR/Deg F. The air infiltration in the test shall have been found to be less than 0.1 CFM/FT at the specified 7-1/2 MPH wind velocity.

1.4 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: Provide Thermoformed pyramids fabricated from sheets identical to those tested for the following fire-test-response characteristics, per ASTM test method indicated below, by UL or other testing and inspecting agencies acceptable to authorities having jurisdiction. Identify plastic sheets with appropriate markings of applicable testing and inspecting organization.
 - 1. Self-ignition Temperature: 651 deg F or greater when tested per ASTM D 1929 on plastic sheets in the thickness intended for use.
 - 2. Smoke density of 75 or less when tested per ASTM D 2843 on plastic sheets in the thickness intended for use.
 - 3. Relative Burning Characteristics: As follows, when tested per ASTM D 635:
 - a. Impact Glazing: Burning rate of 2.5 inches per minute or less when tested on plastic glazing indicated below with a nominal thickness of 0.060 inch or the thickness intended for use.
- B. Qualifications of installers: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and methods needed for the proper performance of the work of this section.

1.5 ENVIRONMENTAL/MOISTURE CONTROL

- A.
 - 1. Skylights shall have integral condensation gutter and weep holes for draining any moisture outside.
 - 2. Skylights shall utilize manufacturers standard butyl seal between retainer and domes to minimize air and water infiltration.

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3. Double glazed skylights shall utilize manufacturer's dry seal gasket system (or equal) to minimize moisture and dust accumulation between glass panes.

1.6 SUBMITTALS

- A. Product Data: Submit data on unit construction, sizes, configuration, jointing methods and locations when applicable, and attachment method.
- B. Submit manufacturer's recommended installation procedures.

1.7 WARRANTY

- A. General: Warranties specified in this section shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.
- B. Skylight Warranty: Provide written warranty signed by the manufacturer, agreeing to repair or replace work that exhibits defects in materials or workmanship and guaranteeing weather-tight and leak-free performance. "Defects" is defined as abnormal aging or deterioration.
 1. Warranty Period: 2 years from the date of Substantial Completion.
- C. Plastic Warranty: Provide written warranty signed by the manufacturer, agreeing to repair or replace work that has or develops defects in the plastic. "Defects" is defined as uncontrollable leakage of water and abnormal aging or deterioration.
 1. Warranty Period for Impact Glazing: 2 years from the date of Substantial Completion.
- D. Finish Warranty: Provide written warranty signed by the manufacturer, agreeing to repair or replace work with finish defects.. "Defects" is defined as peeling, chipping, chalking, fading, abnormal aging or deterioration and failure to perform as required.
 1. Warranty Period for Anodized Finish: 1 year from the date of Substantial Completion for film integrity.

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PART 2 PRODUCTS

2.1 SKYLIGHTS

A. Acceptable Manufacturers:

1. Ameri Energy Group specified skylight system
2. Substitutions as approved by Architect.

2.2 COMPONENTS

A. Product Description: High performance skylight, impact glazed plastic, domed, "Sunshine II Daylighting System" skylight as manufactured by Ameri Energy Group:

12 Plains Road
Suite 322
Essex, CT
(860) 767-6580

Approximate size as follows:

1. 2'-0" Square Skylight

Skylights:

1. Shall be double glazed impact plastic exterior dome.
2. Shall a reflective shaft from inside surface of the exterior dome to the interior diffuser located at the interior suspended ceiling level.
3. Interior diffuser mounted at the suspended ceiling level.

B. Manufacturer shall have been in business of manufacturing skylights for a period of not less than five (5) years, and shall provide a list of similar projects successfully completed within five (5) years within fifty (50) miles of the project site.

C. Contractor shall be responsible to verify size of unit in field and coordinate installation of reflective shaft and interior diffuser with the required modifications to the existing suspended ceiling.

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2.3 MATERIALS

- A. Curb frame to be fabricated from bright white, high performance PVC with a minimum thickness of 0.06 inch. Provide integral condensation gutter system with corners fully welded for waterproof quality.
- B. Retainer Frame: Extruded aluminum alloy 6063-T5 (min). ASTM B 221 with minimum effective thickness of 0.06 inch.
- C. Integral Curbs: Fabricate from double skin of 1100-H14 sheet aluminum, insulated with 1 inch fiberglass insulation. Provide thermal break at top and bottom.
 - 1. Provide .025 inch minimum thickness inner and outer skin. Outer skin to be .032 inch when length exceed nominal 48"
- D. Plastic Sheets; Monolithic, formable, transparent (colorless and tinted) sheets with good weather and impact resistance.
 - 1. Impact Glazing: ASTM D 4802, thermoformable, Category C-2 or CC-2 Type UVA (formulated with ultraviolet absorber), with Finish 1, smooth.
- E. Thermal Break: Fabricate skylight units with thermal barrier separating interior metal framing from materials exposed to outside temperature.
- F. Shape and Size: Ameri Energy Group, approximately 2'-0" square, dome skylight.
- G. Glazing: Thermoformed impact glazing: (Clear, #2412 bronze). Outer dome with 25% rise. Thermoformed impact glazing: (Clear) #2447 White (53% transmission) Inner Dome.
- H. Fasteners: Same metals as metal being fastened, or non-magnetic stainless steel or other non-corrosive metal as recommended by manufacturer.
- I. Bituminous Coating: SSPC-Paint 12, solvent type, bituminous mastic, nominally free of sulfur and containing no asbestos fibers, compounded for 15 mil dry film thickness per coating.

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2.4 PLASTIC SKYLIGHT UNITS

- A. General: Factory-assembled, deck mounted unit consisting of impact plastic glazing, gasketing, inner frame that is incorporated into the curb, and integral curb with self-contained roof flashing flanges.
 - 1. Products: provide Sentinel DDSAP1 meeting the requirements of this section.
- B. Curb: Manufacturer's standard formed or extruded aluminum, including flashing flange to receive roof flashing and counter flashing.
 - 1. Height: 12 inches above roofing.
- C. Condensation Control: Fabricate skylight units with integral internal gutters and weeps to collect and dispose of condensation.
- D. Thermal Break: Fabricate skylight units with thermal barrier separating interior metal framing from materials exposed to outside temperature.
- E. Shape and Size: Ameri EnergyGroup, approximately 2'-0" square, domed skylight.
- F. Impact Glazing: Thermoformed outer dome shape with a Clear, #2412 Bronze transparent (27% transmittance) with a 25% rise.
- G. Impact Glazing: Thermoformed inner dome shape (Clear).

2.5 FALL PROTECTION SAFETY

- A. Uniform design load capacity to meet or exceed 40 PSF snow load and 40 psf wind uplift. No dome breakage or total disengagement of glazing from the frame shall occur upon impact of minimum 775 ft. lbs. Units are designed to comply with the intent of OSHA fall protection regulations.

2.6 FABRICATION

- A. Framing Components as follows:
 - 1. Factory fit and assemble components.
 - 2. Fabricate components that, when assembled, will have accurately fitted joints with ends coped or mitered to produce hairline joints free of burrs and distortion.

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3. Fabricate components to drain water passing joints and to drain condensation and moisture occurring or migrating within skylight system to the exterior.
4. Fabricate components to accommodate expansion, contraction, and field adjustment, and to provide for minimum clearance and shimmering at skylight perimeter.
5. Fabricate components to ensure that glazing is thermally and physically isolated from framing members.
6. Form shapes and sharp profiles, straight and free of defects or deformations, before finishing
7. Fit and secure joints by heliarc welding.

2.7 ALUMINUM FINISHES

- A. General: Comply with NAAMM “Metal Finishes Manual” recommendations for application and designations of finishes.
- B. Finish designations prefixed by AA conform to the system for designating aluminum finishes established by the Aluminum Association.
- C. Mill Finish: Manufacturer’s standard mill finish.
- D. Class I or Class II, Clear Anodized Finish: AA-C22A41 (Chemical Finish; etched, medium matte; Anodic Coating: Class I Architectural, clear film thicker than 0.7 mil complying with AAMA 607.1 Class II Architectural 0.7 mil.
- E. Class I, Color-Anodized Finish: AA-M12C22A42/A44 (Mechanical Finish: as fabricated, non-specular; Chemical Finish: etched, medium matte; Anodic Coating Class I Architectural, film thicker than 0.7 mil with integral color or electrolytically deposited color) complying with AAMA 606.1 or AAMA 608.1. Color to selected from manufacturers standard colors.

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PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with installer present, for compliance with requirements for installation tolerances and other conditions affecting skylight performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Metal Protection: As Follows:
 - 1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for the purpose.
 - 2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.
 - 3. Where aluminum will contact pressure-treated wood, separate dissimilar materials by methods recommended by manufacturer.

3.3 INSTALLATION

- A. Prior to starting installation, the skylight installer shall inspect the supporting curbs for completeness and water tightness to verify that they are properly prepared to receive the work. Report, in writing, any deficiencies in the substrate. Work shall not proceed until all deficiencies are corrected.
- B. Tops of curbs shall receive coating of mastic, provided by installer, to form watertight seal between skylight curb frame and curbing.
- C. The skylight shall be installed by an experienced installer familiar with the manufacturer's system and installation procedures.
- D. Counter Flashing: Where counter flashing is required as a component of the skylight, install to provide an adequate waterproof overlap with roofing or roof flashing (as counter flashing). Seal with thick bead of mastic sealant, except where overlap is indicated to be left open for ventilation.

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3.4 CLEANING AND PROTECTION

- A. Clean exposed metal and plastic surfaces according to manufacturer's instructions. Touch up damaged metal coatings.
- B. Clean plastic skylight units, inside and out, not more than 5 days prior to date of substantial completion.

END OF SECTION

SECTION 21 11 00

FACILITY WATER SERVICE PIPING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes installation the following plumbing specialties and accessories;
 - 1. Pipe and pipe fittings
 - 2. Pipe insulation

1.2 RELATED SECTIONS

- A. Section 07 22 18 – Preparation for Re-roofing
- B. Section 07 27 00 – Roof and Deck Insulation
- C. Section 07 54 00 – Thermoplastic Membrane Roofing
- D. Section 22 40 00 – Plumbing Fixtures

1.3 REFERENCES

- A. ANSI B31.9 – Building Service Piping
- B. ASME B16.1 – Cast Iron Pipe Flanges and Flanged Fittings Class 25, 125, 250 and 800
- C. ASME B16.3 – Malleable Iron Threaded Fittings
- D. ASME B16.4 – Cast Iron Threaded Fittings Class 125 and 250
- E. ASTM A72 – Cast Iron Soil Pipe and Fittings
- F. ASTM A536 – Ductile Iron Castings
- G. ASTM A888 – Hubless Cast Iron Soil Pipe and Fittings
- H. ASTM C564 – Rubber gaskets for cast Iron Soil Pipe Fittings
- I. ASTM C1540 – Heavy Duty Shielded Couplings Joining Hubless Cast Iron
- J. ASTM D 1784 – Rigid PVC Vinyl Compounds

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- K. ASTM D 1785 – PVC Plastic Pipe, Schedule 40
- M. ASTM D 2665 – PVC Drain, Waste, and Vent Pipe & Fittings
- N. CISPI 301 – Cast Iron Soil Pipe and Fittings for Hubless Cast Iron Sanitary Systems
- O. CISPI 310 – Joints for Hubless Cast Iron Sanitary Systems

1.4 SUBMITTALS

- A. Submit under provisions of Division 1.
 - i. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufactures catalog information.
 - ii. Manufacturer's Installation Instructions: Indicate assembly and support requirements.

1.5 PROJECT RECORD DOCUMENTS

- A. Record actual locations of equipment, cleanouts, etc.

1.6 OPERATION AND MAINTENANCE DATA

- A. Maintenance Data: Include installation instructions, spare parts lists, exploded assembly views.

1.7 QUALITY ASSURANCE

- A. All items of similar class shall be the products of the same manufacturer.

1.8 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum five years documented experience.
- B. Installer: Company specializing in performing the work of this section with minimum five years documented experience.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site in manufacturer's original unopened containers or packages with labels intact.
- B. Accept equipment on site in original factory packaging. Inspect for damage.
- C. Provide temporary end caps and closures on pipe and fittings.

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1.10 WARRANTY

- A. Provide manufacturer's standard warranty for pipe, fittings and accessories.

PART 2 PRODUCTS

2.1 PIPING ABOVE GRADE

- A. Cast Iron Pipe: CISPI 310, hubless
 - 1. Fittings: Cast iron
 - 2. Joints: CISPI 310 neoprene gaskets and stainless steel clamp-and shield assemblies.
- B. PVC Schedule 40 Solid Wall Pipe and PVC DWV Fitting System.
 - 1. Fittings: Schedule 40 PVC

2.2 UNIONS AND CONNECTIONS

- A. Provide manufactures instructions on joining pipe and maintain instructions/ manuals on site.

PART 3 INSTALLATION

3.1 PREPARATION

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt, on inside and outside, before assembly.

3.2 INSTALLATION

- A. Install in accordance with manufacturers instructions.
- B. Use fittings for all changes in direction and branch connections.
- C. Install exposed piping at right angles or parallel to building walls. Diagonal runs are not permitted unless expressly indicated.
- D. Conceal all pipe installations in walls, pipe chases, utility spaces, above ceilings, below grade or floors, unless indicated to be exposed to view.
- E. Fire Barrier Penetrations: Where pipes pass through fire rated walls , partitions, ceilings and floors, maintain fire rated integrity.
- F. Install piping with 1/32 inch per foot(1/4 percent) downward slope to drain point.

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- G. Provide non-conducting dielectric connections wherever jointing dissimilar metals
- H. Route piping in orderly manner and maintain gradient.
- I. Install piping to conserve building space and not interfere with use of space.
- J. Group piping wherever practical at common elevations.
- K. Install piping to allow for expansion and contraction without stressing pipe/joints
- L. Provide clearance for installation of insulation and access to valves and fittings.
- M. Provide access where valves and fittings are not exposed.
- N. Where pipe support members are welded to structural building framing, scrape, brush, clean, and apply one coat of zinc rich primer to welding.
- O. Install bell and spigot pipe with bell end upstream.

3.3 APPLICATION

- A. Install unions downstream of valves and at equipment or apparatus connections.

3.4 ERECTION TOLERANCES

- A. Establish invert elevations, slopes for drainage at 1/4" to 1/8" per foot. Maintain gradient
- B. Slope water piping and arrange to drain at low points.

3.5 CLEANING AND FLUSHING

- A. Upon completion of work, all piping systems shall be flushed with water/liquid alkaline solution with emulsifying agents and detergents, to remove dirt, grease, grit, chips and foreign matter.
- B. Solutions for flushing shall be used in sufficient quantity to produce a velocity of at least 2.5 feet per second. Flushing shall continue until discharge solution shows no discoloration or evidence of foreign materials.

3.6 TESTING

- A. All new piping systems installed and parts of existing piping systems which have been altered, extended or repaired under this contract shall be tested as directed by the local authority having jurisdiction and in accordance with the State of Connecticut Building Code.
- B. All new, altered, extended or replaced piping shall remain exposed until tested.

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- C. At completion of tests, Contractor shall submit a written summary of the test to Owner.
- D. Any failed test will be repeated until all the requirements of this section and the Building Code are met.

END OF SECTION

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SECTION 22 01 12
TEMPORARY MECHANICAL DISCONNECTS AND RECONNECTS

PART I GENERAL

1.1 Related Documents

- A. The provisions of the Contract, the General Conditions, the Supplementary Conditions and other Division I Specification Sections, apply to the work in this section.

1.2 Work Included

- A. Temporarily remove roof mounted HVAC equipment, as required. Install wood blocking, curbs, sleepers, roofing and flashing as required, and reinstall equipment.

1.3 Special Provisions

- A. The Contractor shall employ mechanics proficient and/or licensed if applicable, in the trades involved.
- B. The Contractor shall disconnect mechanical equipment only when performing roofing work in the immediate area of the equipment.
- C. Each unit shall be fully operational immediately after reinstallation. Shut down time for each unit shall be limited to an eight (8) hour period unless otherwise agreed by Owner's Representative.
- D. Prior to commencing any disconnects, the Owner shall be given forty-eight (48) hours notice. Notification shall be through.

1.4 Testing

- A. Prior to commencing roof work, The Contractor shall test mechanical units in the presence of the Owner's Representative.
- B. Deficiencies in operation including unusual noises, will be noted in writing shall become a matter of record.
- C. Upon completion of the reinstallation of each unit, it shall be retested by the The Contractor at his expense.

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- D. Any deficiencies which were not noted in the initial testing shall be corrected by The Contractor at his expense.

PART II PRODUCTS

2.1 Replacement Parts

- A. Any replacement parts or additional materials needed due to changes in curb or Sleeper heights shall be as recommended by the manufacturer of the mechanical unit, or as required by governing codes, and shall match the existing materials as to type, size, thickness and quality.

PART III EXECUTION

3.1 Job Conditions

- A. After disconnection, move units a sufficient distance to permit the installation of roofing and flashing materials.
- B. After new roofing is installed, reinstall units as shown, modifying conduit and cable as necessary. Units are to be reinstalled immediately upon completion of new roofing installation at each area that existing units are in place.
- C. Provide plywood traffic ways for moving units. If mechanical contrivance of wheeled "A" frame-type hoists are used, plywood shall be placed under the equipment for its full route of movement. B Plywood shall be a minimum of 5/8" thick.

END OF SECTION

SECTION 22 07 00
PLUMBING INSULATION

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes installation the following insulation and accessories;
 - 1. Piping insulation
 - 2. Jackets and accessories

1.2 RELATED SECTIONS

- A. Section 21 11 00 – Facility Water Service Piping

1.3 REFERENCES

- A. ASTM C177 – Steady State Heat Flux Measurements and Thermal Transmission
Properties by Means of the Guarded Hot Plate Apparatus
- B. ASTM C195 – Mineral Fiber Thermal Insulating Cement.
- C. ASTM C335 – Steady State Heat Transfer Properties of Horizontal Pipe
Insulation
- E. ASTM C449 – Mineral Fiber Hydraulic Setting Thermal Insulating & Finish
Cement
- F. ASTM C518 – Steady State Heat Flux Measurements and Thermal Transmission
Properties by Means of the Heat Flow Meter Apparatus
- G. ASTM C533 – Calcium Silicate Block and Pipe Thermal Insulation
- H. ASTM C585 – Inner and Outer Diameters of Rigid Thermal Insulation for
Nominal Sizes of Pipe and Tubing (NPS System)
- I. ASTM C921 – Properties of Jacketing Materials for Thermal Insulation.
- J. ASTM E84 – Surface Burning Characteristics of Building materials
- K. ASTM E96 – Water vapor Transmission of Materials

- M. ASTM E162 – Standard Test Method for Surface Flammability of Materials
Using a Radiant Heat Energy Source

1.4 SUBMITTALS

- A. Submit under provisions of Division 1.
- A. Product Data: Provide product description, list of materials and thickness for each service, and location.
- B. Manufacturer's Installation Instructions: Indicate assembly and support requirements.

1.5 QUALITY ASSURANCE

- A. Materials: Flame spread/smoke developed rating of 25/50 or less in accordance with ASTM E84, NFPA 255, and UL 723.

1.6 QUALIFICATIONS

- A. Applicator: Company specializing in performing the work of this section with a minimum three years experience.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site in manufacturer's original unopened containers or packages with labels intact.
- B. Deliver materials to site in original factory packaging, labeled with manufacturer's identification, including product density and thickness
- C. Protect insulation against dirt, water, chemical and mechanical damage.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. Maintain ambient temperatures and conditions required by manufacturers adhesive, mastic, and insulation cements.
- B. Maintain temperature during and after installation for a minimum period of 24 hours.

PART 2 PRODUCTS

2.1 GLASS FIBER PIPING INSULATION

- A. Manufacturer:
 - 1. Johns/Manville Micro-Lok

2. Other acceptable manufacturers offering equivalent products:
 - a. Owens Corning
 - b. Certainteed Manson
 - c. Knauf

- B. Insulation: ASTM C547 rigid molded, noncombustible.
 1. 'K' value (SI 'k' value) ASTM C335, 0.25@ 75 deg F (0.036 @ 24 deg C)
 2. Minimum Service Temperature: -20 degrees F (-28.9 degrees C)
 3. Maximum Service Temperature: 850 degrees F (454 degree C)
 4. Maximum Moisture Absorption: 0.2 percent by volume

- C. Vapor Barrier Jacket:
 1. White kraft paper reinforced with glass fiber yarn & bonded to aluminized film
 2. Moisture vapor Permeability: ASTM E96; 0.02 perm-inches

- D. Installation:
 1. Secure seams with pressure sensitive tape closure and butt joints with minimum 3 inch wide tape of same material as vapor barrier jacket.

2.2 JACKETING

- A. Polyvinyl Chloride (PCV) Plastic
 1. Manufacturer: Johns/Manville, Zeston 2000 or approved equal.
 2. Jacket: ASTM D1784, one-piece molded type fitting covers and sheets.
 - a. Minimum Service Temperature: 0 deg F (-18 deg C)
 - b. Maximum Service Temperature: 150 deg F (66 deg C)
 - c. Thickness: 10 mil (.26 mm)
 - d. Color: off-white

3. Installation:
 - a. Fittings and Valves: Factory precut inserts
 - b. Apply vapor retardant mastic to all seams and joints.
 - c. Secure all seams and joints with Zeston PVC Z-Tape.
- B. Canvas jacket: UL listed
 1. fabric: ASTM C921, 6oz/sq yd (220 g/sq m), plain weave cotton treated with dilute fire retardant lagging adhesive compatible with insulation.
- C. Insulating Cement
 1. Manufacturer: Rock Wool “One Shot” or approved equal.
 2. Jacket: ASTM C449, mineral wool/inorganic dry mix, non-combustible.
 - a. Maximum service temperature: 1200 deg F (649 deg C)
 - b. “K” value (SI “k” value): 1.12 at 400 deg F
 - c. Thickness: Same as adjoining piping.
 3. Installation:
 - a. One monolithic layer directly applied
 - b. Exterior finish shall be troweled for smooth paintable surface.

PART 3 INSTALLATION

3.1 EXAMINATION

- A. Verify that pipe has been tested before applying insulation .
- B. Verify that surfaces are clean and dry, with foreign materials removed.

3.2 INSTALLTION

- A. Install in accordance with manufacturers instructions.
- B. On exposed piping, locate insulation and cover seams in least visible locations
- C. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations.

D. Inserts and Shields:

1. Application: Piping 2 inches diameter or larger.
2. Insert location: Between support shield and piping and under finish jacket.
3. Insert Configuration: Minimum 6 inches long, of same thickness and contour as adjoining insulation; may be factory fabricated.
4. Insert material: ASTM C640 cork, hydrous calcium silicate insulation or other heavy density insulating material suitable for planned temperature range.

E. Finish insulation at supports, protrusions, and interruptions.

3.3 TOLERANCE

- A. substituted insulation materials shall provide thermal resistance within 10 percent normal conditions, as materials indicated.

3.4 GLASS FIBER INSULATION SCHEDULE

- A. All insulation shall be 1-1/2 inch thickness with appropriate jacket.

END OF SECTION

SECTION 22 40 00
PLUMBING FIXTURES

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes installation the following plumbing specialties and accessories;
 - 1. Roof drains & overflow roof drains.
 - 2. Downspout

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.
- B. Related Sections
 - 1. Section 07 22 18 – Preparation for Re-roofing
 - 2. Section 07 27 00 – Roof and Deck Insulation
 - 3. Section 07 54 00 – Thermoplastic Membrane Roofing

1.3 REFERENCES

- A. ANSI A112.21.2 - Roof Drains.

1.4 SUBMITTALS

- A. Submit under provisions of Division 1.
- B. Shop Drawings: Indicate dimensions, weights, and placement of openings and holes.
- C. Product Data: Provide component sizes, rough-in requirements, service sizes, capacities and finishes.
- D. Manufacturer's Installation Instructions: Indicate assembly and support requirements.

1.5 PROJECT RECORD DOCUMENTS

- A. Record actual locations of equipment, cleanouts, etc.

1.6 OPERATION AND MAINTENANCE DATA

- A. Maintenance Data: Include installation instructions, spare parts lists, exploded assembly views.

1.7 QUALITY ASSURANCE

- A. All items of similar class shall be the products of the same manufacturer.
- B. Roof Drainage System
 - 1. Basis of design for this project is roof drains with downspout nozzles and parapet scupper sleeve as the secondary means of water drainage. This installation shall conform to all governing local and state codes.
 - 2. Roof drain manufacturer shall provide documentation certifying the proper location and placement of primary and overflow drainage system.

1.8 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum five years documented experience.
- B. Installer: Company specializing in performing the work of this section with minimum five years documented experience.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site in manufacturer's original unopened containers or packages with labels intact.
- B. Accept equipment on site in original factory packaging. Inspect for damage.

1.10 WARRANTY

- A. Provide manufacturer's standard warranty roof drains, parapet roof drains, overflow nozzles and scupper sleeves.

PART 2 PRODUCTS

2.1 MANUFACTURERS

Specialties listed within this specification shall be as the manufactured by the following:

- 1. Josam
- 2. J R Smith
- 3. Zurn

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2.2 ROOF DRAINS

- A. Roof Drains: ANSI A112.21.2, Jay R. Smith Mfg. Co. Series 1010, cast iron body, and dome cover, sump receiver, under deck clamp, flashing clamp and gravel stop.
- B. Roof Drains: ANSI A112.21.2, Jay R. Smith Mfg. Co. Series 1020, cast iron body, and dome cover, sump receiver, under deck clamp, flashing clamp and gravel stop.
- D. Over FlowRoof Drains: ANSI A112.21.2, Jay R. Smith Mfg. Co. Series 1020, cast iron body and dome cover, sump receiver, flush grate, flashing clamp.

2.3 OVERFLOW NOZZLE

- A. Downspout Nozzle: ANSI A112.21.2., Jay R. Smith Mfg. Co. Series 1770, cast bronze body with integral wall flange and bird screen

2.4 PREPARATION

- A. Coordinate cutting and forming of roof and pre-cast wall construction to receive drains, downspout nozzles and parapet scupper sleeves.

PART 3 INSTALLATION

3.1 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Installation of Roof Drains, Parapet Roof Drains, Downspout Nozzles and Parapet Scupper Sleeves in accordance with manufacturer's instructions.
- C. All items of this section to be installed bay a licensed plumber with a minimum five years experience in the installation of rooftop plumbing accessories.

END OF SECTION

SECTION 26 01 12
TEMPORARY ELECTRICAL DISCONNECTS AND RECONNECTS

PART I GENERAL

1.1 Related Documents

- A. The provisions of the Contract, the General Conditions, the Supplementary Conditions and other Division I Specification Sections, apply to the work in this section.

1.2 Work Included

- A. Temporarily disconnect electrical feed to each roof top HVAC unit and other necessary equipment including satellite antenna.
- B. Inspect and repair existing power lines.
- C. Fabrication, installation and flashing of equipment supports.
- D. Reconnection of electrical feed upon completion of new roofing and related sheet metal.

1.3 Special Provisions

- A. The Contractor shall employ mechanics licensed in the electrical trade.
- B. The Contractor shall disconnect electrical equipment or feeds only when performing roofing work in the immediate area of the equipment or feed.
- C. Each feed or unit shall be fully operational immediately after reinstallation. Shut down time for each unit shall be limited to an eight (8) hour period unless otherwise agreed by Owner's Representative.
- D. Prior to commencing any disconnects, the Owner shall be given forty-eight (48) hours notice. Notification shall be given through

1.4 Testing

- A. Prior to commencing roofing work, The Contractor shall test circuits in the presence of the Owner's Representative.

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- B. Deficiencies in operation will be noted in writing and shall become a matter of record.
- C. Upon completion of the reconnection of each item or circuit, it shall be retested by The Contractor in the presence of the Owner's Representative.
- D. Any deficiencies which were not noted in the initial testing shall be corrected by The Contractor at his expense.

PART II PRODUCTS

2.1 Replacement Parts

- A. Any replacement parts or additional materials shall be as recommended by the manufacturer of the unit, or as required by governing codes, and shall match the existing materials as to type, size, thickness and quality.

PART III EXECUTION

3.1 Job Conditions

- A. Do not disconnect electricity without permission of the Owner's representative.
- B. Disconnection shall be performed only after new roof and flashing materials are available to complete the operation.
- C. Locate penetrations in roof system such that tripping hazards are minimized.

END OF SECTION