

**PROJECT MANUAL
TOWN OF NAUGATUCK
CONNECTICUT**

**Roof Replacement
MAPLE HILL ELEMENTARY SCHOOL**

**641 Maple Hill Road
Naugatuck, Connecticut 06770**

Connecticut D.O.E. Project No. TMP-088-CWDX

**Review Submission: August 6, 2012
Issued for Bid: May 7, 2013**



**Architect/Engineers/Interior Designers
Silver/Petrucci + Associates, Inc.
3190 Whitney Avenue
Hamden, Connecticut 06518**

ROOF REPLACEMENT

**MAPLE HILL ELEMENTARY SCHOOL
641 MAPLE HILL ROAD
NAUGATUCK, CT 06770
STATE PROJECT. NO. TMP-088-CWDX**

S/P+A PROJECT NO. 11.179

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Legal Notice

BOROUGH OF NAUGATUCK
NAUGATUCK TOWN HALL
229 Church Street – Naugatuck, CT 06770
Tel (203) 720-7025

INVITATION TO BID

Notice is hereby given that sealed bids by which
the Town of Naugatuck will contract for the

**Maple Hill Elementary School Roof Replacement
CT DOE #TMP-088-CWDX**

will be received in the Purchasing Office, Naugatuck Town Hall until

Monday, May 20, 2013 @ 11:00 a.m.

when they will be publicly opened and read aloud.

A MANDATORY pre-bid meeting between prospective bidders and the Architect
will convene in the **lobby of Maple Hill Elementary School,**
641 Maple Hill Road, Naugatuck
on **Friday, May 10, 2013 @ 4:00 p.m.** when
project details will be discussed and questions answered.

A bid bond for five percent (5%) of the base bid cost is required
and must accompany each proposal.
Bids must be held firm for one hundred twenty (120) days beyond the bid opening date.

The successful bidder must file a one hundred percent (100%) Performance Bond,
a one hundred percent (100%) Labor & Materials Bond and a Certificate of Insurance
with the Board of Education within ten (10) days of notice of bid award.

Plans and specifications must be obtained directly from the Borough of Naugatuck website,
www.naugatuck-ct.gov at no cost to the Contractor.

In accordance with Connecticut General Statute Sections 4a-100 and 4b-91, a responsible bid
must contain two documents: The Contractor Prequalification Certificate and the Update (Bid)
Statement. The classification ROOFING is required as a minimum.

DRAFT AIA[®] Document A701[™] - 1997

Instructions to Bidders

for the following PROJECT:

(Name and location or address)

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<< >>

THE OWNER:

(Name, legal status and address)

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<< >>

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.

1 PART 1 – GENERAL

1.1 COMPLETION DATE

- A. All work as required by these specifications and drawings shall be completed by the date stipulated in the Contractor's bid form. There is no exception to this contract requirement, unless approved otherwise by contract change order. In addition, the project must be substantially complete by 11:59PM on August 30, 2013.
- B. If the work for this project is not substantially completed by 11:59 pm by the dates stipulated in the Contractor's bid form for each of the bid components requiring durations or deadlines, liquidated damages of Five Hundred Dollars (\$500.00) per day or part thereof shall be due for each bid component to the Owner and subtracted from the unpaid contract amount or bond held by the Owner. "Substantial completion" is as defined in the General Conditions of the Contract for Construction, AIA Document A201 included in this project manual. "Substantial completion" is further defined as the date at which the local authorities with jurisdiction over this project grant a temporary or permanent certificate of occupancy (if required for occupancy) for each project area.

1.2 QUESTIONS

- A. Questions regarding this bid can be directed to:

Mr. Dean Petrucelli, Architect
Silver/Petrucelli + Associates, Inc.
3190 Whitney Avenue, Bldg. 2
Hamden, CT 06518
Tel: 203-230-9007 x207
Fax: 203-230-8247
Email: dpetrucelli@silverpetrucelli.com

1.3 RESPONSIBILITY FOR MEASUREMENT OF QUANTITIES

- A. The Contractors shall have sole responsibility for the accuracy of all measurements and for estimating the material quantities required to satisfy these specifications.

1.4 DISCREPANCIES AND ADDENDA

- A. Should a Bidder find any discrepancies in the Drawings and Specifications, or should they be in doubt as to their meaning, they shall notify the Owner at once, who will send a written Addendum to all Bidders concerned. Oral instructions or decisions, unless confirmed by Addenda, will not be considered valid, legal or binding. No change order requests will be authorized or considered because of

the failure of the Contractor to include work called for in the Addenda in their bid.

1.5 MODIFICATIONS TO AIA DOCUMENT A701, Instructions to Bidders, Fifth Edition, 1997.

The following sections modify the provisions and procedures to the degree listed in the sections and articles listed in these supplementary instructions.

ARTICLE 3 **Make the following changes:**

3.1.1 **Delete** all but the first sentence.

3.4.1 **Add the following:** "Addenda may be facsimile/electronically transmitted to all who are known to have received a complete set of bidding documents at the time of said facsimile/electronic transmission".

3.4.3 **Delete the phrase** "four days prior to the date for receipt" and insert "twenty-four (24) hours prior to the date and time for receipt".

ARTICLE 5 **Add the following:**

5.3.3 Contractors who have paid liquidated damages or penalties to an Owner for failing to comply with the schedule of any project in the last five (5) years are disqualified from this project, subject to an appeal to the Building Committee where the Contractor demonstrates that 1) subsequent to the project which resulted in penalties the Contractor completed two (2) similar projects or demonstrably similar projects in a timely fashion; and 2) that the factors which lead to delays and penalties in the first instance no longer exist. Payment of liquidated damages or penalties may also be defined as "having been found by the Owner to be in non-compliance with the project schedule and negotiating a financial settlement for the project in which value was returned to the Owner, either via change orders or 'work-in-kind' or other recognized manner". The Contractor under consideration shall respond to this clause in the Contractor's Qualification Statement, A305 as provided in Section 6.1 of the Instructions to Bidders, A701.

ARTICLE 6 **Add the following:**

6.1.1 The Owner will make investigations as he deems necessary to determine the ability of the Bidder to perform the Work, and the Bidder shall furnish the Owner all such information and data for this purpose as the Owner may request.

6.4 WORK PHASING SCHEDULE

- 6.4.1 Bidders to whom award of the Contractor is under consideration shall submit to the Architect within fifteen (15) days of the Contract date, a detailed work Phasing Schedule describing the bodies of work to be undertaken and areas of the project to be addressed in per week periods between the Award of the Contract and the Bidder's proposed date of Substantial Completion.

ARTICLE 7 **Add the following:**

- 7.3 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.
- 7.4 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 Subparagraph 7.5.1.
- 7.5 If there is no Owner Default, the Surety's obligation under this Bond shall arise after:
- 7.5.1 The Owner has notified the Contractor and the Surety at its address described in Paragraph 7.12 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
- 7.5.2 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 Subparagraph 7.5.1; and
- 7.5.3 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.
- 7.6 When the Owner has satisfied the conditions of Paragraph 7.5.3, the Surety shall promptly and at the Surety's expense take one of the following actions:
- 7.6.1 Arrange for the Contractor, with consent of the Owner, to perform and complete the Construction Contract; or

- 7.6.2 Undertake to perform and complete the Construction Contract itself, through its agents or through independent contractors; or
- 7.6.3 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 Paragraph 7.8) in excess of the Balance of the Contract Price incurred by the Owner resulting from the Contractor's default: or
- 7.6.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:
 - 7.6.4 (a) 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 therefore to the Owner; or
 - 7.6.4 (b) Deny liability in whole or in part and notify the Owner citing reasons therefore.
- 7.7 If the Surety does not proceed as provided in Paragraph 7.6 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen (15) 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 Subparagraph 7.6.4, and the Owner refuses the payment rendered or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.
- 7.8 After the Owner has terminated the Contractor's right to complete the Construction Contract, and if the Surety elects to act under Subparagraph 7.6.1, 7.6.2, or 7.6.3 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:
 - 7.8.1 The responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
 - 7.8.2 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 Paragraph 7.6; and

- 7.8.3 Late delivery penalties or if penalties are not specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
- 7.9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, or successors.
- 7.10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
- 7.11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two (2) years after Contractor Default or within two (2) years after the Contractor ceased working or within two (2) 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.
- 7.12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page.
- 7.13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
- 7.14 Definitions.
- 7.14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
- 7.14.2 Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

- 7.14.3 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.
- 7.14.4 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.

Add the following Articles:

ARTICLE 9

- 9.1 **FIELD OFFICE:** The Contractor may provide and maintain a suitable field office at the site for his use, that of the Architect and others engaged on the project. Space will not be available in the building for the Contractor's field office and storage of materials. If provided, the field office must be large enough for regular job meetings, plan review areas, submittal storage and other job file and administrative functions.
- 9.2 **JOB TELEPHONE:** The Contractor shall maintain at his expense a job telephone, not a "Pay Telephone". The job telephone shall be available to the Architect, the Owner's staff, Municipal Officials or Inspectors and all subcontractors. All calls shall be paid for by the Contractor.
- 9.3 **TEMPORARY STORAGE SHEDS:** The Contractor shall provide and maintain on the site, where directed by the Owner, watertight sheds for the storage of all materials which might be damaged by weather. These sheds shall be metal box storage units or have wood floors raised above the ground.
- 9.4 **SANITARY FACILITIES:** The Contractor shall provide his own sanitary facilities for the use of all persons employed on the project. The facility location shall be determined with the Owner and shall be kept in a sanitary condition by the Contractor at all times.
- 9.5 **WATCHMAN:** The employment of continuous watchman service to guard the property during any and all hours shall be at the discretion of the Contractor. However, the Contractor shall remove and restore all work or temporary structures damaged by fire, vandalism or similar acts at no extra cost to the Owner.
- 9.6 **CLEANING UP:** The Contractor shall provide all project cleaning and removal of materials, along with protection of the work and existing conditions. In a dispute between the Owner and the Contractor concerning rubbish and orderliness on the site, the Owner may have the rubbish removed and charge the cost to the Contractor. Upon written notification from the Architect that the project requires cleaning, the Contractor shall within twenty-four (24) hours remove all rubbish and hazards from the project and shall arrange his material and equipment in an orderly manner on the site. If this cleaning is not completed within twenty-four (24) hours, the Owner may engage labor to clean up the projects to his satisfaction and deduct the costs from any monies due the

Contractor.

- 9.7 REMOVAL OF MATERIALS: All removed materials and rubbish shall be constantly sprinkled with water or other dusting agent to mitigate dust. Provide drop cloths or other type of coverings to prevent infiltration of dust to other parts of the existing building.
- 9.8 PROTECTION OF EXISTING UTILITIES AND SERVICES: The Contractor shall locate and mark the exact locations of the utilities or services and adequately protect them from damage during the work. In the event that any are accidentally disturbed, the Contractor shall repair or replace such damage immediately and restore service as promptly as possible.
- 9.9 POWER SERVICE: The Contractor shall be permitted to use the Owner's power service for work related to the project. The Contractor shall provide for the disconnection/removal of any temporary utility service.
- 9.10 TEMPORARY HEAT: The Contractor shall provide and pay for their temporary heating and ventilation for work related to the project. The Contractor shall provide for the disconnection/removal of any temporary utility service.
- 9.11 ASBESTOS: It will be the responsibility of the Owner to remove all asbestos encountered during the project. It will be the responsibility of the Contractor to identify and notify on a timely basis, any existing conditions that might contain asbestos in order to coordinate its removal expediently.
- 9.12 OVERTIME: The Contractor must include within their base price all overtime, nights, holidays and weekends as required to meet the Project Completion date.
- 9.13 PERMITS: The Contractor must obtain their own city and building permits at no additional charge to the Owner. Town of Naugatuck permits can be obtained from the Town of Naugatuck at cost to the Contractor including the State Education permit cost of \$0.26/\$1,000 value.
- 9.14 SUPERVISION: The Contractor must provide full-time, properly qualified on-site supervision for the entire duration of the project, while workpersons are on site.
- 9.15 GUARANTEES: The workmanship and materials for this project shall be guaranteed by the Contractor in writing on the Contractor's letterhead, for one (1) year from the date of Substantial Completion except as modified by the Contract Documents.
- 9.16 In accordance with Connecticut General Statute Secs. 4a-100 and 4b-91, a responsible bid that exceeds \$500,000 for this vertical building project **must contain two (2) documents: The Contractor Prequalification Certificate and the Update (Bid) Statement.** These two (2) documents must be submitted with the bid form. Contact the DAS Contractor Prequalification Unit at 860-713-5280 for more information. The

classification **ROOFING** is required as a minimum.

ARTICLE 10

- 10.1 BIDDERS REPRESENTATION: Each bidder shall fully acquaint himself with conditions as they exist, so that he fully understands the complexities and restrictions attending the execution of the Work included in the Bid Documents.

The failure to receive or examine any form, instrument, or document, or to visit the site to become acquainted with field conditions, shall in no way relieve the Bidder from any obligation with respect to the Bidder's proposal.

END OF SECTION

(To be submitted in duplicate)

BIDDER: _____
Name

Address

To: **Borough of Naugatuck
Naugatuck Town Hall
229 Church Street
Naugatuck, CT 06770**

Project: **Maple Hill Elementary School Roof Replacement
641 Maple Hill Road
Naugatuck, Connecticut 06770
State Project No. TMP-088-CWDX**

In preparing this bid, we have carefully examined the Bidding Documents for this Project. We have visited the site and noted the conditions affecting the Work.

The Bidding Documents referred to include Drawings and Project Manual dated August 6, 2012 entitled Maple Hill Elementary School Roof Replacement, Naugatuck, CT prepared by Silver/Petrucelli + Associates, Inc., Hamden, Connecticut.

We propose to perform the work described in the Bidding Documents, in keeping with definitions of Article 1 of the Instructions to Bidders, for the Base Bid Sum as follows:

Base Bids:

Maple Hill Elementary School Roof Replacement for the Total Cost of:

\$ _____ Dollars (\$ _____ .00).
written figure

We will commence work on the project _____ calendar days after receipt of "Notice to Proceed" or signing of Contract. We will be able to substantially complete the project within _____ calendar days.

Allowances: (See Section 01019)

Allowance No. 1: Metal Deck Replacement (part of Base Bid) \$ _____

Unit Prices:

As required by the Base Bid, should deteriorated or damaged materials be required to be removed as determined by the Architect or Owner, the cost to remove and replace the referenced

material, (or credit for specified material not provided or installed) including all labor, material, equipment and related furnishings is as follows:

1. Metal roof deck, sized to match existing roof deck to be removed
(including deteriorated roof deck removal, credit and add) \$_____/sf
2. Add pressure treated wood blocking, as specified, cut to fit around
roof structure and systems and installed \$_____/bf
3. Deduct pressure treated wood blocking, as specified, cut to fit
around roof structure and systems and installed \$_____/bf

The undersigned acknowledges that he has examined the documents, visited and examined the site as required under "Instructions to Bidders", examined the availability of labor and materials and further agrees to comply with all the requirements as to the conditions of employment and wage rates set forth by the Department of Labor.

Addenda:

The undersigned acknowledges receipt of the following addenda to the Contract Documents, listed by number and date:

Number , Dated: _____

Number , Dated: _____

Number , Dated: _____

Number , Dated: _____

Exceptions: _____

Date: _____

Signature: _____

Printed Name and Title
of Agent submitting bid: _____

Name of Company: _____

Address: _____

Telephone Number: _____ Fax Number: _____

E-mail: _____

This Bid may be withdrawn prior to the scheduled Bid Opening or any postponement thereof.

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)

« a »
« »
« »

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

« »
« »
« »
« »

The Owner and Contractor agree as follows.

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.

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
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3	DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
4	CONTRACT SUM
5	PAYMENTS
6	DISPUTE RESOLUTION
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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.)

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.)

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 « » percent (« » %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™–2007, General Conditions of the Contract for Construction;
- .2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of « » percent (« » %);
- .3 Subtract the aggregate of previous payments made by the Owner; and
- .4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201–2007.

§ 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 30 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.)

<< >>
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§ 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.)

<< >> % << >>

§ 8.3 The Owner's representative:

(Name, address and other information)

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

§ 8.4 The Contractor's representative:

(Name, address and other information)

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

§ 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)

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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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 that would otherwise exist as to a party or person described in this Section 3.18.

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

ARTICLE 4 ARCHITECT

§ 4.1 GENERAL

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

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

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

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. 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.



GENERAL CONDITIONS

The Work of this Contract shall be subject to the American Institute of Architects Document A201, "General Conditions of the Contract for Construction", herein referred to as the General Conditions.

SUPPLEMENTARY CONDITIONS

The supplementary Conditions contain changes and additions to the General Conditions. Where any part of the General Conditions is modified or voided by the Supplementary Conditions, the remaining unaltered provisions shall remain in effect.

ARTICLE 1 Make the following changes:

1.2.3 Add the following: When applied to materials and equipment required for the Work, the words "furnish", "install" and "provide" shall mean the following:

- .1 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.
- .2 The word "furnish" shall mean to secure, pay for, deliver to site, unload and uncrate materials and equipment.
- .3 The word "install" shall mean to place in position, incorporate in the work, adjust, clean, make fit and ready for use and perform all services except those included under the term "furnish".
- .4 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....".
- .5 "As required" shall mean as required to produce a fully completed project or result to the satisfaction of the Architect.
- .6 Where discrepancies or conflicts occur:
 - .1 Amendments and Addenda shall take precedence over the Specifications.
 - .2 The Specifications shall take precedence over the Drawings.
 - .3 Stated dimensions shall take precedence over scaled dimensions.
 - .4 Large-scale detail drawings shall take precedence over small-scale drawings.
 - .5 Schedules shall take precedence over other data on the drawings.
- .7 In case of a difference between Drawings or 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. The Contractor shall not proceed with such work until the Architect has been contacted for clarification and proper direction.

- .8 Instructions or specifications of a particular manufacturer as referred to herein shall be binding as a part of this Specification. Obtain such written instructions and maintain on the job with the Specification.
- .9 Schedules of materials in various sections of the Specifications are furnished to assist the Contractor. Contractor shall verify the schedules with the Drawings and shall provide any additional materials indicated on the Drawings but not included in the schedules. The greater quantity or highest quality will govern.

Add the following:

- 1.2.4 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 contract (NIC)".
- 1.2.5 Parties to the Contract shall not take advantage of obvious error or apparent discrepancy 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.
- 1.6.2 Contractor shall be furnished up to five (5) sets of Contract Drawings and Specifications, and four (4) copies of each drawing which is issued after the date of the Contract. The Contractor shall pay costs of reproduction for any additional copies of Drawings or Specifications he requires.

ARTICLE 3 Make the following changes:

Add the following:

- 3.4.4 Should the Contractor wish to substitute another product or method for products or methods specified or shown in the Contract Documents, whether specified or shown in Contract Documents, whether or not such phrases as "equal to" or "based on" are used, he shall apply in writing in approval. He shall enclose such data as Architect requires to evaluate products. The Architect's decision shall be final. Contractor is responsible for space requirements of substitutions, he shall execute necessary changes in adjacent and relocated situations, he shall execute necessary changed in adjacent and relocated work which are due to such substitutions, without additional cost and he shall be responsible for delays required for evaluation of proposed substitutions.
- 3.5.1.1 Project Warranty: Unless otherwise specified, Contractor shall warrant (guaranty) all work against defects resulting from the use of material, workmanship or equipment which is inferior, defective or not in accordance with the terms of the Contract. This warranty, unless stated otherwise in a given section of the Specifications, shall be for a period of one year from

the date of issuance of the Certificate of Substantial Completion for the Project.

- .2 Specified Product Warranty: Issued by a manufacturer or fabricator for compliance with requirements of the Contract Documents. Refer to sections of Specifications for requirements of specified warranties.
- .3 Coincidental Product Warranty: Available on a product incorporated into the work, by virtue of manufacturer's publication of warranty without regard for application requirement, a non-specified warranty. Contractor shall identify such warranties as they apply.
- .4 Warranty Obligations
 - .1 Contractor shall restore or remove-and-replace warranted work to its originally specified condition, at such time during warranty as it does not comply with or fulfill terms of warranty.
 - .2 Contractors shall restore or remove-and-replace other work which has been damaged by failure or warranted work, or which must be removed and replaced to gain access to warranted work.
 - .3 Cost of restoration or removal-and-replacement is Contractor's obligation, without regard to whether Owner has already benefited from use of failing work.
 - .4 Except as otherwise indicated or required by governing regulations, warranties do not cover consequential damage to property other than the Work of the Contract.
 - .5 Upon restoration or removal-and-replacement of warranted work which has failed, Contractor shall reinstate the warranty by issuing newly executed form, for at least the remaining period of time of the original warranty, but for not less than half of the original warranty period.
 - .6 Warranties and warranty periods shall not diminish implied warranties, and shall not deprive Owner of actions, rights and remedies otherwise available if the Contractor fails to fulfill the requirements of the Contract Documents.
 - .7 Owner reserves the right to reject coincidental product warranties which conflict with or are less than the requirements of the Contract Documents.
- .5 Contractor shall furnish fully executed warranties to Owner in accordance with the General Conditions and Section 01740.

3.6 **Amend to include the following:** No amount shall be included in the bid for State Sales Tax of for Federal Excise Tax on materials or supplies purchased for this project. The Owner will supply tax exempt number.

3.7.1 **Amend to include the following:** The Contractor shall pay costs charged by utility companies for service connections, inspections and tests, and related utility company fees normally assessed as part of the construction process.

ARTICLE 4 **Add the following:**

- 4.3 The provisions of Article 15 notwithstanding, the Contractor expressly agrees to joinder in arbitration proceedings between Owner/Architect upon specific written request of the Owner. This agreement shall be valid with the Architect's acceptance of an equal provision in their respective contracts.

ARTICLE 7 **Add the following:**

- 7.2.2 The Contractor's proposal for changes in the Work shall be itemized completely and in detail and shall include material costs and quantities, labor wages, time, insurance, pensions and equipment rental other than small tools, and the number of additional calendar days, if any, which are required to complete the Work.

Where unit prices have been established, the proposal shall state the quantity involved and the applicable unit price.

7.5 ALLOWANCE FOR OVERHEAD AND PROFIT

- 7.5.1 The allowance for overhead and profit is compensation for administration, superintendence, materials for temporary structures, additional premiums on bonds and the use of small tools.
- 7.5.2 For additions, deletions or other changes in the Work ordered under method 7.3.3.3, the Contractor may apply an allowance of up to fifteen percent (15%) for profit and overhead to the net cost of the work actually performed by him.
- 7.5.3 Work to be performed by a subcontractor may include an allowance for the subcontractor's overhead and profit not to exceed fifteen percent (15%) of the net cost. The Contractor is permitted up to a **ten percent** (10%) allowance to be applied against the net cost to a subcontractor. In no case shall the total allowance exceed twenty-five percent (25%) of the net cost of work performed by the subcontractor.
- 7.5.4 The Contractor's allowance of up to ten percent (10%) on changes involving more than one (1) subcontractor shall be applied only to the combined net of cost additions and deductions of all subcontractors.
- 7.5.5 There shall be no allowance for overhead and profit for the Contractor or any subcontractor on changes resulting in a net deduction.
- 7.5.6 The provisions of this Article shall apply only to subcontractors as defined in Article 5. Allowance for overhead and profit will be accepted only for those who are direct subcontractors.

ARTICLE 8 Make the following changes:

- 8.3.4 **Add the following:** No extension of time will be allowed for adverse weather conditions unless the number of days of inclement weather is substantially greater or conditions substantially more severe than the average for the calendar period as recorded by a recognized weather observation agency.

ARTICLE 9 Make the following changes:

- 9.3.1 **Revise** “ten days” to read “fifteen (15) days”.

Add the following:

- 9.3.1.3 During progress of the Work, the Owner will pay Contractor ninety-five percent (95%) of the total amount of each monthly payment due. The remaining five percent (5%) will be retained by the Owner until the Project is substantially completed. There will be no further reduction considered until final acceptance of the Project in accordance with the Contract Documents.

- 9.3.2 **Add the following:** If the Contractor does not submit evidence of payment to vendor for material and equipment stored, the Architect will recommend deduction of the amount previously allowed for the items stored from the current or subsequent Application for Payment.

Add the following:

- 9.3.2.1 Contractor may include in Application for Payment the delivered cost of equipment and non-perishable materials delivered and stored at the site but not incorporated in the work, work under the following conditions:

- .1 Items to be protected from fire, theft, vandalism, weather and other damage.
- .2 Storage procedures and areas to be approved.
- .3 Items to be available at all times for inspection by the Owner and Architect.

- 9.3.4 Contractor shall furnish with Application for Payment an invoice establishing value of material and equipment stored at the site along with a statement of amount to be paid the vendor.

- .1 Such stored items are subject to inspection by Architect before payment is recommended.
- .2 Contractor shall furnish Owner with Certificate of Insurance in accordance with Contract Documents for the full value of the items stored at the site.

9.6.2.1 Contractor shall furnish Architect with satisfactory evidence of payment to vendors supplying material and equipment for approved storage. This shall be done within thirty (30) days after the date of progress payment. Satisfactory evidence of payment shall be one of the following:

- .1 Contractor's canceled check in correct amount with identification of invoices paid.
- .2 A letter or telegram from vendor with authorized signature stating amounts and invoices paid.
- .3 A receipted invoice.

9.6.7.1 Payment for material and equipment delivered and stored shall not relieve Contractor of responsibility for furnishing equipment and material required for the work in the same manner as if such payment were not made.

9.10.6 A prerequisite to final payment shall be that the Contractor furnish proof that he has completed all specification requirements covering the following item as applicable: Warranties.

ARTICLE 10 Add the following:

- 10.2.4.1 The Contractor shall not bring hazardous materials onto the site nor use in the Work without compliance with the following conditions.
- .2 The Contractor shall be solely responsible for the handling, storage, and use of explosive or other hazardous materials when their use is permitted. For such use, the Contractor shall obtain necessary permits from regulating agencies and submit copies of permits to the Architect for review before proceeding with use.
 - .3 Contractor shall obtain insurance for use of hazardous material and furnish certificates of insurance in keeping with Conditions of the Contract.

ARTICLE 11 Amend Article 11.5 in accordance with the following provisions:

- A. Insurance shall be carried with a company or companies licensed to do business in the State of Connecticut.
- B. The Contractor shall not begin work until he has obtained all insurance as required, nor shall any subcontractor be permitted to commence work until he has obtained all insurance as required under the same provisions. Insurance shall be maintained throughout the life of the Contract.
- C. It shall be the responsibility of the Contractor to obtain Certificates of Insurance from each subcontractor and to make certain that all coverage is maintained throughout the life of the Contract.

SUPPLEMENTARY GENERAL CONDITIONS

- D. The Contractor, before commencing work, shall supply Owner with Certificates of Insurance evidencing compliance with the insurance requirements. Each certificate shall state that the insurance evidenced by such certificate will not be canceled or reduced without thirty (30) days prior written notice to the Contractor.
- E. Each subcontractor, before commencing work, shall supply Owner with Certificates of Insurance evidencing compliance with the insurance requirements. Each certificate shall state that the insurance evidenced by such certificate will not be canceled or reduced without thirty (35) days prior written notice to the Contractor.
- F. The Contractor shall maintain a file of Certificates of Insurance received from each subcontractor and provide Owner with copy of each certificate.
- G. The Contractor shall furnish to the Owner copies of any endorsements subsequently issued amending coverage or limits.
- H. **CONTRACTOR'S LIABILITY INSURANCE:** Concerning the insurance described in ITEM 11.1, the Contractor shall maintain the following minimum limits:

1. Workers' Compensation

- | | |
|---|---|
| (a) State | Statutory |
| (b) Applicable Federal (e.g., Longshoremen, harbor work, work at or outside U.S. Boundaries): | Statutory |
| (c) Maritime | \$ --- |
| (d) Employer's Liability | \$100,000 Accident
\$500,000 Disease
\$500,000 Policy Limit |
| (e) Benefits Required by Union Labor Contracts: | As applicable |

2. Comprehensive General Liability (Including Premises-Operations; Independent Contractor's Protective; Products and Completed Operations; Broad Form Property Damage):

- (a) Bodily Injury:
- \$1,000,000 Each Occurrence
\$2,000,000 Aggregate, Products and Completed Operations
- (b) Property Damage:

SUPPLEMENTARY GENERAL CONDITIONS

\$1,000,000 Each Occurrence

\$1,000,000 Aggregate

- (c) Products and Completed Operations Insurance shall be maintained for a minimum of two (2) years after final payment and Contractor shall continue to provide evidence of such coverage to Owner on an annual basis during the aforementioned period.

- (d) Property Damage Liability Insurance shall include coverage for the following hazards:

X Explosion C Collapse U Underground

- (e) Contractual Liability (Hold Harmless Coverage):

- (1) Bodily Injury:

\$1,000,000 Each Occurrence

- (2) Property Damage:

\$1,000,000 Each Occurrence

\$1,000,000 Aggregate

- (f) Personal Injury, with Employment Exclusion deleted:

\$1,000,000 Aggregate

- (g) Name as Additional Insureds: Town of Naugatuck and Silver/Petrucelli + Associates, Inc.

3. Comprehensive Automobile Liability (owned, co-owned, hired):

- (a) Bodily Injury:

\$1,000,000 Each Person

\$1,000,000 Each Accident

- (b) Property Damage:

\$ 500,000 Each Occurrence

I. OWNER'S LIABILITY INSURANCE: Concerning the insurance described in ITEM 12.1:

_____ No modification required.

SUPPLEMENTARY GENERAL CONDITIONS

_____ The Contractor shall provide this insurance (normally under an Owner's Protective Liability Policy) with the following limits:

(1) Bodily Injury:

\$1,000,000 Each Occurrence
\$1,000,000 Aggregate

(2) Property Damage:

\$1,000,000 Each Occurrence
\$1,000,000 Aggregate

(3) Personal Injury, with Employment Exclusion deleted

J. PROPERTY INSURANCE: Concerning the insurance as described in ITEM 11.3:

_____ No modification required: Owner will purchase (coverage will be included for all materials and equipment furnished by the Owner which is to be incorporated or used in the project when stored off site or when in transit.).

 X Contractor shall purchase the following:

(1) _____ All Risk

 X Other: Installation Floater.

(2) _____ On the following form: (select one)

_____ Completed Value

_____ Reporting

(3) X In the Names of the Owner, Contractor, Subcontractor, and subcontractor as their interests may appear with limits as follows: (Select One)

_____ Full insurable value of the Work

 X Amount equal to the Contract sum for the Work

(If Coverage for alterations and additions to existing structures is to be included under Owner's existing coverage, specific instructions are included under Item D below).

K. OTHER INSTRUCTION RELATED TO INSURANCE _____.

ARTICLE 15 Add the following:

15.3.1 Mediation

- .1 In addition to and prior to arbitration, the parties shall endeavor to settle disputes by mediation in accordance with the Construction Industry Mediation Rules of the American Arbitration Association currently in effect unless the parties mutually agree otherwise. Demand for mediation shall be filed in writing with the other party to this Agreement and with the American Arbitration Association. A demand for mediation shall be made within a reasonable time after the claim, dispute or other matter in w\question has arisen. In no event shall the demand for mediation be made after the date when institution of legal or equitable proceedings based on such claim, dispute or other matter in question would be barred by the applicable statute of limitations.
- .2 The provisions of Article 15 notwithstanding, the Contractor expressly agrees to joinder in mediation proceedings between Owner/Architect upon specific written request of the Owner. This agreement shall be valid with the Architect's acceptance of an equal provision in their respective contracts.

END OF SECTION

AIA® Document G702™ - 1992

Application and Certificate for Payment

TO OWNER:

PROJECT: a

FROM CONTRACTOR:

VIA ARCHITECT:

APPLICATION NO: 003

PERIOD TO: General Construction

CONTRACT FOR:

CONTRACT DATE:

PROJECT NOS:

Distribution to:

OWNER:

ARCHITECT:

CONTRACTOR:

FIELD:

CONTRACTOR'S APPLICATION FOR PAYMENT

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

1. ORIGINAL CONTRACT SUM.....\$0.00
2. NET CHANGE BY CHANGE ORDERS.....\$0.00
3. CONTRACT SUM TO DATE (Line 1 + 2).....\$0.00
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703).....\$0.00
5. RETAINAGE:

- a. 0 % of Completed Work (Column D + E on G703): \$0.00 = \$0.00
- b. 0 % of Stored Material (Column F on G703): \$0.00 = \$0.00

Total Retainage (Lines 5a + 5b or Total in Column I of G703).....\$0.00

6. TOTAL EARNED LESS RETAINAGE.....\$0.00
- (Line 4 Less Line 5 Total)
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT.....\$0.00
- (Line 6 from prior Certificate)
8. CURRENT PAYMENT DUE.....\$0.00
9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 3 less Line 6) \$0.00

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	\$0.00	\$0.00
Total approved this Month	\$0.00	\$0.00
TOTALS	\$0.00	\$0.00
NET CHANGES by Change Order		\$0.00

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

CONTRACTOR:

By:

Date:

State of:

County of:

Subscribed and sworn to before me this day of

Notary Public:

My Commission expires:

ARCHITECT'S CERTIFICATE FOR PAYMENT

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

AMOUNT CERTIFIED.....\$0.00

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

ARCHITECT:

By:

Date:

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

016	APPLICATION NO:
	APPLICATION DATE:
	PERIOD TO:
	ARCHITECT'S PROJECT NO:

0.00	0.00	0.00
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**CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION
CONTRACTORS WAGE CERTIFICATION FORM**

I, _____ of _____
Officer, Owner, Authorized Rep. Company Name

do hereby certify that the _____
Company Name

Street

City

and all of its subcontractors will pay all workers on the

Project Name and Number
Street and City

the wages as listed in the schedule of prevailing rates required for such project (a copy of which is attached hereto).

Signed

Subscribed and sworn to before me this _____ day of _____, '42 _____.

Notary Public

Return to:

Connecticut Department of Labor
Wage & Workplace Standards Division
200 Folly Brook Blvd.
Wethersfield, CT 06109

Project: Maple Hill Elementary School Roof Replacement

**Minimum Rates and Classifications
for Building Construction**

ID# : B 16840

**Connecticut Department of Labor
Wage and Workplace Standards Division**

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number:
State#:

Project Town Naugatuck
FAP#:

Project: Maple Hill Elementary School Roof Replacement

CLASSIFICATION

Hourly Rate

Benefits

1a) Asbestos Worker/Insulator (Includes application of insulating materials, protective coverings, coatings, & finishes to all types of mechanical systems; application of firestopping material for wall openings & penetrations in walls, floors, ceilings - Last updated 7/21/11

36.86

25.51

1b) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters. **See Laborers Group 7**

2) Boilermaker

34.65

24.10

As of: Tuesday, August 07, 2012

Project: Maple Hill Elementary School Roof Replacement

3a) Bricklayer, Cement Mason, Concrete Finisher (including caulking), Stone Masons	32.50	25.20 + a
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3b) Tile Setter	32.94	22.42
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3c) Terrazzo Mechanics and Marble Setters	31.69	22.35
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3d) Tile, Marble & Terrazzo Finishers	26.25	19.20
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3e) Plasterer	32.50	25.20
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-----LABORERS-----

As of: Tuesday, August 07, 2012

Project: Maple Hill Elementary School Roof Replacement

4) Group 1: Laborers (common or general), acetylene burners, carpenter tenders, concrete specialists, wrecking laborers, fire watchers.	25.80	16.45
4a) Group 2: Mortar mixers, plaster tender, power buggy operators, powdermen, fireproofers/mixer/nozzleman, fence erector.	26.05	16.45
4b) Group 3: Jackhammer operators, mason tender (brick) and mason tender (cement/concrete)	26.30	16.45
4c) **Group 4: Pipelayers (Installation of water, storm drainage or sewage lines outside of the building line with P6, P7 license) (the pipelayer rate shall apply only to one or two employees of the total crew who primary task is to actually perform the mating of pipe sections) P6 and P7 rate is \$26.80	26.05	16.45
4d) Group 5: Air track operators, Sand blasters	26.55	16.45
4e) Group 6: Nuclear toxic waste removers, blasters	28.80	16.45

As of: Tuesday, August 07, 2012

Project: Maple Hill Elementary School Roof Replacement

4f) Group 7: Asbestos/lead removal and encapsulation (except it's removal from mechanical systems which are not to be scrapped)	26.80	16.45
4g) Group 8: Bottom men on open air caisson, cylindrical work and boring crew	26.30	16.45
4h) Group 9: Top men on open air caisson, cylindrical work and boring crew	25.80	16.45
4i) Group 10: Traffic Control Signalman	16.00	16.45
5) Carpenter, Acoustical Ceiling Installation, Soft Floor/Carpet Laying, Metal Stud Installation, Form Work and Scaffold Building, Drywall Hanging, Modular-Furniture Systems Installers, Lathers, Piledrivers, Resilient Floor Layers.	29.65	21.00
5a) Millwrights	30.15	21.39

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6) Electrical Worker (including low voltage wiring) (Trade License required: E1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	35.10	22.26
7a) Elevator Mechanic (Trade License required: R-1,2,5,6)	45.97	23.535+a+b
-----LINE CONSTRUCTION-----		
Groundman	23.80	3% + 13.70
Linemen/Cable Splicer	43.28	3% + 13.70
8) Glazier (Trade License required: FG-1,2)	33.78	16.90 + a

As of: Tuesday, August 07, 2012

Project: Maple Hill Elementary School Roof Replacement

9) Ironworker, Ornamental, Reinforcing, Structural, and Precast Concrete Erection	33.50	27.98 + a
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----OPERATORS----

Group 1: Crane handling or erecting structural steel or stone, hoisting engineer 2 drums or over, front end loader (7 cubic yards or over); work boat 26 ft. and over. (Trade License Required)	35.50	20.50 + a
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Group 2: Cranes (100 ton rate capacity and over); Backhoe/Excavator over 2 cubic yards; Piledriver (\$3.00 premium when operator controls hammer). (Trade License Required)	35.18	20.50 + a
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Group 3: Excavator; Backhoe/Excavator under 2 cubic yards; Cranes (under 100 ton rated capacity), Grader/Blade; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar); Grader Operator; Bulldozer Fine Grade. (slopes, shaping, laser or GPS, etc.).	34.44	20.50 + a
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Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper).	34.05	20.50 + a
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As of: Tuesday, August 07, 2012

Project: Maple Hill Elementary School Roof Replacement

Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell)	33.46	20.50 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller; Pile Testing Machine.	33.46	20.50 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	33.15	20.50 + a
Group 7: Asphalt roller, concrete saws and cutters (ride on types), vermeer concrete cutter, Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and under Mandrell).	32.81	20.50 + a
Group 8: Mechanic, grease truck operator, hydroblaster; barrier mover; power stone spreader; welding; work boat under 26 ft.; transfer machine.	32.41	20.50 + a
Group 9: Front end loader (under 3 cubic yards), skid steer loader regardless of attachments, (Bobcat or Similar): forklift, power chipper; landscape equipment (including Hydroseeder).	31.98	20.50 + a

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Project: Maple Hill Elementary School Roof Replacement

Group 10: Vibratory hammer; ice machine; diesel and air, hammer, etc.	29.94	20.50 + a
Group 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment.	29.94	20.50 + a
Group 12: Wellpoint operator.	29.88	20.50 + a
Group 13: Compressor battery operator.	29.30	20.50 + a
Group 14: Elevator operator; tow motor operator (solid tire no rough terrain).	28.16	20.50 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	27.75	20.50 + a

As of: Tuesday, August 07, 2012

Project: Maple Hill Elementary School Roof Replacement

Group 16: Maintenance Engineer/Oiler.	27.10	20.50 + a
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Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	31.41	20.50 + a
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Group 18: Power safety boat; vacuum truck; zim mixer; sweeper; (Minimum for any job requiring a CDL license).	28.99	20.50 + a
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-----PAINTERS (Including Drywall Finishing)-----

10a) Brush and Roller	30.22	16.90
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10b) Taping Only/Drywall Finishing	30.97	16.90
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As of: Tuesday, August 07, 2012

Project: Maple Hill Elementary School Roof Replacement

10c) Paperhanger and Red Label	30.72	16.90
10e) Blast and Spray	33.22	16.90
11) Plumber (excluding HVAC pipe installation) (Trade License required: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2)	38.67	25.56
12) Well Digger, Pile Testing Machine	33.01	19.40 + a
Roofer: Cole Tar Pitch	37.00	12.75 + a
Roofer: Slate, Tile, Composition, Shingles, Singly Ply and Damp/Waterproofing	35.50	12.75 + a

As of: Tuesday, August 07, 2012

Project: Maple Hill Elementary School Roof Replacement

15) Sheetmetal Worker (Trade License required for HVAC and Ductwork: SM-1,SM-2,SM-3,SM-4,SM-5,SM-6)	33.21	30.56
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16) Pipefitter (Including HVAC work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4, G-1, G-2, G-8 & G-9)	38.67	25.56
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-----TRUCK DRIVERS-----

17a) 2 Axle	27.88	17.22 + a
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17b) 3 Axle, 2 Axle Ready Mix	27.98	17.22 + a
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17c) 3 Axle Ready Mix	28.03	17.22 + a
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Project: Maple Hill Elementary School Roof Replacement

17d) 4 Axle, Heavy Duty Trailer up to 40 tons	28.08	17.22 + a
17e) 4 Axle Ready Mix	28.13	17.22 + a
17f) Heavy Duty Trailer (40 Tons and Over)	28.33	17.22 + a
17g) Specialized Earth Moving Equipment (Other Than Conventional Type on-the-Road Trucks and Semi-Trailers, Including Euclids)	28.13	17.22 + a
18) Sprinkler Fitter (Trade License required: F-1,2,3,4)	40.50	16.85 + a
19) Theatrical Stage Journeyman	22.22	6.53

As of: Tuesday, August 07, 2012

Project: Maple Hill Elementary School Roof Replacement

Welders: Rate for craft to which welding is incidental.

**Note: Hazardous waste removal work receives additional \$1.25 per hour for truck drivers.*

***Note: Hazardous waste premium \$3.00 per hour over classified rate*

Crane with 150 ft. boom (including jib) - \$1.50 extra

Crane with 200 ft. boom (including jib) - \$2.50 extra

Crane with 250 ft. boom (including jib) - \$5.00 extra

Crane with 300 ft. boom (including jib) - \$7.00 extra

Crane with 400 ft. boom (including jib) - \$10.00 extra

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyman instructing and supervising the work of each apprentice in a specific trade.

The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.

Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.

It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.

The annual adjustments will be posted on the Department of Labor's Web page: www.ct.gov/dol

The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.

All subsequent annual adjustments will be posted on our Web Site for contractor access.

As of: Tuesday, August 07, 2012

Project: Maple Hill Elementary School Roof Replacement

Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

~~Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

As of: Tuesday, August 07, 2012

Connecticut Department of Labor
Wage and Workplace Standards Division
FOOTNOTES

Please Note: If the “Benefits” listed on the schedule for the following occupations includes a letter(s) (+ a or + a+b for instance), refer to the information below.

Benefits to be paid at the appropriate prevailing wage rate for the listed occupation.

If the “Benefits” section for the occupation lists only a dollar amount, disregard the information below.

Bricklayers, Cement Masons, Cement Finishers, Concrete Finishers, Stone Masons
(Building Construction) and
(Residential- Hartford, Middlesex, New Haven, New London and Tolland Counties)

- a. Paid Holiday: Employees shall receive 4 hours for Christmas Eve holiday provided the employee works the regularly scheduled day before and after the holiday. Employers may schedule work on Christmas Eve and employees shall receive pay for actual hours worked in addition to holiday pay.

Elevator Constructors: Mechanics

- a. Paid Holidays: New Year’s Day, Memorial Day, Independence Day, Labor Day, Veterans’ Day, Thanksgiving Day, Christmas Day, plus the Friday after Thanksgiving.
- b. Vacation: Employer contributes 8% of basic hourly rate for 5 years or more of service or 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

Glaziers

- a. Paid Holidays: Labor Day and Christmas Day.

Power Equipment Operators
(Heavy and Highway Construction & Building Construction)

- a. Paid Holidays: New Year’s Day, Good Friday, Memorial day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday. Holidays falling on Saturday may be observed on Saturday, or if the employer so elects, on the preceding Friday.

Ironworkers

- a. Paid Holiday: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

Laborers (Tunnel Construction)

- a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. No employee shall be eligible for holiday pay when he fails, without cause, to work the regular work day preceding the holiday or the regular work day following the holiday.

Roofers

- a. Paid Holidays: July 4th, Labor Day, and Christmas Day provided the employee is employed 15 days prior to the holiday.

Sprinkler Fitters

- a. Paid Holidays: Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day, provided the employee has been in the employment of a contractor 20 working days prior to any such paid holiday.

Truck Drivers

(Heavy and Highway Construction & Building Construction)

- a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas day, and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.

Statute 31-55a

Last Updated: April 22, 2010

You are here: [DOL Web Site](#) » [Wage and Workplace Standards](#) » Statute 31-55a

- Special Notice -

To All State and Political Subdivisions, Their Agents, and Contractors

Connecticut General Statute 31-55a - Annual adjustments to wage rates by contractors doing state work.

Each contractor that is awarded a contract on or after October 1, 2002, for (1) the construction of a state highway or bridge that falls under the provisions of section 31-54 of the general statutes, or (2) the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project that falls under the provisions of section 31-53 of the general statutes shall contact the Labor Commissioner on or before July first of each year, for the duration of such contract, to ascertain the prevailing rate of wages on an hourly basis and the amount of payment or contributions paid or payable on behalf of each mechanic, laborer or worker employed upon the work contracted to be done, and shall make any necessary adjustments to such prevailing rate of wages and such payment or contributions paid or payable on behalf of each such employee, effective each July first.

- The prevailing wage rates applicable to any contract or subcontract awarded on or after October 1, 2002 are subject to annual adjustments each July 1st for the duration of any project which was originally advertised for bids on or after October 1, 2002.
- Each contractor affected by the above requirement shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.
- It is the **contractor's** responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's Web Site. The annual adjustments will be posted on the Department of Labor Web page: www.ctdol.state.ct.us. For those without internet access, please contact the division listed below.
- The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project. All subsequent annual adjustments will be posted on our Web Site for contractor access.

Any questions should be directed to the Contract Compliance Unit, Wage and Workplace Standards Division, Connecticut Department of Labor, 200 Folly Brook Blvd., Wethersfield, CT 06109 at (860)263-6790.

←-- [Workplace Laws](#)

Published by the Connecticut Department of Labor, Project Management Office

Information Bulletin

Occupational Classifications

The Connecticut Department of Labor has the responsibility to properly determine "job classification" on prevailing wage projects covered under C.G.S. Section 31-53.

Note: This information is intended to provide a sample of some occupational classifications for guidance purposes only. It is not an all-inclusive list of each occupation's duties. This list is being provided only to highlight some areas where a contractor may be unclear regarding the proper classification.

Below are additional clarifications of specific job duties performed for certain classifications:

- **ASBESTOS WORKERS**

Applies all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems.

- **ASBESTOS INSULATOR**

Handle, install apply, fabricate, distribute, prepare, alter, repair, dismantle, heat and frost insulation, including penetration and fire stopping work on all penetration fire stop systems.

- **BOILERMAKERS**

Erects hydro plants, incomplete vessels, steel stacks, storage tanks for water, fuel, etc. Builds incomplete boilers, repairs heat exchanges and steam generators.

- **BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, MARBLE MASONS, PLASTERERS, STONE MASONS, PLASTERERS. STONE MASONS, TERRAZZO WORKERS, TILE SETTERS**

Lays building materials such as brick, structural tile and concrete cinder, glass, gypsum, terra cotta block. Cuts, tools and sets marble, sets stone, finishes concrete, applies decorative steel, aluminum and plastic tile, applies cements, sand, pigment and marble chips to floors, stairways, etc.

- **CARPENTERS, MILLWRIGHTS. PILEDRIVERMEN. LATHERS. RESILIENT FLOOR LAYERS, DOCK BUILDERS, DIKERS, DIVER TENDERS**

Constructs, erects, installs and repairs structures and fixtures of wood, plywood and wallboard. Installs, assembles, dismantles, moves industrial machinery. Drives piling into ground to provide foundations for structures such as buildings and bridges, retaining walls for earth embankments, such as cofferdams. Fastens wooden, metal or rockboard lath to walls, ceilings and partitions of buildings, acoustical tile layer, concrete form builder. Applies firestopping materials on fire resistive joint systems only. Installation of curtain/window walls only where attached to wood or metal studs. Installation of insulated material of all types whether blown, nailed or attached in other ways to walls, ceilings and floors of buildings. Assembly and installation of modular furniture/furniture systems. Free-standing furniture is not covered. This includes free standing: student chairs, study top desks, book box desks, computer furniture, dictionary stand, atlas stand, wood shelving, two-position information access station, file cabinets, storage cabinets, tables, etc.

- **CLEANING LABORER**

The clean up of any construction debris and the general cleaning, including sweeping, wash down, mopping, wiping of the construction facility, washing, polishing, dusting, etc., prior to the issuance of a certificate of occupancy falls under the *Labor classification*.

- **DELIVERY PERSONNEL**

If delivery of supplies/building materials is to one common point and stockpiled there, prevailing wages are not required. If the delivery personnel are involved in the distribution of the material to multiple locations within the construction site then they would have to be paid prevailing wages for the type of work performed: laborer, equipment operator, electrician, ironworker, plumber, etc.

An example of this would be where delivery of drywall is made to a building and the delivery personnel distribute the drywall from one "stockpile" location to further sub-locations on each floor. Distribution of material around a construction site is the job of a laborer/tradesman and not a delivery personnel.

- **ELECTRICIANS**

Install, erect, maintenance, alteration or repair of any wire, cable, conduit, etc., which generates, transforms, transmits or uses electrical energy for light, heat, power or other purposes, including the Installation or maintenance of telecommunication, LAN wiring or computer equipment, and low voltage wiring.

***License required per Connecticut General Statutes: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9.**

- **ELEVATOR CONSTRUCTORS**

Install, erect, maintenance and repair of all types of elevators, escalators, dumb waiters and moving walks. ***License required by Connecticut General Statutes: R-1,2,5,6.**

- **FORK LIFT OPERATOR**

Laborers Group 4) Mason Tenders - operates forklift solely to assist a mason to a maximum height of nine (9) feet only.

Power Equipment Operator Group 9 - operates forklift to assist any trade, and to assist a mason to a height over nine (9) feet.

- **GLAZIERS**

Glazing wood and metal sash, doors, partitions, and 2 story aluminum storefronts. Installs glass windows, skylights, store fronts and display cases or surfaces such as building fronts, interior walls, ceilings and table tops and metal store fronts. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers which requires either a blended rate or equal composite workforce.

- **IRONWORKERS**

Erection, installation and placement of structural steel, precast concrete, miscellaneous iron, ornamental iron, metal curtain wall, rigging and reinforcing steel. Handling, sorting, and installation of reinforcing steel (rebar). Metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers which requires either a blended rate or equal composite workforce. Insulated metal and insulated composite panels are still installed by the Ironworker.

- **INSULATOR**

Installing fire stopping systems/materials for "Penetration Firestop Systems": transit to cables, electrical conduits, insulated pipes, sprinkler pipe penetrations, ductwork behind radiation, electrical cable trays, fire rated pipe penetrations, natural polypropylene, HVAC ducts, plumbing bare metal, telephone and communication wires, and boiler room ceilings. Past practice using the applicable licensed trades, Plumber, Sheet Metal, Sprinkler Fitter, and Electrician, is not inconsistent with the Insulator classification and would be permitted.

- **LABORERS**

Acetylene burners, asphalt rakers, chain saw operators, concrete and power buggy operator, concrete saw operator, fence and guard rail erector (except metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation.), hand operated concrete vibrator operator, mason tenders, pipelayers (installation of storm drainage or sewage lines on the street only), pneumatic drill operator, pneumatic gas and electric drill operator, powermen and wagon drill operator, air track operator, block paver, curb setters, blasters, concrete spreaders.

- **PAINTERS**

Maintenance, preparation, cleaning, blasting (water and sand, etc.), painting or application of any protective coatings of every description on all bridges and appurtenances of highways, roadways, and railroads. Painting, decorating, hardwood finishing, paper hanging, sign writing, scenic art work and drywall hhg for any and all types of building and residential work.

- **LEAD PAINT REMOVAL**

Painter's Rate

1. Removal of lead paint from bridges.
2. Removal of lead paint as preparation of any surface to be repainted.
3. Where removal is on a Demolition project prior to reconstruction.

Laborer's Rate

1. Removal of lead paint from any surface NOT to be repainted.
2. Where removal is on a *TOTAL* Demolition project only.

- **PLUMBERS AND PIPEFITTERS**

Installation, repair, replacement, alteration or maintenance of all plumbing, heating, cooling and piping. ****License required per Connecticut General Statutes: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2 S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4.***

- **POWER EQUIPMENT OPERATORS**

Operates several types of power construction equipment such as compressors, pumps, hoists, derricks, cranes, shovels, tractors, scrapers or motor graders, etc. Repairs and maintains equipment. ***License required, crane operators only, per Connecticut General Statutes.**

- **ROOFERS**

Covers roofs with composition shingles or sheets, wood shingles, slate or asphalt and gravel to waterproof roofs, including preparation of surface. (tear-off and/or removal of any type of roofing and/or clean-up of any and all areas where a roof is to be relaid)

- **SHEETMETAL WORKERS**

Fabricate, assemble, install and repair sheetmetal products and equipment in such areas as ventilation, air-conditioning, warm air heating, restaurant equipment, architectural sheet metal work, sheetmetal roofing, and aluminum gutters.

Fabrication, handling, assembling, erecting, altering, repairing, etc. of coated metal material panels and composite metal material panels when used on building exteriors and interiors as soffits, fascia, louvers, partitions, wall panel siding, canopies, cornice, column covers, awnings, beam covers, cladding, sun shades, lighting troughs, spires, ornamental roofing, metal ceilings, mansards, copings, ornamental and ventilation hoods, vertical and horizontal siding panels, trim, etc.

The sheet metal classification also applies to the vast variety of coated metal material panels and composite metal material panels that have evolved over the years as an alternative to conventional ferrous and non-ferrous metals like steel, iron, tin, copper, brass, bronze, aluminum, etc. Insulated metal and insulated composite panels are still installed by the Iron Worker. Fabrication, handling, assembling, erecting, altering, repairing, etc. of architectural metal roof, standing seam roof, composite metal roof, metal and composite bathroom/toilet partitions, aluminum gutters, metal and composite lockers and shelving, kitchen equipment, and walk-in coolers.

- **SPRINKLER FITTERS**

Installation, alteration, maintenance and repair of fire protection sprinkler systems.

***License required per Connecticut General Statutes: F-1,2,3,4.**

- **TILE MARBLE AND TERRAZZO FINISHERS**

Assists and tends the tile setter, marble mason and terrazzo worker in the performance of their duties.

- **TRUCK DRIVERS**

Definitions:

1) “Site of the work” (29 Code of Federal Regulations (CFR) 5.2(l)(b) is the physical place or places where the building or work called for in the contract will remain and any other site where a significant portion of the building or work is constructed, provided that such site is established specifically for the performance of the contract or project;

(a) Except as provided in paragraph (l) (3) of this section, job headquarters, tool yards, batch plants, borrow pits, etc. are part of the “site of the work”; provided they are dedicated exclusively, or nearly so, to the performance of the contract or project, and provided they are adjacent to “the site of work” as defined in paragraph (e)(1) of this section;

(b) Not included in the “site of the work” are permanent home offices, branch plant establishments, fabrication plants, tool yards etc, of a contractor or subcontractor whose location and continuance in operation are determined wholly without regard to a particular State or political subdivision contract or uncertain and indefinite periods of time involved of a few seconds or minutes duration and where the failure to count such time is due to consideration justified by industrial realities (29 CFR 785.47)

2) “Engaged to wait” is waiting time that belongs to and is controlled by the employer which is an integral part of the job and is therefore compensable as hours worked. (29 CFR 785.15)

3) “Waiting to be engaged” is waiting time that an employee can use effectively for their own purpose and is not compensable as hours worked. (29 CFR 785.16)

4) “De Minimus” is a rule that recognizes that unsubstantial or insignificant periods of time which cannot as a practical administrative matter be precisely recorded for payroll purposes, may be disregarded. This rule applies only where there are uncertain and indefinite periods of time involved of a short duration and where the failure to count such time is due to consideration justified by worksite realities. For example, with respect to truck drivers on prevailing wage sites, this is typically less than 15 minutes at a time.

Coverage of Truck Drivers on State or Political subdivision Prevailing Wage Projects

Truck drivers are covered for payroll purposes under the following conditions:

- Truck Drivers for time spent working on the site of the work.
- Truck Drivers for time spent loading and/or unloading materials and supplies on the site of the work, if such time is not de minimus

- Truck drivers transporting materials or supplies between a facility that is deemed part of the site of the work and the actual construction site.
- Truck drivers transporting portions of the building or work between a site established specifically for the performance of the contract or project where a significant portion of such building or work is constructed and the physical places where the building or work outlined in the contract will remain.

For example: Truck drivers delivering asphalt are covered under prevailing wage while "engaged to wait" on the site and when directly involved in the paving operation, provided the total time is not "de minimus"

Truck Drivers are not covered in the following instances:

- Material delivery truck drivers while off "the site of the work"
- Truck Drivers traveling between a prevailing wage job and a commercial supply facility while they are off the "site of the work"
- Truck drivers whose time spent on the "site of the work" is de minimus, such as under 15 minutes at a time, merely to drop off materials or supplies, including asphalt.

These guidelines are similar to U.S. Labor Department policies. The application of these guidelines may be subject to review based on factual considerations on a case by case basis.

For example:

- Material men and deliverymen are not covered under prevailing wage as long as they are not directly involved in the construction process. If, they unload the material, they would then be covered by prevailing wage for the classification they are performing work in: laborer, equipment operator, etc.
- Hauling material off site is not covered provided they are not dumping it at a location outlined above.
- Driving a truck on site and moving equipment or materials on site would be considered covered work, as this is part of the construction process.

Any questions regarding the proper classification should be directed to:

*Public Contract Compliance Unit
Wage and Workplace Standards Division
Connecticut Department of Labor
200 Folly Brook Blvd, Wethersfield, CT 06109
(860) 263-6543*

Sec. 31-53b. Construction safety and health course. New miner training program. Proof of completion required for mechanics, laborers and workers on public works projects. Enforcement. Regulations. Exceptions. (a) Each contract for a public works project entered into on or after July 1, 2009, by the state or any of its agents, or by any political subdivision of the state or any of its agents, described in subsection (g) of section 31-53, shall contain a provision requiring that each contractor furnish proof with the weekly certified payroll form for the first week each employee begins work on such project that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53 on such public works project, pursuant to such contract, has completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, has completed a new miner training program approved by the Federal Mine Safety and Health Administration in accordance with 30 CFR 48 or, in the case of telecommunications employees, has completed at least ten hours of training in accordance with 29 CFR 1910.268.

(b) Any person required to complete a course or program under subsection (a) of this section who has not completed the course or program shall be subject to removal from the worksite if the person does not provide documentation of having completed such course or program by the fifteenth day after the date the person is found to be in noncompliance. The Labor Commissioner or said commissioner's designee shall enforce this section.

(c) Not later than January 1, 2009, the Labor Commissioner shall adopt regulations, in accordance with the provisions of chapter 54, to implement the provisions of subsections (a) and (b) of this section. Such regulations shall require that the ten-hour construction safety and health courses required under subsection (a) of this section be conducted in accordance with federal Occupational Safety and Health Administration Training Institute standards, or in accordance with Federal Mine Safety and Health Administration Standards or in accordance with 29 CFR 1910.268, as appropriate. The Labor Commissioner shall accept as sufficient proof of compliance with the provisions of subsection (a) or (b) of this section a student course completion card issued by the federal Occupational Safety and Health Administration Training Institute, or such other proof of compliance said commissioner deems appropriate, dated no earlier than five years before the commencement date of such public works project.

(d) This section shall not apply to employees of public service companies, as defined in section 16-1, or drivers of commercial motor vehicles driving the vehicle on the public works project and delivering or picking up cargo from public works projects provided they perform no labor relating to the project other than the loading and unloading of their cargo.

(P.A. 06-175, S. 1; P.A. 08-83, S. 1.)

History: P.A. 08-83 amended Subsec. (a) by making provisions applicable to public works project contracts entered into on or after July 1, 2009, replacing provision re total cost of work with reference to Sec. 31-53(g), requiring proof in certified payroll form that new mechanic, laborer or worker has completed a 10-hour or more construction safety course and adding provision re new miner training program, amended Subsec. (b) by substituting "person" for "employee" and adding "or program", amended Subsec. (c) by adding "or in accordance with Federal Mine Safety and Health Administration Standards" and setting new deadline of January 1, 2009, deleted former Subsec. (d) re "public building", added new Subsec. (d) re exemptions for public service company employees and delivery drivers who perform no labor other than delivery and made conforming and technical changes, effective January 1, 2009.

Informational Bulletin

THE 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE, PROGRAM OR TRAINING

(Applicable to public works contracts as described by Conn. Gen. Stat. § 31-53(g)
entered into *on or after July 1, 2009*)

- (1) This requirement was created by Public Act No. 08-83, which is codified in Section 31-53b of the Connecticut General Statutes;
- (2) The course, program or training is required for public works contracts as described by Conn. Gen. Stat. § 31-53(g) entered into on or after July 1, 2009;
- (3) It is required of private workers (not state or municipal workers) and apprentices who perform the work of a mechanic, laborer or worker pursuant to the classifications of labor under Conn. Gen. Stat. § 31-53 on a public works project as described by Conn. Gen. Stat. § 31-53(g);
- (4) The ten-hour construction safety and health course, program or training pertains to the ten-hour Outreach Course conducted in accordance with federal OSHA Training Institute standards, a new mining training program approved by the Federal Mine Safety and Health Administration in accordance with 30 C.F. R. 48, or, for telecommunications workers, a ten-hour training course conducted in accordance with federal OSHA standard, 29 CFR 1910.268;
- (5) The internet website for the federal OSHA Training Institute is http://www.osha.gov/fso/ote/training/edcenters/fact_sheet.html;
- (6) The statutory language leaves it to the contractor and its employees to determine who pays for the cost of the ten-hour Outreach Course;
- (7) Proof of course, program or training completion shall be demonstrated through the presentation of a “completion document” (card, document, certificate or other written record issued by federal OSHA or by the Federal Mine Safety and Health Administration) as defined by Conn. State Agencies Regs. § 31-53b-1(2).
- (8) Any completion document with an issuance date more than 5 years prior to the commencement date of the public works project shall not constitute proof of compliance with § 31-53b;
- (9) For each person who performs the duties of a mechanic, laborer or worker on a public works project, the contractor shall affix a copy of the completion document

to the certified payroll required to be submitted to the contracting agency for such project on which such worker's name first appears;

- (10) Any mechanic, laborer or worker on a public works project found to be in non-compliance shall be subject to removal from the project if such employee does not provide satisfactory proof of course completion to the Labor Commissioner by the fifteenth day after the date the employee is determined to be in noncompliance;
- (11) Any such employee who is determined to be in noncompliance may continue to work on a public works project for a maximum of fourteen consecutive calendar days while bringing his or her status into compliance;
- (12) The statute provides the minimum standards required for the completion of a construction safety and health course, program or training by employees on public works contracts; any contractor can exceed these minimum requirements.;
- (13) Regulations pertaining to § 31-53b are located at Conn. State Agencies Regs. §31-53b-1 *et seq.*, and are effective May 5, 2009. The regulations are posted on the CTDOL website;
- (14) Any questions regarding this statute or the regulations may be directed to the Wage and Workplace Standards Division of the Connecticut Labor Department via the internet website of <http://www.ctdol.state.ct.us/wgwkstnd/wgemenu.htm>; or by telephone at (860)263-6790.

THE ABOVE INFORMATION IS PROVIDED EXCLUSIVELY AS AN EDUCATIONAL RESOURCE, AND IS NOT INTENDED AS A SUBSTITUTE FOR LEGAL INTERPRETATIONS WHICH MAY ULTIMATELY ARISE CONCERNING THE CONSTRUCTION OF THE STATUTE OR THE REGULATIONS.

November 29, 2006

Notice
To All Mason Contractors and Interested Parties
Regarding Construction Pursuant to Section 31-53 of the
Connecticut General Statutes (Prevailing Wage)

The Connecticut Labor Department Wage and Workplace Standards Division is empowered to enforce the prevailing wage rates on projects covered by the above referenced statute.

Over the past few years the Division has withheld enforcement of the rate in effect for workers who operate a forklift on a prevailing wage rate project due to a potential jurisdictional dispute.

The rate listed in the schedules and in our Occupational Bulletin (see enclosed) has been as follows:

Forklift Operator:

- **Laborers (Group 4) Mason Tenders** - operates forklift solely to assist a mason to a maximum height of nine feet only.
- **Power Equipment Operator (Group 9)** - operates forklift to assist any trade and to assist a mason to a height over nine feet.

The U.S. Labor Department conducted a survey of rates in Connecticut but it has not been published and the rate in effect remains as outlined in the above Occupational Bulletin.

Since this is a classification matter and not one of jurisdiction, effective January 1, 2007 the Connecticut Labor Department will enforce the rate on each schedule in accordance with our statutory authority.

Your cooperation in filing appropriate and accurate certified payrolls is appreciated.

[New] In accordance with Section 31-53b(a) of the C.G.S. each contractor shall provide a copy of the OSHA 10 Hour Construction Safety and Health Card for each employee, to be attached to the first certified payroll on the project.

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS											
In accordance with Connecticut General Statutes, 31-53 Certified Payrolls with a statement of compliance shall be submitted monthly to the contracting agency.											
Connecticut Department of Labor Wage and Workplace Standards Division 200 Folly Brook Blvd. Wethersfield, CT 06109											
WEEKLY PAYROLL											
CONTRACTOR NAME AND ADDRESS:											
SUBCONTRACTOR NAME & ADDRESS											
WORKER'S COMPENSATION INSURANCE CARRIER											
POLICY #											
EFFECTIVE DATE:											
EXPIRATION DATE:											
TOTAL DEDUCTIONS											
FICA											
FEDERAL											
STATE											
WITH- HOLDING											
WITH- HOLDING											
LIST OTHER											
GROSS PAY FOR THIS PREVAILING RATE JOB											
CHECK # AND NET PAY											
GROSS PAY FOR ALL WORK PERFORMED THIS WEEK											
TYPE OF FRINGE BENEFITS											
Per Hour 1 through 6 (see back)											
BASE HOURLY RATE											
TOTAL FRINGE BENEFIT PLAN CASH											
1. \$											
2. \$											
3. \$											
4. \$											
5. \$											
6. \$											
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O-TIME											
Base Rate											
Cash Fringe											
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6. \$											
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***FRINGE BENEFITS EXPLANATION (P):**

Bona fide benefits paid to approved plans, funds or programs, except those required by Federal or State Law (unemployment tax, worker's compensation, income taxes, etc.).

Please specify the type of benefits provided:

- 1) Medical or hospital care _____ 4) Disability _____
2) Pension or retirement _____ 5) Vacation, holiday _____
3) Life Insurance _____ 6) Other (please specify) _____

CERTIFIED STATEMENT OF COMPLIANCE

For the week ending date of _____,

I, _____ of _____, (hereafter known as

Employer) in my capacity as _____ (title) do hereby certify and state:

Section A:

1. All persons employed on said project have been paid the full weekly wages earned by them during the week in accordance with Connecticut General Statutes, section 31-53, as amended. Further, I hereby certify and state the following:

- a) The records submitted are true and accurate;
- b) The rate of wages paid to each mechanic, laborer or workman and the amount of payment or contributions paid or payable on behalf of each such employee to any employee welfare fund, as defined in Connecticut General Statutes, section 31-53 (h), are not less than the prevailing rate of wages and the amount of payment or contributions paid or payable on behalf of each such employee to any employee welfare fund, as determined by the Labor Commissioner pursuant to subsection Connecticut General Statutes, section 31-53 (d), and said wages and benefits are not less than those which may also be required by contract;
- c) The Employer has complied with all of the provisions in Connecticut General Statutes, section 31-53 (and Section 31-54 if applicable for state highway construction);
- d) Each such employee of the Employer is covered by a worker's compensation insurance policy for the duration of his employment which proof of coverage has been provided to the contracting agency;
- e) The Employer does not receive kickbacks, which means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided directly or indirectly, to any prime contractor, prime contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a prime contractor in connection with a subcontractor relating to a prime contractor; and
- f) The Employer is aware that filing a certified payroll which he knows to be false is a class D felony for which the employer may be fined up to five thousand dollars, imprisoned for up to five years or both.

2. OSHA~The employer shall affix a copy of the construction safety course, program or training completion document to the certified payroll required to be submitted to the contracting agency for this project on which such employee's name first appears.

(Signature) (Title) Submitted on (Date)

Section B: Applies to CONNDOT Projects ONLY

That pursuant to CONNDOT contract requirements for reporting purposes only, all employees listed under Section B who performed work on this project are not covered under the prevailing wage requirements defined in Connecticut General Statutes Section 31-53.

(Signature) (Title) Submitted on (Date)

Note: CTDOL will assume all hours worked were performed under Section A unless clearly delineated as Section B WWS-CP1 as such. Should an employee perform work under both Section A and Section B, the hours worked and wages paid must be segregated for reporting purposes.

*****THIS IS A PUBLIC DOCUMENT*****

*****DO NOT INCLUDE SOCIAL SECURITY NUMBERS*****

**Weekly Payroll Certification For
Public Works Projects (Continued)**

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

Week-Ending Date: _____
Contractor or Subcontractor Business Name: _____

WEEKLY PAYROLL

[illegible]

*IF REQUIRED

Naugatuck Public Schools

2013-2014 SCHOOL YEAR CALENDAR

AUGUST					
M	T	W	Th	F	
			1	2	
5	6	7	8	9	
12	13	14	15	16	
19	20	21	22	23	
26	27	28	29	30	

FEBRUARY 18/113					
M	T	W	Th	F	
3	4	5	6	7	
10	11	12	13	14	
17	18	19	20	21	
24	25	26	27	28	

3 Snow date for conferences

4-7 Kindergarten Registration
17, 18 Washington/Lincoln Birthdays
Observed – **No School**

SEPTEMBER 19/19					
M	T	W	Th	F	
2	3	4	5	6	
9	10	11	12	13	
16	17	18	19	20	
23	24	25	26	27	
30					

2 Labor Day – No School
3 Teacher day – No school
4 First day of School - Students
10 Open House – Elementary Schools,
Early Dismissal for Grades PreK-4 only
12 Open House – Intermediate Schools,
Early Dismissal for Grades 5-6 only
17 Open House – Middle School Early
Dismissal for Grades 7-8 only
19 Open House – High School, Early
Dismissal for Grades 9-12 only

MARCH 21/134					
M	T	W	Th	F	
3	4	5	6	7	
10	11	12	13	14	
17	18	19	20	21	
24	25	26	27	28	
31					

19, 20, 21 Parent Conferences 7-12; early
dismissal for 7-12 students only

OCTOBER 22/41					
M	T	W	Th	F	
	1	2	3	4	
7	8	9	10	11	
14	15	16	17	18	
21	22	23	24	25	
28	29	30	31		

14 Columbus Day – No School
23, 24, 25 Parent Conferences PreK-12;
early dismissal for all students

APRIL 17/151					
M	T	W	Th	F	
	1	2	3	4	
7	8	9	10	11	
14	15	16	17	18	
21	22	23	24	25	
28	29	30			

18 Good Friday-No School
14-17 Spring Recess – **No School** - Tuttle
Office Open

NOVEMBER 18/59					
M	T	W	Th	F	
				1	
4	5	6	7	8	
11	12	13	14	15	
18	19	20	21	22	
25	26	27	28	29	

11 Veteran's Day – No School
27 Early Dismissal for all Students
28 Thanksgiving Break – No School
29 Thanksgiving Break – No School

MAY 21/172					
M	T	W	Th	F	
			1	2	
5	6	7	8	9	
12	13	14	15	16	
19	20	21	22	23	
26	27	28	29	30	

26 Memorial Day – No School

DECEMBER 15/74					
M	T	W	Th	F	
2	3	4	5	6	
9	10	11	12	13	
16	17	18	19	20	
23	24	25	26	27	
30	31				

20 Full Day of School
23 Winter Break – Tuttle Office Open
24 Winter Break – No School
25 Winter Break – No School
26 Winter Break – Tuttle Office Open
27 Winter Break – Tuttle Office Open
30 Winter Break – Tuttle Office Open
31 Winter Break – No School

JUNE 8/180					
M	T	W	Th	F	
2	3	4	5	6	
9	10	11	12	13	
16	17	18	19	20	
23	24	25	26	27	
30					

11 Tentative Last Day of School students and
staff – **Early Dismissal for all Students**

JANUARY 21/95					
M	T	W	Th	F	
		1	2	3	
6	7	8	9	10	
13	14	15	16	17	
20	21	22	23	24	
27	28	29	30	31	

1 Winter Break – No School
20 M.L. King Jr. Day – No School
27, 28, 29 Parent Conferences PreK-6;
early dismissal for Pre-K-6
students only
30, 31, Feb. 3 Snow dates for parent
conferences

JULY 2014					
M	T	W	Th	F	
	1	2	3	4	
7	8	9	10	11	
14	15	16	17	18	
21	22	23	24	25	
28	29	30	31		

By law there must be 180 days of school prior to July 1, 2014. Naugatuck will have 180 days prior to July 1, 2014.

Note: Cancelled school days are made up by extending the school year after the tentative last scheduled day in June.

ROOF REPLACEMENT

**MAPLE HILL ELEMENTARY SCHOOL
641 MAPLE HILL ROAD
NAUGATUCK, CT 06770
STATE PROJECT. NO. TMP-088-CWDX**

S/P+A PROJECT NO. 11.179

<u>Drawing Number</u>	<u>Drawing Name</u>
CS	COVER SHEET
A1	ROOF PLAN & INFORMATION
A2	ROOF DETAILS
A3	ROOF DETAILS

END OF SECTION

1 PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 PROJECT DESCRIPTION

- A. The Project generally includes, but is not necessary limited to the following major elements:
 - 1. Removal of existing built-up roofing, insulation, cant strips and tapered edges, perimeter roofing, flashings and metal gravel stops, drip edges and caps.
 - 2. Off site disposal of all removed materials.
 - 3. Removal and replacement of deteriorated wood blocking and metal decking.
 - 4. Removal and replacement of existing steel door and hardware. Paint new.
 - 5. Removal and replacement of existing metal framed skylight and associated components.
 - 6. Installation of modified bituminous membranes, mopped and mechanically attached underlayment, flat and tapered insulations.
 - 7. New flashings, gravel stops, drip edges, caps, scuppers and other trim metal work as detailed and specified and sealants.
 - 8. Removal of existing and installation of new roof drains and related piping and pipe insulation as indicated in the construction documents.

1.3 CONTRACTOR USE OF PREMISES

- A. General: Limit use of the premises to construction activities in areas indicated; allow for Owner occupancy and use by the public.
- B. Confine operations to as small work areas and accessways as possible. As much as possible and without damage to the finishes, doors and related building systems, access the project area via the service doors designated by the Owner for the small portion of interior work.
- C. Keep driveways and entrances serving the premises clear and available to the Owner and the occupants at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.
 - 1. Under no circumstances is there to be storage of materials or equipment on any roofs before, during and after work.

- D. Maintain existing egress patterns, exit doors and means of egress during construction, which will include the provision of temporary walkways, sidewalks or other means necessary to provide adequate life safety for the building occupants, particularly at exitways which must continue to be open and serviceable while adjacent construction activity occurs.
- E. Use of the Existing Building: Maintain the existing building in a weathertight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.
 - 1. Maintain roof drains in the functioning condition at the end of each work day.

1.4 OWNER OCCUPANCY

- A. Full Owner Occupancy: The Owner will occupy the site and existing building during the entire construction period, with children on site during the school year. Cooperate with the Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with the Owner's operations. Pre-schedule construction operations with the Owner for areas that must be evacuated for extended periods, giving the Owner the opportunity to relocate operations to non-affected areas.

1.5 SPECIAL REQUIREMENTS

- A. Under no circumstances shall the students or buildings' occupants be subjected to fumes or other deleterious effects of the operation on days that school is in session. Should material delivery, demolition or construction operations, inclement weather or related schedule conditions produce this situation (as determined by the Principal), the Contractor shall be required to suspend operations that produce the offending effects until such time as the building is not occupied, or as approved by the Owner.
 - 1. Meaningful Instruction: Meaningful instruction (as determined by the Principal) must be facilitated and possible within the building at all times. This requirement may limit the Contractor's demolition and construction operations as the distraction represented by hammering, material movement, etc. may disrupt classes. No down time or mobilization charges will be permitted should the meaningful instruction requirement suspend the Contractor's operations for any length of time.
 - 2. Mastery Tests: During the latter part of September and into October, Connecticut Mastery Tests may be administered to portions of the student population, which requires absolute concentration on the part of the students. The Principal may prohibit roofing operations during the administration of these tests. Cooperate with the principal to determine the

schedule, locations of the testing and where operations may proceed with disrupting classroom or roofing operations.

- B. Preconstruction Meeting: Prior to any work on site, the Contractor(s) must convene, attend and document a preconstruction meeting with the Architect, General Contractor's staff and School personnel to determine the delivery and installation coordination requirements and the expectations for the execution and completion of the project. The meeting must produce a comprehensive, cooperatively produced schedule for the contractor's operations during the course of the work.

2 PART 2 – PRODUCTS

Not Used

3 PART 3 – EXECUTION

Not Used

END OF SECTION

1 PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Quantity Allowances
- B. Schedule of Values
- C. Application for Payment
- D. Change procedures
- E. Measurement and Payment – Unit Prices
- F. Alternates

1.2 RELATED SECTIONS

- A. Section 01300 – Submittals: Schedule of Values
- B. Section 01600 – Material and Equipment: Product substitutions

1.3 QUANTITY AND UNIT COST ALLOWANCES

- A. Costs Included in Allowances: Cost of Product to Contractor or Subcontractor, less applicable trade discounts; delivery to site and applicable taxes.
- B. Architect Responsibilities:
 - 1. Consult with Contractor in consideration and selection of Products, suppliers and installers.
 - 2. Select Products in consultation with Owner and transmit decision to Contractor.
 - 3. Prepare Change Order.
- C. Contractor Responsibilities:
 - 1. Assist Architect in determination of scope of work, selection of Products, suppliers and installers.
 - 2. Obtain proposals from suppliers and installers and offer recommendations.
 - 3. On notification of selection by Architect execute purchase agreement with designated supplier and installer.
 - 4. Arrange for and process shop drawings, product data and samples. Arrange for delivery.
 - 5. Promptly inspect Products upon delivery for completeness, damage and defects. Submit claims for transportation damage.
- D. Funds will be drawn from Allowances only by Change Order.
- E. Allowances listed are to be included in the base bid proposal as listed on the Bid Form. Their values will be tracked during the course of the project, with deletions from the contract price by change order should the listed quantities not be

removed or installed; or added to the contract price by change order should quantities exceeding those referenced in the Allowances be required by field conditions.

F. Allowances:

1. **Allowance No. 1 – Metal Deck Replacement:** As it is impractical to quantify the amount of metal roof decking that may be deteriorated under the existing roof membranes at the time of bid, the Contractor shall include the cost based on the Contractor's unit price an allowance of the metal roof decking area indicated in the construction documents, as indicated in Section 05300. Should metal decking be encountered that at the Architect's direction require removal, the Contractor shall do so, deducting the amount of the affected installation or installations from the allowance amount referenced below. Removal and replacement shall include all fasteners, accessories, removal and disposal (including all manpower, tools and materials). The metal deck replacement allowance shall be 1,600 square feet of the total metal roof deck area for which membranes are being removed and replaced, as indicated in the construction documents.
2. Allowances that are unused, partially unused or omitted from the Contract shall be credited to the Owner at the full Unit Price value with no pro-ration.

1.4 SCHEDULE OF VALUES

- A. Submit typed schedule on AIA Form G703 – Application and Certificate for Payment Continuation Sheet.
- B. Submit Schedule of Values in duplicate within fifteen (15) days after date of Owner-Contractor Agreement established in Notice to Proceed.
- C. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the major specification Section. Identify site mobilization, bonds and insurance. Elevations should be broken down by area into material and labor costs.
- D. Include within each line item, a direct proportional amount of Contractor's overhead and profit.
- E. Revise schedule to list approved Change Orders, with each Application for Payment.
- F. If work is to be scheduled during overtime or weekend hours, it will be the Contractor's responsibility to cover the cost for custodians.

1.5 APPLICATIONS FOR PAYMENT

- A. Submit three (3) copies of each application on AIA Form G702 – Application and Certificate for Payment.
- B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.
- C. Provide insurance certificates and verification of material in storage included in the application for payment.

1.6 CHANGE PROCEDURES

- A. The Architect will advise of minor changes in the Work not involving an adjustment to Contract Sum/Price or Contract Time as authorized by AIA A201, 2007 Edition, Article 7.4 by issuing supplemental instructions on AIA Form G710.
- B. The Architect may issue a Proposal Request or Notice of Change which includes a detailed description of a proposed change with supplementary or revised Drawings and Specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor will prepare and submit an estimate within seven (7) calendar days.
- C. The Contractor may propose changes by submitting a request for change to the Architect, describing the proposed change and its full effect on the Work. Include a statement describing the reason for the change, and the effect on the Contract Sum/Price and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors. Document any requested substitutions in accordance with Section 01600.
- D. Stipulated Sum/Price Change Order: Based on Proposal Request and Contractor's fixed or maximum price quotation or Contractor's request for a Change Order as approved by Architect.
- E. Unit Price Change Order: For pre-determined unit prices and quantities, the Change Order will be executed on a fixed unit price basis. For unit costs or quantities of units of work which are not pre-determined, execute Work under a Construction Change Authorization. Changes in Contract Sum/Price or Contract Time will be computed as specified for Time and Material Change Order.
- F. Construction Change Authorization: Architect may issue a directive, on AIA Form G714 Construction Change Directive, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a City of Stamford Change Order. Document will describe changes in the Work, and designate method of

determining any change in Contract Sum/Price or Contract Time. City of Stamford Change Order must then be approved.

- G. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract. Architect will determine the change allowable in Contract Sum/Price and Contract Time as provided in the Contract Documents.
- H. Maintain detailed records of work done on Time and Material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.
- I. Change Order Forms: AIA G701 Change Order will serve as back-up for City of Stamford Change Order.
- J. Execution of Change Orders: City will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

1.7 MEASUREMENT AND PAYMENT – UNIT PRICES

- A. Authority: Measurement methods are delineated in the individual specification sections.
- B. Take all measurements and compute quantities. The Architect will verify measurements and quantities.
- C. Payment Includes: Full compensation for all required labor, Products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

1.8 ALTERNATES

- A. Voluntary alternates quoted on Bid Forms will be reviewed and accepted or rejected at the Owner's option. Accepted Alternates will be identified in Owner-Contractor Agreement.
- B. Coordinate related work and modify work as required.

2 PART 2 – PRODUCTS

Not Used

3 PART 3 – EXECUTION

Not Used

END OF SECTION

1 PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Requirements and limitations for cutting and patching of Work

1.2 RELATED SECTIONS

- A. Section 01010 – Summary of Work: Work by Owner or by separate contractors
- B. Section 01300 – Submittals
- C. Section 01600 – Materials and Equipment: Product Options and Substitutions
- D. Individual Product Specification Sections:
 - 1. Cutting and patching incidental to work of the Section
 - 2. Advance notification to other Sections of openings required in work of those Sections
 - 3. Limitations on cutting mechanical or electrical systems

1.3 SUBMITTALS

- A. Submit written request in advance of cutting or alteration which affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather-exposed or moisture-resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate contractor.
- B. Include in request:
 - 1. Location and description of affected work.
 - 2. Necessity for cutting or alteration.
 - 3. Description of proposed work, and products to be used.
 - 4. Alternatives to cutting and patching.
 - 5. Effect on work of Owner or separate contractor.
 - 6. Written permission of affected separate contractor.
 - 7. Date and time work will be executed.

2 PART 2 – PRODUCTS

2.1 MATERIALS

- A. Primary Products: Those required for original installation.
- B. Product Substitution: For any proposed change in materials, submit request for substitution under provisions of Section 01600.

3 PART 3 – EXECUTION

3.1 EXAMINATION

- A. Inspect existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.
- B. After uncovering existing work, inspect conditions affecting performance of work.
- C. Beginning of cutting or patching means acceptance of existing conditions.

3.2 PREPARATION

- A. Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.
- B. Provide protection from elements for areas which may be exposed by uncovering work.

3.3 CUTTING AND PATCHING

- A. Execute cutting, fitting, and patching to complete work.
- B. Fit products together, to integrate with other work.
- C. Uncover work to install ill-timed work.
- D. Remove and replace defective or non-conforming work.
- E. Remove samples of installed work for testing when requested.
- F. Provide openings in the work for penetration of mechanical and electrical work.

3.4 PERFORMANCE

- A. Execute work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.
- B. Employ original installer to perform cutting and patching for weather exposed and moisture resistant elements, and sight-exposed surfaces.
- C. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- D. Restore work with new products in accordance with requirements of Contract Documents.
- E. Fit work air tight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.

- F. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

END OF SECTION

1 PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Submittal procedures
- B. Construction progress schedules
- C. Proposed products list
- D. Shop drawings
- E. Product data
- F. Samples
- G. Manufacturers' instructions
- H. Manufacturers' certificates

1.2 RELATED SECTIONS

- A. Section 01019 – Schedule of Values
- B. Section 01700 – Contract Closeout: Contract warranty and manufacturer's certificates and related closeout submittals
- C. Section 01740 – Warranties and Bonds: Special warranties and guarantees issues by sub-contractors, manufacturers and others

1.3 SUBMITTAL PROCEDURES

- A. Transmit each submittal with Architect accepted form.
- B. Sequentially number the transmittal forms. Re-submittals to have original number with an alphabetic suffix.
- C. Identify Project, Contractor, Subcontractor or supplier; pertinent Drawing sheet and detail number(s), and specification Section number, as appropriate.
- D. 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 Contract Documents.
- E. Schedule submittals to expedite the Project, and deliver to Architect at business address. Coordinate submission of related items.
- F. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.
- G. Provide space for Contractor and Architect review stamps.

- H. Revise and resubmit submittals as required, identify all changes made since previous submittal.
- I. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.

1.4 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial progress schedule in duplicate within fifteen (15) days after date established in Notice to Proceed or Contract Award for Architect review.
- B. Revise and resubmit as required.
- C. Submit revised schedules every two (2) weeks identifying changes since previous version. This will be closely tracked to assure that the schedule is being maintained.
- D. Submit a horizontal bar chart with separate line for each major section of Work or operation identifying first work day of each week.
- E. Show 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.
- F. Indicate estimated percentage of completion for each item of Work at each submission.
- G. Indicate submittal dates required for shop drawings, product data, samples and product delivery dates, including those furnished by Owner and under Allowances.

1.5 PROPOSED PRODUCTS LIST

- A. Within fifteen (15) days after date of Notice to Proceed, submit complete list of major products proposed for use, 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 standards.

1.6 SHOP DRAWINGS

- A. Submit in the form of one (1) reproducible transparency and two (2) opaque reproductions. The reproducible transparency will be returned for the Contractor's distribution.

- B. After review, reproduce and distribute in accordance with Article on Procedures above and for Record Documents described in Section 01700 – Contract Closeout.

1.7 PRODUCT DATA

- A. Submit the number of copies which the Contractor requires, plus two (2) 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 Project.
- C. After review, distribute in accordance with Article on Procedures above and provide copies for Record Documents described in Section 01700 – Contract Closeout.

1.8 SAMPLES

- A. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- B. Submit samples of finishes from the full range of manufacturers' colors for Architect's and Owner's selection.
- C. Include identification on each sample, with full Project information.
- D. Submit the number or samples specified in individual specification Sections; one (1) of which will be retained by Architect.
- 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 manufacturers' printed instructions for delivery, storage, assembly, installation and finishing, in quantities specified for Product Data.
- B. Identify conflicts between manufacturers' instructions and Contract Documents.

1.10 MANUFACTURER'S CERTIFICATES

- A. When specified in individual specification Sections, submit manufacturers' certificate to Architect for review, in quantities specified for Product Data.

- B. Indicate material or product conforms to or exceeds specified requirements.
Submit supporting reference date, affidavits and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or Product, but must
be acceptable to Architect.

2 PART 2 – PRODUCTS

Not Used

3 PART 3 – EXECUTION

Not Used

END OF SECTION

1 PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Products
- B. Transportation and handling
- C. Storage and protection
- D. Product options
- E. Substitutions

1.2 RELATED SECTIONS

- A. General Conditions – Instructions to Bidders: Product options and substitution procedures

1.3 PRODUCTS

- A. Products: Means new material, components and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.
- B. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- C. Provide interchangeable components of the same manufacturer, for similar components.

1.4 TRANSPORTATION AND HANDLING

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to assure that products comply with requirements, quantities are correct and products are undamaged.
- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement or damage.

1.5 STORAGE AND PROTECTION

- A. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight, climate controlled enclosures.
- B. For exterior storage of fabricated products, place on sloped supports, above ground.

- C. Provide off-site storage and protection when site conditions, limitations of space or interference with the Owner's operation does not permit on-site storage or protection.
- D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.
- E. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement or damage.
- F. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.

1.6 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.
- B. Products Specified by Naming One (1) or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One (1) or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

1.7 SUBSTITUTIONS

- A. Architect will consider requests for Substitutions only within fifteen (15) days after date established in Notice to Proceed.
- B. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- D. A request constitutes a representation that the Contractor:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
 - 2. Will provide the same warranty for the Substitution as for the specified product.
 - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.

4. Waives claims for additional costs or time extension which may subsequently become apparent.
 5. Will reimburse Architect for review or redesign services associated with re-approval by authorities.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- F. Substitution Submittal Procedure:
1. Submit three (3) copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
 2. Submit shop drawings, product data and certified test results attesting to the proposed product equivalence.
 3. The Architect will notify Contractor, in writing, of decision to accept or reject request.

2 PART 2 – PRODUCTS

Not Used

3 PART 3 – EXECUTION

Not Used

END OF SECTION

1 PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Closeout procedures
- B. Final cleaning
- C. Adjusting
- D. Project record documents

1.2 RELATED SECTIONS

- A. General Conditions: Project commissioning
- B. Section 01730 – Operation and Maintenance Data
- C. Section 01740 – Warranties and Bonds

1.3 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 inspection.
- B. Provide submittals to Architect and 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 all portions of the building as specified in Section 01010.

1.4 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. Clean equipment and fixtures to a sanitary condition, which includes removal of dust and construction debris from existing furniture, equipment and finishes.
- C. Clean filters of operating equipment contaminated by project operations.
- D. Clean debris from roofs and drainage systems.
- E. Clean site; sweep paved areas, rake clean landscaped surfaces.
- F. Remove waste and surplus materials, rubbish and construction facilities from the site.

1.5 PROJECT RECORD DOCUMENTS

- A. Maintain on site, one (1) set of the following record documents; record actual revisions to the Work:
 - 1. Contract Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other Modifications to the Contract.
 - 5. Reviewed shop drawings, product data and samples.
- B. Store Record Documents separate from documents used for construction.
- C. Record information concurrent with construction progress.
- D. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and Modifications.
- E. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Field changes of dimension and detail.
 - 2. Details not on original Contract Drawings.
- F. Delete Architect title block and seal from all documents.
- G. Submit documents to Architect one (1) week prior to requesting Certificate of Occupancy from the Town of Naugatuck to enable the Architect to complete the as-built transposition for submittal to the Fire Marshal at the Certificate of Occupancy inspection.

2 PART 2 – PRODUCTS

Not Used

3 PART 3 – EXECUTION

Not Used

END OF SECTION

1 PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Format and content of manuals
- B. Schedule of submittals

1.2 RELATED SECTIONS

- A. Section 01300 – Submittals: Submittals procedures, shop drawings, product data, and samples
- B. Section 01700 – Contract Closeout: Contract Closeout Procedures
- C. Individual Specifications Sections: Specific requirements for operation and maintenance data

1.3 QUALITY ASSURANCE

- A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

1.4 FORMAT

- A. Prepare data in the form of an instructional manual.
- B. Binders: Commercial quality, 8½ x 11 inch three-ring binders with hardback, cleanable, plastic covers; one inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- C. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; list title of Project; identify subject matter of contents.
- D. Arrange content by systems under section numbers and sequence of Table of Contents of this Project Manual.
- E. Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts the systems.
- F. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.
- G. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages and insert in oversized sleeve, bound into the manual for ease of storage and reference.

1.5 CONTENTS, EACH VOLUME

- A. Table of Contents: Provide title of Project; names, addresses and telephone numbers of Construction Manager, Architect/Engineer, sub-consultants and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.
- B. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- C. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- D. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
- E. Type Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
- F. Warranties and Bonds: Bind in copy of each and provide as specified in Section 01740.

1.6 MANUAL FOR MATERIALS AND FINISHES

- A. Building Products, Applied Materials and Finishes: Include product data, with catalog number, size, composition and color and texture designations.
- B. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods and recommended schedule for cleaning and maintenance.
- C. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition and details of installation. Provide recommendations for inspections, maintenance and repair.
- D. Additional Requirements: As specified in individual product specification Sections.
- E. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.7 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Each Item of Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics and limiting conditions.
- B. Maintenance Requirements: Include routine procedures and guide for trouble-shooting; repair and alignment, adjusting and checking instructions.
- C. Include manufacturer's printed operation and maintenance instructions.
- D. Provide list of original manufacturer's spare parts, or roofing components, current prices and recommended quantities to be maintained in storage.
- E. Additional Requirements: As specified in individual product specification Sections.
- F. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.8 SUBMITTALS

- A. Submit two (2) copies of preliminary draft or proposed formats and outlines of contents before start of Work. Construction Manager and Architect/Engineer will review draft and return one (1) copy with comments.
- B. Submit one (1) copy of completed volumes in final form fifteen (15) days prior to final inspection. Copy will be returned after final inspection, with Construction Manager and Architect/Engineer comments. Revise content of documents as required prior to final submittal.
- C. Submit three (3) copies of revised volumes of data in final form within ten (10) days after final inspection.

1.9 SCHEDULE OF SUBMITTALS

- A. As a minimum, the following systems, or subsystems within each of the listed sections, shall be submitted in the manual. Other equipment, systems or materials not listed, but installed shall be included in the manual.
 - 1. Section 05300 Metal Deck
 - 2. Section 06610 Glass Fiber, Resin and Vinyl Fabrications
 - 3. Section 07525 Modified Bituminous Sheet Roofing
 - 4. Section 07600 Flashing and Sheet Metal
 - 5. Section 07900 Sealants
 - 6. Section 08111 Steel Doors
 - 7. Section 08630 Metal Framed Skylights

OPERATION AND MAINTENANCE DATA

- 8. Section 08710 Door Hardware
- 9. Section 09900 Painting
- 10. Section 15410 Plumbing Piping

2 PART 2 – PRODUCTS

Not Used

3 PART 3 – EXECUTION

Not Used

END OF SECTION

1 PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Preparation and submittal
- B. Time and schedule of submittals

1.2 RELATED SECTIONS

- A. Section 01730 – Operations and Maintenance Data
- B. Individual Specifications Sections: Warranties required for specific products or Work

1.3 FORM OF SUBMITTALS

- A. Bind in commercial quality, 8½ x 11 inch binders with hardback, cleanable, plastic covers.
- B. Label cover of each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and name of responsible principal.
- C. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification Section in which specified, and the name of the product or work item.
- D. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier and manufacturer, with name, address and telephone number of responsible principal.

1.4 PREPARATION OF SUBMITTALS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers and manufacturers, within ten (10) days after completion of the applicable item or work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Completion is determined.
- B. Verify that documents are in proper form, contain full information and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.

1.5 TIME OF SUBMITTALS

- A. Make other submittals within ten (10) days after Date of Substantial Completion, prior to final Application for Payment.
- B. For items of Work when acceptance is delayed beyond Date of Substantial Completion, submit within ten (10) days after acceptance, listing the date of acceptance as the beginning of the warranty period.

1.6 SCHEDULE OF SUBMITTALS

- A. As a minimum, warranties for the following systems, or subsystems within each of the listed sections, shall be submitted. Other warranties for equipment, systems or materials not listed, but installed shall be included in the manual.
 - 1. Section 06610 Glass Fiber, Resin and Vinyl Fabrications
 - 2. Section 07525 Modified Bituminous Sheet Roofing
 - 3. Section 07600 Flashing and Sheet Metal
 - 4. Section 08111 Steel Doors
 - 5. Section 08630 Metal Framed Skylights
 - 6. Section 08710 Door Hardware
 - 7. Section 15410 Plumbing Piping

2 PART 2 – PRODUCTS

Not Used

3 PART 3 – EXECUTION

Not Used

END OF SECTION



21 Griffin Road North
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May 19, 2011

Mr. Michael Lynch
Facilities Engineer
Naugatuck Board of Education
380 Church Street
Naugatuck, Connecticut 06418

Re: Asbestos Roofing Inspections at the Maple Hill School.
TRC Project No.: 178105.0050.00001

Dear Mr. Lynch:

On May 9, 2011, Jennifer Peshka of TRC conducted asbestos roof inspections at the Maple Hill Elementary School in Naugatuck, Connecticut. The roof inspections were coordinated with Kaestle Boos Associates, Inc. (KBA) of New Britain, Connecticut. KBA was responsible for subcontracting a roofing contractor who made the actual roofing cuts and performed the repairs.

The asbestos inspections were conducted in accordance with the Environmental Protection Agency (EPA) National Emissions Standard for Hazardous Air Pollutants (NESHAPS) regulations for demolitions or renovations. TRC collected bulk samples of suspect ACM. The quantity of samples collected and analyzed met the NESHAPS and AHERA requirements. Bulk samples were analyzed by polarized light microscopy (PLM). Non friable organically bound (NOB) materials (i.e., roofing products) are difficult to analyze by PLM and required additional analysis by transmission electron microscopy (TEM). TRC analyzed (37) bulk samples by PLM. Fifteen (15) of these samples required additional analysis by TEM.

Suspect ACM identified on roofs of the Maple Hill Elementary School were: fiberboard, perimeter flashing materials, penetration flashing materials, white roof patch, black parapet caulk, white seam caulk, tan seam caulk, gray building perimeter caulk, black skylight glaze, gray skylight flashing caulk, light gray skylight caulk, brown skylight glaze, black skylight glaze, black skylight flashing, black caulk and light gray caulk. All suspect ACM was sampled and analyzed by PLM with confirmation analysis of NOB materials by TEM. Sample analysis identified all roofing, caulk and glaze materials as non ACM.

Mr. Michael Lynch
May 19, 2011
Page 2

Attached is a bulk sample summary table of suspect asbestos containing materials, a table of identified asbestos containing materials, a table of confirmed non asbestos containing materials, the analytical results and a site sketch. If you have any questions regarding this inspection or require additional information, please contact me at (860) 298-6266.

Sincerely,

TRC ENVIRONMENTAL CORPORATION



Henry J. Laliberte
Senior Program Manager

CC: Richard Kirby, KBA



TABLE 1
BULK SAMPLE SUMMARY OF SUSPECT ASBESTOS CONTAINING MATERIALS
MAPLE HILL ELEMENTARY SCHOOL
NAUGATUCK, CONNECTICUT

Sample No.	Sample Location	Homogeneous Material	% and Type Asbestos
01	Roof one	Fiberboard 1	ND<1%
02	Roof two	Fiberboard 1	ND<1%
03	Roof three	Fiberboard 1	ND<1%
04	Roof four	Fiberboard 1	ND<1%
05	Roof five	Fiberboard 1	ND<1%
06	Stack – roof five	Flashing 1	ND<1% ¹
07	Roof two AC unit	Flashing 1	ND<1%
08	Roof one vent	Flashing 1	ND<1%
09	Roof three perimeter	Flashing 1	ND<1%
10	Roof five patched area	White roof patch	ND<1% ¹
11	Roof five patched area	White roof patch	ND<1%
12	Roof six vent penetration	Flashing 2	ND<1% ¹
13	Roof six vent penetration	Flashing 2	ND<1%
14	Roof four parapet	Black parapet caulk	ND<1% ¹
15	Roof four parapet	Black parapet caulk	ND<1%
16	Roof five seam	White seam caulk	ND<1% ¹
17	Roof five seam	White seam caulk	ND<1%
18	Roof five seam	Tan seam caulk	ND<1% ¹
19	Roof five seam	Tan seam caulk	ND<1%
20	Roof five perimeter	Gray building perimeter caulk	ND<1% ¹
21	Roof five perimeter	Gray building perimeter caulk	ND<1%
22	Skylight	Black skylight glaze	ND<1% ¹
23	Skylight	Black skylight glaze	ND<1%
24	Skylight	Gray skylight flashing caulk	ND<1% ¹
25	Skylight	Gray skylight flashing caulk	ND<1%
26	Skylight	Light gray skylight patch	ND<1% ¹
27	Skylight	Light gray skylight patch	ND<1%
28	Skylight	Brown skylight glaze	ND<1% ¹

NA/PVA Not analyzed/positive via inseparable association with a confirmed positive ACM

NA/PS Not analyzed/positive stop, homogeneous to sample proven to contain asbestos

ND<1% Non-detected, less than 1%

NAD No asbestos detected

+ Although found to be negative by analysis, material is homogeneous to a determined ACM and therefore must be considered positive

1 NOB material; result confirmed by TEM analyses

* Quantified by PLM Point Counting techniques

TABLE 1
BULK SAMPLE SUMMARY OF SUSPECT ASBESTOS CONTAINING MATERIALS
MAPLE HILL ELEMENTARY SCHOOL
NAUGATUCK, CONNECTICUT

Sample No.	Sample Location	Homogeneous Material	% and Type Asbestos
29	Skylight	Brown skylight glaze	ND<1%
30	Skylight	Black skylight glaze	ND<1% ¹
31	Skylight	Black skylight glaze	ND<1%
32	Small skylight	Black skylight flashing	ND<1% ¹
33	Small skylight	Black skylight flashing	ND<1%
34	Small skylight	Black caulk	ND<1% ¹
35	Small skylight	Black caulk	ND<1%
36	Small skylight	Light gray caulk	ND<1% ¹
37	Small skylight	Light gray caulk	ND<1%

NA/PVA Not analyzed/positive via inseparable association with a confirmed positive ACM

NA/PS Not analyzed/positive stop, homogeneous to sample proven to contain asbestos

ND<1% Non-detected, less than 1%

NAD No asbestos detected

+ Although found to be negative by analysis, material is homogeneous to a determined ACM and therefore must be considered positive

1 NOB material; result confirmed by TEM analyses

* Quantified by PLM Point Counting techniques

TABLE 2 IDENTIFIED ASBESTOS CONTAINING MATERIALS (>1%) MAPLE HILL ELEMENTARY SCHOOL NAUGATUCK, CONNECTICUT					
Material	Sampled- Assumed (mo/yr)	General Location	NESHAP Category	AHERA Category	Estimated Quantity
All materials sampled as suspect asbestos containing materials (ACM) were determined to be non ACM by PLM and TEM analysis.					

** Roof tars have been completely exempted from OSHA Asbestos regulations and, as a Category I Non-friable material, do not need to be removed from a structure prior to renovation/demolition under EPA Asbestos NESHAP regulations and, so long as the materials are exterior to a structure and will remain Category I Non-friable materials during renovation/demolition, are not covered under the CTDPH Asbestos Abatement standards. In addition, as Category I Non-friable materials, the roof tars do not need to be disposed of as asbestos waste under the EPA Asbestos NESHAP regulations; however, the CTDEP special waste regulations would not allow the material to be disposed of as general construction waste within the State of Connecticut. Disposal of the roof tars as general construction waste (so long as the materials are not rendered into a state which would define them as regulated asbestos-containing materials (RACM), i.e., friable) is, however, allowed in other states such as Massachusetts.*

AHERA Categories = thermal system insulation (TSI), surfacing material or miscellaneous
NESHAP Categories = friable, category I non-friable or category II non-friable
Friable = crumbled, pulverized or reduced to powder by hand pressure when dry
Category I Non-friable = packings, gaskets, resilient floor covering and asphalt roofing
Category II Non-friable = all non-friable that is not Category I

TABLE 3
CONFIRMED NON-ASBESTOS CONTAINING MATERIALS
MAPLE HILL ELEMENTARY SCHOOL
NAUGATUCK, CONNECTICUT

Material	General Location
Fiberboard 1	Roofs one through five
Flashing 1	All roofs
White roof patch	Roof five patched area
Flashing 2	Roof six vent penetration
Black parapet caulk	Roof four parapet
White seam caulk	Roof five seam
Tan seam caulk	Roof five seam
Gray building perimeter caulk	Roof five perimeter
Black skylight glaze	Skylight
Gray skylight flashing caulk	Skylight
Light gray skylight patch	Skylight
Brown skylight glaze	Skylight
Black skylight glaze	Skylight
Black skylight flashing	Small skylight
Black caulk	Small skylight
Light gray caulk	Small skylight

AHERA Categories = thermal system insulation (TSI), surfacing material or miscellaneous
NESHAP Categories = friable, category I non-friable or category II non-friable
Friable = crumbled, pulverized or reduced to powder by hand pressure when dry
Category I Non-friable = packings, gaskets, resilient floor covering and asphalt roofing
Category II Non-friable = all non-friable that is not Category I



Industrial Hygiene Laboratory
21 Griffin Road North
Windsor, CT 06095
(860) 298-6308

BULK ASBESTOS ANALYSIS REPORT

CLIENT: Naugatuck Board of Education

Site: Maple Hill School, Naugatuck, CT
Lab Log #: 39345
Project #: 178105.0050.0001
Date Received: 05/09/11
Date Analyzed: 05/10/11

RESULTS

Sample No.	Color	Homogeneous	Multi-Layered	Layer No.	Other Matrix Mat'ls	Asbestos %	Asbestos Type
1	Grey	Yes	No	--	60% cellulose	ND<1%	None
2	Grey	Yes	No	--	60% cellulose	ND<1%	None
3	Grey	Yes	No	--	60% cellulose	ND<1%	None
4	Grey	Yes	No	--	60% cellulose	ND<1%	None
5	Grey	Yes	No	--	60% cellulose	ND<1%	None
6	Black	Yes	No	--	--	ND<1%	None
7	Black	Yes	No	--	--	ND<1%	None
8	Black	Yes	No	--	--	ND<1%	None
9	Black	Yes	No	--	--	ND<1%	None
10	White	Yes	No	--	--	ND<1%	None
11	White	Yes	No	--	--	ND<1%	None
12	Black/Grey	Yes	No	--	--	ND<1%	None
13	Black/Grey	Yes	No	--	--	ND<1%	None
14	Black	Yes	No	--	--	ND<1%	None
15	Black	Yes	No	--	--	ND<1%	None
16	White	Yes	No	--	--	ND<1%	None
17	White	Yes	No	--	--	ND<1%	None
18	Tan	Yes	No	--	--	ND<1%	None
19	Tan	Yes	No	--	--	ND<1%	None
20	Grey	Yes	No	--	--	ND<1%	None

TRC LABORATORY ASBESTOS ANALYTICAL ACCREDITATIONS

NVLAP Lab Code 101424-0 AIHA #100122 CT #PH-0426 ME LA-0075, LB-0071 MA #AA000052 NY #10980
R1 #AAL-007C3 TX #300354 VT #AL014538 VA #3333 000283 AZ #A20944 HI #L-09-004 NJ #CT004

WV# LT000356
CA #10275CA

21	Grey	Yes	No	--	--	ND<1%	None
22	Black	Yes	No	--	--	ND<1%	None
23	Black	Yes	No	--	--	ND<1%	None
24	Grey	Yes	No	--	--	ND<1%	None
25	Grey	Yes	No	--	--	ND<1%	None
26	Light Grey	Yes	No	--	--	ND<1%	None
27	Light Grey	Yes	No	--	--	ND<1%	None
28	Brown	Yes	No	--	--	ND<1%	None
29	Brown	Yes	No	--	--	ND<1%	None
30	Black	Yes	No	--	--	ND<1%	None
31	Black	Yes	No	--	--	ND<1%	None
32	Black	Yes	No	--	--	ND<1%	None
33	Black	Yes	No	--	--	ND<1%	None
34	Black	Yes	No	--	--	ND<1%	None
35	Black	Yes	No	--	--	ND<1%	None
36	Light Grey	Yes	No	--	--	ND<1%	None
37	Light Grey	Yes	No	--	--	ND<1%	None

Reporting limit- asbestos present at 1%

ND<1% - asbestos was not detected

Trace- asbestos was observed at level of less than 1%

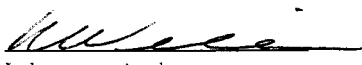
Note: Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. In those cases, negative results must be confirmed by quantitative transmission electron microscopy.

The Laboratory at TRC follows the EPA's Interim Method for the Determination of Asbestos in Bulk Insulation (1982), and the EPA recommended Method for the Determination of Asbestos in Bulk Building Materials (EPA/600/R-93/116), July 1993, R.L. Perkins and B.W. Harvey which utilizes polarized light microscopy (PLM). Our analysts have completed an accredited course in asbestos identification. TRC's Laboratory is accredited under the National Voluntary Laboratory Accreditation Program (NVLAP), for Bulk Asbestos Fiber Analysis, NVLAP Code 18/A01, effective through June 30, 2011. TRC is an American Industrial Hygiene Association (AIHA) accredited lab for PLM effective through October 1, 2012. Asbestos content is determined by visual estimate unless otherwise indicated. Quality Control is performed in-house on at least 10% of samples and the QC data related to the samples is available upon written request from the client.

This report shall not be reproduced, except in full, without the written approval of TRC. This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report relates only to the items tested.

Analyst: Kathleen Williamson

QC Analyst: Kathleen Williamson

Reviewed by: 
Laboratory Analyst

Approved: 

Signatory: Kathleen Williamson
Laboratory Manager

Date Issued: 5/11/11

TRC LABORATORY ASBESTOS ANALYTICAL ACCREDITATIONS

NVLAP Lab Code 101424-0
RI #AAL-007C3 TX #300354

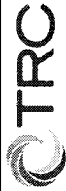
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VT #AL014538

CT #PH-0426
VA #3333 000283

ME LA-0075, LB-0071 MA #AA000052
AZ #A20944 HI #L-09-004

NY #10980
NJ #CT004

WV# LT000356
CA #10275CA



21 GRIFFIN ROAD NORTH
WINDSOR, CONNECTICUT 06095
TELEPHONE (860) 298-9692
FAX (860) 298-6380

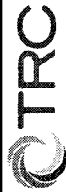
ASBESTOS BULK SAMPLING CHAIN OF CUSTODY

Edition: October 2009
Supersede Previous Edition

LAB ID #. 39345

PROJECT NUMBER		PROJECT NAME		PARAMETERS					TURNAROUND TIME					
178105.0050.00001		Maple Hill School, Naugatuck BOE		PLM EPA 600/R93/116 (POSITIVE STOP)	PLM EPA 600/R93/116 (w/ gravimetric reduction) (POSITIVE STOP)	ANALYZE BY LAYER	POINT COUNT (IF >1% & <10%)	TEM NY NOB 198.4 (IF PLM SERIES NEG)	PLM:	8hr	24hr	48hr	3day	5day
SIGNATURE		INSPECTOR		MATERIAL										
FIELD SAMPLE NUMBER		DATE	TIME	TYPE		SAMPLE LOCATION								
				COMP	GRAB									
1	5/9/11	0905	X		X	Roof one								
2	5/9/11	0930	X		X	Roof two								
3	5/9/11	0946	X		X	Roof three								
4	5/9/11	0955	X		X	Roof four								
5	5/9/11	1025	X		X	Roof five								
6	5/9/11	0945	X		X	Stack roof five			X					
7	5/9/11	1030	X		X	Roof two A/C unit								
8	5/9/11	0908	X		X	Roof one vent								
9	5/9/11	0948	X		X	Roof three perimeter								
10	5/9/11	1012	X		X	Roof five patched area			X					
11	5/9/11	1013	X		X	Roof five patched area								

Relinquished by: (Signature)	Date:	Received by: (Signature)	Date:	Received by: (Signature)
	5/9/11		5/9/11	
(Printed) Jennifer Peshka	Time: 1301	(Printed) 1500	Time: 1500	(Printed)
Remarks:		Condition of Samples: Acceptable: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Page 1 of 4



21 GRIFFIN ROAD NORTH
WINDSOR, CONNECTICUT 06095
TELEPHONE (860) 298-9692
FAX (860) 298-6380

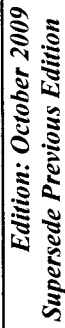
ASBESTOS BULK SAMPLING CHAIN OF CUSTODY

Edition: October 2009
Supersede Previous Edition

LAB ID #: 251345




PROJECT NUMBER		PROJECT NAME		PARAMETERS					TURNAROUND TIME							
178105.0050.00001		Maple Hill School, Naugatuck BOE		PLM EPA 600/R93/116 (POSITIVE STOP)	PLM EPA 600/R93/116 (w/ gravimetric reduction) (POSITIVE STOP)	ANALYZE BY LAYER	POINT COUNT (IF >1% & <10%)	TEM NY NOB 198.4 (IF PLM SERIES NEG)	MATERIAL							
SIGNATURE		INSPECTOR														
FIELD SAMPLE NUMBER	DATE	TIME	TYPE	SAMPLE LOCATION												
				COMP	GRAB											
12	5/9/11	1046	X	Roof 6 vent penetration	X				X	Flashing 2						
13	5/9/11	1047	X	Roof 6 vent penetration	X					Flashing 2						
14	5/9/11	0958	X	Roof 4 parapet	X				X	Black parapet caulk						
15	5/9/11	1000	X	Roof 4 parapet	X					Black parapet caulk						
16	5/9/11	1032	X	Roof 5 seam	X				X	White seam caulk						
17	5/9/11	1033	X	Roof 5 seam	X					White seam caulk						
18	5/9/11	1036	X	Roof 5 seam	X				X	Tan seam caulk						
19	5/9/11	1037	X	Roof 5 seam	X					Tan seam caulk						
20	5/9/11	1041	X	Roof 5 perimeter	X				X	Gray building perimeter caulk						
21	5/9/11	1042	X	Roof 5 perimeter	X					Gray building perimeter caulk						
22	5/9/11	0933	X	Sky light	X				X	Black skylight glaze						

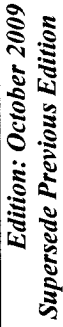
Relinquished by: (Signature) <i>Jennifer Peshka</i>	Date: 5/9/11	Received by: (Signature) <i>W. Williams</i>	Date: 5/9/11	Relinquished by: (Signature)	Date:	Received by: (Signature)
(Printed) Jennifer Peshka	Time: 1301	(Printed) 1500	Time: 1500	(Printed)	Time:	(Printed)
Remarks:				Condition of Samples: <i>OK</i> Acceptable: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Page 2 of 4



ASBESTOS BULK SAMPLING CHAIN OF CUSTODY

39345

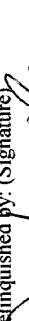

Relinquished by: (Signature) 	Date: 5/9/11	Received by: (Signature) 	Relinquished by: (Signature)	Date:	Received by: (Signature)
(Printed) Jennifer Peshka	Time: 1301	(Printed) 1500	(Printed)	Time:	(Printed)
Remarks:					
			Condition of Samples:  Acceptable: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Comments:		



ASBESTOS BULK SAMPLING CHAIN OF CUSTODY

LAB ID#. 35345

[illegible]

Relinquished by: (Signature) 	Date: 5/9/11	Received by: (Signature) 	Relinquished by: (Signature)	Date:	Received by: (Signature)
(Printed) Jennifer Peshka	Time: 1301	(Printed) 1552	(Printed)	Time:	(Printed)
Remarks:		Condition of Samples: <u>OK</u>		Page 4 of 4	
		Acceptable: Yes <u>✓</u> No <u> </u>			
		Comments:			

Proscience Analytical Services, Inc.

22 Cummings Park, Woburn, MA 01801 Ph. 781-935-3212 Fax 781-932-4857
TEM Bulk Chain of Custody Record

Date: 05/11/11

PO#: C178105

Client: TRC

Client Job#: 178105.0050.0001

Client Job Ref./Loc.: Naugatuck BOE- Maple Hill School

Relinquished by: K. Williamson- KWilliamson@trcsolutions.com

Received by:

Report to: H. Laliberte- HLaliberte@trcsolutions.com

Samplers Name: J. Peshka- JPeshka@trcsolutions.com

Analysis Type: Chatfield **EPA N.O.B** Qualitative

Turn Around Time: <12 Hour <24 Hour <48 Hour <3 Day 5 Day Other:

Client ID #	Lab ID#	Description	Location	Acceptable on Receipt	For Lab Use Only Comments
6	39345	Flashing	See COC		
10	39345	Roof Patch			
12	39345	Flashing			
14	39345	Caulk			
16	39345	Caulk			
18	39345	Caulk			
20	39345	Caulk			
22	39345	Glaze			
24	39345	Caulk			
26	39345	Patch			
28	39345	Glaze			
30	39345	Caulk			
32	39345	Flashing			
34	39345	Caulk			
36	39345	Caulk			
For Lab Use Only		# Spies	Total	Client #	Batch #
				Results Reported	Comments



ProScience Analytical Services, Inc

Henry Laliberte
TRC Environmental Corp. (CT)
21 Griffin Road North
Windsor, CT 06095

May 16, 2011

Dear Henry Laliberte,

Results of samples you described and submitted to ProScience Analytical Services, Inc. are shown on the enclosed data sheets. The analytical results in this report apply to the items tested only.

The listed samples were prepared and analyzed in compliance with the New York State Transmission Electron Microscope Method for Identifying and Quantitating Asbestos in Non-Friable Organically Bound Bulk Samples. This method is used for the determination of weight percent of asbestos in non-friable materials.

The sample is processed to remove non-asbestos interference. The remaining residue is examined using a Philips 300 transmission electron microscope equipped with selected area electron diffraction (SAED) and an Evex energy dispersive x-ray analyzer.

The following are reported: identification numbers, type of material, color or the sample, initial weight of the sample, weight percent of organic material lost by ashing, weight percent of carbonates lost by acid dissolution, weight percent of non-fibrous/non asbestos inorganic material, total weight percent of asbestos in the original sample, and the type(s) of asbestos, if any.

The EPA recognizes asbestos as the following: actinolite, amosite, anthophyllite, chrysotile, crocidolite, and tremolite. To be considered asbestos containing, a material must be determined to contain greater than one percent asbestos. Samples are retained for a period of 2 months.

The quality control data related to the samples analyzed are available for review upon the written request of the client. ProScience Analytical Services, Inc. and its personnel assume no responsibility for potential sample contamination, misuse, misinformation, or misrepresentation by the client. The enclosed results may not be used under any circumstances as product endorsement by any US government agency including NIST/NVLAP. This report may not be reproduced, except in its entirety, without permission of the ProScience Analytical Services, Inc. Laboratory Director.

Please contact me if you have any questions regarding this report or related information.

Sincerely,

Mark Derosier, Senior Analyst

Aimee Cormier, Laboratory Manager

Adrian Stanca, Laboratory Director

Enclosure:

BATCH NUMBER : NT 12509 CLIENT PROJECT ID: 178105.0050.0001

Client Ref: Naugatuck BOE - Maple Hill School

NVLAP Lab Code 200090-0; CT ID# PH-0209; MA ID# AA000156; ME ID# LB-055; ME ID# LA-056;

AIHA ID# 102754; VT ID# AL016876; PH ID# 218(TEM,PLM); RI ID# 186.

ProScience Analytical Services, Inc.

22 Cummings Park, Woburn, Massachusetts 01801
781-935-3212 ~ Fax: 781-932-4857 ~ E-Mail: general@proscience.net

Client Project #: 178105.0050.0001
Client Reference: Naugatuck BOE - Maple Hill School
PO #: C178105
Client #: 297
Client Name: TRC Environmental Corp. (CT)

Batch: NT 12509
Method: NOB
Date Received: 5/12/2011
Date Analyzed: 5/16/2011
Date of Report: 5/16/2011

LAB ID	Field ID	Description:	Color	Initial Weight	% Asbestos Types						% Other Non-asb.	% Organic Carb.	Total % Asbestos	Analyzed / Charged	Prepped / Charged
					CHR	AMO	ACT	CRO	ANT	TRE					
NT95455	6	Flashing 1, Stack Roof Five		.1854	.00	.00	.00	.00	.00	.00	14.83	53.51	ND	Yes	No
NT95456	10	White Roof Patch, Roof five Patched Area		.1298	.00	.00	.00	.00	.00	.00	25.96	62.02	ND	Yes	No
NT95457	12	Flashing 2, Roof 6		.2774	.00	.00	.00	.00	.00	.00	9.12	57.75	ND	Yes	No
NT95458	14	Black Parapet Caulk, Roof 4 Parapet		.2338	.00	.00	.00	.00	.00	.00	15.74	51.63	ND	Yes	No
NT95459	16	White Seam Caulk, Roof 5 Seam		.5127	.00	.00	.00	.00	.00	.00	11.69	69.49	ND	Yes	No
NT95460	18	Tan Seam Caulk, Roof 5 Seam		.1869	.00	.00	.00	.00	.00	.00	10.97	48.05	ND	Yes	No
NT95461	20	Gray Building Perimeter Caulk, Roof 5 Perimeter		.4009	.00	.00	.00	.00	.00	.00	8.20	76.28	ND	Yes	No
NT95462	22	Black Skylight Glaze, Sky Light		.3103	.00	.00	.00	.00	.00	.00	17.73	51.24	ND	Yes	No
NT95463	24	Gray Skylight Flashing Caulk, Sky Light		.2032	.00	.00	.00	.00	.00	.00	48.13	25.25	ND	Yes	No
NT95464	26	Light Gray Skylight Patch, Sky Light		.5873	.00	.00	.00	.00	.00	.00	9.56	71.63	ND	Yes	No
NT95465	28	Brown Skylight Glaze, Sky Light		.2812	.00	.00	.00	.00	.00	.00	34.39	28.66	ND	Yes	No
NT95466	30	Black Skylight Caulk, Sky Light		.4358	.00	.00	.00	.00	.00	.00	39.72	30.20	ND	Yes	No
NT95467	32	Black Skylight Flashing, Small Skylight		.7542	.00	.00	.00	.00	.00	.00	13.98	55.18	ND	Yes	No
NT95468	34	Black Caulk, Small Skylight		.2073	.00	.00	.00	.00	.00	.00	29.67	69.80	ND	Yes	No
NT95469	36	Light Gray Caulk, Small Skylight		.3217	.00	.00	.00	.00	.00	.00	8.27	73.61	ND	Yes	No

ProScience Analytical Services, Inc.

22 Cummings Park, Woburn, Massachusetts 01801
781-935-3212 ~ Fax: 781-932-4857 ~ E-Mail: general@proscience.net

Client Project #: 178105.0050.0001
Client Reference: Naugatuck BOE - Maple Hill School
PO #: C178105
Client #: 297
Client Name: TRC Environmental Corp. (CT)

Batch: NT 12509
Method: NOB
Date Received: 5/12/2011
Date Analyzed: 5/16/2011
Date of Report: 5/16/2011

LAB ID	Field ID	Description:	Color	Initial Weight	% Asbestos Types			% Other Non-asb.	% Organic Carb.	Total % Asbestos	Analyzed / Charged	Preped / Charged
					CHR	AMO	ACT					

Comments:

Key: CHR = Chrysotile AMO = Amosite CRO = Crocidolite ACT = Actinolite TRE = Tremolite ANT = Anthophyllite TR = Trace = < 1% ND = None Detected



Aimee Cormier, Analyst

Proscience Analytical Services, Inc.

22 Cummings Park, Woburn, MA 01801 Ph. 781-935-3212 Fax 781-932-4857
TEM Bulk Chain of Custody Record

NT12509

Date: 05/11/11

PO#: C178105

Client: TRC

Client Job#: 178105.0050.0001

Client Job Ref./Loc.: Naugatuck BOE- Maple Hill School

Relinquished by: K. Williamson- KWilliamson@trcsolutions.com

Received by: *W. J. Peshka* 5-12-11 9:00am

Report to: H. Laliberte- HLaliberte@trcsolutions.com

Samplers Name: J. Peshka- JPeshka@trcsolutions.com

Analysis Type: Chatfield EPA N.O.B Qualitative

Turn Around Time: <12 Hour <24 Hour <48 Hour <3 Day 5 Day Other:

Client ID #	Lab ID#	Description	Location	Acceptable on Receipt	For Lab Use Only Comments
6	39345	Flashing	See COC		
10	39345	Roof Patch			
12	39345	Flashing			
14	39345	Caulk			
16	39345	Caulk			
18	39345	Caulk			
20	39345	Caulk			
22	39345	Glaze			
24	39345	Caulk			
26	39345	Patch			
28	39345	Glaze			
30	39345	Caulk			
32	39345	Flashing			
34	39345	Caulk			
36	39345	Caulk			
For Lab Use Only	# Spies	Total	Client #	Batch #	Results Reported
					Comments



21 GRIFFIN ROAD NORTH
WINDSOR, CONNECTICUT 06095
TELEPHONE (860) 298-9692
FAX (860) 298-6380

ASBESTOS BULK SAMPLING CHAIN OF CUSTODY

Edition: October 2009
Supersedes Previous Edition

PROJECT NUMBER		PROJECT NAME		INSPECTOR		PARAMETERS				TURNAROUND TIME					
178105.0050.00001		Maple Hill School, Naugatuck BOE		Jennifer Peshka											
FIELD SAMPLE NUMBER	DATE	TIME	TYPE		SAMPLE LOCATION	PLM EPA 600/R93/116 (POSITIVE STOP)	PLM EPA 600/R93/116 (w/ gravimetric reduction) (POSITIVE STOP)	ANALYZE BY LAYER	POINT COUNT (IF >1% & <10%)	TEM NY NOB 198.4 (IF PLM SERIES NEG)	MATERIAL				
			COMP	GRAB							8hr	24hr	48hr	3day	5day
1	5/9/11	0905	X		Roof one	X									
2	5/9/11	0930	X		Roof two	X									
3	5/9/11	0946	X		Roof three	X									
4	5/9/11	0955	X		Roof four	X									
5	5/9/11	1025	X		Roof five	X									
6	5/9/11	0945	X		Stack roof five	X				X					
7	5/9/11	1030	X		Roof two A/C unit	X									
8	5/9/11	0908	X		Roof one vent	X									
9	5/9/11	0948	X		Roof three perimeter	X									
10	5/9/11	1012	X		Roof five patched area	X				X					
11	5/9/11	1013	X		Roof five patched area	X									

Relinquished by: (Signature) 	Date: 5/9/11	Received by: (Signature) 	Date: 5/9/11
(Printed) Jennifer Peshka	Time: 1301	(Printed) 	Time: 1500
Remarks:		Condition of Samples: <u>Yes</u> <u>No</u> Acceptable: Yes _____ No _____ Comments:	
		Received by: (Signature) (Printed)	
		Time: (Printed)	
		Page 1 of 4	



Edition: October 2009
Supersedes Previous Edition

ASBESTOS BULK SAMPLING CHAIN OF CUSTODY

21 GRIFFIN ROAD NORTH
WINDSOR, CONNECTICUT 06095
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LAB ID # 39345

PROJECT NUMBER		PROJECT NAME		PARAMETERS					TURNAROUND TIME					
178105.0050.00001		Maple Hill School, Naugatuck BOE		PLM EPA 600/R93/116 (POSITIVE STOP)	PLM EPA 600/R93/116 (w/ gravimetric reduction) (POSITIVE STOP)	ANALYZE BY LAYER	POINT COUNT (IF >1% & <10%)	TEM NY NOB 198.4 (IF PLM SERIES NEG)	PLM:	8hr	24hr	48hr	3day	
SIGNATURE		INSPECTOR							TEM:	X	X	X	X	3day
FIELD SAMPLE NUMBER	DATE	TIME	TYPE	GRAB	SAMPLE LOCATION	MATERIAL								
12	5/9/11	1046	X	X	Roof 6 vent penetration	X			X	Flashing 2				
13	5/9/11	1047	X	X	Roof 6 vent penetration	X				Flashing 2				
14	5/9/11	0958	X	X	Roof 4 parapet	X			X	Black parapet caulk				
15	5/9/11	1000	X	X	Roof 4 parapet	X				Black parapet caulk				
16	5/9/11	1032	X	X	Roof 5 seam	X			X	White seam caulk				
17	5/9/11	1033	X	X	Roof 5 seam	X				White seam caulk				
18	5/9/11	1036	X	X	Roof 5 seam	X			X	Tan seam caulk				
19	5/9/11	1037	X	X	Roof 5 seam	X				Tan seam caulk				
20	5/9/11	1041	X	X	Roof 5 perimeter	X			X	Gray building perimeter caulk				
21	5/9/11	1042	X	X	Roof 5 perimeter	X				Gray building perimeter caulk				
22	5/9/11	0933	X	X	Sky light	X			X	Black skylight glaze				

Relinquished by: (Signature)	Date: 5/9/11	Received by: (Signature)	Date: 5/9/11	Relinquished by: (Signature)	Date:	Received by: (Signature)
(Printed)	Time: 1301	(Printed)	Time: 1300	(Printed)	Time:	(Printed)
Jennifer Peshka						
Remarks:	Condition of Samples: <u>OK</u> Acceptable: Yes <u> </u> No <u> </u> Comments:			Page 2 of 4		

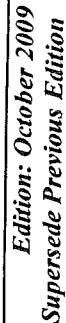


ASBESTOS BULK SAMPLING CHAIN OF CUSTODY

21 GRIFFIN ROAD NORTH
WINDSOR, CONNECTICUT 06095
TELEPHONE (860) 298-9692
FAX (860) 298-6380

PROJECT NUMBER 178105.0050.00001		PROJECT NAME Maple Hill School, Naugatuck BOE		LAB ID #. 39345					
SIGNATURE 		INSPECTOR Jennifer Peshka		TURNAROUND TIME					
FIELD SAMPLE NUMBER	DATE	TIME	TYPE	PARAMETERS				MATERIAL	
				PLM EPA 600/R93/116 (POSITIVE STOP)	PLM EPA 600/R93/116 (w/ gravimetric reduction) (POSITIVE STOP)	ANALYZE BY LAYER	POINT COUNT (IF >1% & <10%)		TEM NY NOB 198.4 (IF PLM SERIES NEG)
23	5/9/11	0934	X	Sky light	X				Black skylight glaze
24	5/9/11	0937	X	Sky light	X			X	Gray skylight flashing caulk
25	5/9/11	0937	X	Sky light	X				Gray skylight flashing caulk
26	5/9/11	0939	X	Sky light	X			X	Light gray skylight patch
27	5/9/11	0940	X	Sky light	X				Light gray skylight patch
28	5/9/11	0942	X	Sky light	X			X	Brown skylight glaze
29	5/9/11	0944	X	Sky light	X				Brown skylight glaze
30	5/9/11	0945	X	Sky light	X			X	Black skylight caulk
31	5/9/11	0945	X	Sky light	X				Black skylight caulk
32	5/9/11	1055	X	Small skylight	X			X	Black skylight flashing
33	5/9/11	1056	X	Small skylight	X				Black skylight flashing


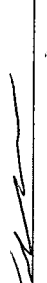
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(Printed) Jennifer Peshka	Time: 1301	(Printed) 1500	Time: 1500	(Printed)
Remarks:			Condition of Samples: 20 Acceptable: Yes No Comments:	
			Page 3 of 4	



ASBESTOS BULK SAMPLING CHAIN OF CUSTODY

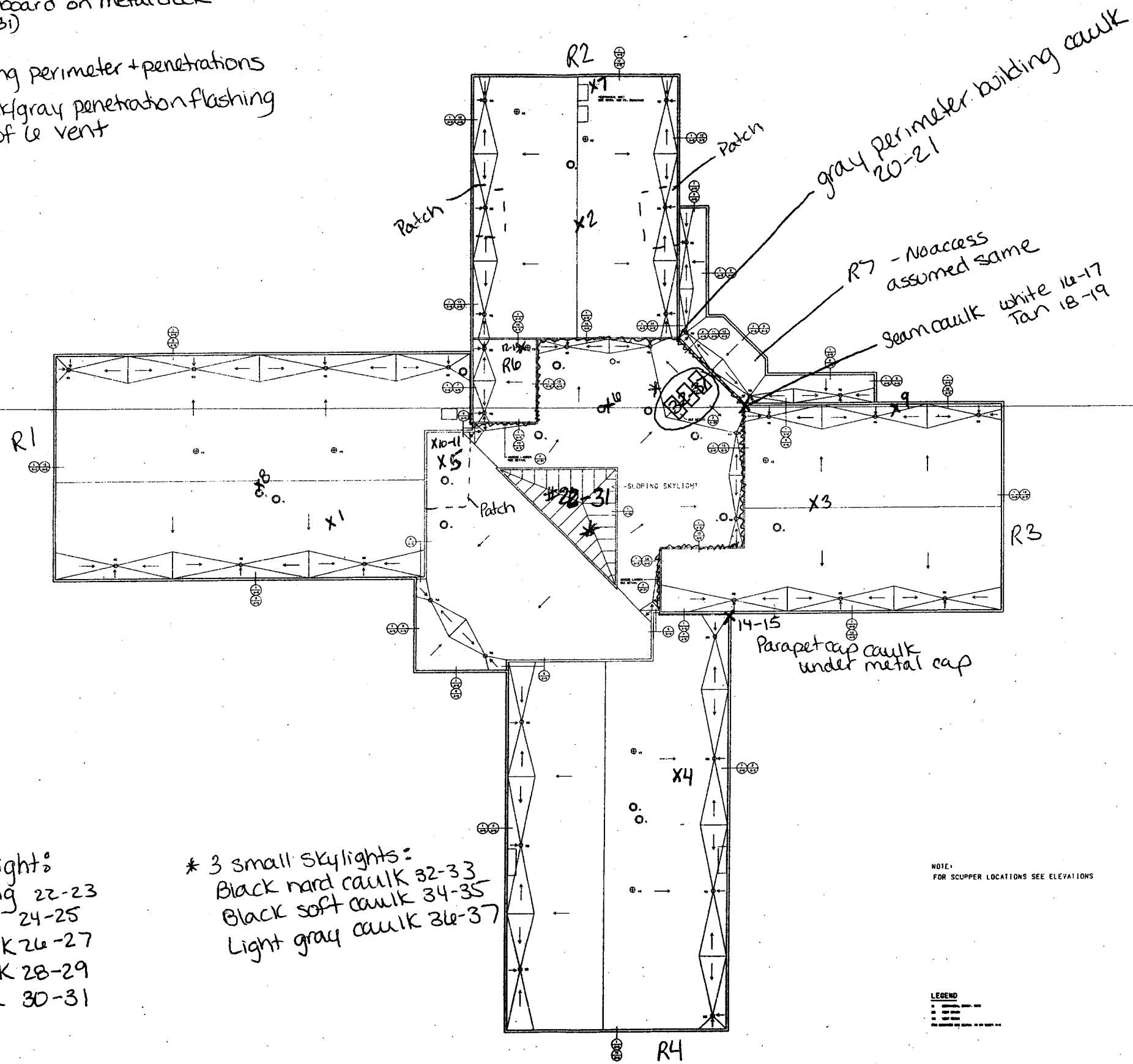
LAB ID#. 39345

[illegible]

Relinquished by: (Signature) 	Date: 5/9/11	Received by: (Signature) 	Relinquished by: (Signature)	Date:	Received by: (Signature)
(Printed) Jennifer Peshka	Time: 1301	(Printed) 1500	(Printed)	Time:	(Printed)
Remarks:		Condition of Samples: <u>OK</u> Acceptable: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Comments:			
Page 4 of 4					

R1-R7=rubber over styrafoam
over fiberboard on metal deck
(FBI)

FL1 - Black Flashing perimeter + penetrations
FL2 - older black/gray penetration flashing
on Roof & vent



* Large Skylight:
Black glazing 22-23
gray caulk 24-25
Light gray caulk 26-27
Brown caulk 28-29
Black caulk 30-31




* 3 small skylights:
Black hard caulk 32-33
Black soft caulk 34-35
Light gray caulk 36-37

NOTE:
FOR SCUPPER LOCATIONS SEE ELEVATIONS

LEGEND

ROOF PLAN

1/16" = 1'-0"

3-8-88	Drawing issued for Mechanical: plumbing, fire protection, and HVAC bidding and construction purposes.	
3-8-88	Drawing issued for Electrical: bidding and construction purposes.	
02-01-89	DRAWINGS ISSUED FOR GENERAL CONSTRUCTION BIDDING AND CONSTRUCTION PURPOSES.	
11-16-87	DRAWINGS ISSUED FOR GENERAL CONSTRUCTION REVIEW PURPOSES.	
DATE	MARK	DESCRIPTION
REVISIONS		
NEW ELEMENTARY SCHOOL		
FOR THE BOROUGH OF NAUGATUCK		
MAPLE HILL ROAD NAUGATUCK, CONNECTICUT		
 MORGANTI INCORPORATED CONSTRUCTION MANAGERS 10 SOUTH ST., P. O. BOX 175 RIDGEFIELD, CONN. 06477-0175 (203) 438-2675		
		
 KAESTLE BOOS ASSOCIATES INC. ARCHITECTS 31 HIGH STREET NEW BRITAIN, CONNECTICUT 06051 PHONE (203) 229-0361		
DRAWN BY		SCALE
RUCAPS		1/16"=1'-0"
ROOF PLAN		
PROJECT NO. 87011		DRAWING NO. A-8
DATE		

1 PART 1 – GENERAL

1.1 SUMMARY

- A. Work Included: Metal deck as required for this work as indicated on the drawings and includes, but is not limited to, the following:
1. Metal roof decking, including all edge and end closures, reinforcing as hereinafter specified and all accessories as may be required for a complete and properly erected installation. Decking shall be furnished and installed so as to require no shoring from below.
 2. Welding: Include all welding required to properly fabricate and erect the metal decking.
 3. Openings: Metal decking shall be cut by the Contractor as required to fit predetermined holes and structural steel framed openings.
 - a. All holes required by other trades shall be provided by the trades requiring the holes (other than predetermined holes). Cutting shall be performed as hereinafter specified.
 - b. The reinforcing required for all openings and holes and openings passing through the metal decking shall be furnished and installed under this Contract regardless of by whom the holes have been cut.
 4. Shop and field cutting of metal decking shall be included under the Contract.
 5. Hoisting of all materials required to be furnished and installed shall be included under this Contract.
 6. Painting: All touch-up painting required for weld areas and damaged surfaces of metal decking and accessory items shall be performed under this Contract.
 7. Safety Requirements: The Contractor is responsible for compliance with the safety requirements of all agencies having jurisdiction, including the Occupational Safety and Health Administration.

1.2 RELATED SECTIONS

- A. Section 01019 – Contract Considerations
- B. Section 06100 – Rough Carpentry
- C. Section 07212 – Roof Insulation Board
- D. Section 07565 – Roofing Removals and Preparation
- E. Section 15410 – Plumbing Piping

1.3 REFERENCES

- A. Reference Standards: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text

by the basic designation only.

1. American Society for Testing and Materials (ASTM) Publications:

- A 36-08 Carbon Structural Steel
- A 653-10 Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

2. American Welding Society (AWS) Publications:

- D1.3-08 Structural Welding Code – Sheet Steel

1.4 SUBMITTALS

- A. Refer to Section 01300.
- B. Product Data: Submit manufacturer's specifications and installation instructions for metal decking and accessories.
- C. Shop Drawings: Submit detailed drawings showing layout and types of deck panels, anchorage details (welding, etc.) and conditions requiring closure panels, closure strips, supplementary framing, cut openings, special jointing or other accessories.
- D. Resubmitted shop drawings shall have revisions circled or clouded to identify the change.
- E. Welder Certification: Provide certification that welders to be employed in work have satisfactorily passed AWS qualification tests.

1.5 QUALITY ASSURANCE

- A. Refer to Quality Control in this Section.
- B. Codes and Standards: Comply with provisions of the following codes and standards, except as otherwise indicated or specified:
 - 1. AISI "Specification for the Design of Cold-Formed Steel Structural Members"
 - 2. AWS D1.3 "Structural Welding Code – Sheet Steel"
 - 3. SDI "Design Manual for Floor Decks and Roof Decks"
 - 4. Connecticut State Building Code Section 1609.7 and applicable sections of Chapters 22 and 34.
- C. Qualification of Field Welding: Qualify welding processes and welding operators in accordance with "Welder Qualification" procedures of AWS D1.1.

D. Design Criteria for Metal Roof Deck:

1. Manufacture in accordance with Steel Deck Institute Basic Design Specification, SDI Standard No. 1, supporting design live load plus dead load with a maximum fiber stress of 20,000 psi and a maximum live load deflection of 1/240 of the span.

1.6 PRODUCT DELIVERY AND STORAGE

- A. Exercise care during storage and handling of metal deck units to avoid damage. Deck units stored at the job shall be supported completely free of the ground and covered to avoid damage from the elements. Other materials shall be stored in a weathertight and dry place until ready for use in the work. Protect deck and packaged materials from corrosion and deterioration.

2 PART 2 – PRODUCTS

2.1 MATERIALS

- A. Metal Roof Deck: 1½ inch deep wide rib, Type "B", 20 gauge galvanized steel deck to match existing, with nesting side seams formed from hot dipped galvanized steel sheets, Grade A, with zinc coating conforming to ASTM A 653, coating designation G60. Metal roof deck shall be manufactured by United Steel Deck, Inc., Summit, NJ (800.631.1215), Vulcraft/Nucor Corporation, Chemung, NY (607.529.9000), Roll Form Products, Jamestown, NY (716.665.5310) or approved equal. Minimum acceptable metal thickness, before coating, of 20 gauge deck shall be .035 inches.
- B. Sheet Metal Accessories: ASTM A 653, commercial quality, galvanized.
- C. Miscellaneous Steel Shapes: ASTM A 36.
- D. Galvanizing Repair Paint: High zinc-dust content paint for repair of damaged galvanized surfaces complying with Military Specifications MIL-P-21035 (Ships).
- E. Arc Welding Electrodes: Type E60XX OR E70XX in accordance with AWS D1.3.

3 PART 3 – EXECUTION

3.1 INSPECTION OF WORK-IN-PLACE

- A. Examine work-in-place on which specified work is in any way dependent to ensure that conditions are satisfactory for the installation of specified work. Report any defects which may influence satisfactory completion of specified work. Absence of such notification will be construed as acceptance of work-in-place.

3.2 INSTALLATION

- A. General: Install deck units and accessories in accordance with manufacturer's recommendations and final shop drawings, and as specified herein. Place deck units on supporting steel framework in sheet lengths sufficient to extend over three (3) supports (two (2) spans) wherever possible and adjust to final position with ends accurately aligned and bearing on supporting members before being permanently fastened. Do not stretch or contract side lap interlocks. Place deck units flat and square, secured to adjacent framing without warp or excessive deflection. Coordinate and cooperate with structural steel erector in locating decking bundles to prevent overloading of structural members.
- B. Cutting and Fitting: Cut and neatly fit deck units and accessories around other work projecting through or adjacent to the decking, as shown.
- C. Touch-up Painting: After decking installation, wire brush, clean and paint scarred areas, welds and rust spots on top and bottom surfaces of decking units and supporting steel members. Touch-up galvanized surfaces with a galvanizing compound applied to a dry film thickness of at least 3 mils.

3.3 FASTENING

- A. Metal Roof Deck:
 - 1. End joints of metal roof deck shall be over steel framing. At ends, lap 2 inches minimum, and weld upper unit to lower unit and to supports using 5/8 inch Ø puddle welds at 6 inches on center.
 - 2. Intermediate support connections shall be made at each steel bearing location using 5/8 inch Ø puddle welds at 6 inches on center.
 - 3. Weld metal roof deck to all steel members at all roof edges parallel to span of deck using 5/8 inch Ø puddle welds at 12 inches on center.
 - 4. Fasten all side laps of metal roof deck alongside joints with #10 self tapping screws not over 3'-0" on center.

3.4 PROTECTION

- A. Do not use metal deck units for storage or working platform until permanently secured in position.
- B. Assure that construction loads do not exceed carrying capacity of deck, indicated on the approved shop drawings.
- C. Weight or otherwise secure loose units at all times to prevent their displacement by high winds, etc. Place only as much decking as may be completely secured by the end of each day's work.

3.5 QUALITY CONTROL

- A. Owner may engage an independent testing and inspection agency to inspect welded connections and to prepare test reports.
- B. Testing agency may conduct and interpret tests and state in each report whether test specimens comply with requirements, and specifically state any deviations therefrom.
- C. Inspection of steel decking shall include verification and inspection that all steel decking is erected in accordance with approved drawings, Contract Documents and Table 1704.3 of the 2005 Connecticut State Building Code .
- D. The Inspection Service may inspect all field welds in accordance with Articles 4.4, 4.5 and 7 of the American Welding Society "Structural Welding Code – Sheet Steel" (AWS D1.3). Welds will be certified and daily reports submitted.
- E. The Inspection Service may make certain that qualified and valid welding procedure specifications are determined and followed. Procedures and qualification requirements will be as required by Article 7 of the American Welding Society "Structural Welding Code – Sheet Steel" (AWS D1.3).

END OF SECTION

1 PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Roof curbs and nailers
- B. Blocking in roof openings
- C. Plywood sheathing
- D. Preservative treatment of wood

1.2 RELATED SECTIONS

- A. Section 05300 – Metal Deck
- B. Section 07212 – Roof Insulation Board
- C. Section 07525 – Modified Bituminous Sheet Roofing
- D. Section 07565 – Roofing Removals and Preparation
- E. Section 07600 – Flashing and Sheet Metal

1.3 REFERENCES

- A. Reference Standards: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

- 1. American Society of Mechanical Engineers (ASME) Publications:

- B18.2.1-10 Square, Hex, Heavy Hex and Askew Head Bolts and Hex, Heavy Hex, Hex Flange, Lobed Head and Lag Screws (Inch Series)

- B18.6.1-81 Wood Screws (Inch Series)

- 2. American Wood Preservers' Association (AWPA) Standards:

- T1-11 Processing and Treatment Standard

- M6-07 Brands Used on Preservative Treated Materials

- 3. American Society for Testing and Materials (ASTM) Publications:

- A 36-08 Carbon Structural Steel

- A 307-10 Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength

- F 1667-11 Driven Fasteners: Nails, Spikes, and Staples

- 4. Federal Specifications (FS) Publications:

- A-A-1922A-95 Shield, Expansion (Caulking Anchors, Single Lead)

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide technical data on wood preservative materials and application instructions.
- C. Certificates of Grade: Attesting that products meet the grade requirements specified in lieu of grade markings where appearance is important and grade marks will deface material.

1.5 DELIVERY AND STORAGE

- A. Deliver materials to the site in an undamaged condition. Carefully store materials off the ground to provide proper ventilation, drainage and protection against dampness. Remove defective and damaged materials and provide new materials.

1.6 GRADING AND MARKING

- A. Lumber: Mark each piece of board lumber or each bundle of small pieces of lumber with the grade mark of a recognized association or independent inspection agency. Such association or agency shall be certified by the Board of Review, American Lumber Standards Committee, to grade the species used.
- B. Preservative-Treated Lumber and Plywood: The Contractor shall be responsible for the quality of treated wood products. Each treated piece shall be permanently marked or branded, by the producer, in accordance with AWP A M6. The Contractor shall provide the Owner with the inspection report of an independent inspection agency, approved by the Owner, that offered products comply with applicable AWP A Standards. The AWP B Quality Mark "LP-22" on each piece will be accepted, in lieu of inspection reports, as evidence of compliance with applicable AWP A treatment standards.
- C. Fire-Retardant Treated Lumber: Mark each piece in accordance with Mil. Spec. MIL-L-19140, except pieces that are to be natural or transparent finished. In addition, exterior fire-retardant lumber shall be distinguished by a permanent penetrating blue stain. Labels of a nationally recognized independent testing agency will be accepted as evidence of conformance to the fire-retardant requirements of Mil. Spec. MIL-L-19140.

1.7 SIZES AND SURFACING: Lumber shall be surfaced four (4) sides. Size references, unless otherwise specified, are nominal sizes, and actual sizes shall be within manufacturing tolerances allowed by the standard under which the product is produced.

1.8 MOISTURE CONTENT: Air-dry or kiln-dry lumber. Kiln-dry treated lumber after treatment. Maximum moisture content of wood products shall be as follows at the time

of delivery to the job site:

- A. Lumber and Boards: Nineteen percent (19%) maximum.
- B. Materials other than lumber – Moisture content shall be in accordance with standard under which the product is produced.

1.9 PRESERVATIVE TREATMENT

- A. Lumber and plywood shall be treated in accordance with T1. All wood shall be air or kiln dried after treatment. Specific treatments shall be verified by the report of an approved independent inspection agency, or the AWPB Quality Mark on each piece. Do not incise surfaces of lumber that will be exposed. Brush coat areas that are cut or drilled after treatment with either the same preservative used in the treatment or with a two percent (2%) copper naphenate solution. The following items shall be preservative treated:
 - 1. Nailers, edge strips, crickets and curbs for roof decks.
 - 2. Wood blocking and sills that are less than 24 inches from the ground and/or set into or in contact with concrete or masonry.

1.10 QUALITY ASSURANCE

- A. Perform Work in accordance with the following agencies:
 - 1. Lumber Grading Agency: Certified by ALSC.

2 PART 2 – PRODUCTS

2.1 ROUGH LUMBER

- A. Lumber: Preservative treated lumber such as nailing strips, nailers, sleepers and board lumber shall be one (1) of the species listed in the table below. Minimum grade of species shall be as listed. Finger-jointed lumber may be used in the same applications as solid lumber of an equivalent species and grade, provided the finger-jointed lumber meets all the requirements of the certification and the quality control programs of the rules writing agency having jurisdiction and all applicable requirements of PS 56.

Table of Grades for Framing and Board Lumber

<u>Grading Rules</u>	<u>Species</u>	<u>Framing/Board Lumber</u>
WWPA standard 1 grading rules No. 3 Common	Mountain Hemlock Douglas Fir-Larch Douglas Fir South	All Species: Standard Light Framing or No. 3 Structural Light Framing

(Stud Grade for 2 x 4 size, 10 feet and shorter)

WCLIB standard
grading rules

Douglas Fir-Larch
Hem-Fir

All Species:
Standard Light Standard

2.2 PLYWOOD: Conform to the requirements of U.S. Product Standard PS 1 and the American Plywood Association. Products conforming to equivalent grading by TECO or Pittsburgh Testing Laboratory is also approved. Do not use particle panel products or other fabricated wood products. All plywood is to be glued and screwed.

A. Plywood Sheathing: C-D Grade, Exposure 1, fire treated, thickness as indicated on the Drawings.

2.3 ROUGH HARDWARE: Unless otherwise indicated or specified, rough hardware shall be of the type and size necessary for the project requirements. Sizes, types and spacing of fastenings of manufactured building materials shall be as recommended by the product manufacturer unless otherwise indicated or specified. Rough hardware exposed to the weather or embedded in or in contact with preservative treated wood, exterior masonry or concrete slabs shall be zinc-coated.

A. Bolts and Nuts: ASTM A 307.

B. Expansion Anchors: FS A-A-1922A; except as shown otherwise, maximum size of devices in Groups IV, V, VI and VII shall be as indicated on the drawings.

C. Adhesive Anchors: ASTM A 36; the adhesive capsules shall contain a vinylester resin as supplied in then Hilti HEA adhesive capsule.

D. Lag Screws and Lag Bolts: ANSI B18.2.1.

E. Wood Screws: ANSI B18.6.1.

F. Wire Nails: ASTM F 1667.

3 PART 3 – EXECUTION

3.1 INSTALLATION

A. Fit rough carpentry, set accurately to the required lines and levels and secure in place in a rigid manner. Provide as necessary for the proper completion of the work all framing members not indicated or specified. Spiking and nailing not indicated or specified otherwise shall be in accordance with the Nailing Schedule contained in UBC; perform bolting in an approved manner. Spikes, nails and bolts shall be drawn up tight.

- B. Construct curb members of single pieces.
- C. Curb roof openings except where prefabricated curbs exist. Form corners by alternating lapping side members.
- D. Anchors in Masonry: Except where indicated otherwise, embed anchor bolts not less than 15 inches in masonry unit walls and provide each with a nut and a 2-inch-diameter washer at bottom end. Fully grout bolts with mortar.
- E. Anchors in Concrete: Except where indicated otherwise, embed anchor bolts as indicated on the drawings in poured concrete walls and provide each with a nut and a 2-inch-diameter washer at bottom end. A bent end may be substituted for the nut and washer; bend shall be not less than 90 degrees.
- F. Miscellaneous
 - 1. Wood Roof Nailers, Edge Strips and Curbs: Provide sizes and configurations indicated or specified and anchored securely to continuous construction.
 - 2. Roof Edge Strips and Nailers: Provide at perimeter of roof, around openings through roof and where roofs abut walls, curbs and other vertical surfaces. Except where indicated otherwise, nailers shall be 6 inches wide and the same thickness as the insulation. Strips shall be grooved for edge venting; install at walls, curbs and other vertical surfaces with a ¼ to ½ inch air space. Where applicable, utilize existing anchor bolts that are firmly welded or attached to roof structural elements to anchor the base members before applying additional blocking. Provide additional galvanized nuts and washers as required to complement the existing anchor bolts. In the event that the perimeter wood blocking on the roof cannot be fastened to the structure utilizing existing anchor bolts or fasteners, the fastening schedule and details shall be completed in accordance with NRCA standards, which incorporates the Factory Mutual Loss Prevention Data Sheet 1-49 (1985) for perimeter flashing.
 - 3. Curbs: Provide wood curbs for scuttles and ventilators and wood nailers bolted to tops of masonry curbs and at expansion joints, as indicated.
 - 4. Wood Blocking: Provide proper sizes and shapes at proper locations for the installation and attachment of wood and other finish materials, fixtures, equipment and items indicated or specified.

3.2 SITE APPLIED WOOD TREATMENT

- A. Apply preservative treatment in accordance with manufacturer's instructions.
- B. Brush apply one (1) coat of preservative treatment on wood in contact with cementitious materials, roofing and related metal flashing. Treat site-sawn cuts.

- C. Allow preservative to dry prior to erecting members.

END OF SECTION

1 PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Cellular PVC sheet (composite board)

1.2 RELATED SECTIONS

- A. Section 06100 – Rough Carpentry
- B. Section 07525 – Modified Bituminous Sheet Roofing
- C. Section 07900 – Sealants
- D. Section 08630 – Metal Framed Skylights
- E. Section 09900 – Painting

1.3 REFERENCES

- A. Reference Standards: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

- 1. American Society for Testing and Materials (ASTM) Publications:

E 84-11 Surface Burning Characteristics of Building Materials

1.4 QUALITY ASSURANCE

- A. Fabricator: Company specializing in architectural glass fiber and resin components with five (5) years documented experience.

1.5 REGULATORY REQUIREMENTS

- A. Conform to Connecticut Fire Safety Code and Building Code, with an ASTM E 84 rating of 10 or better.

1.6 SUBMITTALS

- A. Submit shop drawings indicating dimensions, adjacent construction, materials, thicknesses, fabrication details, required clearances, field jointing, tolerances, colors, finishes, methods of support, integration of electrical components and anchorages.
- B. Submit product data, samples and fabricator's installation instructions under provisions of Section 01300.
- C. Provide product data on specified component products, including manufacturer's specification product sheet.

- D. Submit two (2) samples, 6 inches long illustrating color, texture and finish.

1.7 OPERATION AND MAINTENANCE DATA

- A. Submit cleaning and maintenance data under provisions of Section 01700.
- B. Include instructions for stain removal, surface and gloss restoration.

1.8 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Store materials protected from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer.

1.9 ENVIRONMENTAL REQUIREMENTS

- A. Maintain air temperature in spaces where products will be installed for time period before, during, and after installation as recommended by manufacturer.

1.10 WARRANTY

- A. Provide manufacturer's standard warranty against defects in materials and workmanship for one (1) year.
- B. Provide manufacturer's twenty-five (25) year warranty for cellular PVC sheet against defects in manufacturing that cause the products to rot, corrode, delaminate or excessively swell from moisture.

2 PART 2 – PRODUCTS

2.1 SHEET TRIM

A. Manufacturers

- 1. Azek Trimboards, Moosic, PA (877.275.2935)
- 2. Kleer Lumber, LLC, Westfield, MA (866.553.3770)
- 3. Substitutions: Under provisions of Section 01600.

B. Materials

- 1. Free foam cellular PVC material with a small-cell microstructure and density of .55 grams/cm³.

- a. Material shall have as a minimum the physical and performance properties specified by the manufacturer.

C. Accessories

- 1. Fasteners: Stainless steel designed for wood trim and siding (thinner shank, blunt point, full round head) or as recommended by manufacturer. Staples, small brads and wire nails are not acceptable.
- 2. Adhesive: Manufacturer's standard adhesive, moisture resistant and non-staining.
- 3. Sealant: Use urethane, polyurethane or acrylic based sealants without silicone.
- 4. Putty: Manufacturer's standard putty.

D. Shop Finishing

- 1. Color: White.

3 PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify that substrates are ready to receive work and dimensions are as instructed by the fabricator.
- B. Beginning of installation means acceptance of substrates.

3.2 INSTALLATION

- A. Install fabrications in accordance with shop drawings and fabricator's instructions.

3.3 FINISH

- A. Composite products do not require paint for protection, but shall be painted to achieve a custom color.
- B. Finish in accordance with Section 09900 – Painting and manufacturer's recommendations.

3.4 TOLERANCES

- A. Maximum Variation from True Position: ¼ inch.
- B. Maximum Offset from True Alignment: 1/8 inch.

3.5 CLEANING

- A. Clean components of foreign material.
- B. Clean fabrications in accordance with fabricator's instructions.

END OF SECTION

1 PART 1 – GENERAL

1.1 RELATED SECTIONS

- A. Section 05300 – Metal Deck
- B. Section 06100 – Rough Carpentry
- C. Section 07525 – Modified Bituminous Sheet Roofing
- D. Section 07565 – Roofing Removals and Preparation
- E. Section 15410 – Plumbing Piping

1.2 REFERENCES

- A. Reference Standards: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

- 1. American Society for Testing and Materials (ASTM) Publications:

- C 728-05 Perlite Thermal Insulation Board
(R 2010)

- C 1177-08 Glass Mat Gypsum Substrate for Use as Sheathing

- D 312-00 Asphalt Used in Roofing
(R 2006)

- D 5643-06 Coal Tar Roof Cement, Asbestos Free

- E 84-11 Surface Burning Characteristics of Building Materials

- 2. Factory Mutual Engineering Corporation (FM) Publications:

- 4450 Approval Standard for Class 1 Insulated Steel Roof Decks

- 3. Underwriters' Laboratories, Inc. (UL) Publication:

- 1256 Standard for Safety Fire Test of Roof Deck Constructions

1.3 QUALIFICATION OF INSTALLER: Certified by the manufacturer as qualified to install roof insulation systems.

1.4 SUBMITTALS

- A. Samples: One (1) not larger than 12 inches square of each type of proposed insulating material and two (2) each of nails and mechanical fasteners, when used to install insulation.
- B. Shop Drawings: Show complete description of the procedures for the installation of the roof insulation system indicating the type of materials, thicknesses, location of ridges and valleys, special methods for cutting and fitting of insulation and

special precautions. Manufacturer's drawings based on field measurements may be submitted to supplement the information shown on the shop drawings. Provide calculations verifying the total "U" value of the insulation assembly.

C. Certified Test Reports: Flame spread and smoke developed ratings for insulation in accordance with ASTM E 84 and FM 4450 and/or UL 1256. Provide certifications that materials or systems conform to listed UL and material/manufacturing standards as listed in this section per Section 1508 of the 2005 CSBC.

D. Manufacturer's Recommendations: Two (2) current copies of insulation manufacturer's recommendations for the following:

1. Location and spacing of wood nailers.
2. Minimum thickness and fastener pattern for insulation.
3. Type of insulation material(s).

E. Delivery and Storage:

1. Delivery: In compliance with Section 2603.2 of the 2005 Connecticut State Building Code (CSBC), deliver materials to the site in original sealed containers or packages bearing manufacturer's name and brand designation. Where materials are covered by a referenced specification, containers or packages shall bear specification number, type and class as applicable. Each container of asphalt shall bear flash point (FP), equiviscous temperature (EVT) and finished blowing temperature (FBT) or this information shall be shown on the accompanying bills of lading. Deliver materials in sufficient quantity to allow continuity of work.
2. Storage: Store, handle and install materials in a manner to protect them from damage, exposure to open flame or other ignition sources and from wetting and moisture absorption during entire construction period. Store materials on pallets or platforms and cover with waterproof tarpaulins. For twenty-four (24) hours immediately before laying, store felt rolls on ends in an area maintained at a temperature above 49 degrees F. Bundle insulation board by manufacturer's identity codes. Replace damaged material with new material.

1.5 ENVIRONMENTAL CONDITIONS: Do not install roof insulation during inclement weather or when air temperature is below 40 degrees F or is expected to go below 40 degrees F, within twenty-four (24) hours after installation, or when there is ice, frost or dampness visible on the roof deck.

1.6 PROTECTION OF PROPERTY: Provide protection as specified herein and in the General Conditions of this project.

- A. Flame-Heated Equipment: Locate and use flame-heated equipment so as not to endanger the structure or materials on the site or adjacent property. Do not place flame heating equipment on roof. Provide and maintain fire extinguishers.
- B. Protective Coverings: Install protective coverings at paving and building walls adjacent to hoist prior to starting the work. Lap protective coverings at least 6 inches, secure against wind and vent to prevent collection of moisture on covered surfaces. Maintain protective coverings in place for duration of roofing work.
- C. Dripping of Bitumen: Seal joints in and at edges of deck as necessary, to prevent dripping of bitumen into building or down exterior walls.
- D. Special Protection: Provide approved special protection or avoid heavy traffic on completed work when ambient temperature is above 80 degrees F.
- E. Damaged Work and Materials: Restore work and materials damaged to their original condition or replace with new materials.

1.7 QUALITY ASSURANCE

- A. The applicator shall be licensed by the roofing manufacturer and shall present evidence of certification in writing to the Owner before beginning the work.
- B. The foreman of the crew performing the work of this Section shall be a qualified roofing journeyman with at least five (5) years experience in placing insulation roofing systems.

2 PART 2 – PRODUCTS

2.1 MATERIALS: Shall conform to the respective specifications and standards and to requirements specified herein.

- A. Roof Insulation: One (1) of or an assembly of not more than three (3), of the following materials. Provide starter, flat boards and filler blocks as required to provide the total thickness of insulation necessary to meet the specified thermal conductance. Mitered joints shall be factory fabricated and shall consist of two (2) diagonally cut boards. Identify each piece of tapered insulation board by color or other identity coding system which will allow identifying the different sizes of tapered insulation board required to complete the roof insulation system. The top layer of insulation shall be a flat sheet of perlite or cover board.

1. Polyisocyanurate Board:

- a. Firestone Building Products, Indianapolis, IN (800.428.4442); **ISO 95+ GL**

- b. Johns Manville, Denver, CO (800.654.3103); **E'NRG'Y 3**
 - c. Celotex Corporation, Wayne, PA (800.235.6839); **Hy-Therm AP**
 - d. CertainTeed Commercial Roofing Systems, Valley Forge, PA (610.341.7000); **FlintBoard ISO**
 - e. Substitutions: Under provisions of Section 01250.
- 2. Expanded Perlite Board: ASTM C 728:
 - a. International Permalite, Inc.
 - b. Celotex Corporation; **Celo-Therm**
 - c. Substitutions: Under provisions of Section 01250.
- 3. Cover Board: ASTM C 1177, except the top surface of the insulation shall have an impact resistant, factory applied facing:
 - a. Georgia-Pacific Corporation, Atlanta, GA (800.284.5347); **Dens-Deck**
 - b. Substitutions: Under provisions of Section 01250.
- B. Tapered insulation board shall be:
 - 1. ¼ and ½ inch per foot tapered polyisocyanurate as indicated in the documents, manufactured by Firestone, Johns Manville or approved equal.
 - 2. 1 inch per foot tapered polyisocyanurate on counter slopes of polyisocyanurate to provide a minimum ½ inch counter slope to valleys indicated in the drawings for positive drainage to the roof drains as manufactured by Firestone, Johns Manville or approved equal.
- C. Insulation Thickness: The entire insulation assembly shall provide minimum thermal conductance as translated from the thermal ratings indicated in the construction documents for the average thickness of the rigid insulation system (including tapered insulation @ ½ inch per foot slope), except the thickness at the low point shall be not less than 1½ inches.
- D. Fire Safety Requirements: Rigid insulation board shall have a flame spread rating not greater than 25 and a smoke developed rating not greater than 50, exclusive of facing, when tested in accordance with ASTM E 84. Insulation listed in the UL Building Materials Directory and bearing labels indicating compliance with the flame spread and smoke developed ratings specified will be accepted in lieu of copies of certified test reports. Compliance with flame spread and smoke developed ratings will not be required when the insulation has been tested as a part of a roof construction assembly of the type used for this project and the construction is listed as being Fire-Classified in the UL Building Materials Directory, or listed as Class I roof deck construction in the FM Approval Guide.

- E. Preformed Cants and Tapered Edge Strips: Of the same material as the roof insulation. If unavailable, provide standard machine cut fiberboard strips or wood to suit the details as recommended by the roofing manufacturer.
- F. Steep Asphalt: ASTM D 312, Type IV.
- G. Asphalt Roof Cement: ASTM D 5643, Type I.
- H. Nails and Fasteners: Flush-driven through discs of not less than 1 3/8 inch diameter. Discs may be omitted when one-piece composite nails or fasteners with heads not less than one inch diameter are used. Minimum withdrawal resistance of nails or approved fasteners shall be 40 pounds each in the specific decks when driven.
 - 1. Fasteners for Metal Decks: Approved, hardened, penetrating type fasteners with zinc-coated or chromate finish and designed to be driven through roof deck. Fasteners shall be listed in the FM Approval Guide for Class I roof deck construction. Length of fasteners shall be governed by thickness of insulation. Holding power shall not be less than 120 lbs per fastener; or shall withstand an uplift pressure of 90 lbs per square foot when tested in accordance with the Uplift Pressure Test described in the FM Loss Prevention Data Sheet I-28. A pull-out test shall be conducted by the fastener manufacturer prior to selecting and ordering the fasteners.
- I. Steel Discs: Zinc coated steel not lighter than 28 gauge and not less than 1 3/8 inch diameter. Disc shall be formed to prevent dishing. Do not use bell or cup-shaped caps.

3 PART 3 – EXECUTION

3.1 CONDITION OF SURFACES

- A. Inspection of Surfaces: Surfaces on which insulation is to be installed shall be clean, smooth and dry. Condition of surfaces shall be inspected and approved by the Owner immediately before installation is started.
- B. Preparation of Surfaces: Correct all deficiencies in roof deck surfaces prior to start of work.

3.2 INSTALLATION

- A. Keep roof insulating materials dry before, during and after installation. Keep insulation 1/2 inch clear of vertical surfaces penetrating and projecting from the roof surface.

- B. Temperature of Asphalt: When installing insulation, apply asphalt when temperature of asphalt is within 25 degrees F of equiviscous temperature (EVT). Do not heat asphalt to or above flash point (FP). Do not heat asphalt to or above the finish blowing temperature (FBT) for longer than four (4) consecutive hours. Use thermometers to check temperatures during heating and application. Have kettlemen in attendance at all times during heating process to insure that maximum temperatures specified are not exceeded.
- C. Wood Nailers: Pressure preservative treated wood nailers for securing insulation or for nailing of roofing felts, are specified in Section 06100 – Rough Carpentry. Verify prior to the installation of insulation that nailers the same thickness as insulation have been provided at eaves, edges, curbs, walls and roof openings for securing gravel stops and flashing flanges.
- D. Insulation
 - 1. Insulation Installation: Lay insulation so that end joints of each course break with those of adjoining courses. When using multiple layers of insulation, joints of each succeeding layer shall be parallel and broken in both directions with respect to the layer below.
 - a. Insulation on Metal Decks: Secure insulation by mechanically fastening. Engage fasteners by driving them through insulation into top flange of metal deck, as required by Section 07525 – Modified Bituminous Sheet Roofing. Insulation joints parallel to ribs of deck shall occur on solid bearing surfaces only, not over open ribs. Space fasteners as recommended in FM Loss Prevention Data Sheet I-28. When multiple layers of insulation are used, fasten or mop in the second layer and all succeeding layers as specified herein for fastening or mopping layers of insulation in place.
 - b. Insulation over Top Surface of Polyisocyanurate Board: Install cover board or expanded perlite board over the top surface of the polyisocyanurate board. Mop the overlayment board as specified herein for mopping layers of insulation in place. Joints of the overlayment board shall be staggered at least 6 inches with respect to the polyisocyanurate board below.
 - c. Cant Strips: Where indicated, provide cant strips at intersections of the roof with walls, parapets and curbs extending above the roof. The face of cant strips shall have an incline of 45 degrees and the minimum dimensions shall be 4 inches by 4 inches. Cant strips shall bear on the wood nailers and fit flush against vertical surfaces. Where possible, nail cant strips to adjoining surfaces. Where cant strips are installed against non-nailable materials, install cant strips with adhesive, mechanical fasteners or set in asphalt roof cement in accordance with manufacturer's recommendations.

- d. Tapered Edge Strips: Where indicated, provide edge strips in the right-angle formed by the junction of the roof and wood nailing strips that extend above the level of the roof. Edge strips shall be tapered from top of wood nailing strips to approximately 1/8 inch at a slope of one to 1½ inches per foot. Install edge strips flush against vertical surfaces of wood nailing strips. Where possible, nail edge strips to adjoining surfaces. Where installed against non-nailable materials, install edge strips with adhesive, mechanical fasteners or set in asphalt roof cement in accordance with manufacturer's recommendations.

3.3 PROTECTION OF APPLIED INSULATION

- A. Completely cover each day's installation of insulation with roofing as specified in Section 07525 – Modified Bituminous Sheet Roofing. Apply glaze coat at the rate of 10 pounds per 100 square feet of area. Protect open ends of each day's work with temporary water cut-offs; remove cut-offs when work is resumed. Protect open spaces between insulation and parapets or other walls and spaces at curbs and expansion joints, until permanent roofing and flashing is applied. Storing, walking, wheeling or trucking will not be permitted directly on insulation or on roofed surfaces. Board or plank walkways, runways and platforms shall be provided and located near supports, as necessary, to distribute weight to conform to indicated live load limits of roof construction.

END OF SECTION

1 PART 1 – GENERAL

1.1 RELATED SECTIONS

- A. Section 06100 – Rough Carpentry
- B. Section 07212 – Roof Insulation Board
- C. Section 07600 – Flashing and Sheet Metal
- D. Section 15410 – Plumbing Piping

1.2 REFERENCES

- A. Reference Standards: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

1. American Society for Testing and Materials (ASTM) Publications:

- C 864-05 Dense Elastomeric Compression Seal Gaskets, Setting Blocks and Spacers
- D 36-09 Softening Point of Bitumen (Ring-and-Ball Apparatus)
- D 41-11 Asphalt Primer Used in Roofing, Dampproofing and Waterproofing
- D 312-00 Asphalt Used in Roofing
(R 2006)
- D 2628-91 Preformed Polychloroprene Elastomeric Joint Seals for
(R 2005) Concrete Pavements
- D 6164-11 Styrene-Butadiene-Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements

1.3 CONFORMANCE STANDARDS

- A. Underwriters Laboratories (UL).

1. Fire Classification Rating: "Class C"

1.4 SYSTEM DESCRIPTION

- A. Modified Bitumen Conventional Roofing System: Two (2) ply membrane system with mineral surface cap sheet finish, on flat and tapered insulations. The Systems will be provided and installed in accordance with the specified manufacturer's twenty (20) year guarantee roofing system. The Systems will be installed on insulated roof deck surfaces.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the products specified in this Section with five (5) years documented experience.
- B. Applicator: Company specializing in performing the work of this Section with ten (10) years documented experience and approved by system manufacturer.
- C. Work of this Section to conform to NRCA Roofing and Waterproofing Manual and the manufacturer's instructions.

1.6 REGULATORY REQUIREMENTS

- A. Conform to current Connecticut State Building Code and Connecticut Fire Safety codes for roof assembly fire hazard requirements.
- B. Underwriters Laboratories, Inc. (UL): Class C Fire Hazard Classification.
- C. Factory Mutual Engineering & Research Corporation (FM): Roof Assembly Classification, of Class 1 Construction, wind uplift requirement of I-60 for field, I-90 for perimeter, and I-120 for corners, in accordance with FM Property Loss Prevention Data Sheets 1-28.

1.7 QUALITY ASSURANCE

- A. Provide manufacturer's written proof of the manufacturer's approved applicators status, submitted by the Contractor.
- B. Upon completion, provide an inspection by a representative of the manufacturer in order to ascertain that the roofing system has been installed according to their published specifications and details, and the drawing details that have been approved by them which may be a slight variance to their published details or cover conditions for which they have no published details.
 - 1. Guarantee shall be issued upon approval of the installation by the manufacturer and acceptance by the Owner, whichever shall occur later.
 - a. In no event shall the effective date of the guarantee predate the acceptable completion of all operations affecting the roof membrane and associated flashing, terminations and the like.

1.8 SUBMITTALS

- A. Submit 3 inch by 5 inch samples of roofing membrane and accessories, with manufacturer's identification labels attached.

- B. Submit manufacturer's application manual, which describes completely the preparation of surfaces and application of specified materials.
- C. Submit shop drawings showing details, fabrication and fastening devices for each condition encountered.
- D. Submit samples of each type of mechanical fastener and stress plate.
- E. Submit specimen's of the manufacturer's roofing systems standard twenty (20) year guarantee.
- F. Letter from the membrane system manufacturer certifying that the selected insulation, and the methods used for attachment, are acceptable to the manufacturer for use with the specified membrane system to provide the required guarantee.

1.9 PRE-INSTALLATION CONFERENCE

- A. Prior to ordering materials and commencing roofing, conduct a pre-installation conference to discuss the specified roofing system and its proper application. Notify the local manufacturer's representative when the pre-installation conference is scheduled.

1.10 DELIVERY, STORAGE AND HANDLING

- A. Deliver roofing materials, insulation and accessories in manufacturer's original protective containers with labels intact and legible. Comply with manufacturer's published instructions for storage and handling.
- B. Store materials in dry protected areas, on clean, raised platforms with securely anchored weather protective covering.
- C. Store flammable products away from sparks or open flames.
- D. Store roofing materials at a minimum of forty-five (45) degrees Fahrenheit prior to use as recommended by the manufacturer. Protect materials from freezing.

1.11 ENVIRONMENTAL REQUIREMENTS

- A. Proceed with roofing work only when weather conditions comply with manufacturer's recommendations. Do not exceed temperature limitations recommended by the manufacturers.

1.12 GUARANTEE

- A. Upon completion of the work, provide the manufacturer's non-prorated twenty (20) year guarantee, covering materials and workmanship, insuring a weather and watertight roofing system. This guarantee will not contain a pre-determined dollar limitation.
- B. Provide self-adhesive emblems for each roof hatch, door or access way, notifying the user of the roof condition, precautionary measures and other conditions of use or maintenance of the roofing membranes.

2 PART 2 – PRODUCTS

2.1 SBS ROOFING MEMBRANE SYSTEM (MOD. BITUMEN ROOFING)

- A. Roofing membrane (applicable for slopes up to and including but not exceeding 2/12) shall consist of a layer of granule surfaced SBS polymer modified sheet, with an SBS smooth polymer modified sheet, applied in accordance with manufacturer's recommendations to achieve the specified guarantee. The modifiers shall be styrene-butadiene-styrene (SBS). The reinforcement core shall be one (1) reinforcement layer of non-woven polyester.
- B. Approved Manufacturers: Johns Manville, Denver, CO (800.654.3103), Firestone Building Products Company, Indianapolis, IN (800.428.4442), Soprema Roofing and Waterproofing, Inc., Wadsworth, OH (800.356.3521), CertainTeed Commercial Roofing Systems, Valley Forge, PA (610.341.7000) or approved equal.
- C. FM Approved Systems: 110mph wind design required.
 - 1. Insulated Deck: **Johns Manville 2CID**
Firestone I-3233-M (Red Shield System)
Soprema 2043
CertainTeed GMS-C-U2
- D. Modified Bituminous Membrane: Johns Manville **DynaKap FR CR**
Firestone **SBS Premium FR UltraWhite**
Sopralene **180 Granules**
CertainTeed **Flintastic Premium GMS**
 - 1. Compound: Styrene Butadiene Styrene (SBS) Modified Asphalt.
 - 2. Reinforcement: Minimum 160 g/m² polyester fabric mat.
 - 3. Weight: Minimum 97 pounds per roll.
 - 4. Thickness: Minimum 160 mil thick sheet, with a granular surface.
 - 5. Application: Asphalt.

6. Surfacing: Mineral.
 7. Color: White, with acrylic coating.
 8. Edges: Tapered edges are not permitted.
- E. Base Sheet: **Johns Manville DynaBase**
 Firestone SBS Smooth 145
 Soprema Elastophene 180 Sanded
 CertainTeed Ultra Poly SMS Base
1. Type: Asphalt saturated polyester mat conforming to ASTM D 6164.
 2. Weight: Minimum 88 pounds per roll.
- F. Asphalt Primer: ASTM D 41.
- G. Asphalt (Hot): ASTM D 312 Type IV, steep asphalt. Use only that asphalt which has all of the following information printed on the asphalt packages or on the bills of lading covering bulk asphalt.
1. Softening Point Range: The temperature ranges of the asphalt determined in accordance with ASTM D 312 and ASTM D 36.
 2. Equiviscous Temperature Range: The temperature range, plus or minus 25 degrees F, at which a viscosity of 125 Centistokes is attained.
 3. Finishing Blowing Temperature: The temperature at which the blowing of the asphalt has been completed.
- H. SBS Flashing Systems
1. Flashing: As recommended by the manufacturer to suit each condition.
 2. Adhesives: As recommended by manufacturer for use on its system.

2.2 ACCESSORIES

- A. Nails for securing membranes to wood nailers shall be 1 inch long barbed and galvanized roofing nails let through minimum 2 inch diameter discs with minimum 26 gauge thickness.
- B. Fasteners for securing membranes at the walls shall be all-purpose fastener as recommended by roofing manufacturer with 2 inch diameter fastening plates at 8 inches on center.
- C. Each fastener exposed to view in the finished work shall be provided with a gasket. Gasket shall not be less than 1/16 inch thick, and fabricated of cured EPDM sized so as to snugly fit the fastener shank and extend beyond the head edge by not less than 1/8 inch.
1. All exposed fastener heads shall be covered with a dab of sealant.

- D. Vent Stack Boots: Provide manufacturer's standard rubber boots and flashing collars appropriate for purpose intended.
 - E. Walkway Pads: Selected system's top ply material, cut in sizes recommended per manufacturer, in contrasting color selected by Architect. SBS material laid as a continuous strip material is not acceptable.
 - F. Roof Expansion Joint: ASTM C 864, Silicone extrusion or black, non-reinforced, form-supported, closed cell neoprene extrusions, with a bifurcated waterproof attachment to metal flanges. Compression seals shall conform to ASTM D 2628, black. Flange metal shall be 26 gauge galvanized steel and shall extend over the tops of curbs with a minimum of 2 inch flange metal.
- 1. Approved Manufacturers:
 - a. GAF Materials Corporation, Hampstead, NH (877.270.7663)
 - b. Johns Manville
 - c. Substitutions: Under provisions of Section 01250.

3 PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify securely supported and attached deck, free of depressions, waves or projections.
- B. Verify deck surfaces are dry and free of moisture in any form.
- C. Verify proper placement of roof openings, pipes, curbs, sleeves, ducts, vents and other penetrations.
- D. Verify proper securement of penetrating or roof mounted equipment.

3.2 JOB AND WEATHER CONDITIONS

- A. Suspend all application and installation activities during inclement weather.
- B. Protect adjacent building surfaces against damage and bitumen spillage.
- C. Protect roof deck and insulation from moisture by providing water cut-offs at the end of each day's work or when the weather is threatening. Failure to protect the deck and roofing from moisture will result in the removal of damaged materials or materials containing excessive moisture. Remove water cut-offs prior to start of new work.

- D. Remove debris from roof deck and site on a daily basis and dispose at an approved disposal site.
- E. Do not permit traffic or material storage on completed roof surfaces.

3.3 ASPHALT

- A. Provide kettle or tanker with clearly visible operating thermometer.
- B. Do not heat asphalt above flash point and EVT recommendations.
- C. Application of Asphalt: Uniformly applied without voids as recommended by roofing manufacturer.
- D. Type of asphalt.
 - 1. Roofing Base Sheet to Insulation: Type IV.
 - 2. Modified Bitumen Membrane to Base Sheet: Type IV.

3.4 SUBSTRATE PREPARATION

- A. Comply with manufacturer's published instructions for preparation of substrates to receive sheet roofing. Prior to priming, clean substrate of dust, debris and other substances detrimental to roofing work. All new insulations must be free of ridges or edges that will preclude the installation of the roof systems as recommended by the manufacturer.

3.5 SBS ROOFING INSTALLATION

- A. SBS Base Sheet (and INTERPLY where required by manufacturer):
 - 1. Install one (1) ply of base sheet over insulation in a full and uniform coating of asphalt, applied at the rate of 25 lbs per square.
 - 2. Laps: 2 inch side laps and 4 inch end laps.
- B. SBS Modified Bituminous Membrane:
 - 1. Install one (1) ply of modified bituminous membrane to base sheet in a full and uniform coating of asphalt at the rate of 25 lbs per square.
 - 2. Laps: 4 inch side laps and 6 inch end laps.
 - 3. Finishing Operations: Broadcast mineral granules provided by the manufacturer into asphalt material that extrudes between membranes during application. Apply sufficient granules to conceal all asphalt material, in a uniform and level manner, blending with the adjacent membrane material. Provide white acrylic coating once the asphalt material has cured. **THIS OPERATION IS AN ABSOLUTE REQUIREMENT AND MUST BE**

COMPLIED WITH AT THE TIME OF FINAL MEMBRANE APPLICATION.

C. SBS Flashings:

1. Prime metal and masonry surfaces prior to flashing application at the minimum rate of 1 gallon per 100 square feet.
2. Securely apply flashings over base sheets as recommended by the manufacturer. Install the top ply of the perimeter flashing in a fully mopped bed of steep asphalt, type IV.
3. Apply mineral surfaced membrane base flashings to seal membrane to vertical elements. The membrane should extend 6 inches minimum onto the roof deck.
4. Secure to nailing strips at 4 inches o.c. and reglets.
5. Coordinate installation of roof drains and related flashings.
6. Seal flashings and flanges of items penetrating membrane.

3.6 FIELD QUALITY CONTROL

- A. Provide on-the-job inspections, technical assistance and membrane application guidance as may be necessary to complete the roofing membrane application in accordance with the manufacturer's guarantee requirements.
- B. As directed by the Owner, and at no additional cost, the contractor may be required to cut not more than four (4) roof cores, of approximately 200 square inches each, from every newly constructed built-up roofing area in order to establish the amount of materials used per square foot, and shall restore all such areas to sound and watertight conditions.
- C. In the event that such core cuts disclose any deficiency in materials, or soundness of construction, the contractor shall, at his own expense, apply additional materials or otherwise correct the deficiencies to the satisfaction of the Owner.

3.7 JOB COMPLETION

- A. Inspect completed roofing and correct all defects to meet the specification requirements.
- B. The manufacturer's representative shall inspect the completed roofing system and notify the Contractor of any defects in the application.
- C. Clean up all debris, excess materials and equipment and remove from site.
- D. Clean any drips or spills of asphalt or primers. Apply additional granules as required to cover and conceal any asphalt bleed throughs.

MODIFIED BITUMINOUS SHEET ROOFING

- E. In areas where finished surfaces are soiled by work of this Section, consult manufacturer of surfaces for cleaning advice and conform to their documented instructions.
- F. Repair or replace defaced or disfigured finishes caused by work of this Section.
- G. Restrict construction traffic and equipment movement on the completed roofing to only essential personnel. Provide appropriate protection against traffic and construction activities on completed roofs.

END OF SECTION

1 PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Removal of existing roofing in preparation for a new roof system where indicated in Drawings. This will include the removal of existing built-up roofing, insulation, caps and flashings, blocking, disposal of removed materials, protection of areas over which work traffic will move, work called for in the Drawings and other work necessitated by their operations.

1.2 RELATED SECTIONS

- A. Section 06100 – Rough Carpentry
- B. Section 07212 – Roof Insulation Board
- C. Section 07525 – Modified Bituminous Sheet Roofing
- D. Section 07600 – Flashing and Sheet Metal
- E. Section 07900 – Sealants
- F. Section 15410 – Plumbing Piping

1.3 QUALIFICATIONS

- A. Materials Removal Firm: Company specializing in performing the work of this Section with minimum ten (10) years documented experience. The foreman of the crew performing roofing removals shall be a qualified roofing or waterproofing journeyman with at least five (5) years experience in roofing removals.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. Do not remove existing roofing system when weather conditions threaten the integrity of the building contents or intended continued occupancy.
- B. Maintain continuous temporary protection during and prior to installation of new roofing system.
- C. Coordinate the Work so that removal of the existing roofing system and the installation of the new roofing system proceed in an orderly and timely manner.

1.5 SCHEDULING

- A. Schedule work under the provisions of Section 01300.
- B. Schedule work to coincide with commencement of installation of new roofing system.

- C. Remove only existing roofing materials that can be replaced with new materials the same day and as the weather will permit.

1.6 COORDINATION

- A. Coordinate work with other affected mechanical and electrical work associated with roof penetrations.

2 PART 2 – PRODUCTS

2.1 MATERIALS

- A. Temporary Protection: Sheet polyethylene. Provide weights to retain sheeting in position.

3 PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify existing site conditions under provisions of the general conditions of this contract.
- B. Verify that existing roof surface is clear and ready for work of this Section.

3.2 PREPARATION

- A. Sweep roof surface clean of loose matter. Remove loose refuse and dispose off site.
- B. Control dust, noise and debris to the satisfaction of the Owner.

3.3 MATERIALS REMOVAL

- A. Remove metal counter flashings. At the existing reglets scheduled to remain, fold up metal counter flashings to permit access to top edge of base flashings.
- B. Remove roofing, perimeter base flashings and flashings around roof protrusions, pitch pans and pockets.
- C. Remove blocking and related material.
- D. Remove membranes, insulation and associated components.

- E. Repair existing deck surfaces to provide smooth working surface for new roof system.

3.4 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.
- C. Provide for surface drainage from sheeting to existing drainage facilities.
- D. Do not permit traffic over unprotected or repaired deck surface.
- E. Provide temporary protective sheeting on furniture, equipment, flooring and other interior finishes in areas that will be subject to falling debris and underdeck materials. Professionally clean the interior spaces soiled by roofing removal and replacement operations before classes begin each day.

3.5 FIELD QUALITY CONTROL

- A. Inspection will identify the exact limits of material removal.

END OF SECTION

1 PART 1 – GENERAL

1.1 WORK INCLUDED

- A. Caps, drip edges, gravel stops, and roof flashings
- B. Scuppers and related counter flashings

1.2 RELATED SECTIONS

- A. Section 06100 – Rough Carpentry
- B. Section 07212 – Roof Insulation Board
- C. Section 07525 – Modified Bituminous Sheet Roofing
- D. Section 07900 – Sealants

1.3 REFERENCES

- A. Reference Standards: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

- 1. American Society for Testing and Materials (ASTM) Publications:

- | | |
|-----------|--|
| B 209-10 | Aluminum and Aluminum-Alloy Sheet and Plate |
| D 41-11 | Asphalt Primer Used in Roofing, Dampproofing and Waterproofing |
| D 5643-06 | Coal Tar Roof Cement, Asbestos Free |

- 2. Federal Specification (FS)

- | | |
|--------------|---------------------------------|
| UU-B-790A-68 | Building Paper, Vegetable Fiber |
|--------------|---------------------------------|

- 3. Single-Ply Roofing Institute (SPRI) Publications:

- | | |
|---------|---|
| ES-1-03 | Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems |
|---------|---|

1.4 REGULATORY REQUIREMENTS

- A. Conform to ANSI/SPRI ES-1 in accordance with Section 1504.5 of the 2005 Connecticut State Building Code for edge securement.

1.5 SUBMITTALS

- A. Samples:

- 1. Sheet Metal Materials: Two (2) pieces, 6 by 10 inches, of each type.

2. Gravel Stops and Drip Edges: One (1) piece, 6 inches long, and one (1) sample.
 3. Nails and Other Fastenings: Two (2) each.
- B. Shop Drawings: Indicate thicknesses, dimensions, fastenings and anchoring methods, expansion joints and other provisions necessary for thermal expansion and contraction. Scaled catalog cuts may be submitted for factory fabricated items.
1. Gravel stops and drip edges
 2. Flashing at roof penetrations
 3. Base and cap flashing (counter flashing)
- C. Certificates of Compliance: Manufacturer's certificates attesting that materials meet specified requirements.
- 1.6 DELIVERY, HANDLING AND STORAGE: Package and protect materials during shipment. Uncrate and inspect materials for damage, dampness and wet-storage stains upon delivery to the job site. Remove from the site and replace damaged materials that cannot be restored to like-new condition. Handle sheet metal items to avoid damage to surfaces, edges, and ends. Store materials in dry, weather-tight, ventilated areas until immediately before installation.
- 1.7 WARRANTY
- A. Warranty all work against defects in materials and workmanship for two (2) years following final acceptance.
1. Provide duplicate original warranties in writing on Contractor's letterhead.

2 PART 2 – PRODUCTS

2.1 MATERIALS

- A. Furnish sheet metal items in 8 to 10 foot lengths. Single pieces less than 8 feet long may be used to connect to factory-fabricated inside and outside corners, and at ends of runs. Provide accessories and other items essential to complete the sheet metal installation. These accessories shall be made of the same materials as the items to which they are applied. Fabricate sheet metal items of the materials specified below and to the gauge, thickness or weight specified. Sheet metal items shall have manufacturer's durinodic coating finish unless specified otherwise.
- B. Exposed Sheet Metal Items: Shall be of the same material. The following items shall be considered as exposed sheet metal: Gravel stops, drip edges, caps and all

associated accessories.

- C. Gravel Stops, Drip Edges, Caps, Scuppers and other Exposed Flashings: ASTM B 209; 0.050 inch thick aluminum, with two (2) coat Kynar finish (or approved equal), color to be selected by Architect and Owner from manufacturer's full range, meeting alloy standards 6063-T52. Provide for expansion and contraction, as well as cleats and other related items as recommended by the manufacturer.

1. Approved manufacturers:

- a. Firestone Building Products, Indianapolis, IN (800.428.4442)
- b. Johns Manville, Denver, CO (800.654.3103)
- c. Architectural Products Company, Wood Ridge, NJ (800.631.8375)
- d. Cheney Flashing Company, Trenton, NJ (800.322.2873)
- e. Southern Aluminum Finishing Company, Atlanta, GA (800.241.7429)
- f. Substitutions: Under provision of Section 01600.

- D. Bituminous Plastic Cement: ASTM D 5643.

- E. Building Paper: FS UU-B-790, Style 4, Grade B.

- F. Asphalt Primer: ASTM D 41.

- G. Fastener: Use the same metal or a metal compatible with the item fastened. Use stainless steel fasteners to fasten dissimilar materials.

3 PART 3 – EXECUTION

3.1 INSTALLATION

- A. Requirements: Make surfaces to receive sheet metal plumb and true, clean, even, smooth, dry and free of defects and projections which might affect the application. For installation of items not shown in detail or not covered by specifications conform to the applicable requirements of the SMACNA Architectural Sheet Metal Manual. Join sheet metal together as recommended by the manufacturer or by the SMACNA manual.
- B. Workmanship: Make lines, arises and angles sharp and true. Free exposed surfaces from visible wave, warp and buckle and tool marks. Fold back exposed edges neatly to form a ½ inch hem on the concealed side. Make sheet metal exposed to the weather watertight with provisions for expansion and contraction.
- C. Nailing: Confine nailing of sheet metal generally to sheet metal having a maximum width of 18 inches. Confine nailing or flashing to one (1) edge only. Space nails evenly not over 3 inches on centers and approximately ½ inch from edge unless otherwise specified or indicated. Face nailing will not be permitted.

Where sheet metal is applied to other than wood surfaces, include in shop drawings, the locations for nailing strips required to secure the work. Nailing strips are specified in Section 06100 – Rough Carpentry.

- D. Cleats: Provide cleats for sheet metal 18 inches and over in width. Cleats shall be continuous and fastened not over 12 inches on centers unless otherwise specified or indicated. Cleating shall be of the same material and thickness as the sheet metal being installed. Secure one (1) end of the cleat with two (2) nails and the cleat folded back over the nail heads. Lock the other end into the seam. Pre-tin cleats for soldered seams.
- E. Bolts, Rivets and Screws: Install bolts, rivets and screws where indicated or required. Provide compatible washers where required to protect surface of sheet metal and to provide a watertight connection.
- F. Flat-Lock Seams: Finish not less than ¾ inch wide.
- G. Protection from Contact with Dissimilar Materials:
 - 1. Metal Surfaces: Paint surfaces in contact with mortar, concrete or other masonry materials with alkali-resistant coatings such as heavy-bodied bituminous paint.
 - 2. Wood or Other Absorptive Materials: Paint surfaces that may become repeatedly wet and in contact with metal with two (2) coats of aluminum paint or a coat of heavy-bodied bituminous paint.
- H. Expansion and Contraction: Provide expansion and contraction joints at not more 32 foot intervals for aluminum and at not more than 40 foot intervals for other metals. Where the distance between the last expansion joint and the end of the continuous run is more than half the required interval, an additional joint shall be provided. Space joints evenly.
- I. Gravel Stops, Drip Edges, Caps, Scuppers and other Exposed Flashings: Prefabricate in the shapes and sizes indicated and in lengths not less than 8 feet. Extend flange at least 4 inches onto roofing. Provide prefabricated, mitered corners internal and external corners. Nail flange securely to wood nailer with large-head, barbed-shank roofing nails 1.5 inches long spaced not more than 3 inches on centers.
 - 1. Edge Strip: Hook the lower edge of fascias at least ¾ inch over a continuous strip of the same material bent outward at an angle not more than 45 degrees to form a drip. Nail hook strip to a wood nailer at 6 inches maximum on centers. Where fastening is made to concrete or masonry, use screws spaced 12 inches on centers driven in expansion shields set in the concrete or masonry. Where horizontal wood nailers are slotted to provide for insulation venting, install strips to prevent obstruction of vent slots.

Where necessary, install strips over 1/16 inch thick compatible spacer or washers.

2. Joints: Leave open the section ends of gravel stops and fascias ¼ inch and backed with a formed flashing plate, mechanically fastened in place and lapping each section end a minimum of 4 inches set laps in plastic cement. Face nailing will not be permitted.

3.2 PAINTING: Field-paint sheet metal for separation of dissimilar materials.

3.3 CLEANING

- A. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, handling marks, contamination from steel wool, fittings and drilling debris and scrub-clean. Free the exposed metal surfaces of dents, creases, waves, scratch marks and solder or weld marks.

3.4 REPAIRS TO FINISH

- A. Scratches, abrasions and minor surface defects of finish may be repaired in accordance with the manufacturer's printed instructions and as approved. Repair damaged surfaces caused by scratches, blemishes and variations of color and surface texture. Replace items which cannot be repaired.

3.5 FIELD QUALITY CONTROL

- A. Establish and maintain a quality control procedure for sheet metal used in conjunction with roofing to assure compliance of the installed sheet metalwork with the contract requirements. Work not in compliance with the contract shall be promptly removed and replaced or corrected. Quality control shall include, but not be limited to, the following:
 1. Observation of environmental conditions; number and skill level of sheet metal workers; condition of substrate.
 2. Verification of compliance before, during and after installation.
 3. Inspection of sheet metalwork, for proper size and thickness, fastening and joining and proper installation.
- B. Procedure: Submit for approval prior to start of roofing work. Include a checklist of points to be observed. Document the actual quality control observations and inspections.

END OF SECTION

1 PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Building and site sealants

1.2 RELATED SECTIONS

- A. Section 07525 – Modified Bituminous Sheet Roofing
- B. Section 07600 – Flashing and Sheet Metal
- C. Section 07631 – Gutters and Downspouts
- D. Section 15410 – Plumbing Piping

1.3 REFERENCES

- A. Reference Standards: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

- 1. American Society for Testing and Materials (ASTM) Publications:

- C 920-11 Elastomeric Joint Sealants

1.4 SUBMITTALS

- A. Certificates of Conformance: Submit certificates from the manufacturers attesting that materials meet the specified requirements.
- B. Manufacturers' Data: Clearly mark data to identify material type to be provided.
- C. Sealants: Data for sealant shall include:
 - 1. Application instructions and precautions.
 - 2. Shelf life.
 - 3. Mixing instructions for multi-component sealants.
 - 4. Recommended cleaning solvents.
- D. Primer(s).
- E. Backstop Material(s).
- F. Colors: Submit not less than three (3) different samples of manufacturers' full range for selection by Architect and Owner.
- G. Manufacturer's Test Report: Indicate sealant compatibility with commonly used substrates.

- 1.5 **SAMPLE JOINTS:** Before sealant work is started, provide a sample of each type of finished joint where directed. Sample shall show the workmanship, bond and color of sealant. The workmanship, bond and color of sealant throughout the project shall match the approved sample joints.
- 1.6 **ENVIRONMENTAL CONDITIONS:** The ambient temperature shall be within the limits of 40 and 100 degrees F when sealant is applied.
- 1.7 **DELIVERY AND STORAGE:** Deliver materials to the job site in unopened manufacturers' external shipping containers, with brand names, date of manufacture, color and material designation clearly marked thereon. Elastomeric sealant containers shall be labeled to identify type, class, grade and use. Carefully handle and store materials to prevent inclusion of foreign materials or subjection to sustained temperatures exceeding 100 degrees F or less than 40 degrees F.

2 PART 2 – PRODUCTS

- 2.1 **SEALANTS:** Provide one part polysulfide sealants that have been tested and found suitable for the substrates to which it will be applied.
 - A. For joints in vertical surfaces, provide ASTM C 920, Type S, Class 25, Grade NS, Use NT. For joints at aluminum surfaces, provide ASTM C 920, Type S, Class 25, Grade NS, Use A. For joints in horizontal surfaces, provide ASTM C 920, Type S, Class 25, Use T. Color as selected by Architect and Owner from manufacturer's full color range. Location(s) shall be as follows, at a minimum:
 - 1. Metal-to-metal joints where sealant is indicated or specified.
 - 2. Joints between ends of gravel stops and adjacent walls.
 - B. **Manufacturers:** The following manufacturers are approved for use:
 - 1. Tremco Incorporated, Ashland, OH (800.321.7906)
 - 2. Pecora Corporation, Harleysville, PA (800.523.6688)
 - 3. Sika Corporation, Lyndhurst, NJ (800.933.7452)
 - 4. Substitutions: In accordance with Section 01300
- 2.2 **PRIMER FOR SEALANT:** Provide a non-staining, quick-drying type of consistency recommended by the sealant manufacturer for the particular application.
- 2.3 **BOND BREAKERS:** Provide the type and consistency recommended by the sealant manufacturer for the particular application.
- 2.4 **BACKSTOPS:** Provide glass fiber roving or neoprene, butyl, polyurethane or polyethylene foams free from oil or other staining elements as recommended by sealant manufacturer. Backstop material shall be compatible with sealant.

2.5 CLEANING SOLVENTS: Provide type(s) recommended by the sealant manufacturer.

3 PART 3 – EXECUTION

3.1 SURFACE PREPARATION: Surfaces shall be clean, dry to the touch and free from dirt frost, moisture, grease, oil, wax, lacquer, paint and other foreign matter that would tend to destroy or impair adhesion. When resealing an existing joint, remove existing caulk or sealant prior to applying new sealant.

A. Steel Surfaces: Remove loose mill scale by sandblasting or, if sandblasting is impractical or would damage finish work, scraping and wire brushing. Remove protective coatings by sandblasting or using a residue-free solvent.

B. Aluminum or Bronze Surfaces: Remove temporary protective coatings from surfaces that will be in contact with sealant. When masking tape is used as a protective coating, remove tape and any residual adhesive just prior to sealant application. For removing protective coatings and final cleaning, use non-staining solvents recommended by the manufacturer of the item(s) containing aluminum or bronze surfaces.

3.2 SEALANT PREPARATION: Do not add liquids, solvents, or powders to the sealant. Mix multi-component elastomeric sealants in accordance with manufacturer's instructions.

3.3 APPLICATION

A. Joint Width-To-Depth Ratios:

1. Acceptable Ratios:

<u>JOINT WIDTH</u>	<u>JOINT DEPTH</u>	
	Minimum	Maximum
For metal, glass, or other nonporous surfaces:		
¼ inch (minimum)	¼ inch	¼ inch
Over ¼ inch	½ of width	Equal to width
For wood:		
¼ inch (minimum)	¼ inch	¼ inch
Over ¼ inch to ½ inch	¼ inch width	Equal to width
Over ½ inch to 2 inches	½ inch	5/8 inch
Over 2 inches	(As recommended by sealant manufacturer)	

2. Unacceptable Ratios: Where joints of acceptable width-to-depth ratios have not been provided, clean out joints to acceptable depths and grind or cut to acceptable widths without damage to the adjoining work. Grinding shall not be required on metal surfaces.
- B. Backstops: Install backstops dry and free of tears or holes. Tightly pack the back or bottom of joint cavities with backstop material to provide a joint of the depth specified. Install backstops in the following locations:
1. Where indicated.
 2. Where backstop is not indicated but joint cavities exceed the acceptable maximum depths specified in paragraph entitled, "Joint Width-to-Depth Ratios."
- C. Primer: Immediately prior to application of sealant, clean out loose particles from joints. Where recommended by sealant manufacturer, apply primer to joints in concrete masonry units, wood and other porous surfaces in accordance with sealant manufacturer's instructions. Do not apply primer to exposed finish surfaces.
- D. Bond Breaker: Provide bond breakers to the back or bottom of joint cavities, as recommended by the sealant manufacturer for each type of joint and sealant used, to prevent sealant from adhering to these surfaces. Carefully apply the bond breaker to avoid contamination of adjoining surfaces or breaking bond with surfaces other than those covered by the bond breaker.
- E. Sealants: Provide a sealant compatible with the material(s) to which it is applied. Do not use a sealant that has exceeded shelf life or has jelled and can not be discharged in a continuous flow from the gun. Apply the sealant in accordance with the manufacturer's instructions with a gun having a nozzle that fits the joint width. Force sealant into joints to fill the joints solidly without air pockets. Tool sealant after application to ensure adhesion. Sealant shall be uniformly smooth and free of wrinkles. Upon completion of sealant application, roughen partially filled or unfilled joints, apply sealant and tool smooth as specified.

3.4 PROTECTION AND CLEANING

- A. Protection: Protect areas adjacent to joints from sealant smears. Masking tape may be used for this purpose if removed 5 to 10 minutes after the joint is filled.
- B. Final Cleaning: Upon completion of sealant application, remove remaining smears and stains and leave the work in a clean and neat condition.
1. Masonry and Other Porous Surfaces: Immediately scrape off fresh sealant that has been smeared on masonry and rub clean with a solvent as recommended by the sealant manufacturer. Allow excess sealant to cure for

- twenty-four (24) hours then remove by wire brushing or sanding.
2. Metal and Other Non-Porous Surfaces: Remove excess sealant with a solvent-moistened cloth.

END OF SECTION

1 PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Non-rated steel doors, exterior

1.2 RELATED SECTIONS

- A. Section 08710 – Door Hardware
- B. Section 09900 – Painting

1.3 REFERENCES

- A. Reference Standards: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

- 1. American National Standards Institute (ANSI) Publications:

- A117.1-03 Accessible and Usable Buildings and Facilities

- 2. Steel Door Institute (SDI) Publications:

- A250.8-03 Standard Steel Doors and Frames
(R 2008)

- 3. American Society for Testing and Materials (ASTM) Publications:

- A 653-04 Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Shop Drawings: Indicate door elevations, internal reinforcement, closure method, undercuts and finish.
- C. Product Data: Indicate door configurations, location of cut-outs for hardware reinforcement.
- D. Manufacturer's Installation Instructions: Indicate special installation instructions.
- E. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

- A. Conform to requirements of ANSI/SDI-A250.8 and ANSI A117.1.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01600.
- B. Protect doors with resilient packaging sealed with heat shrunk plastic.
- C. Break seal on-site to permit ventilation.

1.8 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on shop drawings.

1.9 COORDINATION

- A. Coordinate work under provisions of Section 01300.
- B. Coordinate the work with door opening construction, door frame and door hardware installation.

2 PART 2 – PRODUCTS

2.1 STANDARD DOOR MANUFACTURERS

- A. Steelcraft Manufacturing Company, Cincinnati, OH (800.243.9780); **B Series**
- B. Ceco Door, An Assa Abloy Group Company, Milan, TN (888.232.6366); **Medallion Series**
- C. Kewanee Corporation, Chicago, IL (708.458.1171); **D Series**
- D. Curries Company, An Assa Abloy Group Company, Mason City, IA (641.423.1334); **747 Series**
- E. Substitutions: Under provisions of Section 01600.

2.2 DOORS

- A. Exterior Doors: SDI-A250.8 Grade III Model 1.

2.3 DOOR CONSTRUCTION

- A. Face: Steel sheet in accordance with ANSI/SDI-100, but not less than 16 gauge thick. Exterior Applications shall be to ASTM A 653 steel sheet hot-dipped zinc coated to .60 oz/sq. ft.
- B. Core: Polyurethane or polystyrene insulation. Vertical galvanized steel stiffeners for exterior application.
- C. Hardware Reinforcement: NAAMM CHM-1-74.

2.4 FABRICATION

- A. Fabricate doors with hardware reinforcement welded in place.

2.5 FINISH

- A. Steel Sheet: Exterior applications galvanized to ASTM A 653 G60.
- B. Primer: Oven-dried, baked-on primer.

3 PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify substrate conditions under provisions of Section 01600.
- B. Verify that opening sizes and tolerances are acceptable.

3.2 INSTALLATION

- A. Install doors in accordance with ANSI/SDI-100 and DHI.
- B. Coordinate installation of doors with installation of hardware specified in Section 08710.

3.3 ERECTION TOLERANCES

- A. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.4 ADJUSTING

- A. Adjust work under provisions of Section 01700.

- B. Adjust door for smooth and balanced door movement.

END OF SECTION

1 PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Roof system skylights

1.2 RELATED SECTIONS

- A. Section 07525 – Modified Bituminous Sheet Roofing
- B. Section 07600 – Flashing and Sheet Metal
- C. Section 07900 – Sealants

1.3 REFERENCES

- A. Reference Standards: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

- 1. American Society for Testing and Materials (ASTM) Publications:

- A 123-12 Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
- E 283-04 Determining Rate of Air Leakage Through Exterior Windows,
(R 2012) Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
- E 330-02 Structural Performance of Exterior Windows, Doors, Skylights
(R 2010) and Curtain Walls by Uniform Static Air Pressure Difference
- E 331-00 Water Penetration of Exterior Windows, Skylights, Doors and
(R 2009) Curtain Walls by Uniform Static Air Pressure Difference
- E 547-00 Water Penetration of Exterior Windows, Skylights, Doors, and
(R 2009) Curtain Walls by Cyclic Static Air Pressure Difference

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Skylight: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Indicate materials, finishes and installation procedures recommended by manufacturer.
 - 4. Indicate compliance with specified design criteria.
 - 5. Indicate compliance with performance requirements.
 - 6. Include product specific glazing details.
- C. Shop Drawings:

1. Indicate material types, gauges and finishes, fabrication details and installation details.
 2. Show glazing types, methods of attachment and thermal movement provisions.
- D. Indicate compliance with specified structural design criteria.
1. Submitted design calculations shall bear seal of a professional engineer licensed in the State of Connecticut.
 2. Certify that engineer has reviewed shop drawings.
- E. Samples: For each finish product specified, two (2) complete sets of color chips representing manufacturer's full range of available colors and patterns.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
1. Skylight manufacturer shall have a minimum of ten (10) years experience in design, fabrication and installation of custom aluminum skylight systems.
- B. Installer Qualifications:
1. Installer shall be trained and approved by manufacturer.
 2. Installer shall have five (5) years experience with skylight type, size and complexity.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
1. Finish areas designated by Architect.
 2. Do not proceed with remaining work until workmanship, color and sheen are approved by Architect.
 3. Refinish mock-up area as required to produce acceptable work.

1.6 PRE INSTALLATION CONFERENCE

- A. Convene one (1) week prior to commencing work of this Section, under provisions of Section 01300.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.8 PROJECT CONDITIONS

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

1.9 WARRANTY

- A. Performance Warranty: Provide manufacturer's written five (5) year warranty covering skylight work. Warranty shall cover defective materials, workmanship and performance. Warranty shall be limited to repair or replacement of work described in this section and shall not provide for repair or replacement of work by others.

2 PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. American Skylites, Inc., Arlington, TX (800.772.7401); **Model #GTSE**
- B. Solar Innovations, Myerstown, PA (800.618.0669)
- C. Substitutions: In accordance with provisions of Section 01600.

2.2 SKYLIGHT PERFORMANCE

- A. Uniform Load:
 - 1. Deflection of framing members shall not exceed L/180 or 1 inch whichever is less.
 - 2. Shall meet the requirements of uniform load test ASTM E 330 that requires glazing to withstand a positive and negative test pressure of 60 psf.
 - 3. Impact Protection: Unit skylights shall meet Miami-Dade County Notice of Acceptance certificate required.
- B. Air Infiltration:
 - 1. Shall meet the requirements of ASTM E 283 that allows a maximum air infiltration of 0.06 cfm of the total glazed surface area.
- C. Water Infiltration:
 - 1. Shall meet the requirements of ASTM E 547/E 331 that allows for no water infiltration at a test pressure of 12 psf.

2.3 GLASS SKYLIGHTS

- A. Glass Thermal Break Self Flashing: Insulated glass unit skylights with two (2) polyurethane thermal breaks and 1 inch fiberglass insulated 4 inches self flashing frame for installation on roof deck. Sizes and configurations as shown on drawings.
 - 1. Insulated Glass: Construction shall be minimum overall thickness of 1 inch (1/4 inch glass, 1/2 inch air space, 1/4 inch glass). Insulated glass shall be factory dual sealed.
 - 2. Glass:
 - a. Tinted, as selected by Architect and Owner from manufacturer's full range.
 - b. Low "E"/Argon gas.
 - c. Laminated.

2.4 FABRICATION

- A. Curb and Curb Frame: Curb and curb frame shall be fabricated from 6063-T5/T6 aluminum extrusion. 4 inch curb and curb frame shall be minimum 0.070 with two (2) polyurethane thermal breaks to reduce thermal transfer and reduce condensation on the interior of the frame and 1 inch fiberglass insulation. Curb frame shall have an integral condensation gutter. All corners shall be welded using the heliarc process.
- B. Glazing Gaskets and Sealants: Glazing to be separated from frame by a continuous extruded black Santoprene gasket. All insulated glass shall be factory dual sealed.
- C. Fasteners: Screws and fasteners used in the factory assembly process shall be stainless steel. Fasteners and screws used for securing skylight to structure shall be suitable for substrate.
- D. All skylights shall be factory assembled and factory glazed.

2.5 FINISH

- A. All exposed aluminum to be a two (2) coat Kynar finish (or approved equal), color to be selected by Architect and Owner from manufacturer's full range.
- B. Concealed Steel Items: Galvanized in accordance with ANSI/ASTM A 123 to 2.0 oz/sq ft.
- C. Apply one (1) coat of bituminous paint to concealed aluminum and steel surfaces in contact with cementitious or dissimilar materials.

3 PART 3 – EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

3.5 CLEANING

- A. General Cleaning: Installer shall remove all protective coverings from frames and/or insulated glass and shall leave installation free from heavy debris and/or sealant markings.
- B. Final Cleaning: Final cleaning in accordance with manufacturers recommendations shall be by the Contractor.

END OF SECTION

1 PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes

1. Furnish, deliver and install all finish hardware necessary for all doors, also hardware as specified herein and as enumerated in "Set Numbers" and as indicated and required by actual conditions at the building. The hardware shall include the furnishing of all necessary screws, special screws, bolts, special bolts, expansion shields and all other devices necessary for the proper application of the hardware.

B. Related Work Specified in Other Sections

1. The following items are to be furnished under other sections of the specifications and are specifically excluded from this section:

Rough and Constructional Type Hardware

1.2 REFERENCES

A. The following documents should be used in estimating, detailing and installing the items specified:

1. 2005 Connecticut Fire Safety Code, NFPA and Supplements
2. American National Standards Institute (ANSI)
3. CT State Building Code, Supplements and 2003 International Building Code including ICC/ANSI A117.1-2003
4. DHI Publication "Sequence and Format for the Hardware Schedule"
5. DHI Publication "Keying Systems and Nomenclature"
6. 1988 Uniform Federal Accessibility Standards

1.3 SUBMITTALS

A. General Requirements

1. Make all submittals in accordance with Section 01300.

B. Schedules

1. Submit detailed Hardware Schedules in conformance with standard DHI sequence and format. Provide four (4) copies of the schedule with each submission prior to approval.

C. Product Data

1. Provide four (4) complete sets of catalog cuts or product data sheets with the initial submission of the Hardware Schedule.

D. Samples

1. Provide a sample of each item to be proposed as a substitute for a specified product.

E. Templates:

1. Submit template information as required for the proper application of all items of hardware.
2. Keying Schedules
3. Submit a Keying Schedule with each Hardware Schedule, in standard DHI format as referenced in the DHI manual "Keying Systems and Nomenclature".

1.4 QUALITY ASSURANCE

A. Substitutions

1. Standards: Manufacturers and model numbers listed are to establish a standard of quality. Unless otherwise noted as "no substitution", similar items by approved manufacturers that are equal in design, function and quality will be accepted upon prior approval of the Architect and provided required data and physical samples are submitted in accordance with Section 01600. All bidders shall specify in their bids the products which they propose to furnish.

B. Supplier Qualifications

1. Qualifications: The hardware supplier must be engaged regularly in contracting work, be staffed to expedite work and have warehousing facilities to reasonably service the project. The firm shall have been furnishing hardware on similar projects in the vicinity for not less than two (2) years. The supplier must have in his employ a certified Architectural Hardware Consultant or a person with equivalent qualifications, to inspect periodically and direct detailing, applying and adjusting of hardware.

1.5 DELIVERY, STORAGE AND HANDLING

A. Marking and Packaging

1. Hardware shall be delivered to the job site in the manufacturers' original packages, marked to correspond with the approved Hardware Schedule.

B. Storage

1. The Contractor shall check all deliveries of hardware against the approved list and receipt for same, and immediately report any shortages or damage. The Contractor shall be solely responsible for the proper storage and care of all material, and shall make good without cost to the Owner, any loss, shortage or damage.

1.6 GENERAL NOTES

- A. Door hardware accessible to persons with disabilities shall be provided to comply with Uniform Federal Accessibility Standards.
- B. Installation Seminar: Hardware manufacturer is to provide an installation seminar for the hardware installer prior to installation.
- C. Punch List Preparation: Hardware manufacturer's representative to inspect the hardware installation prior to closeout.

1.7 WARRANTY

- A. All hardware furnished shall be warranted for a period of not less than one (1) year after date of final completion of the building, against defective material and workmanship. Where manufacturer's warranty is extended for a period greater than one (1) year, said warranty shall apply for that item to its full extent. All charges in conjunction with the replacement of defective hardware will be borne by the successful bidder. The hardware supplier shall not however, be liable where faulty operation is due to improper installation, abnormal usage or lack of normal maintenance.
 1. Closers: Ten (10) years, except electronic closers, two (2) years.
 2. Locksets: Three (3) years, except electrified locksets, one (1) year.

2 PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. The following manufacturer's products have been specified herein:
 1. Stanley Hardware, New Britain, CT (800.337.4393)
 2. Hager Companies, St. Louis, MO (800.255.3590)
 3. McKinney Products Company, Scranton, PA (800.346.7707)

4. Schlage Lock, Colorado Springs, CO (800.847.1864)
5. LCN Closers, Princeton, IL (800.526.2400)
6. Burns Manufacturing, Inc., Erie, PA (800.519.2610)
7. H.B. Ives, Wallingford, CT (203.294.4837)
8. Rockwood Manufacturing Company, Rockwood, PA (800.458.2424)
9. Glynn-Johnson, Indianapolis, IN (877.613.8766)
10. Zero International, Inc., Bronx, NY (800.635.5335)
11. Pemko Manufacturing Company, Memphis, TN (800.824.3018)
12. Door Controls International (DCI), Inc., Dexter, MI (800.742.3632)

2.2 MATERIALS

A. Screws and Fasteners

1. All hardware shall be packed with the necessary machine screws, sheet metal screws and sex bolts as required for proper and secure application.

B. Hinges

1. Unless otherwise noted, hinges shall be of the types and sizes as follows: (Numbers are taken from ANSI/BHMA Standard A156.1 and Stanley Hardware)

a. Exterior Doors:

- 1) 1¾ inch thick – Up to 3'-0" wide, 5 inches (**083102**) with non-removable pin option.

- b. The width of hinges shall be sufficient to clear all trim. Furnish one (1) pair of hinges for all doors up to 5'0" high. Furnish one (1) additional hinge for every additional 2½ feet or fraction thereof.

2. Equivalent products by the following manufacturers will be accepted:

- a. Hager
- b. McKinney

C. Locks, Latches, Cylinders

1. Locks and latches shall match that of the existing facility or shall be Schlage **ND Series**, Commercial Cylinder Lock x **RHO** (lever), Vandlgard functions as directed by the Architect and/or Owner. No other substitutions. Zinc die-cast levers will not be accepted.

D. Door Closers

1. Door closers, marked closer, shall be LCN **4040 Series Smoothee**, with delayed action cylinder, sized to the door leaf size. No substitutions.
2. Door closers are to be mounted on the least conspicuous side of the door and shall be selected to accommodate door swings and swing ranges as indicated in the Construction Documents. The hardware supplier shall consult with the Architect to verify applications, and note mounting locations on the hardware schedule.

E. Door Stops

1. Glynn-Johnson **90S** (stop only). Furnish with 300 series stainless steel, in US32D finish.
2. Equivalent products by the following manufacturers will be accepted:
 - a. DCI

F. Protection Plates

1. Provide Burns Manufacturing door protection plates, of 16 gauge construction, where indicated in the hardware sets, in heights as follows:
 - a. Kick Plates: 16 inches.
2. Widths shall be 2 inches less than door width for single doors and 1 inch less than door width for pairs of doors.
3. Kick plates shall be beveled three (3) sides.
4. Equivalent products by the following manufacturers will be accepted:
 - a. Ives
 - b. Rockwood

G. Thresholds

1. Thresholds shall be Pemko **2005AP** or in profiles as detailed in the construction documents.
2. Equivalent products by the following manufacturers will be accepted:
 - a. Zero

H. Weatherstripping

1. Head and Jamb: Zero International **#328AA**, Solid Neoprene in an extruded aluminum housing.
2. Sill: Zero International **#339AA** with extruded aluminum housing, solid neoprene.
3. The following manufacturer's equivalent products will be accepted:

- a. Pemko

2.3 FINISHES

- A. In general, unless otherwise specified in the hardware sets or specification, materials and finishes for the buildings shall be as follows:
 - 1. Interior Door Butts: Steel with finish US26D.
 - 2. Locks and Latches: Finish BHMA 626.
 - 3. Door Closers: Iron with sprayed finish to match balance of hardware.
 - 4. Protective Plates: Stainless Steel with finish US32D.
 - 5. All other items of hardware with finish US26D unless otherwise specified.

2.4 KEYING

- A. All locks and cylinders shall be master keyed to the existing master key system for the facility per the Architect and/or Owner.
- B. All master keys shall be delivered to the Architect or Owner as directed.
- C. The Contractor shall tag all change keys with temporary cardboard tags, using the final room numbers to be marked on the doors as indicated on the drawings. All tagged keys shall be turned over to the Owner.
- D. Keys required:
 - 1. Change Keys: Three (3) per cylinder.
 - 2. Master Keys: Six (6) per master key set.

3 PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine doors, frames and related items for conditions that would prevent the proper application of finish hardware. Do not proceed until defects are corrected.

3.2 COORDINATION

- A. Prior to installation of hardware, schedule and hold a meeting for the purpose of instructing installers on proper installation and adjustment of finish hardware. Representatives of locks, exit devices, closers, automatic operators and electrified hardware shall conduct training; provide at least ten (10) days notice to representatives. After training a letter of compliance, indicating when the training was held and who was in attendance, shall be sent to the Architect.

3.3 INSTALLATION

- A. Unless otherwise noted, all finish hardware shall be installed according to DHI published standard mounting locations.
- B. All tools, wrenches, instruction and maintenance sheets and other items of hardware shall be turned over to the Owner.
- C. Do not install surface mounted items until finishes have been completed on the substrate. Protect all installed hardware during painting.

3.4 FIELD QUALITY CONTROL

- A. After installation has been completed, provide the services of a qualified hardware consultant to check the project to determine the proper application of hardware according to the approved Hardware Schedule and Keying Schedule. Also, check the operation and adjustment of all hardware items.

3.5 ADJUSTING AND CLEANING

- A. At final completion, all hardware shall be left clean and free from disfigurement. Make a final adjustment to all door closers and other items of hardware. Where hardware is found defective, repair or replace or otherwise correct as directed.

3.6 PROTECTION

- A. Provide for the proper protection of all items of hardware until the Owner accepts the project as complete.

3.7 HARDWARE SCHEDULE

- A. The following hardware schedule is provided as a supplement to the requirements of Drawing A28 of the Construction Documents, which contain primary life safety information and details regarding each of the doors listed below.
- B. The hardware supplier shall meet with the Architect and/or Owner to determine lock functions and keying requirements.

HW-1

EACH TO HAVE:

BUTTS

1 STOREROOM LOCKSET

1 CLOSER

1 OH STOP

- 1 KICK PLATE
- 1 THRESHOLD
WEATHERSTRIPPING

END OF SECTION

1 PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Surface preparation and field application of paints and coatings

1.2 REFERENCES

- A. Reference Standards: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

- 1. American Society for Testing and Materials (ASTM) Publications:
 - D 16-11 Paint, Related Coatings, Materials and Applications

1.3 DEFINITIONS

- A. Conform to ASTM D 16 for interpretation of terms used in this Section.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide data on all finishing products.
- C. Samples: Submit two (2) sample sleeves, illustrating range of colors available for each surface finishing product scheduled. Architect will select colors from manufacturer's full color line.
- D. Manufacturer's Instructions: Indicate special surface preparation procedures and substrate conditions requiring special attention.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.
- B. Applicator: Company specializing in performing the work of this section with minimum five (5) years documented experience.

1.6 REGULATORY REQUIREMENTS

- A. Conform to Connecticut Building Code for flame and smoke rating requirements for finishes.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Section 01600.
- B. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- C. Container label to include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation and instructions for mixing and reducing.
- D. Store paint materials at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.

2 PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers – Paint
 - 1. ICI Paints, Cleveland, OH (800.454.3336)
 - 2. PPG Industries, Inc., Pittsburgh, PA (412.434.3131)
 - 3. Sherwin Williams Stores Division (800.474.3794)
- B. Manufacturers – Paint (Metal Surfaces)
 - 1. Hunting Specialty Products; **Hammerite**
 - 2. Benjamin Moore & Co., Montvale, NJ (800.344.0400); **Eggshell Finish House Paint with IronClad Galvanized Metal Latex Primer**
- C. Substitutions: Under provisions of Section 01600.

2.2 MATERIALS

- A. Coatings: Ready mixed, except field catalyzed coatings. Process pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating; good flow and brushing properties; capable of drying or curing free of streaks or sags.
- B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.
- C. Fastener Head Cover Materials: Latex filler.

2.3 FINISHES

- A. Finish ratings of interior paints and coatings shall conform to the following criteria:
 - 1. Exits: Class A
 - a. All other Areas: Class A or B

3 PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces and substrate conditions are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- C. Test shop applied primer for compatibility with subsequent cover materials.

3.2 PREPARATION

- A. Remove or mask electrical plates, hardware, light fixture trim, escutcheons and fittings prior to preparing surfaces or finishing.
- B. Correct defects and clean surfaces which affect work of this section. Remove existing coatings that exhibit loose surface defects.
- C. Seal with shellac and seal marks which may bleed through surface finishes.

- D. Existing Coatings: Remove surface irregularities by scraping or sanding to produce uniform substrate for coating application.
- E. Impervious Surfaces: Remove mildew by scrubbing with solution of tri-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- F. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- G. Composite Items Scheduled to Receive Paint Finish: Wipe off dust and grit with equal parts of water and ammonia solution (or equivalent) prior to priming. Fill nail holes and cracks after primer has dried; sand between coats.

3.3 APPLICATION

- A. Apply products in accordance with manufacturer's instructions.
- B. Do not apply finishes to surfaces that are not dry.
- C. Apply each coat to uniform finish.
- D. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
- E. Sand wood and metal lightly between coats to achieve required finish.
- F. Vacuum clean surfaces free of loose particles. Use tack cloth just prior to applying next coat.
- G. Allow applied coat to dry before next coat is applied.

3.4 FINISHING MECHANICAL, PLUMBING, FIRE PROTECTION AND ELECTRICAL EQUIPMENT

- A. Paint shop primed equipment. Paint shop pre-finished items occurring at interior areas.
- B. Remove unfinished louvers, grilles, covers and access panels on mechanical and electrical components and paint separately.
- C. Prime and paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports except where items are pre-finished.
- D. Paint exposed conduit and electrical equipment occurring in finished areas.

- E. Color code equipment, piping, conduit and exposed duct work in accordance with requirements indicated.
- F. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons and fittings removed prior to finishing.
- G. Prime and paint (flat black, 1 coat) interiors of duct sections which are visible from finished spaces through return grilles or diffusers, eliminating reflectivity and color cast by these metal surfaces.

3.5 CLEANING

- A. Clean work under provisions of 01700.
- B. Collect waste material which may constitute a fire hazard, place in closed metal containers and remove daily from site.

3.6 SCHEDULE – EXTERIOR SURFACES

- A. Steel – Galvanized:
 - 1. One (1) coat galvanized primer.
 - 2. Two (2) coats of alkyd enamel, gloss.
- B. Composites – Painted:
 - 1. One (1) coat of acrylic “gripper” primer.
 - 2. One (1) coat of latex enamel, semi-gloss.

END OF SECTION

1 PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Piping insulation, jackets and accessories. Insulate new roof drain bodies and sections of piping installed or disturbed by the new work.

1.2 RELATED SECTIONS

- A. Section 15410 – Plumbing Piping

1.3 REFERENCES

- A. Reference Standards: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

- 1. American Society for Testing and Materials (ASTM) Publications:

- C 547-11 Mineral Fiber Pipe Insulation

- D 1784-11 Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds

- E 84-11 Surface Burning Characteristics of Building Materials

1.4 SUBMITTALS

- A. Submit under provisions of Section 01330.
- B. Product Data: Provide product description, list of materials and thickness for each service and locations.
- C. Samples: Submit two (2) samples of any representative size illustrating each insulation type.
- D. Manufacturer's Installation Instructions: Indicate procedures which ensure acceptable workmanship and installation standards will be achieved.

1.5 QUALITY ASSURANCE

- A. Materials: Flame spread/smoke developed rating of 25/50 or less in accordance with ASTM E 84.

1.6 QUALIFICATIONS

- A. Applicator: Company specializing in performing the work of this section with minimum three (3) years experience.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Maintain ambient temperatures and conditions required by manufacturers of adhesives, mastics and insulation cements.

2 PART 2 – PRODUCTS

2.1 PIPE INSULATIONS AND JACKETS

- A. Manufacturers: Johns Manville, Denver, CO (800.654.3103) or approved equal.
- B. Glass Fiber: **Micro-Lok** meeting ASTM C 547; rigid molded, noncombustible.
 - 1. 'K' ('ksi') Value: 0.23 at 75 degrees F.
 - 2. Maximum Service Temperature: 850 degrees F
 - 3. Vapor Retarder Jacket: **AP-T PLUS** White Kraft paper reinforced with glass fiber yarn and bonded to aluminum foil, secure with self sealing longitudinal laps and butt strips or AP Jacket with outward clinch expanding staples or vapor barrier mastic as needed.
- C. PVC: **Ceel-Co® 550 PVC** jackets and fittings meeting ASTM D 1784; high impact, gloss white, UV resistant.
 - 1. Thickness: 30 mil.

3 PART 3 – EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Verify that all surfaces are clean, dry and free of foreign material.

3.2 INSTALLATION

- A. Install materials in accordance with manufacturer's recommendations, building codes and industry standards.
- B. Continue insulation vapor barrier through penetrations except where prohibited by code.
- C. Piping Insulation:
 - 1. Locate insulation and cover seams in least visible locations.
 - 2. Neatly finish insulation at supports, protrusions and interruptions.
 - 3. Provide insulated dual temperature pipes or cold pipes conveying fluids below ambient temperature with vapor retardant jackets with self sealing

- laps. Insulate complete system.
4. Provide insert between support shield and piping on piping 1½ inches diameter or larger. Fabricate of Johns Manville **Thermo-12** or other heavy density insulating material suitable for temperature. Insulation inserts shall not be less than the following lengths:

3 inch to 6 inch pipe size	12 inches long
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3.3 PIPING INSULATION SCHEDULE

	PIPE SIZE <u>Inch (mm)</u>	THICKNESS <u>Inch (mm)</u>
A. Fiber Glass Insulation		
Roof Drain Bodies	all sizes	1
Roof Drainage Within 10 Feet of the Exterior	all sizes	1½

END OF SECTION

1 PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Pipe and pipe fittings (replacing damaged sections where indicated)
- B. Pipe hangers, supports, isolators and associated anchors
- C. Storm water drainage system (drain)

1.2 RELATED SECTIONS

- A. Section 06100 – Rough Carpentry
- B. Section 07525 – Modified Bituminous Sheet Roofing
- C. Section 07900 – Sealants
- D. Section 15260 – Piping Insulation

1.3 REFERENCES

- A. Reference Standards: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

1. American Society for Testing and Materials (ASTM) Publications:

- | | |
|----------|---|
| A 74-09 | Cast Iron Soil Pipe and Fittings |
| C 564-11 | Rubber Gaskets for Cast Iron Soil Pipe and Fittings |

2. America Society of Mechanical Engineers (ASME) Publications:

- | | |
|-------------|-------------------------------|
| A112.6.4-03 | Roof, Deck and Balcony Drains |
|-------------|-------------------------------|

3. International Association of Plumbing and Mechanical Officials (IAPMO) Publications:

- | | |
|------------|--|
| IGC 187-09 | Roof Drains with Integral Overflow Drain or Air Vent |
|------------|--|

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide data on pipe materials, pipe fittings, valves and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.
- C. Submit manufacturer's product data on the drains.

1.5 PROJECT RECORD DOCUMENTS

- A. Submit under provisions of Section 01700.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.
- B. Installer: Company specializing in performing the work of this section with minimum three (3) years experience.

2 PART 2 – PRODUCTS

2.1 STORM WATER PIPING, ABOVE GRADE

- A. Cast Iron Pipe: ASTM A 74 extra heavy weight.
 - 1. Fittings: Cast iron.
 - 2. Joints: ASTM C 564, neoprene gasket system.

2.2 ROOF DRAINS

- A. Manufacturers
 - 1. Standard Roof Drain:
 - a. Zurn Industries, Inc., Falconer, NY (716.665.1132); **Series RD-2120**
 - b. Josam Company, Michigan City, ID (800.365.6726); **Series 21500**
 - 2. Emergency Roof Drain:
 - a. Froet Industries LLC, Sterling, IL (815.626.7922); **Model# 100C4** bi-functional roof drain with adjustable extensions for varying deck and insulation thickness.
 - b. Jay R. Smith Manufacturing Co., Montgomery, AL (334.277.8520); **Model# JRS** 148 combination roof drain with 6 inch high cast iron overflow drain.
 - 3. Substitutions: Under provisions of Section 01250.
- B. Roof Drain:
 - 1. Compliance: ANSI/ASME A112.6.4 and IAPMO IGC 187.

- 2. Provide drain with adjustable extensions and underdeck clamp. Provide with cast iron dome(s), no hub outlet(s) and combined flashing clamp(s) and gravel stop(s). Size for conditions in the field. The Contractor will verify all roof leader sizes before submitting shop drawings.
- C. Wall End Drain: **Model Z-104** manufactured by Zurn Industries, Inc., Falconer, NY (716.665.1132), Watts Drainage Products **WD-940** or approved equal. Provide low silhouette bronze dome only, large enough to cover drain pipe exiting through existing brick wall as indicated in construction documents. Provide appropriate fasteners to secure to wall.

2.3 PIPE HANGERS AND SUPPORTS

- A. Hangers for Pipe Sizes 2 to 4 Inches and Cold Pipe Sizes 6 Inches and Over: Carbon steel, adjustable, clevis.
- B. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
- C. Shield for Insulated Piping 2½ Inches and Larger: Pipe covering protective saddles.

2.4 HANGER RODS

- A. Steel Hanger Rods: Threaded both ends, threaded one end or continuous threaded.

3 PART 3 – EXECUTION

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.
- C. Prepare piping connections to equipment with flanges or unions.

3.2 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Provide non-conducting dielectric connections wherever jointing dissimilar metals.
- C. Route piping in orderly manner and maintain gradient.
- D. Install piping to conserve building space and not interfere with use of space.

- E. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- F. Provide clearance for installation of insulation.

3.3 DRAIN INSTALLATION

- A. Remove all deleterious material from the opening.
- B. Cut or adjust the opening to accommodate the new drain assembly.
- C. Install the drain in accordance with the manufacturer's instructions, adjusting the fitting to the existing scupper.

3.4 PIPE HANGERS AND SUPPORTS

- A. Support horizontal piping as follows:

<u>PIPE SIZE</u>	<u>MAX. HANG. SPACING</u>	<u>HANG. DIAMETER</u>
½ to 1¼ inch	6'-6"	3/8"
1½ to 2 inch	10'-0"	3/8"
2½ to 3 inch	10'-0"	½"
Cast Iron Drain & Vent	See Below	

- B. Install hangers to provide minimum ½ inch space between finished covering and adjacent work.
- C. Use hangers with 1½ inch minimum vertical adjustment.
- D. Support horizontal cast iron pipe adjacent to each hub, with 5 feet maximum spacing between hangers.
- E. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
- F. Support riser piping independently of connected horizontal piping.

3.5 ERECTION TOLERANCES

- A. Establish invert elevations, slopes for drainage to ¼ inch per foot minimum. Maintain gradients.

3.6 SERVICE CONNECTIONS

- A. Provide new storm drain branches, connecting to existing storm leaders. Before commencing work check elevations required for storm drain connections, confirming ceiling elevations and ensure that the storm branches can be properly connected with slope for drainage above the existing ceiling systems.

3.7 PROTECTION

- A. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.
- B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

3.8 JOB COMPLETION

- A. Inspect completed drain network and correct all defects to meet the specification requirements.
- B. Clean up all debris, excess materials and equipment and remove from site.
- C. Replace damaged or removed ceiling tiles and underlayment with ceiling materials to match existing. Touch up paint wall and ceilings damaged by Contractor's operations and as permitted by the Owner.
- D. Repair or replace defaced or disfigured other finishes and equipment caused by work of this Section.
- E. Restrict construction traffic and equipment movement within the buildings to only essential personnel. Provide appropriate protection against traffic and construction activities.

END OF SECTION