

**Interior Alterations
McGee Middle School
BLAST Classroom
899 Norton Road
Berlin, CT**

Town of Berlin Bid No.: 2019-19

June 10, 2019

- BID SET -

**Jacunski Humes Architects, LLC
15 Massirio Drive
Suite 101
Berlin, CT 06037**

SPECIFICATIONS

INTERIOR ALTERATIONS

MCGEE MIDDLE SCHOOL
BLAST CLASSROOM
899 NORTON ROAD
BERLIN, CT

TOWN OF BERLIN PROJECT NO.: 2019-19

JUNE 10, 2019

PREPARED BY:

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750 OLD MAIN STREET, SUITE 202
ROCKY HILL, CT 06067
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BLAST CLASSROOM
899 NORTON ROAD
BERLIN, CT

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INTERIOR ALTERATIONS

MCGEE MIDDLE SCHOOL
BLAST CLASSROOM
899 NORTON ROAD
BERLIN, CT

Drawing No. Drawing Title

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INVITATION TO BID

INTERIOR ALTERATIONS

MCGEE MIDDLE SCHOOL
BLAST CLASSROOM
899 NORTON ROAD
BERLIN, CT

Sealed bids addressed to the Town of Berlin for Interior Alterations, McGee Middle School, BLAST Classroom, 899 Norton Road, Berlin, CT, will be received by Mr. Douglas Solek, Superintendent of Facilities, Room 8, Berlin Town Hall, 240 Kensington Road, Berlin, CT, 06037, no later than 11:00 AM local time on Tuesday, July 2, 2019, at which time they will be publicly opened and read aloud.

Complete bid documents can be viewed and ordered through Advanced Reprographics, LLC, 50 Corporate Avenue, Plainville, CT, 06062.

For viewing: Visit www.advancedrepro.net, select "Planroom"; select "Public Jobs". Documents will be available Monday, June 17, 2019.

To obtain an electronic or paper set of bid documents: An electronic or paper set containing all contract documents may be purchased directly from Advanced Reprographics for \$60.00 per set. This is a purchase and is not refundable.

As security, each Bid must be accompanied by a Certified Check or Cashiers Check drawn upon either a State Bank and Trust Company or a National Banking Association, to the order of the Town of Berlin, or the Bid must be accompanied by a Bid Bond having as surety thereto, such Surety Company or Companies as are authorized to do business in the State of Connecticut, of an amount not less than 5% of the Bid.

The successful Bidder shall furnish Performance, Labor and Material Payment Bonds, each for 100% of the Contract Sum.

Bidders shall not include Federal Excise or State of Connecticut Sales Tax to which Public Buildings are exempt.

After opening of the Bids, no Bid can be withdrawn for a period of sixty (60) days.

After review of all factors, terms and conditions, including price, the Town of Berlin reserves the right to reject any or all Bids, or any part thereof, or waive defects in same, or accept any proposal deemed to be in the best interest of the Town of Berlin.

The Town of Berlin does not discriminate on the basis of sex, race, physical disability, religion or national origin.

A Pre-Bid Conference will be held on Tuesday, June 25, 2019, at 2:00 PM, at McGee Middle School, 899 Norton Road, Berlin, CT. It is recommended that all Bidders attend.

Douglas Solek
Superintendent of Facilities
Town of Berlin



AIA[®] Document A701[™] – 1997

Instructions to Bidders

for the following PROJECT:

(Name and location or address)

Interior Alterations
McGee Middle School
Blast Classroom
899 Norton Road
Berlin, CT 06037

THE OWNER:

(Name, legal status and address)

Town of Berlin
240 Kensington Road
Berlin, CT 06037

THE ARCHITECT:

(Name, legal status and address)

Jacunski Humes Architects, LLC
15 Massirio Drive, Suite 101
Berlin, CT 06037

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. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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.

SUPPLEMENTARY INSTRUCTION TO BIDDER

1.01 GENERAL CONDITIONS

AIA Document A701, "Instructions to Bidders," 1997 Edition, American Institute of Architects, Articles 1 through 8, are bound herein and are hereby made a part of the Contract Documents and shall apply to all Contractors and Subcontractors.

1.02 SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

- a. Certain Articles of the AIA Instructions to Bidders are revised or replaced by requirements of the Supplementary Instructions, listed below. Such revisions are replacements and shall take precedence over the AIA Instructions to Bidders.
- b. The Following Articles, revised paragraphs and clauses have the same numerical designations occurring in the AIA Instructions to Bidders, and all additions follow in direct numbered sequence.

ARTICLE 2 - BIDDER'S REPRESENTATIONS

Add the following as paragraph 2.1.5:

- 2.1.5 Arrangements made in advance to visit the site should be by contacting Mr. Douglas G. Solek, Superintendent of Facilities, Town of Berlin, 240 Kensington Road, Berlin, CT, Telephone 860-828-7029, for access to the property. Visitations may be made by appointment only with Mr. Solek. Each Bidder shall visit the site of the proposed work and fully acquaint themselves with conditions relating to construction and labor so that they may fully understand the facilities, difficulties and restrictions attending the execution of the work under this Contract. Bidders shall thoroughly examine and be familiar with the drawings and the specifications. The failure or omission of any Bidder to receive or examine any form, instrument, Addendum or other documents or to visit the site and acquaint himself with conditions there existing, shall in no way relieve any Bidder from any obligation with respect to his Bid or the Contract.

ARTICLE 3 - BIDDING DOCUMENTS

- 3.1.2 Delete Paragraph 3.1.2.

Add the following Paragraph:

3.2.1.1 Any conflict existing between the Drawings and the Specifications and not brought to the attention of the Architect for clarification before bids are submitted shall be resolved on the basis of furnishing the greatest quantity and/or highest quality indicated, without cost to the Contract.

Add the following Paragraph:

3.2.4 A Pre-Bid Conference will be held on Tuesday, June 25, 2019, at 2:00 PM, at McGee Middle School, 899 Norton Road, Berlin, CT. It is recommended that all Bidders attend.

Add the following Paragraph:

3.3.4.1 After the award of the Contract, no substitutions will be considered for the brands specified except upon written request of the Contractor and written approval by the Architect and Owner's concurrence. Substitutions shall be submitted including the entire system and/or assembly attached thereto.

Add the following Paragraph:

3.3.5 Approval by the Owner and the Architect of any such substitution shall not relieve the Contractor requesting the substitution of any responsibility for additional costs incurred by other trades for changes made necessary to accommodate the substituted item.

ARTICLE 4 - BIDDING PROCEDURE

Delete Paragraph 4.2.2 and substitute the following:

Surety Bonds, if required, shall be written on forms similar in content to AIA Document A310 and executed by a company authorized to transact business within the State of Connecticut, 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 his power of attorney.

ARTICLE 5 - CONSIDERATION OF BIDS

Add the following Paragraph:

5.3.3 Prior to the award of a Contract, bidders must present satisfactory evidence that they have been regularly engaged in the business of doing such work as they propose to execute and that they are prepared with the necessary supervisory staff, capital, materials and machinery to conduct and complete the work to be contracted for in accordance with the drawings and specifications and to begin it promptly when ordered. Such evidence shall show that the Contractor has experience in the renovation of occupied buildings.

Add the following Paragraph:

- 5.3.4 A bid may be rejected if the bidder cannot show that he has the necessary capital and experience and owns, controls or can produce the necessary plant to commence the work at the time prescribed and thereafter to prosecute and complete the work at the rate or time specified; and that he is not already obligated for the other work which would delay the commencement, prosecution, or completion of this work. A bid may also be rejected if the bidder has previously failed to complete a contract within the time required or had previously performed a similar work in an unsatisfactory manner or does not have experience in the renovation of buildings that were occupied during the course of the work.

ARTICLE 7 - PERFORMANCE BOND AND PAYMENT BOND

Amend Paragraph 7.1.1 to read as follows:

Successful contract bidders will be required to furnish and pay for Surety in the full amount of the Contract. This Bond shall provide 100% security for faithful performance and for payment of all persons performing labor or furnishing materials in connection with this Contract and shall be executed by a company authorized to transact business within the State of Connecticut. Cost of such bonds shall be included in the Base Bid.

Add the following Paragraph:

- 7.2.5 If required, Performance Bond and Payment Bond shall remain in force in full value throughout the course of the project. No reduction in bond value shall be acceptable.

ARTICLE 8 - FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

Add the following Paragraph:

- 8.1.2 Bids submitted in duplicate by CONTRACTORS must be made only from a copy of the BID FORM which accompanies these Specifications and shall be made on the bidder's official letterhead.

ADDITIONAL SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

ADD ARTICLE 9 - TIME

- 9.1 The Contractor to whom this Contract may be awarded will be required to commence work on the Project within ten (10) days of Contract signing. The work shall be prosecuted diligently thereafter and shall be completed in accordance with the proposal.

END OF SUPPLEMENTARY INSTRUCTIONS TO BIDDERS



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Contractor's Qualification Statement

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

SUBMITTED TO:

ADDRESS:

SUBMITTED BY:

NAME:

ADDRESS:

PRINCIPAL OFFICE:

- Corporation
- Partnership
- Individual
- Joint Venture
- Other

NAME OF PROJECT: *(if applicable)*

Interior Alterations
Blast Classroom
McGee Middle School 899 Norton Road
Berlin, CT 06037

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

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

§ 1 ORGANIZATION

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

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

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

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. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

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

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

§ 1.3.1 Date of incorporation:

§ 1.3.2 State of incorporation:

§ 1.3.3 President's name:

§ 1.3.4 Vice-president's name(s)

§ 1.3.5 Secretary's name:

§ 1.3.6 Treasurer's name:

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

§ 1.4.1 Date of organization:

§ 1.4.2 Type of partnership (if applicable):

§ 1.4.3 Name(s) of general partner(s)

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

§ 1.5.1 Date of organization:

§ 1.5.2 Name of owner:

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

§ 2 LICENSING

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

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

§ 3 EXPERIENCE

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

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

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

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

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

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

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

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

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

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

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

§ 4 REFERENCES

§ 4.1 Trade References:

§ 4.2 Bank References:

§ 4.3 Surety:

§ 4.3.1 Name of bonding company:

§ 4.3.2 Name and address of agent:

§ 5 FINANCING

§ 5.1 Financial Statement.

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

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

Net Fixed Assets;

Other Assets;

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

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

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

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

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

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

§ 6 SIGNATURE

§ 6.1 Dated at this day of

Name of Organization:

By:

Title:

§ 6.2

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

Subscribed and sworn before me this day of

Notary Public:

My Commission Expires:

PROPOSAL

INTERIOR ALTERATIONS

MCGEE MIDDLE SCHOOL
BLAST CLASSROOM
899 NORTON ROAD
BERLIN, CT

TOWN OF BERLIN BID NO.: 2019-19

Date _____

To: Mr. Douglas Solek
Superintendent of Facilities
Berlin Town Hall
240 Kensington Road
Berlin, CT 06037

Pursuant to and in compliance with your "Invitation to Bid" relating thereto, the undersigned,

(Name of Firm)

having visited the site and carefully examined the Drawings, Contract Documents and complete Specifications dated June 10, 2019, together with all Addenda issued and received prior to the scheduled closing time for receipt of Bids as prepared by the Architect; Jacunski Humes Architects, LLC, 15 Massirio Drive, Suite 101, Berlin, CT; hereby offers and agrees as follows:

To provide all labor, materials, equipment, appliances and whatsoever else necessary to construct and properly finish all work in connection with the,

INTERIOR ALTERATIONS
MCGEE MIDDLE SCHOOL
BLAST CLASSROOM
899 NORTON ROAD

Berlin, Connecticut, to the satisfaction of the Architect and the Owner for the Base Bid Lump Sum of:

_____ (\$ _____)

If awarded this Contract, we will execute an Agreement with the Town of Berlin, Owner of the property.

If awarded the Contract, the undersigned agrees that the work will commence forthwith and shall be substantially complete on or before August 30, 2019.

The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on this project. The Bid includes Addenda listed below and they are hereby acknowledged:

Addendum # ____ Dated _____

Addendum # ____ Dated _____

Addendum # ____ Dated _____

Enclosed herewith, is the Bid Security in the form of:

Bid Bond () Certified Check ()

in the amount of: _____ (\$ _____)

COMPANY NAME: _____

ADDRESS: _____

BY: _____

(authorized signature, officer of bidder's company)

(above name typewritten)

TITLE: _____

TELEPHONE: _____

E-MAIL: _____

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General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

Interior Alterations
Blast Classroom
McGee Middle School
899 Norton Road
Berlin, CT 06037

THE OWNER:

(Name, legal status and address)

Town of Berlin
240 Kensington Road
Berlin, CT 06037

THE ARCHITECT:

(Name, legal status and address)

Jacunski Humes Architects, LLC
15 Massirio Drive, Suite 101
Berlin, CT 06037

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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

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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.

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§ 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.

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§ 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

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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

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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

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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

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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.

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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.

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§ 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.

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§ 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.

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§ 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.

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§ 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

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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

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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.

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§ 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

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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

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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.

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§ 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

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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.

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§ 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.

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§ 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

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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.

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§ 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.

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§ 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.

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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.

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§ 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.

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§ 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.

SUPPLEMENTARY GENERAL CONDITIONS

1.01 GENERAL CONDITIONS

- A. AIA Document A201, "General Conditions of the Contract for Construction," 2007, The American Institute of Architects, Articles 1 through 15 are bound herein and are hereby made a part of the Specifications and shall apply to Contractors and all Subcontractors.

1.02 SUPPLEMENTARY GENERAL CONDITIONS

- A. Certain articles of the AIA General Conditions are revised by, or are replaced by requirements of the following Supplementary Conditions. Such revisions for replacements shall take precedence over the AIA General Conditions.
- B. Where any Article of the AIA General Conditions is supplemented hereby, the AIA provisions of such Article shall remain in effect. All the supplementary provisions shall be considered as added thereto. Where any such article is amended, voided, or superseded thereby, the provisions of such Article not so specifically amended, voided, or superseded shall remain in effect.

AMENDMENT OF ARTICLE 3 - CONTRACTOR

Add the following to Paragraph 3.2, Review of Contract Documents and Field Conditions:

- 3.2.5 After reporting to the Architect any error, inconsistency, or omission it may discover in the Contract Documents, the Contractor shall not proceed with any work so affected without the Architect's written modification to the Drawings and/or Specifications.
- 3.2.6 In the event of conflict between portions of the Contract Documents, Contractor shall ask for written decision from the Architect as to which method or material will be required.

Add the following to Paragraph 3.4, Labor and Materials:

- 3.4.4 The Contractor is encouraged to use local labor where feasible, but not when it is at the expense of poor workmanship and/or higher cost.

Add the following to Paragraph 3.6, Taxes:

- 3.6.1 Under the terms of Regulation 16, referring to Contractors and Subcontractors, issued by the State Tax Commission in administration of the State Sales and Use Tax, to which Bidder is referred, the Contractor may purchase materials or supplies to be consumed in

the performance of the Contract without payment of tax and shall not include in his Bid nor charge any use or sales tax thereon.

Add the following to Paragraph 3.7, Permits, Fees and Notices:

3.7.6 The requirements of Subparagraphs do not waive the Contractor's responsibility of complying with the requirements of the Contract Documents when such regulations and requirements exceed those of any laws, ordinances, rules, regulations, and orders of any public authority bearing on the work.

Add the following to Paragraph 3.15, Cleaning Up:

3.15.3 No burning of rubbish at the job site will be permitted. Provision for removal of rubbish will be made by the Contractor at no additional cost to the Owner.

Revise Paragraph 3.18, Indemnification, as follows:

Change to read:

3.18.1 The Contractor agrees that it will indemnify and save harmless said Town of Berlin, and its respective officers, agents and servants, and the Architect and its agents and employees, named as defendant or co-defendant in any claim or suit and their respective officers, agents and servants, on amount of any and all claims, damages, losses, litigation, expense counsel fees and compensation arising out of injuries (including death) sustained by, or alleged to have been sustained by the client, patient, visitor, servants, employees or agents of Town of Berlin and their respective officers, agents and servants, or of the Contractor or of and Subcontractors or material men, and from injuries (including death) sustained by, or alleged to have been sustained by the public, any or all persons on or near the work, or by any other person, or damage to property, real or personal (including property of Town of Berlin, and their respective officers, agents and servants) caused in whole or in part by the acts or omissions of the Contractor or any Subcontractor or material men or anyone directly or indirectly employed by them while engaged in the performance of any work for and/or in Town of Berlin and its respective contract period specified in the Contract Permit or agreement and the Contractor agrees he will maintain insurance as required hereon including contractual liability coverage applicable to the obligations assumed in this paragraph.

Add the following new Paragraph 3.19, Privacy of Owner Operations:

3.19 The contractor acknowledges that the owner's facility engages in services for a specific clientele, and that protection of the privacy of the owner's clients is essential. Accordingly, the contractor agrees that it will instruct its employees and its subcontractors' employees to avoid any contact, communication, or interaction with clients or visitors to the facility. The contractor also acknowledges that the owner

reserves the right to require the immediate removal from the project of any person who violates or is suspected of violating this requirement, and that such removal shall not be grounds for any extension of time or claim for additional compensation.

ARTICLE 7 - CHANGES IN THE WORK

Add the following to Paragraph 7.2, Change Orders:

7.2.2 If the cost or credit to the Owner results from a change in the work, the value of such cost or credit shall be determined as follows:

- .1 The cost of labor performed and material used by the Contractor with their own forces.
- .2 The cost of Workmen's Compensation, Federal Social Security, and Connecticut Unemployment Compensation in established rates, actual additional cost of payment and performance bonds.
- .3 Actual cost of rental rates for equipment employed and used directly on the work.
- .4 Fifteen percent (15%) of .1, .2, and .3 above-mentioned for overhead, superintendence and profit; however, if the work to be performed results in a credit to the Owner, no percentage for overhead and profit will apply.
- .5 On work to be performed by a Subcontractor, the Contractor's allowance is to be ten percent (10%) applied to a total cost of Subcontractor's work, including Contractor's allowance as per Paragraph 7.
- .6 On any changes involving the Contractor, Subcontractor or any contractor of theirs, their total cost and/or omissions shall be combined as one before the application of the percentage allowed for the Contractor's overhead and profit in accordance with Paragraph .5 above.
- .7 On work to be performed by a Subcontractor, the Subcontractor's allowance is to be fifteen percent (15%) for his overhead and profit applied to Paragraphs .1, .2, and .3 above.
- .8 The Contractor, when performing work under .3 shall, when requested, promptly furnish in a form satisfactory to the Owner, itemized statements of the cost of the work so ordered, including but not limited to, certified payrolls and copies of accounts, bills and vouchers to substantiate the above estimates.

ARTICLE 9 - PAYMENTS AND COMPLETION

Revise Paragraph 9.3, Applications for Payment, as follows:

Change 9.3.1 to read:

- 9.3.1 In order to expedient monthly payments during the course of the project, the Contractor shall review with the Architect a preliminary draft of the aforementioned application for payment to assure agreement with the Contractor before final copies of the application are typed and formally submitted. The Architect shall then review the Contractor's formal application for payment and certify in writing in accordance with Section 9.4, the total value of work done, including an allowance for the value of material delivered and suitably stored at the site at the time of such estimate. The Owner shall retain five percent (5%) of such estimated value, said retainage to be held by the Owner as part security for the fulfillment of this Contract by the Contractor, and shall monthly pay the Contractor, while carrying in the work, the balance not retained as aforesaid, after deducing therefrom all previous payments and all sums to be kept or retained under the provisions of this Contract. Final payment, including the retainage, shall be due within thirty (30) days after completion of the Contract fully performed as determined by the Architect. Town of Berlin shall put forth its best effort to make payment within thirty (30) days after delivery of the item or receipt of a properly completed invoice, whichever is later. Payment period shall be net thirty (30) days unless otherwise specified.

Payment terms allowing less than twenty (20) days cannot be considered in determining the lowest Bidder.

No voucher, claim or charge against the Owner shall be paid without the approval of the Financial Officer for correctness and legality. Appropriate checks shall be drawn by the Financial Officer for approved claims or charges and they shall be valid without counter signature unless the Board of Selectman otherwise prescribed.

Add the following to Paragraph 9.3, Applications for Payment:

- 9.3.4 Applications for payments shall be submitted in four copies.

Add the following to Paragraph 9.6, Progress Payments:

- 9.6.8 No interest is to be allowed or paid by the Owner upon any monies retained under the provisions of this Contract.

Add the following to Paragraph 9.10, Final Completion and Final Payment:

- 9.10.6 It is also agreed that no partial payments on account by Town of Berlin nor the presence of the Architect, or Inspectors or their supervisors or inspection of work or materials, nor the use of parts of the proposed structure shall constitute an acceptance of any part of the work prior to substantial completion as defined in Paragraph 9.8.

ARTICLE 10 - PROTECTION OF PERSONS AND PROPERTY

Add the following to Paragraph 10.2, Safety of Persons and Property:

- 10.2.9 The Contractor shall be responsible for the adequate strength and safety of all scaffolding, staging and hoisting equipment and for temporary shoring, bracing and tying.
- 10.2.10 The Contractor shall furnish approved hard hats, other personal protective equipment as required, approved first aid supplies, name of first aid attendant and a posted list of emergency facilities.
- 10.2.11 The Contractor shall take immediate action to correct any hazardous conditions reported.
- 10.2.13 The Contractor shall comply with the requirements of the Occupational Safety Act of 1969, including all standards and regulations which have been promulgated by the governmental authorities which have administered such acts; and said requirements, standards and regulations are incorporated herein by reference.

The Contractor shall be directly responsible for compliance therewith on the part of its agents, employees, material men and all citations, assessments, fines or penalties which may be incurred by reason of its agents, employees, material men and Subcontractors, to so comply.

The Contractor shall indemnify the Owner and the Architect and save them harmless from any and all losses, cost and expenses, including fines and reasonable attorney's fees incurred by Owner and Architect by reason of the real or alleged violation of such laws, ordinances, regulations and directives, Federal, State and Local, which are currently in effect or which have become effective in the future, by the Contractor, its Subcontractors or material suppliers.

ARTICLE 11 - INSURANCE AND BONDS

Revise paragraph 11.1, Contractor's Liability Insurance as follows:

Amend 11.1.1 as follows:

In the third line, delete words "set forth below."
In the sixth line, change colon to a period.
Delete items .1 through .8 and add the following:

The Contractor agrees to carry as a minimum the following insurance in such form and with such carriers as are satisfactory to the Owner and will furnish the Owner with Certificates of Insurance in duplicate.

- .1 Statutory Workmen's Compensation Insurance as provided by Connecticut Law and Custom.
- .2 Public Liability and Property Damage Insurance, including completed operations, broad form property damage endorsement and Contractor's protective covering acts of Subcontractor's, for all liability assumed under the Owner's Liability and Indemnity Agreement and, where applicable, coverage for use of explosives, for collapse of building and for damage to underground properties and coverage required by any law or municipal ordinance or regulation:

Bodily Injury Liability

\$1,000,000 Each Occurrence

Property Damage Liability

\$1,000,000 Each Occurrence

- .3 Automobile Liability and Property Damage, including coverage for owned, non-owned, hired or borrowed motor vehicles:

Bodily Injury Liability

\$1,000,000 Each Occurrence

Property Damage Liability

\$1,000,000 Each Occurrence

Amend Paragraph 11.2, Owner's Liability Insurance, as follows:

- 11.2.2 The Contractor shall procure, pay for and maintain Owner's and Contractor's Protective Liability Insurance in the following limits, naming the Owner and Architect as insureds:

Bodily Injury Liability

\$1,000,000 Each Occurrence

Property Damage Liability

\$1,000,000 Each Occurrence

Revise Paragraph 11.3, Property Insurance as follows:

Change to read:

- 11.3.1 Builder's Risk Insurance with extended coverage provision at least equal to special extended coverage endorsement, Form Number 758-B, insuring all work in progress and/or all construction materials delivered and stored on the job site shall be provided and

paid for by the Owner. The named insureds will be the Owner, Contractor, and Subcontractors as their interests may appear.

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

Add the following to Paragraph 11.3.2, Boiler and Machinery Insurance:

The Boiler Insurance Coverage of Town of Berlin does not extend to cover the interest of the Contractor, Subcontractor, or Sub-subcontractor.

END OF SUPPLEMENTARY GENERAL CONDITIONS

Project: Blast Classroom Catherine M McGee Middle School

**Minimum Rates and Classifications
for Building Construction**

ID# : B 26217

**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: Project Town: Berlin
State# FAP#:

Project: Blast Classroom Catherine M McGee Middle School

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) 38.25 27.96

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**

1c) Asbestos Worker/Heat and Frost Insulator 40.21 29.30

As of: Thursday, June 06, 2019

Project: Blast Classroom Catherine M McGee Middle School

2) Boilermaker	38.34	26.01
3a) Bricklayer, Cement Mason, Concrete Finisher (including caulking), Stone Masons	34.72	32.55 + a
3b) Tile Setter	34.90	25.87
3c) Terrazzo Mechanics and Marble Setters	31.69	22.35
3d) Tile, Marble & Terrazzo Finishers	26.70	21.75
3e) Plasterer	33.48	32.06

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-----LABORERS-----

4) Group 1: Laborers (common or general), acetylene burners, concrete specialists, wrecking laborers, fire watchers.	30.75	20.84
4a) Group 2: Mortar mixers, plaster tender, power buggy operators, powdermen, fireproofers/mixer/nozzleman (Person running mixer and spraying fireproof only).	30.30	20.10
4b) Group 3: Jackhammer operators/pavement breaker, mason tender (brick), mason tender (cement/concrete), forklift operators and forklift operators (masonry).	31.25	20.84
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.	30.55	20.10
4d) Group 5: Air track operator, sand blaster and hydraulic drills.	30.55	20.10

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4e) Group 6: Blasters, nuclear and toxic waste removal.	31.80	20.10
4f) Group 7: Asbestos/lead removal and encapsulation (except it's removal from mechanical systems which are not to be scrapped).	31.05	20.10
4g) Group 8: Bottom men on open air caisson, cylindrical work and boring crew.	28.38	20.10
4h) Group 9: Top men on open air caisson, cylindrical work and boring crew.	27.86	20.10
4i) Group 10: Traffic Control Signalman	16.00	20.10
5) Carpenter, Acoustical Ceiling Installation, Soft Floor/Vinyl Floor/Carpet Laying, Metal Stud Installation, Form Work and Scaffold Building, Drywall Hanging, Modular-Furniture Systems Installers, Lathers, Piledrivers, Resilient Floor Layers.	33.53	25.66

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5a) Millwrights	34.04	26.09
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)	37.50	27.91+3% of gross wage
7a) Elevator Mechanic (Trade License required: R-1,2,5,6)	53.37	33.705+a+b
-----LINE CONSTRUCTION-----		
Groundman	26.50	6.5% + 9.00
Linemen/Cable Splicer	48.19	6.5% + 22.00

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8) Glazier (Trade License required: FG-1,2)	37.18	21.05 + a
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9) Ironworker, Ornamental, Reinforcing, Structural, and Precast Concrete Erection	35.47	35.14 + 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 and Tunnel Boring Machines. (Trade License Required)	40.97	24.80 + a
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Group 2: Cranes (100 ton rate capacity and over); Excavator over 2 cubic yards; Piledriver (\$3.00 premium when operator controls hammer); Bauer Drill/Caisson. (Trade License Required)	40.64	24.80 + 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.). (Trade License Required)	39.88	24.80 + a
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Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper).	39.48	24.80 + a
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)	38.87	24.80 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller; Pile Testing Machine.	38.87	24.80 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	38.55	24.80 + 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).	38.20	24.80 + a
Group 8: Mechanic, grease truck operator, hydroblaster; barrier mover; power stone spreader; welding; work boat under 26 ft.; transfer machine.	37.79	24.80 + a

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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).	37.34	24.80 + a
Group 10: Vibratory hammer; ice machine; diesel and air, hammer, etc.	35.24	24.80 + a
Group 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment.	35.24	24.80 + a
Group 12: Wellpoint operator.	35.18	24.80 + a
Group 13: Compressor battery operator.	34.58	24.80 + a
Group 14: Elevator operator; tow motor operator (solid tire no rough terrain).	33.41	24.80 + a

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Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	32.99	24.80 + a
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Group 16: Maintenance Engineer/Oiler.	32.32	24.80 + a
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Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	36.76	24.80 + a
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Group 18: Power safety boat; vacuum truck; zim mixer; sweeper; (Minimum for any job requiring a CDL license).	34.26	24.80 + a
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-----PAINTERS (Including Drywall Finishing)-----

10a) Brush and Roller	33.62	21.05
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Project: Blast Classroom Catherine M McGee Middle School

10b) Taping Only/Drywall Finishing	34.37	21.05
10c) Paperhanger and Red Label	34.12	21.05
10e) Blast and Spray	36.62	21.05
11) Plumber (excluding HVAC pipe installation) (Trade License required: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2)	42.62	31.21
12) Well Digger, Pile Testing Machine	37.26	24.05 + a
13) Roofer (composition)	36.70	19.85

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14) Roofer (slate & tile)	37.20	19.85
15) Sheetmetal Worker (Trade License required for HVAC and Ductwork: SM-1,SM-2,SM-3,SM-4,SM-5,SM-6)	37.50	36.79
16) Pipefitter (Including HVAC work) 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)	(Trade	42.62 31.21

-----TRUCK DRIVERS-----

17a) 2 Axle	29.13	23.33 + a
17b) 3 Axle, 2 Axle Ready Mix	29.23	23.33 + a

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17c) 3 Axle Ready Mix	29.28	23.33 + a
17d) 4 Axle, Heavy Duty Trailer up to 40 tons	29.33	23.33 + a
17e) 4 Axle Ready Mix	29.38	23.33 + a
17f) Heavy Duty Trailer (40 Tons and Over)	29.58	23.33 + a
17g) Specialized Earth Moving Equipment (Other Than Conventional Type on-the-Road Trucks and Semi-Trailers, Including Euclids)	29.38	23.33 + a
18) Sprinkler Fitter (Trade License required: F-1,2,3,4)	43.92	15.84 + a

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Project: Blast Classroom Catherine M McGee Middle School

19) Theatrical Stage Journeyman

25.76

7.34

***As of:* Thursday, June 06, 2019**

Project: Blast Classroom Catherine M McGee Middle School

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*

ALL Cranes: When crane operator is operating equipment that requires a fully licensed crane operator to operate he receives an extra \$4.00 premium in addition to the hourly wage rate and benefit contributions:

1) Crane handling or erecting structural steel or stone; hoisting engineer (2 drums or over)

2) Cranes (100 ton rate capacity and over) Bauer Drill/Caisson

3) Cranes (under 100 ton rated capacity)

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. 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.

Contracting Agencies are under no obligation pursuant to State labor law to pay any increase due to the annual adjustment provision.

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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: Thursday, June 06, 2019

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.

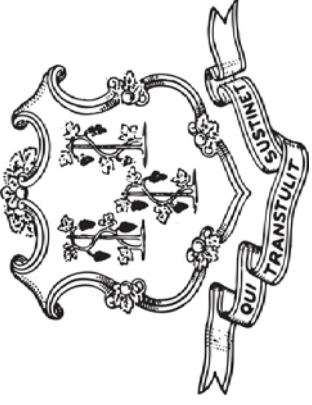
(b) Any person required to complete a course or program under subsection (a) of this section who has not completed the course or program shall be subject to removal from the worksite if the person does not provide documentation of having completed such course or program by the fifteenth day after the 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.



THIS IS A PUBLIC WORKS PROJECT

Covered by the

PREVAILING WAGE LAW

CT General Statutes Section 31-53

**If you have QUESTIONS regarding your wages
CALL (860) 263-6790**

Section 31-55 of the CT State Statutes requires every contractor or subcontractor performing work for the state to post in a prominent place the prevailing wages as determined by the Labor Commissioner.

Informational Bulletin

THE 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE

(applicable to public building contracts entered into *on or after July 1, 2007*, where the total cost of all work to be performed is at least \$100,000)

- (1) This requirement was created by Public Act No. 06-175, which is codified in Section 31-53b of the Connecticut General Statutes (pertaining to the prevailing wage statutes);
- (2) The course is required for public building construction contracts (projects funded in whole or in part by the state or any political subdivision of the state) entered into on or after July 1, 2007;
- (3) It is required of private employees (not state or municipal employees) and apprentices who perform manual labor for a general contractor or subcontractor on a public building project where the total cost of all work to be performed is at least \$100,000;
- (4) The ten-hour construction course pertains to the ten-hour Outreach Course conducted in accordance with federal OSHA Training Institute standards, and, 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) Within 30 days of receiving a contract award, a general contractor must furnish proof to the Labor Commissioner that all employees and apprentices performing manual labor on the project will have completed such a course;
- (8) Proof of completion may be demonstrated through either: (a) the presentation of a *bona fide* student course completion card issued by the federal OSHA Training Institute; *or* (2) the presentation of documentation provided to an employee by a trainer certified by the Institute pending the actual issuance of the completion card;
- (9) Any card with an issuance date more than 5 years prior to the commencement date of the construction project shall not constitute proof of compliance;

- (10) Each employer shall affix a copy of the construction safety course completion card to the certified payroll submitted to the contracting agency in accordance with Conn. Gen. Stat. § 31-53(f) on which such employee's name first appears;
- (11) Any employee found to be in non-compliance shall be subject to removal from the worksite 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;
- (12) Any such employee who is determined to be in noncompliance may continue to work on a public building construction project for a maximum of fourteen consecutive calendar days while bringing his or her status into compliance;
- (13) The Labor Commissioner may make complaint to the prosecuting authorities regarding any employer or agent of the employer, or officer or agent of the corporation who files a false certified payroll with respect to the status of an employee who is performing manual labor on a public building construction project;
- (14) The statute provides the minimum standards required for the completion of a safety course by manual laborers on public construction contracts; any contractor can exceed these minimum requirements; and
- (15) Regulations clarifying the statute are currently in the regulatory process, and shall be posted on the CTDOL website as soon as they are adopted in final form.
- (16) Any questions regarding this statute 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.

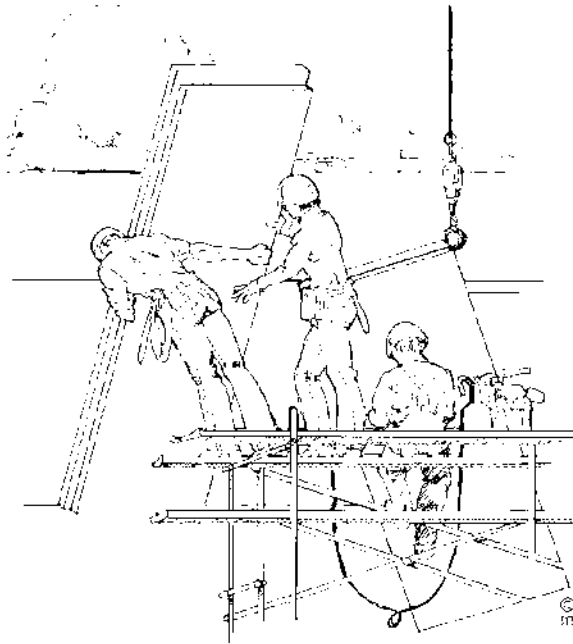
~NOTICE~

TO ALL CONTRACTING AGENCIES

Please be advised that Connecticut General Statutes Section 31-53, requires the contracting agency to certify to the Department of Labor, the total dollar amount of work to be done in connection with such public works project, regardless of whether such project consists of one or more contracts.

Please find the attached “Contracting Agency Certification Form” to be completed and returned to the Department of Labor, Wage and Workplace Standards Division, Public Contract Compliance Unit.

 Inquiries can be directed to (860)263-6543.



CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION
CONTRACT COMPLIANCE UNIT

CONTRACTING AGENCY CERTIFICATION FORM

I, _____, acting in my official capacity as _____,
authorized representative title

for _____, located at _____,
contracting agency address

do hereby certify that the total dollar amount of work to be done in connection with
_____, located at _____,
project name and number address

shall be \$_____, which includes all work, regardless of whether such project
consists of one or more contracts.

CONTRACTOR INFORMATION

Name: _____

Address: _____

Authorized Representative: _____

Approximate Starting Date: _____

Approximate Completion Date: _____

Signature

Date

Return To: Connecticut Department of Labor
Wage & Workplace Standards Division
Contract Compliance Unit
200 Folly Brook Blvd.
Wethersfield, CT 06109

Date Issued: _____

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.

CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION

CONTRACTORS WAGE CERTIFICATION FORM
Construction Manager at Risk/General Contractor/Prime Contractor

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 _____, _____.

Notary Public

Return to:

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

Rate Schedule Issued (Date): _____

[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																			
WEEKLY PAYROLL																			
Connecticut Department of Labor Wage and Workplace Standards Division 200 Folly Brook Blvd. Wethersfield, CT 06109																			
WORKER'S COMPENSATION INSURANCE CARRIER Travelers Insurance Company POLICY # #BAC8888928 EFFECTIVE DATE: 1/1/09 EXPIRATION DATE: 12/31/09																			
SUBCONTRACTOR NAME & ADDRESS																			
XYZ Corporation 2 Main Street Yantic, CT 06389																			
PAYROLL NUMBER	PERSON/WORKER, ADDRESS and SECTION	Week-Ending Date	APPR RATE AND RACE*	MALE/FEMALE	WORK CLASSIFICATION	DAY AND DATE							Total ST Hours	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS			CHECK # AND NET PAY	
						S	M	T	W	TH	F	S			FICA	WITH-HOLDING	WITH-HOLDING		LIST OTHER
1		9/26/09			Trade License Type & Number - OSHA 10 Certification Number	20	21	22	23	24	25	26							
	Robert Craft 81 Maple Street Willimantic, CT 06226		M/C		Electrical Lineman E-1 1234567 Owner OSHA 123456	8	8	8	8	8	8	8		\$ 1,582.80			P-xxxx	\$ 1,582.80	#123 \$ xxx.xx
	Ronald Jones 212 Elm Street Norwich, CT 06360		M/B	65%	Electrical Apprentice OSHA 234567	8	8	8	8	8	8			\$ 1,464.80	xx.xx	xx.xx	G-xxx	\$ 1,464.80	#124 \$ xxx.xx
	Franklin T. Smith 234 Washington Rd. New London, CT 06320 SECTION B		M/H		Project Manager	8								\$ 1,500.00	xx.xx	xx.xx	M-xxx		#125 xxx.xx

OSHA 10 ~ ATTACH CARD TO 1ST CERTIFIED PAYROLL

***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 Blue Cross 4) Disability _____
- 2) Pension or retirement _____ 5) Vacation, holiday _____
- 3) Life Insurance Utopia 6) Other (please specify) _____

CERTIFIED STATEMENT OF COMPLIANCE

For the week ending date of 9/26/09,

I, Robert Craft of XYZ Corporation, (hereafter known as

Employer) in my capacity as Owner (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.

Robert Craft owner 10/2/09
 (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.

Robert Craft owner 10/2/09
 (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**

***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 person 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 person 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 person 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 persons name first appears.

 (Signature) (Title) Submitted on (Date)

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

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

WEEKLY PAYROLL

Week-Ending Date:
Contractor or Subcontractor Business Name:

PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/ FEMALE AND RACE*	WORK CLASSIFICATION Trade License Type & Number - OSHA 10 Certification Number	DAY AND DATE							Total ST Hours	Total O/T Hours	BASE HOURLY RATE TOTAL FRINGE BENEFIT PLAN CASH	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS			GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY
				S	M	T	W	TH	F	S						FEDERAL	STATE	OTHER		
				HOURS WORKED EACH DAY												FICA	WITH- HOLDING	WITH- HOLDING		
				1.	2.	3.	4.	5.	6.	6.										
											\$ Base Rate	1. \$ 2. \$ 3. \$								
											\$ Cash Fringe	4. \$ 5. \$ 6. \$								
											\$ Base Rate	1. \$ 2. \$ 3. \$								
											\$ Cash Fringe	4. \$ 5. \$ 6. \$								
											\$ Base Rate	1. \$ 2. \$ 3. \$								
											\$ Cash Fringe	4. \$ 5. \$ 6. \$								

*IF REQUIRED

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(d).

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. If unsure, the employer should seek guidelines for CTDOL.*

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. RESILEINT 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.

- **LABORER, CLEANING**

- The clean up of any construction debris and the general (heavy/light) cleaning, including sweeping, wash down, mopping, wiping of the construction facility and its furniture, washing, polishing, and dusting.

- **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 or 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 require 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 require equal composite workforce.

- **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.

- **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), decorative security fence (non-metal)).

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. (demolition 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, assembles, installs and repairs 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, 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. 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. To include testing and air –balancing ancillary to installation and construction.

- **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**

~How to pay truck drivers delivering asphalt is under REVISION~

Truck Drivers are required to be paid prevailing wage for time spent "working" directly on the site. These drivers remain covered by the prevailing wage for any time spent transporting between the actual construction location and facilities (such as fabrication, plants, mobile factories, batch plant, borrow pits, job headquarters, tool yards, etc.) dedicated exclusively, or nearly so, to performance of the contract or project, which are so located in proximity to the actual construction location that it is reasonable to include them. ****License required, drivers only, per Connecticut General Statutes.***

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.

**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.

SECTION 01 01 00 - SPECIAL CONDITIONS

1.01 USE OF BUILDING BY THE OWNER

- A. McGee Middle School will be occupied by patrons and staff. All work must be carefully coordinated with the Superintendent of Facilities or his/her designee, and the Architect to insure satisfactory operational conditions for patrons and staff who may occupy the building during the construction period.

1.02 EXISTING CONDITIONS AND MEASUREMENTS

- A. Each Bidder will be held to have examined the premises and satisfied himself with the conditions which would in any manner affect the work under the Contract, and no later claims for extra compensation for labor, materials and equipment which could have been foreseen by such examination, including, but not limited to roof test cuts, will be recognized. This Contractor shall take all necessary measurements for his work, at the site, and shall verify all measurements given on the Drawings. A Pre-Bid Conference will be held on Tuesday, June 25, 2019, at 2:00 PM, at McGee Middle School, 899 Norton Road, Berlin, CT.

1.03 INTENT

- A. These Specifications with the accompanying Drawings are intended to describe and illustrate all material, labor, equipment and whatsoever else necessary to complete the Interior Alterations, McGee Middle School, Blast Classroom, 899 Norton Road, Berlin, CT.
- B. For convenience of reference, these Specifications are separated into titled Divisions and Sections. Such separations shall not, however, operate to make the Architect an arbiter to establish limits to Contracts between the Contractor and Subcontractors. The Divisions of the Specifications do not necessarily define the limits of the Contractor's subcontracts; the work of any one subcontract may include items specified in several Divisions or Sections. The Contractor may sublet work as he/she sees fit, but it is his/her responsibility to see that all work shown on the Drawings and or specified is completed in accordance with the Contract.
- C. All materials shall be furnished and all work shall be accomplished in strict accordance with the grades or standards of materials, standards of workmanship, and manufacturer's specifications listed or mentioned in these documents.

- D. The listing or mention of materials shall be sufficient indication that all such materials shall be furnished by the Contractor, in accordance with the grades or standards indicated, free from defects impairing strength, durability or appearance and in sufficient quantity for the proper and complete execution of the work, unless specifically stated otherwise.
- E. The listing or mention of any method of installation, erection, fabrication or workmanship shall not operate to make the contractor an agent, but shall be for the sole purpose of setting a standard of quality for the finished work. Contractor is free to use any alternate method, provided only that, prior to the start of the work, such alternate method is approved in writing by the Architect, as resulting in quality equal to that intended by these documents. Unless an alternate method is approved, all work shall be in strict accordance with all methods of installation, erection, fabrication and workmanship listed or mentioned herein.

1.04 CORRELATION OF DRAWINGS AND SPECIFICATIONS

- A. In general, the Specifications will describe the “quality” of the work and the Drawings, the “extent” of the work. The Drawings and specifications are cooperative and supplementary, however, and each item of the work is not necessarily mentioned in both the Drawings and the Specifications. All work necessary to complete the project, so described, is to be included in this Contract.
- B. In case of disagreement between Drawings and Specifications, or within either document itself, the better quality or greater quantity of work for decision and or adjustment shall prevail. Any work done by the Contractor without consulting the Architect, when the same requires a decision, shall be done at the Contractor’s risk.
- C. Omissions or Errors: If any omissions or errors are noted or instructions at variance with the obvious intent of the documents, it is the responsibility of the Contractor to call them to the Architect’s attention before signing the Contract.

1.05 INTERPRETATION OF “OR EQUAL”

- A. The use of trade names, with a notation such as “or equal” in these Specifications is to establish quality required there is no attempt to limit competitive bidding, but in like manner quality specified will be rigidly maintained.
- B. The words “approved,” “equal to,” “as directed,” etc., are interpreted and will be taken to mean “to the satisfaction of the Architect.”
- C. Where three or more proprietary names are specified, and the words “or equal” are omitted, no substitute products will be considered. Bids must be based on one of the named products.

1.06 WORK SCHEDULE AND COST BREAKDOWN

- A. The work is to be carried to completion with utmost speed. Substantial completion of the project shall be achieved by the Contractor on or before August 30, 2019. The Contractor shall furnish to the Architect a Critical Path Schedule showing anticipated starting and completion dates for the various Divisions of this work. This schedule shall be furnished to the Architect prior to Contractor's first requisition for payment.
- B. If, in the opinion of the Architect, it becomes necessary for maintaining the schedule and completing the project within the specified time, Contractor shall provide additional crews immediately so upon written request.
- C. Submit immediately after the Contract is let, an itemized breakdown of estimated cost in detail.

1.07 CONSTRUCTION COORDINATION

- A. There shall be cooperation and coordination with respect to time, space, work, etc., between General Contractor, Subcontractors and all other Contractors and no claim for extra compensation and or extension of Contract time will be allowed for conditions resulting from lack of said cooperation and coordination.

1.08 TEMPORARY UTILITIES

- A. General - All concerned with furnishing utilities for use on the project as specified in this section are cautioned to determine location of sources of supply and conditions under which services can be brought to points of use on the site. Each shall inspect premises and drawings for requirements of local installations and shall ascertain rules and fees under which various public private or municipal utilities will supply service. Upon completion of project, remove all temporary work.
- B. Water - Existing service is available for the Contractor's use.
- C. Electrical Service
 - 1. Existing service is available for Contractor's use. The Contractor shall arrange and pay for temporary connections.
 - 2. Contractors shall be responsible for furnishing such light bulbs and extension cords as may be essential to the execution of their respective branches of the work and for extensions of lines to sheds or to power tools and remote areas which cannot be reached with extension cords.

- D. Utility Charges for electric power and water service will be paid by the Owner.
- E. Job Telephone - Existing telephone service within the building is available to the Contractor for local calls only.

1.09 PROTECTION

- A. Contractor shall at all times protect the building from damages from rain water. He shall provide all equipment and enclosures to insure this protection. Removal of existing roofing and or work which in any way can allow water to intrude into the building, shall not be undertaken if rain is forecasted. In the event that the building or contents of the building are damaged due to negligence on the part of the Contractor, the Contractor shall fully restore the building, furniture, equipment, etc., to original conditions and compensate the Owner for all resulting losses.
- B. Contractor shall remove all snow and ice as may be required for proper protection and prosecution of the work.
- C. Contractor shall provide all shoring, bracing and sheathing as required for safety and for proper execution of work and have same removed when work is completed.
- D. During cold weather, Contractor shall protect all work from damage. If low temperatures make it impossible to continue operations safely in spite of cold weather precautions, Contractor shall cease work and shall so notify Architect. The Contractor shall be responsible for the repair and or replacement, as may be required, of all work damaged from frost, freezing or any elements of the weather.
- E. Protection at Night and when Work is not in Progress. The Contractor shall be solely responsible for damage, loss or liability, due to the theft or vandalism when work is not in progress at night, weekends, or holidays.
- F. Existing Exit ways shall be maintained to provide safe egress from occupied portions of the school at all times.
- G. Fire Protection - All fire used within the structure for working purposes shall be extinguished when not in use. No flammable material shall be stored in the structure in excess of amounts allowed by the authorities. No gasoline shall be stored in or close to the school at any time.
- H. Precaution must be exercised at all times for the protection of persons and property. The safety provisions of applicable laws, school and construction codes must be observed; Contractor shall take or cause to be taken such additional

safety and health measures as are reasonably necessary. Machinery, equipment and other hazards, guarded in accordance with the safety provisions of the Manual of Accident Prevention in Construction published by the Associated General Contractors of America, to the extent that such provisions are not in contravention of applicable laws.

- I. It shall be the responsibility of the Contractor to protect and preserve, in operating condition, all utilities traversing the work area. Damage to any utility due to work under this Contract shall be repaired to the satisfaction of the Architect at no additional cost to the Owner.

1.10 USE OF PREMISES, SPECIAL WORKING CONDITIONS

- A. The Contractor shall confine his apparatus, storage of materials, supplies, equipment and operations to the areas bounded by the Contract and on-site limits as directed by the Architect. Coordination with the Owner is essential in this matter.
- B. The Contractor shall be responsible for keeping the premises clean and shall pick up rubbish and debris daily.

1.11 MAINTENANCE OF TRAFFIC AND EXITS

- A. On-site and off-site traffic and exit ways shall not be blocked by construction vehicles, parked cars, material storage and other construction operations. Interior and exterior school exit ways shall be maintained at all times during the work day.

1.12 SAMPLES

- A. All materials that will be used in the construction of this project are subject to the approval of the Architect. All samples required by the Specifications shall be submitted for approval. Where color selections are made, complete samples shall be furnished to the Architect. Carefully note that gravel application can not commence until a sample has been submitted and approved by the Architect.

1.13 EQUIPMENT AND HOISTS

- A. The Contractor shall provide at his/her own expense and risk, all tools, equipment apparatus, and temporary work that may be required for the execution of the work under his Contract.
- B. The Contractor shall provide temporary hoists with power and attendance for same as required to handle his/her own materials and rubbish.

1.14 FIRE EXTINGUISHERS

- A. Provision of fire extinguishers in the area under construction is required from the standpoint of controlling incipient fires promptly.

1.15 REPAIRS

- A. Contractor shall make all repairs to existing streets, walks, curbs, grassed areas, etc., and existing construction, furnishings, equipment, etc., made necessary and or resulting from this work.

1.16 GENERAL COORDINATION

- A. There shall be cooperation and coordination with respect to time, space, work, etc., between the General Contractor, Subcontractors and all other Contractors and no claim for extra compensation and or extension of Contract time will be allowed for conditions resulting from lack of said cooperation and coordination.
- B. The Contractor shall promptly notify the Architect and Owner of all errors, omissions or discrepancies which he finds on the Contract Documents and he shall not proceed with the work involved in such errors, omissions, or discrepancies until instructions are given by the Architect. The Contractor shall be responsible for all work erroneously installed prior to receiving said instructions.

1.17 DELIVERY STORAGE AND HANDLING

- A. All materials and equipment shall be so delivered, stored and handled as to prevent intrusion of foreign materials and damage by weather or breakage. Packaged materials shall be delivered and stored in original packages. Packages opened for Architect's inspection shall be repackaged until ready for use. Packages, materials and equipment showing evidence of damage shall be rejected.
- B. All materials which could be affected by dampness shall be stored in suitable substantial watertight storage facilities maintained in good condition throughout their use.

1.18 FINAL CLEANING

- A. All accumulated rubbish shall be removed from the school and points immediately adjacent thereto by the Contractor who shall transport same from premises. Flammable rubbish shall not be burned on the premises. It shall be hauled away. No rubbish shall be deposited as fill on premises.
- B. Leave the work area clean and ready for use. If the Contractor fails to clean up, the Owner may do so and the cost thereof shall be deducted from the Contract for

Construction. Thoroughly wash and clean all dirt and stains on all surfaces affected by this contract. Leave the work area and interior of the building clean and ready for occupancy and use on or before August 30, 2019. If the Contractor fails to demonstrate a commitment to accomplish the required cleaning, the Owner reserves the right to employ a professional cleaning service and to deduct the cost thereof from the Contract for Construction.

1.19 SOCIAL SECURITY TAXES

- A. The Contractor and each Subcontractor shall pay the taxes measured by the wages of all their employees as required by the Federal Social Security Act and all amendments thereto, and accept the exclusive liability for said taxes. The Contractor shall also indemnify and hold the Owner harmless on account of any tax measured by the wages aforesaid of employees of the Contractor and his subcontractors, assessed against of the Owner under authority of said law.

1.20 UNEMPLOYMENT INSURANCE

- A. The Contractor and each Subcontractor shall pay unemployment insurance measured by the wages of his employees as required by law and accept the exclusive liability for said contributions. The Contractor shall also indemnify and hold harmless the owner on account of any contribution measured by the wages of aforesaid employees of the Contractor and their Subcontractors, assessed against the Owner under authority of law.

1.21 OCCUPATIONAL SAFETY AND HEALTH ACT

- A. The Contractor shall comply with the requirements of the Occupational Safety and Health Act of 1970 and the Construction Safety Act of 1969, including all standards and regulations which have been promulgated by the Governmental Authorities which administer such Acts and said requirements, standards and regulations are incorporated herein by reference.
- B. The Contractor shall comply with said regulations, requirements and standards and require and be directly responsible for compliance therewith on the part of his agents, employees, material men and Subcontractors and shall directly receive and be responsible for all citations, assessments, fines or penalties which may be incurred by reason of their agents, employees, material men or Subcontractors failing to so comply.
- C. The Contractor shall indemnify the Owner and Architect and save them harmless from any and all losses, costs and expenses, including fines and reasonable attorney's fees incurred by the Owner and Architect by reason of the real or alleged violation of such laws, ordinances, regulations and directives, Federal,

State, and Local, which are currently in effect or which become effective in the future, by the Contractor, their Subcontractors or material suppliers.

1.22 JOB MEETINGS

- A. Pre Construction and Job Meetings conducted at the job site by the Architect's representative for the purpose of coordinating and observing the work shall be mandatory for the General Contractor and or his/her superintendent. Also, at times, the Architect's representative will designate certain Subcontractors to attend.

1.23 LIST OF CONTACTS

- A. General Contractor shall furnish Owner list of persons to contact with telephone numbers for emergency use during construction period (off hours, weekends, holidays).

1.24 PLANS AND SPECIFICATIONS AT THE SITE

- A. The General Contractor shall maintain at the site one copy of all Drawings, Specifications, Addenda, approved shop drawings, change orders and other modifications, schedules, and instructions in good order and marked to record all changes made during construction. These shall be available at all times to the Architect or his authorized representatives.

1.25 DRAWINGS FURNISHED

- A. Four (4) copies of the Drawings and Specifications will be allowed the General Contractor by the Owner. If more are required, the General Contractor shall pay the cost of reproduction.

END OF SECTION 01 01 00

SECTION 01 31 00 - PROJECT COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, “General Conditions of the Contract for Construction”, the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

- A. This Section specifies administrative and supervisory requirements necessary for Project coordination including, but not necessarily limited to:
 - 1. Coordination.
 - 2. Progress Meetings.
 - 3. Administrative and supervisory personnel.
 - 4. General installation provisions.
 - 5. Cleaning and protection.
- B. Requirements for the Contractor’s Construction Schedule are included in Section 01 01 00, “Special Conditions”.
- C. Requirements for the Scheduling and Coordination of Tests and Inspections are included in Section 01 40 00, “Quality Control Services”.

1.3 COORDINATION

- A. Coordination: Coordinate construction activities included under various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections of the Specifications that are dependent upon each other for proper installation, connection, and operation. No claim for extra compensation or extension of Contract time will be allowed for conditions resulting from a lack of said coordination and cooperation.
 - 1. Where installation of one part of the work, is dependent on installation of other components, either before or after its own installation, schedule construction activities in the sequence required to obtain the best results.

2. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for required maintenance, service and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.
1. Prepare similar memoranda for the Owner and separate Contractors where coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of schedules.
 2. Installation and removal of temporary facilities.
 3. Delivery and processing of submittals.
 4. Progress meetings.
 5. Project Close-out activities.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1.4 PRE-CONSTRUCTION CONFERENCE

- A. The Architect will schedule a pre-construction conference and organizational meeting at the Project site no later than 15 days after execution of the Agreement and prior to commencement of construction activities. Attend the meeting to review responsibilities and personnel assignments.
- B. Attendees: The Owner, Architect and their consultants, the Owner's Clerk-of-the-Works, the General Contractor and its superintendent, major subcontractors, manufacturers, suppliers and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the Work.
1. Notify and arrange for attendance by all parties except the Architect, Owner, and Owner's representative.
- C. Agenda: Items of significance that could affect progress will be discussed, including such topics as:

1. Tentative construction schedule.
2. Critical Work sequencing.
3. Designation of responsible personnel.
4. Procedures for processing field decisions and Change orders.
5. Procedures for processing Applications for Payment.
6. Distribution of Contract Documents.
7. Submittal of Shop Drawings, Product Data and Samples.
8. Preparation of record documents.
9. Use of the premises.
10. Office, Work and storage areas.
11. Equipment deliveries and priorities.
12. Safety procedures.
13. First aid.
14. Security.
15. Housekeeping.
16. Working hours.

1.5 SUBMITTALS

- A. Coordination Drawings: Prepare and submit coordination Drawings where close and careful coordination is required for installation of products and materials fabricated off-site by separate entities, and where limited space availability necessitates maximum utilization of space for efficient installation of different components.
1. Show the interrelationship of components shown on separate Shop Drawings.
 2. Indicate required installation sequences.
 3. Comply with requirements contained in Section 01 33 00, "Submittals and Product Substitutions."
 4. Refer to Division - 23 and Division - 26, Section for specific coordination drawing requirements for mechanical and electrical installations.
- B. Staff Names: Within fifteen (15) days of Notice to Proceed, submit a list of the Contractor's principal staff assignments, including the Superintendent and other personnel in attendance at the site; identify individuals, their duties and responsibilities; list their addresses and telephone numbers.

1.6 COORDINATION MEETINGS

- A. Conduct Project coordination meetings at regularly scheduled times convenient for all parties involved. Project coordination meetings are in addition to regular progress meetings.

- B. Request representation at each meeting by every party currently involved in coordination or planning for the construction activities involved.
- C. Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.7 PROGRESS MEETINGS

- A. The Architect will conduct progress meetings at the Project site at regularly scheduled intervals. Coordinate dates of meetings with preparation of the payment request.
- B. Attendees: Notify each subcontractor, supplier or other entity concerned with current progress or involved in planning, coordination or performance of future activities, to attend these meetings. Persons familiar with the Project and authorized to conclude matters relating to progress shall be represented.
- C. Agenda: Review and correction or approval of minutes of the previous progress meeting. Review of other items of significance that could affect progress. Topics for discussion that is appropriate to the current status of the Project.
 - 1. General Contractor's Construction Schedule: Prepare a written report including progress since the last meeting. Determine where each activity is in relation to the General Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 2. Review of present and future needs of each entity present, including such items as:
 - a. Interface requirements.
 - b. Time.
 - c. Sequences.
 - d. Deliveries.
 - e. Off-site fabrication problems.
 - f. Access.
 - g. Site utilization.
 - h. Temporary facilities and services.
 - i. Hours of Work.
 - j. Hazards and risks.
 - k. Housekeeping.
 - l. Quality and Work standards.
 - m. Change Order Proposals.
 - n. Documentation of information for payment requests.

- D. Reporting: The Architect will prepare and distribute copies of minutes of the meeting to Owner and General Contractor. General Contractor shall distribute copies to others that should be informed of decisions.
 - 1. Schedule Updating: Revise the construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION PROVISIONS

- A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.
- B. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.
- C. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.
- D. Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.
- E. Visual Effects: Provide uniform joint widths in exposed Work. Arrange joints in exposed Work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.
- F. Recheck measurements and dimensions, before starting each installation.
- G. Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.
- H. Coordinate temporary enclosures with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.
- I. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the

particular application indicated. Refer questionable mounting height decisions to the Architect for final decision.

3.2 CLEANING AND PROTECTION

- A. During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- B. Clean and maintain completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- C. Limiting Exposures: Supervise construction activities to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:
 - 1. Excessive static or dynamic loading.
 - 2. Excessive internal or external pressures.
 - 3. Excessively high or low temperatures.
 - 4. Thermal shock.
 - 5. Excessively high or low humidity.
 - 6. Air contamination or pollution.
 - 7. Water or ice.
 - 8. Solvents.
 - 9. Chemicals.
 - 10. Light.
 - 11. Radiation.
 - 12. Puncture.
 - 13. Abrasion.
 - 14. Heavy traffic.
 - 15. Soiling, staining and corrosion.
 - 16. Bacteria.
 - 17. Rodent and insect infestation.
 - 18. Combustion.
 - 19. Electrical current.
 - 20. High speed operation,
 - 21. Improper lubrication.
 - 22. Unusual wear or other misuse.
 - 23. Contact between incompatible materials.
 - 24. Destructive testing.
 - 25. Misalignment.
 - 26. Excessive weathering.
 - 27. Unprotected storage.
 - 28. Improper shipping or handling.

- 29. Theft.
- 30. Vandalism.

END OF SECTION 01 31 00

SECTION 01 33 00 - SUBMITTALS AND PRODUCT SUBSTITUTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, “General Conditions of the Contract for Construction”, the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for submittals required for performance of the Work, including;
 - 1. Schedule of Values.
 - 2. Shop Drawings.
 - 3. Product Data.
 - 4. Samples.
- B. This Section specifies administrative and procedural requirements for handling requests for substitutions made after award of the Contract.
- C. Administrative Submittals: Refer to other Division-1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to:
 - 1. Applications for payment.
 - 2. Performance and payment bonds.
 - 3. Insurance certificates.
 - 4. List of Subcontractors.
- D. Inspection and test reports are included in Section 01 40 00 “Quality Control Services.”

1.3 SUBMITTAL PROCEDURES

- A. Coordination: Within 15 days of the Contract award, submit to the Architect a comprehensive Submittals listing each item to be submitted and the date proposed to be submitted. Coordinate with the Architect in the preparation and processing of submittals with performance of construction activities. Transmit each

submittal sufficiently in advance of performance of related construction activities to avoid delay.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
 2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - a. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
 - b. Coordinate transmittal of all submittals requiring color selection so that comprehensive selection can be processed.
 3. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for re-submittals.
 - a. Allow two weeks for initial review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Architect will promptly advise the General Contractor when a submittal being processed must be delayed for coordination.
 - b. If an intermediate submittal is necessary, process the same as the initial submittal.
 - c. Allow two weeks for reprocessing each submittal.
 - d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Architect sufficiently in advance of the Work to permit processing.
- B. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
1. Provide a space approximately 4" x 5" on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
 2. Include the following information on all submittals:
 - a. Name of item being submitted.
 - b. Number and title of appropriate Specification Section.
 - c. Drawing number and detail references, as appropriate.
 - d. Name of manufacturer.
 - e. Name, address and telephone number of supplier.
 - f. Bid Package number and name.

- g. Project Name.
 - h. Date.
 - i. Name, address and telephone number of Contractor.
 - j. Name, address and telephone number of Subcontractor.
 - k. Name, address and telephone number of Architect.
- C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from General Contractor to Architect using a transmittal form. Submittals received from sources other than the General Contractor will be returned without action.
- D. Number of copies: Submit seven (7) copies of all shop drawings and product data. Submit one (1) each of all samples.

1.4 DEFINITIONS

- A. Substitutions: Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by the General Contractor after award of the Contract are considered requests for “substitutions.” The following are not considered substitutions:
- 1. Substitutions requested by Bidders during the bidding period, and accepted prior to award of Contract, are considered as included in the Contract Documents and are not subject to requirements specified in this Section for substitutions.
 - 2. Revisions to Contract Documents requested by the Owner or Architect.
 - 3. Specified options of products and construction methods included in Contract Documents.
 - 4. The General Contractor’s determination of and compliance with governing regulations and orders issued by governing authorities.

1.5 SCHEDULE OF VALUES

- A. Coordinate preparation of the Schedule of Values with preparation of the General Contractor’s Construction Schedule.
- 1. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:
 - a. General Contractor’s construction schedule.
 - b. Application for Payment form.
 - c. List of subcontractors.
 - 2. Submit the Schedule of Values to the Architect at the earliest feasible date, but in no case later than seven (7) days before the date scheduled for submittal of the initial Application for Payment.

- B. Format and Content: Use the Project Manual Table of Contents as a guide to establish the format for the Schedule of Values.
1. Forms: Use AIA Document G702 and Continuation Sheets G703, as the form for the Schedule of Values.
 2. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of the Architect.
 - c. Project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 3. Arrange the Schedule of Values in a tabular form with separate columns to indicate the following for each item listed:
 - a. Generic name.
 - b. Related Specification Section.
 - c. Change Orders (numbers) that have affected value.
 - d. Dollar value.
 - e. Percentage of Contract Sum to the nearest one-hundredth percent, adjusted to total 100 percent.
 4. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Break principal subcontract amounts down into several line items.
 5. Round amounts off to the nearest whole dollar; the total shall equal the Contract Sum.
 6. For each part of the Work where an Application for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed, provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
 7. Show temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items in the Schedule of Values.

1.6 SHOP DRAWINGS

- A. Submit newly prepared information, drawn to accurate scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not considered Shop Drawings.

- B. Shop Drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates and similar drawings. Include the following information:
1. Dimensions.
 2. Identification of products and materials included.
 3. Compliance with specified standards.
 4. Notation of coordination requirements.
 5. Notation of dimensions established by field measurement.
 6. Sheet Size: Except for templates, patterns and similar full size Drawings, submit Shop Drawings on sheets at least 8 ½" x 11", but no larger than 24" x 36".
 7. Do not use Shop Drawings without an appropriate final stamp indicating action taken in connection with construction.
- C. Shop Drawing Submissions to the Architect in electronic format only will be acceptable to the Architect given that they are in Adobe, PDF format and contain proper transmittal information.

1.7 PRODUCT DATA

- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."
1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:
 - a. Manufacturer's printed recommendations.
 - b. Compliance with recognized trade association standards.
 - c. Compliance with recognized testing agency standards.
 - d. Application of testing agency labels and seals.
 - e. Notation of dimensions verified by field measurement.
 - f. Notation of coordination requirements.
 2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
 3. Submittals: Submit copies of each required submittal; submit additional copies where required for maintenance manuals.

- a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
4. Distribution: Furnish copies of final submittal to Architect for distribution to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities.
 - a. Do not proceed with installation until an approved copy of Product Data applicable is in the installer's possession.
 - b. Do not permit use of unmarked copies of Product Data in connection with construction.

1.8 SAMPLES

- A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture and pattern.
 1. Mount, display, or package samples in the manner specified to facilitate review of qualities indicated. Prepare samples to match the Architect's sample. Include the following:
 - a. Generic description of the sample.
 - b. Sample source.
 - c. Product name or name of manufacturer.
 - d. Compliance with recognized standards.
 - e. Availability and delivery time.
 2. Submit samples for review of kind, color, pattern, and texture, for a final check of these characteristics with other elements, and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
 - a. Where variation in color, pattern, texture or other characteristics are inherent in the material or product represented, submit multiple units that show approximate limits of the variations.
 - b. Refer to other Specification Sections for requirements for samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation and similar construction characteristics.
 3. Preliminary submittals: Where samples are for selection of color, pattern, texture or similar characteristics from a range of standard choices, submit a full set of choices for the material or product.

- a. Preliminary submittals will be reviewed with the Architect indicating selection or other action.
 - b. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
4. Submittals: Except for samples illustrating assembly details, workmanship, fabrication techniques, connections, operation and similar characteristics, samples will not be returned, unless so requested in advance.
5. Maintain sets of returned samples, at the Project site, for quality comparisons throughout the course of construction.
- a. Comply with submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.

1.9 SUBMITTALS

- A. Substitution Request Submittal: Requests for substitution will be considered if received within 60 days after commencement of the Work. Requests received more than 60 days after commencement of the Work may be considered or rejected at the discretion of the Architect.
1. Submit three (3) copies of each request for substitution for consideration. Submit requests in the form and in accordance with procedures required for Change Order proposals.
 2. Identify the product, or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers, complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
 - a. Product Data, including Drawings and descriptions of products, fabrication and installation procedures.
 - b. Samples, where applicable or requested.
 - c. A detailed comparison of significant qualities of the proposed substitution with those of the work specified. Significant qualities may include elements such as size, weight, durability, performance and visual effect.
 - d. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors, that will become necessary to accommodate the proposed substitution.
 - e. A statement indicating the substitution's effect on the General Contractor's Construction Schedule compared to the schedule

without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.

- f. Cost information, including a proposal of the net change, if any in the Contract Sum.
- g. Certification by the Contractor that the substitution proposed is equal-to or better in every significant respect to that required by the Contract Documents, and that it will perform adequately in the application indicated. Include the Contractor's waiver of rights to additional payment or time, that may subsequently become necessary because of the failure of the substitution to perform adequately.

- 3. Architect's Action: Within one week of receipt of the request for substitution, the Architect will request additional information or documentation necessary for evaluation of the request. Within 2 weeks of receipt of the request, or one week of receipt of the additional information or documentation, whichever is later, the Architect will notify the General Contractor of acceptance or rejection of the proposed substitution. If a decision on use of a proposed substitute cannot be made or obtained within the time allocated, use the product specified by name.

1.10 ARCHITECT'S ACTION

- A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Architect will review each submittal, mark to indicate action taken, and return promptly.
 - 1. Compliance with specified characteristics is the Contractor's responsibility.
- B. Action Stamp: The Architect will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, to indicate the action taken:
 - 1. Final Unrestricted Release: Where submittals are marked "Approved," that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
 - 2. Final-But-Restricted Release: When submittals are marked "Approved as Corrected," that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
 - 3. Returned for Resubmittal: When submittal is marked "Not Approved, Revise and Resubmit," do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other

activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.

- a. Do not permit submittals marked “Not Approved, Revise and Resubmit” to be used at the Project site, or elsewhere where Work is in progress.
4. Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked “Action Not Required”.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Conditions: The General Contractor’s substitution request will be received and considered by the Architect when one or more of the following conditions are satisfied, as determined by the Architect; otherwise requests will be returned without action except to record noncompliance with these requirements.
 1. Extensive revisions to Contract Documents are not required.
 2. Proposed changes are in keeping with the general intent of Contract Documents.
 3. The request is timely, fully documented and properly submitted.
 4. The request is directly related to an “or equal” clause or similar language in the Contract Documents.
 5. The specified product or method of construction cannot be provided within the Contract Time. The request will not be considered if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
 6. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
 7. A substantial advantage is offered the owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Additional responsibilities for the Owner may include additional compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner or separate Contractors, and similar considerations.
 8. The specified product or method of construction cannot be provided in a manner that is compatible with other materials, and where the General Contractor certifies that the substitution will overcome the incompatibility.

9. The specified product or method of construction cannot be coordinated with other materials, and where the General Contractor certifies that the proposed substitution can be coordinated.
 10. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the General Contractor certifies that the proposed substitution provide the required warranty.
- B. The General Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

PART 3 - EXECUTION (Not Applicable).

END OF SECTION 01 33 00

SECTION 01 40 00 - QUALITY CONTROL SERVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, “General Conditions of the Contract for Construction”, the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for quality control services.
- B. Quality control services include inspections and tests and related actions including reports, performed by independent agencies, governing authorities, and the Contractor. They do not include Contract enforcement activities performed by the Architect.
- C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve the General Contractor of responsibility for compliance with Contract Document requirements.
- D. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.
 - 1. Specific quality control requirements for individual construction activities are specified in the Sections that specify those activities. Those requirements, including inspections and tests, cover production of standard products as well as customized fabrication and installation procedures.
 - 2. Inspections, test and related actions specified are not intended to limit the General Contractor’s quality control procedures that facilitate compliance with Contract Document requirements.
 - 3. Requirements for the General Contractor to provide quality control services required by the Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 RESPONSIBILITIES

- A. Retesting: The General Contractor is responsible for retesting where results of required inspections, tests or similar services prove unsatisfactory and do not

indicate compliance with Contract Document requirements, regardless of whether the original test was the General Contractor's responsibility.

1. Costs of retesting construction revised or replaced by the General Contractor is the General Contractor's responsibility, where required tests, performed on original construction, do not indicate compliance with Contract Documents.
- B. Associated Services: The General Contractor shall cooperate with agencies performing required inspections, tests and similar services and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include but are not limited to:
1. Providing access to the Work and furnishing incidental labor and facilities necessary to facilitate inspections and tests.
 2. Taking adequate quantities of representative samples of materials that require testing or assisting the agency in taking samples.
 3. Providing facilities for storage and curing of test samples.
 4. Providing the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.
 5. Security and protection of samples and test equipment at the Project site.
- C. Owner Responsibilities: The Owner will provide inspections, tests and similar quality control services specified to be performed by independent agencies and not by the General Contractor, except where they are specifically indicated as the General Contractor's responsibility or are provided by another identified entity. Costs for these services are not included in the Contract Sum.
1. The Owner will employ and pay for the services of an independent agency, testing laboratory or other qualified firm to perform services which are the owner's responsibility.
 2. The General Contractor agrees to engage and pay for the quality control services specified as the General Contractor's responsibility, including retesting, from the independent agency engaged by the Owner.
- D. Duties of the Testing Agency and Special Inspector: The independent testing Agency and the Special Inspector, engaged to perform inspections, sampling and testing of materials and construction specified in individual Specification Sections, shall cooperate with the Architect and Contractor in performance of their duties, and shall provide qualified personnel to perform required inspections and tests.
1. The Agency or the Special Inspector shall notify the Architect and General Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.

2. Neither the Agency nor the Special Inspector is not authorized to release, revoke, alter or enlarge requirements of the Contract Documents, or approve or accept any portion of the Work.
 3. Neither the Agency nor the Special Inspector shall not perform any duties of the General Contractor.
- E. Coordination: The General Contractor and each Agency engaged to perform inspections, tests and similar services shall coordinate the sequence of activities to accommodate required services with a minimum of delay. In addition, the General Contractor and each agency shall coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.
1. The General Contractor is responsible for scheduling times for inspections, tests, taking samples and similar activities.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION

3.1 MOISTURE TESTING IN CONCRETE SLABS PRIOR TO FLOORING INSTALLATIONS

- A. All concrete sub floors must be tested for moisture, PH (alkalinity) to insure proper adhesive bond.
1. Moisture tests shall be conducted in accordance with the following:
 - a. ASTM F 2170, "Standard Test Method for Determining Relative Humidity in Concrete Slabs using in situ Probes". Three Tests shall be conducted for areas up to 1000 square feet of flooring. Relative humidity of the slab should not exceed 75%.
 - b. ASTM 1869 "Standard Text Method for Moisture Vapor Emission Rate of Concrete Sub floor". Three tests shall be conducted for areas up to 100 square feet of flooring. The maximum allowable amount of moisture transmission must not exceed 3.0 lbs per 1000 square feet in 24 hours.
 2. If the test results exceed the limitations stated above, the installation of finish flooring must not proceed until the problem has been corrected to conform to the flooring manufacturer's specifications.

3. A PH test for alkalinity must be conducted. Results should range between 5 and 9. If the test results are not acceptable, the installation must not proceed until the problem has been corrected.

3.2 REPAIR AND PROTECTION

- A. General: Upon completion of inspection, testing, sample-taking and similar services, repair damaged construction and restore substrates and finishes to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes.
- B. Protect construction exposed by or for quality control service activities, and protect repaired construction.
- C. Repair and protection is the General Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

END OF SECTION 01 40 00

**SECTION 01 42 00 - REFERENCE STANDARDS, DEFINITIONS, MATERIALS AND
EQUIPMENT**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, “General Conditions of the Contract for Construction”, the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

- A. This Section specifies applicability of industry standards to products specified, administrative and procedural requirements governing the Contractor’s selection of products for use in the Project.
- B. Submittals and administrative procedures for handling requests for substitutions made after award of the Contract are included under Section 01 33 00, “Submittals and Product Substitutions.”

1.3 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. Indicated: The term indicated refers to graphic representations, notes, or schedules on the Drawings, or other Paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Terms such as shown, noted, scheduled, and specified are used to help the reader locate the reference. There is no limitation on location.
- C. Directed: Terms such as directed, requested, authorized, selected, approved, required, and permitted mean directed by the Architect, requested by the Architect, and similar phrases.
- D. Approved: The term approved, when used in conjunction with the Architect’s action on the Contractor’s submittals, applications, and requests, is limited to the Architect’s duties and responsibilities as stated in the Conditions of the Contract.
- E. Regulations: The term regulations includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and

agreements within the construction industry that control performance of the Work.

- F. **Furnish:** The term furnish means supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. **Install:** The term install describes operations at the Project site including the actual unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. **Provide:** The term provide means to furnish and install, complete and ready for the intended use.
- I. **Installer:** An Installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.
 - 1. The term experienced, when used with the term Installer, means having a minimum of five previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of the authority having jurisdiction.
 - 2. **Trades:** Using terms such as carpentry is not intended to imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as carpenter. It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.
 - 3. **Assigning Specialists:** Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the Contractor has no choice or option. However, the ultimate responsibility for fulfilling Contract requirements remains with the Contractor.
 - a. This requirement shall not be interpreted to conflict with enforcing building codes and similar regulations governing the Work. It is also not intended to interfere with local trade union jurisdictional settlements and similar conventions.
- J. **Project site** is the space available to the Contractor for performing construction activities either exclusively or in conjunction with others performing other work as part of the Project. The extent of the Project site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.

- K. Testing Agencies: A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.
- L. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as “specialties,” “systems,” “structure,” “finishes,” “accessories,” and similar terms. Such terms such are self-explanatory and have well-recognized meanings in the construction industry.
 - 1. “Products” are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term “product” includes the terms “material,” “equipment,” “system,” and terms of similar intent.
 - a. “Named Products” are items identified by manufacturer’s product name, including make or model designation, indicated in the manufacturer’s published product literature, that is current as the date of the Contract Documents.
 - 2. “Materials” are products that are substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
 - 3. “Equipment” is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.

1.4 SPECIFICATION FORMAT AND CONTENT EXPLANATION

- A. These Specifications with the accompanying Drawings are intended to describe and illustrate all material, labor, and equipment necessary to complete the additions and interior renovations to the Housatonic Valley Regional High School, Falls Village, CT.
- B. Specification Format: These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute’s 16 Division format and MASTERFORMAT numbering system.
- C. Specification Content: This Specification uses certain conventions regarding the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:
 - 1. Abbreviated Language: Language used in Specifications and other Contract Documents is abbreviated. Words and meanings shall be

interpreted as appropriate. Words that are implied, but not stated, shall be interpolated, as the sense requires. Singular words will be interpreted as plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.

2. Imperative and streamlined language is used generally in the Specifications. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor or by others when so noted.

- a. The words “shall be” are implied wherever a colon (:) is used within a sentence or phrase.

- D. In general, the Specifications will describe the “quality” of the work and the Drawings, the “extent” of the work. The Drawings and Specifications are cooperative and supplementary, however, and each item of the work is not necessarily mentioned in both the Drawings and the Specifications. All work necessary to complete the project, so described, is to be included in this Contract.
- E. In case of disagreement between Drawings and Specifications, or within either document itself, the better quality or greater quantity of work for decision and/or adjustment. Any work done by the Contractor without consulting the Architect, when the same requires a decision, shall be done at the Contractor’s risk.
- F. Omissions or Errors: If any omissions or errors are noted or instructions at variance with the obvious intent of the documents, it is the responsibility of the Contractor to call them to the Architect’s attention before signing the Contract.

1.5 SUBMITTALS

- A. Comply with requirements contained in Section 01300, “Submittals and Product Substitutions”.

1.6 QUALITY ASSURANCE

- A. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.
- B. Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.
- C. Responsibility to furnish material: Listing or mention of materials is sufficient indication to make it the Contractor’s responsibility to furnish said materials in accordance with the grades or standards indicated, free from defects impairing

strength, durability or appearance, and in sufficient quantity for the proper and complete execution of the work, unless specifically stated otherwise.

- D. Responsibility for or methods: The listing or mention of any method of installation, erection, fabrication or workmanship shall not operate to make the contractor an agent, but shall be for the sole purpose of setting a standard of quality for the finished work. Contractor is free to use any alternate method, provided only that, prior to the start of the work, such alternate method is approved in writing by the Architect, as resulting in quality equal to that intended by these documents. Unless an alternate method is approved, all work shall be in strict accordance with all methods of installation, erection, fabrication and workmanship listed or mentioned herein.

1.7 INDUSTRY STANDARDS

- A. Compliance: Furnish all materials and accomplish all work in accordance with the grades or standards of materials, standards of workmanship, and manufacturer's literature, as referenced in these documents.
- B. Applicability of Standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- C. Publication Dates: Comply with the standards in effect as of the date of the Contract Documents.
- D. Conflicting Requirements: Where compliance with two or more standards is specified and where the standards may establish different or conflicting requirements for minimum quantities or quality levels, refer requirements that are different, but apparently equal, and uncertainties to the Architect for a decision before proceeding.
 - 1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to the Architect for a decision before proceeding.
- E. Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, the Contractor shall obtain copies directly from the publication source.
- F. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards-generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision. Refer to the “Encyclopedia of Associations,” published by Gale Research Co., available in most libraries.
- 1.8 PRODUCT DELIVERY, STORAGE, AND HANDLING
- A. Deliver, store and handle products in accordance with the Architect’s and manufacturer’s recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.
1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.
 3. Deliver products to the site in the manufacturer’s original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
 4. Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.
 5. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
 6. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
 7. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer’s instructions.
 8. Packages, materials and equipment showing evidence of damage may be rejected by the Architect.
 9. Store rigid insulation board away from the building.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation.
1. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.
 2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- B. Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations, not by previous Project experience. Procedures governing product selection include the following:
1. Proprietary Specification Requirements: Where only a single product or manufacturer is named, provide the product indicated, or equal to that described.
 2. Semi-Proprietary Specification Requirements: Where three or more products or manufacturers are named, provide one of the products indicated. No substitutions will be permitted.
 - a. Where products or manufacturers are specified by name, accompanied by the term “or equal,” or “or approved equal” comply with the Contract Document provisions concerning “substitutions” to obtain approval for use of an unnamed product.
 3. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
 4. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.
 - a. Manufacturer’s recommendations may be contained in published product literature, or by the manufacturer’s certification of performance.
 5. Compliance with Standards, Codes and Regulations: Where the Specifications only require compliance with an imposed code, standard or

regulation, select a product that complies with the standards, codes or regulations specified.

6. Visual Matching: Where Specifications require matching an established Sample, the Architect's decision will be final on whether a proposed product matches satisfactorily.
 - a. Where no product available within the specified category matches satisfactorily and also complies with other specified requirements, comply with provisions of the Contract Documents concerning "substitutions" for selection of a matching product in another product category, or for noncompliance with specified requirements.
7. Visual Selection: Where specified product requirements include the phrase " as selected from manufacturer's standard colors, patterns, textures " or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Architect will select the color, pattern and texture from the product line selected.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS:

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.
 1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 01 42 00

SECTION 01 71 00 – CLEANING OF NEW SPACES

1.01 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, “General Conditions of the Contract for Construction”, the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.02 SCOPE OF THE WORK

- A. Furnish all labor, materials and other services required to give the new spaces a thorough cleaning in preparation for occupancy on or before the Owner takes occupancy of the building. Carefully note that this specification applies to all sections of the building completed by the contractor prior to occupancy by the Owner at the completion of the project, no later than within the limit of calendar days noted in the proposal. The use of a professional cleaning service is strongly advocated.
- B. Cleaning shall consist of, but is not limited to, the items below:
1. All accumulated rubbish shall be removed from the building and points immediately adjacent thereto and removed from the site.
 2. Give the entire project a thorough cleaning at the completion of all other work but before the glass is cleaned.
 3. Clean all glass, including windows, remove putty, stains and paint, wash and polish same. Care shall be taken not to scratch glass. Cleaning of glass shall be done after completion of all other work.
 4. Clean all paint, decorated and stained work; remove all marks, stains, fingerprints and other soil or dirt from all painted and stained work.
 5. Remove all temporary protections. Clean and polish all affected floors at completion.
 6. Clean and polish all painted woodwork at completion.
 7. Clean and polish all hardware for all trades; this shall include removal of all stains, dust, dirt, paint, etc., upon completion.
 8. Remove all spots, soil and paint from all tile work; wash same upon completion.
 9. Clean all fixtures and equipment, remove all stains, paint, dirt and dust.
 10. Thoroughly wash and clean all dirt and stains on all exterior vertical and horizontal surfaces affected by this contract.
 11. Leave the final renovated area clean (for each phase) no later than **two weeks prior to Substantial Completion**. If the Contractor fails to demonstrate a commitment to accomplish the required cleaning in adequate time for re-occupancy, the Owner reserves the right to employ a

professional cleaning service and to deduct the cost thereof from the
Contract for Construction.

END OF SECTION 01 71 00

SECTION 01 77 00 - PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, “General Conditions of the Contract for Construction”, the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for project closeout by the General Contractor and each Trade Contractor, including but not limited to:
 - 1. Final inspection procedures.
 - 2. Project record document submittal.
 - 3. Operating and maintenance manual submittal.
 - 4. Submittal of warranties.
 - 5. Final cleaning.
- B. Closeout requirements for specific construction activities may also be included in the appropriate Sections in Divisions - 02 through - 31.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection by the Architect for certification of Substantial Completion, complete the following. List exceptions in the request.
 - 1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
 - a. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
 - 2. Advise the Owner of pending insurance change-over requirements.

3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
 4. Obtain and submit releases to the Architect enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
 5. Submit record drawings, maintenance manuals and similar final record information to the Architect.
 6. Deliver tools, spare parts, extra stock, and similar items.
 7. Remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
 8. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.
- B. Final Inspection Procedures: Submit a request for final inspection, to the Architect. Following the Architect's final inspection, the Architect will either prepare the Certificate of Substantial Completion, or advise the General Contractor of construction that must be completed or corrected before the certificate will be issued.
1. The Architect will repeat final inspection when requested by the General Contractor and assured that the Work has been substantially completed.
 2. Results of the completed final inspection will form the basis of requirements for final acceptance.

1.4 FINAL ACCEPTANCE

- A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
1. Submit the final payment request to the Architect with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
 2. Submit an updated final statement to the Architect, accounting for final additional changes to the Contract Sum.
 3. Submit a certified copy of the Architect's Final Inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the General Contractor.
 4. Submit consent of surety to final payment.
 5. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. Re-Inspection Procedure: The Architect will re-inspect the work upon receipt of notice from the General Contractor that the Work, including Final Inspection list items from earlier inspections, has been completed, except items whose

completion has been delayed because of circumstances acceptable to the Owner and Architect.

1. Upon completion of re-inspection, the Architect will prepare a certificate of final acceptance, or advise the General Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
2. If necessary, re-inspection will be repeated.

1.5 RECORD DOCUMENT SUBMITTALS

- A. General: Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Owner's and Architect's reference during normal working hours.
- B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
 1. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.
 2. Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.
 3. Note related Change Order numbers where applicable.
 4. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set. Submit to the Architect.
- C. Maintenance Manuals: Organize and submit two (2) copies to the Architect of all operating and maintenance data organized and indexed into suitable sets of manageable size. Bind properly indexed data into individual heavy-duty 2-inch, 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:
 1. Emergency instructions.
 2. Copies of warranties.
 3. Recommended "turn around" cycles.
 4. Inspection procedures.
 5. Shop Drawings and Product Data.
 6. All Maintenance Manuals are to be submitted in duplicate (2 copies).

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: General cleaning during construction is required by the General Conditions.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
 - 1. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.
 - a. Remove labels that are not permanent labels.
 - b. Clean transparent materials. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.
 - c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.
 - d. Clean the site, including landscape development areas, of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.
- C. Removal of Protection: Remove temporary protection and facilities installed for protection of the work during construction.
- D. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.

1. Where extra materials of value remaining after completion of associated Work have become the Owner's property, arrange for disposition of these materials as directed.
- E. If the General Contractor fails to demonstrate a commitment to accomplish the required cleaning in an orderly, timely fashion, the Owner reserves the right to employ a professional cleaning service, and to deduct any costs thereof from the Contract Amount.

END OF SECTION 01 77 00

SECTION 01 78 00 - WARRANTIES AND BONDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, “General Conditions of the Contract for Construction”, the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

- A. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturer’s standard warranties on products and special warranties.
 - 1. Refer to the General Conditions for terms of the Contractor’s special warranty of workmanship and materials.
 - 2. General close-out requirements are included in Section 01 77 00 “Project Close-out.”
 - 3. Specific requirements for warranties for the Work and products and installations that are specified to be warranted are included in the individual Sections of Divisions - 2 through - 31.
 - 4. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.
- B. Disclaimers and Limitations: Manufacturer’s disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

1.3 DEFINITIONS

- A. Standard Product Warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the owner.
- B. Special Warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

1.4 WARRANTY REQUIREMENTS

- A. Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.
- B. Reinstatement of Warranty: When work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The General Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the owner has benefited from use of the Work through a portion of its anticipated useful service life.
- D. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.
 - 1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.
- E. The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

1.5 SUBMITTALS

- A. Submit written warranties to the Architect prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Architect.
 - 1. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the General Contractor during the construction period, submit properly executed warranties to the Architect within fifteen (15) days of completion of that designated portion of the Work.

- B. When a special warranty is required to be executed by the General Contractor, or a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner through the Architect for approval prior to final execution.

- C. Form of Submittal: At Final Completion compile two (2) copies of each required warranty and bond properly executed by the General Contractor, or by the subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manuals.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION

3.1 SCHEDULE OF WARRANTIES

- A. Schedule: Provide warranties on products and installations as specified in each Section relating to each product.

END OF SECTION 01 78 00

SECTION 02075 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, “General Conditions of the Contract for Construction”, the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 DESCRIPTION OF REQUIREMENTS

- A. Definition: “Cutting and patching” includes cutting into existing construction to provide for the installation or performance of other work and subsequent fitting and patching required to restore surfaces to their original condition. “Cutting and patching” shall also include the removal and subsequent reinstallation of existing construction required to be removed in order to execute the work specified and/or indicated on the drawings, i.e., ceilings, electrical/mechanical equipment, etc.
- B. “Cutting and patching” is performed for coordination of the work, to uncover work for access or inspection, to obtain samples for testing, to permit alterations to be performed or for other similar purposes.
- C. Cutting and patching performed during the manufacture of products, or during the initial fabrication, erection or installation processes is not considered to be “cutting and patching” under this definition. Drilling of holes to install fasteners and similar operations are also not considered to be “cutting and patching”.
- D. Refer to other sections of these specifications for specific cutting and patching requirements and limitations applicable to individual units of work.
- E. Unless otherwise specified, requirements of this section apply to mechanical and electrical work. Refer to Division 15 and Division 16 sections for additional requirements and limitations on cutting and patching of mechanical and electrical work.

1.3 QUALITY ASSURANCE

- A. Requirements for Structural Work: Do not cut and patch structural work in a manner that would result in a reduction of load-carrying capacity or load-deflection ratio.
- B. Before cutting and patching the following categories, or similar categories, of work, obtain the Architect’s approval to proceed with cutting and patching as described in the procedural proposal for cutting and patching.

1. Structural steel.
 2. Miscellaneous structural metals, including lintels, equipment supports, stair systems and similar categories of work.
 3. Structural concrete plank floor structure.
 4. Foundation construction.
 5. Bearing and retaining walls.
 6. Structural decking.
 7. Piping, duct-work, vessels and equipment.
- C. Operational and Safety Limitations: Do not cut and patch operational elements or safety related components in a manner that would result in a reduction of their capacity to perform in the manner intended, including energy performance, or that would result in increased maintenance, or decreased operational life or decreased safety.
- D. Before cutting and patching the following elements, or similar elements, of work, and similar work elements where directed, obtain the Owner's approval to proceed with cutting and patching as proposed in the proposal for cutting and patching.
1. Shoring, bracing and sheeting.
 2. Primary operational systems and equipment.
 3. Water, moisture, vapor, air, smoke barriers, membranes and flashings.
 4. Noise and vibration control elements and systems.
 5. Control, communication, conveying, and electrical wiring systems.
- E. Visual Requirements: Do not cut and patch work exposed on the building's exterior or in its occupied spaces, in a manner that would, in the Architect's and Owner's opinion, result in lessening the building's aesthetic qualities. Do not cut and patch work in a manner that would result in substantial visual evidence of cut and patch work. Remove and replace work judged by the Architect and Owner to be cut and patched in a visually unsatisfactory manner.
- F. If possible, retain the original installer or fabricator, or another recognized experienced and specialized firm to cut and patch the following categories, and similar categories, of exposed work.
1. Processed concrete finishes.
 2. Detention facilities.
 3. Ornamental metal.
 4. HVAC enclosures, cabinets or covers.

1.4 SUBMITTALS

- A. Procedural Proposal for Cutting and Patching: Where prior approval of cutting and patching is required, submit proposed procedures for this work well in

advance of the time work will be performed and request approval to proceed. Include the following information, as applicable, in the submittal:

1. Describe nature of the work and how it is to be performed, indicating why cutting and patching cannot be avoided. Describe anticipated results of the work in terms of changes to existing work, including structural, operational, and visual changes as well as other significant elements.
 2. List products to be used and firms that will perform work.
 3. Give dates when work is expected to be performed.
 4. List utilities that will be disturbed or otherwise be affected by work, including those that will be relocated and those that will be out-of-service temporarily. Indicate how long utility service will be disrupted.
- B. Where cutting and patching of structural work involves the addition of reinforcement, submit details and engineering calculations to show how that reinforcement is integrated with original structure to satisfy requirements.
- C. Where cutting and patching of exposed finishes is to be involved, submit a drawing clearly describing in detail the location and extent of the work for the Owner's and the Architect's approval.
- D. Approval by the Owner and the Architect to proceed with cutting and patching work does not waive the Architect's right to later require complete removal and replacement of work found to be cut and patched in an unsatisfactory manner.

PART 2 PRODUCTS

2.1 MATERIALS

- A. General: Except as otherwise indicated, or as directed by the Architect, use materials for cutting and patching that are identical to existing materials. If identical materials are not available, or cannot be used, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials for cutting and patching that will result in equal-or-better performance characteristics than existing construction.

PART 3 EXECUTION

3.1 INSPECTION

- A. Before cutting, examine the surfaces to be cut and patched and the conditions under which the work is to be performed. If unsafe or otherwise unsatisfactory conditions are encountered, take corrective action before proceeding with the work.

- B. Before the start of cutting work, meet at the work site with all parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict between the various trades. Coordinate layout of the work and resolve potential conflicts before proceeding with the work.

3.2 PREPARATION

- A. Temporary Support: To prevent failure, provide temporary support of work to be cut.
- B. Protection: Protect other work during cutting and patching to prevent damage. Provide protection from adverse weather conditions for that part of the project that may be exposed during cutting and patching operations.
- C. Avoid interference with use of adjoining areas or interruptions of free passage to adjoining areas.
- D. Take precautions not to cut existing pipe, conduit, or duct serving the building but scheduled to be relocated until provisions have been made to bypass them.

3.3 PERFORMANCE

- A. General: Employ skilled workmen to perform cutting and patching work. Except as otherwise indicated or as approved by Architect, proceed with cutting and patching at the earliest feasible time and complete work without delay.
- B. Cutting: Cut the work using methods that are least likely to damage work to be retained or adjoining work. Where possible review proposed procedures with the original installer, comply with original installer's recommendations.
- C. In general, where cutting is required, use hand or small power tools designed for sawing or grinding, not hammering and chopping. cut through concrete and masonry using a cutting machine such as a carborundum saw or core drill to insure a neat hole. Cut holes and slots neatly to size required with minimum disturbance of adjacent work. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces. Temporarily cover openings when not in use.
- D. By-pass utility services such as pipe and conduit, before cutting, where such utility services are shown or required to be removed, relocated or abandoned. Cut-off conduit and pipe in walls or partitions to be removed. After by-pass and cutting, cap valve or plug and seal tight remaining portion of pipe and conduit to prevent entrance of moisture or other foreign matter.
- E. Patching: Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the work.

- F. Where feasible, inspect and test patched areas to demonstrate integrity of work.
- G. Restore exposed finishes of patched areas and where necessary extend finished restoration into retained adjoining work in a manner which will eliminate evidence of patching and refinishing.
- H. Where removal of walls or partitions extends one finished area into another finished area, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. If necessary to achieve uniform color and appearance, remove existing floor and wall coverings and replace with new materials.
- I. Where patch occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing patch, after patched area has received prime and base coat.
- J. Patch, repair or rehang existing ceilings as necessary to provide an even plane surface of uniform appearance.

3.4 CLEANING

- A. Thoroughly clean areas and spaces where work is performed or used as access to work. Remove completely paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.

END OF SECTION 02 07 50

SECTION 02 41 19 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, "General Conditions of the Contract for Construction", the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

- A. This Section requires the selective removal and subsequent off-site disposal of the following:
1. Portions of existing building indicated on drawings and as required to accommodate new construction.
 2. Removal and legal disposal of all items of selective demolition by the contractor(s) that involves demolition of existing equipment, existing installations, or existing construction elements to accommodate new construction and as indicated on the drawings.
- B. Related Work Specified Elsewhere, including but not limited to:
1. Division – Structural
 2. Division 22 – Plumbing
 3. Division 23 – HVAC
 4. Division 26 - Electrical

1.3 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections:
1. Proposed schedule of operations coordination for shutoff, capping, and discontinuation of utility services as required.
 2. Provide a detailed sequence of demolition and removal work.
 3. Permits and notices authorizing demolition from applicable regulatory agencies.
 4. Certificates of severance of utility companies.
 5. Permit for transport and disposal of demolition debris.
 6. All other items required by any agency or regulation having jurisdiction over the demolition work.

1.4 JOB CONDITIONS

- A. Condition of Structures: Owner assumes no responsibility for actual condition of items or structures to be demolished. Conditions existing at time of inspection for bidding purposes will be maintained by Owner insofar as practicable. However, minor variations within structure may occur by Owner's removal and salvage operations prior to start of selective demolition work.
- B. Partial Demolition and Removal: Items indicated to be removed but of salvageable value to Contractor may be removed from structure as work progresses. **Owner has right of first refusal for all salvaged items removed from the existing building and not required for the completed renovation.** Owner to designate on-site location for storage of salvaged items for their use. Owner to transport salvaged items for their retention to an off-site location as required. Transport salvaged items from site as they are removed.
 - 1. Storage or sale of removed items on site will not be permitted.
- C. Protections: Provide temporary barricades and other forms of protection to protect Owner's personnel and general public from injury due to selective demolition work.
 - 1. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structure or element to be demolished and adjacent facilities or work to remain.
 - 2. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.
 - 3. Protect floors with suitable coverings when necessary.
 - 4. Provide temporary weather protection during interval between demolition and removal of existing construction on exterior surfaces and installation of new construction to ensure that no water leakage or damage occurs to structure or interior areas of existing building.
 - 5. Remove protections at completion of work.
- D. Damages: Promptly repair damages caused to adjacent surfaces by demolition work.
- E. Traffic: Conduct selective demolition operations and debris removal to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
 - 1. Do not close, block, or otherwise obstruct streets, walks, or other occupied or used facilities without written permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
- F. Utility Services: Maintain existing utilities indicated to remain in service and protect them against damage during demolition operations.

1. Do not interrupt utilities serving occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities.
 2. Contractor shall coordinate shut off of all existing utilities serving structure(s) to be demolished. Disconnecting and sealing existing utilities before starting demolition operations is part of this work.
- G. Environmental Controls: Use water sprinkling, temporary enclosures, and other methods to limit dust and dirt migration. Comply with governing regulations pertaining to environmental protection.
1. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.

1.5 QUALITY ASSURANCE

- A. Qualifications of Workers: Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section
- B. Comply with the requirements of the following
1. Local and State Building Codes and Health Departments
 2. U.S. EPA and Massachusetts Department of Environmental Protection
 3. Utility companies having jurisdiction and that may have utilities within the area of the Work.
 4. All other applicable local, state, and federal regulations

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 PREPARATION

- A. General: Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of areas to be demolished and adjacent facilities to remain.
1. Cease operations and notify Owner's Representative immediately if safety of structure appears to be endangered. Take precautions to support structure until determination is made for continuing operations.
 2. Cover and protect furniture, equipment, and fixtures from soilage or damage when demolition work is performed in areas where such items have not been removed.

3. Locate, identify, stub off, and disconnect utility services that are not indicated to remain.

3.2 DEMOLITION

- A. General: Perform selective demolition work in a systematic manner. Use such methods as required to complete work indicated on Drawings in accordance with demolition schedule and governing regulations.
 1. Provide services for effective air and water pollution controls as required by local authorities having jurisdiction.
 2. For interior concrete floor slabs, use removal methods that will not crack or structurally disturb adjacent slabs or partitions. Use power saw where possible.
- B. If unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to Owner's Construction Manager in written, accurate detail. Pending receipt of directive from Owner's Construction Manager, rearrange selective demolition schedule as necessary to continue overall job progress without undue delay.
- C. Building Demolition: Demolish building elements completely and remove from site. Use such methods as required to complete work within limitations of governing regulations.
 1. Proceed with demolition in systematic manner, from top of structure to ground. Complete demolition work above each floor or tier before disturbing supporting members on lower levels.
 2. Demolish concrete and masonry in small sections.
 3. Remove structural framing members and lower to ground by hoists, derricks, or other suitable methods.
 4. Break up all concrete slabs-on-grade.
 5. Locate demolition equipment throughout structure and remove materials so as to not impose excessive loads to supporting walls, floors, or framing.
- D. Below-Grade Construction: Demolish foundation walls and other below-grade construction, including concrete slabs, to a depth of not less than 42 inches below finish grade elevation.

3.3 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove from building site debris, rubbish, and other materials resulting from demolition operations.
 1. Burning of removed or demolition materials will not be permitted on project site.

- B. Removal: Transport materials removed from demolished structures and legally dispose of at an off site location. Burying demolition debris on site will not be permitted.

3.4 CLEANUP AND REPAIR

- A. General: Upon completion of demolition work, remove tools, equipment, and demolished materials from site. Remove protections and leave interior areas broom clean.
 - 1. Repair demolition performed in excess of that required. Return elements of construction and surfaces to remain to condition existing prior to start operations. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

END OF SECTION 02 41 19

SECTION 03300 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, "General Conditions of the Contract for Construction", the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.1 DESCRIPTION OF WORK

- A. This contract includes all labor, materials, equipment and appliances necessary to complete all cast-in-place concrete as indicated, as scheduled or as specified.

PART 2 - PRODUCTS

2.1 CONCRETE AND RELATED MATERIALS

- A. Portland Cement; Type I conforming to ASTM C 150. Cement used in the work shall correspond to that upon which the selection of concrete proportions was based.
 - 1. Only one brand and manufacturer of approved cement shall be used for exposed concrete.
 - 2. Type III cement shall be used only with prior written approval.
 - 3. Air entraining cement shall not be used.
- B. Aggregates:
Normal Weight: conform to ASTM C33
 - 1. Fine aggregate: clean, sharp, natural sand free from loam, clay, or other deleterious matter.
 - 2. Coarse aggregate, clean, uncoated, graded aggregate containing no clay, loam or foreign matter.
- C. Water; shall be fresh, and drinkable.
- D. Concrete admixtures; provide admixtures used in compliance with manufacturers recommendations.

1. Air-entraining agent; conforming to ASTM C 260, MB-AE 10, or MB-VR, manufactured by master Builders, or approved equal as manufactured by Sonnoborne, Euclid, or W.R. Grace Companies.
 2. Water-reducing; set-controlling admixture; conforming to ASTM C 494, Type A (water-reducing), Type D (water-reducing and retarding) and Type E (water-reducing, accelerating), manufactured by Master Builders, Sonnoborne, Euclid or W. R. Grace Companies.
 3. Do NOT use admixtures containing chlorides, including calcium chloride, due to possible harmful effects on metal reinforcing and metal decking.
- E. Metal Accessories; shall conform to the requirements of the Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice for Reinforcing Concrete Construction".
- F. Curing Materials; exceeding the requirements of ASTM C 309 "Standard Specifications for Liquid Membrane-Forming Compounds for Curing Concrete". "MasterKure" manufactured by Master Builders, or approved equal manufactured by Sonnoborne, Euclid or W. R. Grace Companies.
1. Material providing water retention not exceeding loss of .055 gm/cm² when used at a coverage of 450 sq. ft. per gallon and tested per ASTM C 156.
- The General Contractor is responsible for verifying compatibility of curing materials and methods with finish materials before purchasing or proceeding. Removal of incompatible materials shall be performed at no additional expense.
- H. Vapor barrier: 6 mil polyethylene shall be installed under concrete slabs on grade, installed in widest practical width with all joints lapped a minimum of six (6) inches, and all breaks or holes shall be patched prior to pouring the concrete.
- J. Floor Hardener: shall be "Mastertop CST", as manufactured by Master Builders, Inc or approved equal by L&M Construction or Sonneborne. Confirm compatibility and potential special requirements relative to curing compound before proceeding. Removal of curing compound, if required, shall be included as part of this work.
- K. Joint Filler: premolded, "Flexcell" expansion joint filler as manufactured by Celotex Corp., Tampa, Florida or approved equal.

2.2 SELECTION OF CONCRETE PROPORTIONS

- A. Concrete shall be composed of Portland Cement, fine and coarse aggregate, water, Pozzoloth admixture, and as specified, an air-entraining admixture. Proportions of ingredients shall produce concrete which will work readily into corners and angles of forms, bond to reinforcement, without segregation or excessive bleed water forming on the surface.

Proportioning of materials for Normal Weight concrete shall be in accordance with ACI 211.1R-91, "Recommended Practice for Selecting Proportions for Normal Weight Concrete".

1. Proportions of ingredients shall be selected by past field experience or by laboratory trial mixes to produce placability, durability, strength and the additional properties specified.

- B. Required average strength above specified strength shall be determined in accordance with ACI 318-95 "Building Code Requirements for Reinforced Concrete" and evaluations of compressive strength results of field concrete shall be in accordance with ACI 214R-89 "Recommended Practice for Evaluation of Strength Test Results of Concrete".
 1. Past Field Experience; proportions shall be established on the actual field experience of the ready-mix produced with the materials proposed to be employed. Standard deviation shall be determined by 30 consecutive tests (or two groups of tests totaling 30 or more).
 - (a) Average strength used for selecting proportions based on past field experience shall exceed specified strength ($f'c$) by at least:
 - 400 psi - standard deviation is less than 300
 - 550 psi - standard deviation is 300 to 400
 - 700 psi - standard deviation is 400 to 500
 - 900 psi - standard deviation is 500 to 600
 - 1200 psi - standard deviation is above 600 or unknown
 2. Trial Mixes; when the ready-mix producer does not have a record of past performance, the combination of materials and the proportions selected shall be selected from trial mixes having proportions and consistencies suitable for the work based on ACI 211.1R-91, using at least three different water-cement ratios which will produce a range of strengths encompassing those required.
 - (a) Average strength required: 1200 psi above specified strength.

2.3 CONCRETE QUALITIES REQUIRED

- A. Specified minimum compressive strength at 28 days shall be 3,000 psi, unless otherwise noted on the drawings or in other Sections. Concrete strength for all exterior work, such as exterior mechanical pads, sidewalks, etc, shall be 4,000 psi unless noted otherwise.

- B. Concrete subject to exposure shall be air-entrained. Total air content required (air-entrained and entrapped air) shall be:

<u>Nominal Max. Size Coarse Aggregate</u>	<u>Total Air Content</u>
3/4"	6% \pm 1
1"	5% \pm 1
1 1/2"	4% \pm 1

- C. Concrete shall be proportioned and produced to have a slump, not to exceed 4 in. if consolidation is by vibration or 5 in. if consolidation is by other means.

- D. Slump for concrete flatwork shall be 1" less than specified above.
- E. Maximum size of coarse aggregate shall not exceed one-third the thickness of slabs, and one-fifth the narrower dimension between forms.
- F. Concrete shall be adjusted to produce the required rate of hardening for varied climatic and job-site conditions.
 - 1. Under 50°F ambient temperature - Accelerate (approval in writing required from Architect) (type E admixture - ASTM C 494)
Do not use Calcium Chloride as an additive.
 - 2. Between 50°F and 80°F - Normal (Type A Admixture - ASTM C 494)
 - 3. Over 80°F - Retard (Type B Admixture-ASTM C 494)

PART 3 - EXECUTION

3.1 PRODUCTION OF CONCRETE

- A. Concrete shall be ready-mixed batched, mixed, and transported in accordance with ASTM C 94 "Specifications for Ready-Mixed Concrete".

3.2 PLACING

- A. Preparation - contractor shall provide access for delivery and provide sufficient equipment and manpower to rapidly place all concrete.
 - 1. All work shall be in accordance with ACI 304R-89 "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete".
 - 2. Formwork shall have been completed; snow, ice, water, & debris removed from within forms.
 - 3. Premolded joint filler, expansion joint material, anchors and all embedded items shall have been positioned.
 - 4. Concrete shall not be placed on frozen ground
 - 5. Subgrades shall be sprinkled sufficiently to eliminate concrete water loss.
- B. Conveying - concrete shall be handled from mixer to final placement rapidly by methods which will prevent segregation or loss of ingredients to maintain required quality of concrete.
- C. Depositing - concrete shall be deposited continuously; when continuous placement is not possible, construction joints shall be located as approved by the architect. Concrete shall be placed as nearly as possible to its final position; avoid rehandling or flowing.
 - 1. Concrete shall be consolidated by vibration, spading, rodding, or forking. Work concrete around reinforcement, embedded items, and into corners,

eliminating all air and stone pockets, and other sources of honeycombing and planes of weakness.

2. Internal vibration shall have a minimum frequency of 8000 v/min with amplitude to consolidate effectively.
 - (a) Vibrators shall be operated by competent workmen.
 - (b) Use of vibrators to transport concrete shall not be allowed.
 - (c) Vibrators shall be inserted and withdrawn approximately every 18 in. for 5 to 15 sec.

3.3 WEATHER CONDITIONS

- A. Cold Weather - temperature of concrete delivered at the job site shall conform to the following minimum:

<u>Air Temperature</u>	<u>Concrete Temperature</u>
30 to 45°F	55°F to 90°F
0 to 30°F	60°F to 90°F
Below 0°F	65°F to 90°F

- B. Water heated to above 100°F shall be combined with the aggregates before cement is added. Cement shall not be added to water or aggregates having a temperature greater than 100°F.
1. All work shall be in accordance with ACI 306R-88 "Cold Weather Concreting".
 2. When the outdoor temperature below 40°F temperature of the concrete shall be maintained at not less than 50°F for the required curing time.
 - (a) Arrangements shall be made before placement to maintain required temperature without injury from excessive heat.
 - (b) Combustion heaters shall not be used during the first 48 hours without precautions to prevent exposure of concrete and workmen to exhaust gases containing carbon dioxide and carbon monoxide.
- C. Hot Weather - temperature of concrete delivered at the job-site shall not exceed 90°F. Cool materials before mixing as required.
1. All work shall be in accordance with ACI 305R-91 "Hot Weather Concreting".
 2. Provisions shall be made for windbreaks, shading, fog, spraying, sprinkling or wet cover when necessary.

3.4 CURING AND PROTECTION

- A. Immediately following placement, concrete shall be protected from premature drying, hot and cold temperatures, rain, flowing water and mechanical injury.

- B. Materials and method of curing shall be approved by the Architect. Final curing shall continue for not less than 7 days.
1. Applications of Waterproof sheet material shall conform to ASTM C 171 "Specifications for Waterproof Sheet Materials for Curing Concrete".
 2. Application of liquid membrane-forming compound shall conform to ASTM C 309 "Specifications for Liquid Membrane-Forming Compounds for Curing Concrete".
 3. Contractor shall confirm compatibility of curing compound with finish materials and hardener. He shall remove curing compound if required before applying finish materials.

3.5 FINISHING

- A. Grout cleaning of exposed walls: Exposed exterior concrete walls shall be patched as required and shall have a grout cleaned finish as indicated on drawings or as instructed by the Architect.
- B. No cleaning operations shall be undertaken until the walls of the building are entirely completed. Cleaning portions of the walls as the work progresses will not be permitted.
- C. Use the following method for grout cleaning of exposed concrete:
1. Mix 1 part Portland cement and 1 1/2 parts fine sand with enough water to produce a grout having the consistency of thick paint. White Portland cement shall be used for all or part of the cement in the grout, as directed by the Architect, to give the color desired. Wet the surface of the concrete and apply the grout with brushes or a spray gun uniformly, completely filling air bubbles and holes.
 2. Immediately after applying the grout, float the surface with a wood float, and scour the wall vigorously. The grout shall then be allowed to set partially for an hour or two depending on weather conditions. In hot, dry weather, the wall shall be kept damp during this period, using a fine fog spray. When grout has hardened so it can be scraped from the wall with the edge of a steel trowel without removing the grout from the small air holes, cut off all that can be removed with a trowel. Next allow surface to dry thoroughly and rub it vigorously with a dry burlap to completely remove any dried grout. There shall be no visible film of grout remaining after this rubbing. The entire cleaning operation for any area must be completed the day it is started. No grout shall be left on the wall overnight and sufficient time shall be allowed for the grout to dry after it has been cut with the trowel so it can be wiped off clean with the burlap.
 3. After the entire building has been grout cleaned, if any slightly dark spots or streaks remain, they shall be wiped off lightly with a fine abrasive hone. The rubbing with the hone shall not be enough to change the texture of the concrete. This final operation shall be included as a part of grout cleaning.
- D. Slab Finishing:

1. All concrete floor slabs, under resilient tile or carpet, shall be steel troweled to a smooth uniform finish, free from defects and blemishes, nothing to be added to either wet or dry finish. Steel troweling shall not be done until concrete has hardened sufficiently to prevent excess fine material from working to the surface.
2. All concrete floor slabs, under ceramic tile or concrete toppings shall have a wood float finish. Surface shall be rough enough to bond the mortar setting bed or topping.
3. All slab surfaces not receiving finish flooring material shall receive surface hardener applied at a rate not exceeding 200 square feet per gallon. Application methods and rates shall be performed in strict accordance with Manufacturer's recommendations.

3.6 PROTECTION OF WORK

- A. Concrete shall be protected from damage. Damaged concrete shall be replaced at the Contractor's expense.
- B. The General Contractor shall be responsible for the protection of concrete slabs on grade through winter weather. If they should heave due to cold weather, the slabs and all fill below slabs shall be removed and replaced at no expense to the Owner.

END OF SECTION 03 30 00

SECTION 03 54 00 – SELF-LEVELING UNDERLAYMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, “General Conditions of the Contract for Construction”, the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

- A. This Section includes furnishing and installing self-leveling concrete underlayment as specified herein, along with all accessories, over existing floor surfaces within areas of interior renovations as indicated on the drawings.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Section 03 30 00 “Cast in Place Concrete” for installation of cast in place concrete fill.

1.3 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Qualification data for firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include a list of completed projects with project name, addresses, names of architects and owners, and other information specified.

1.4 QUALITY ASSURANCE

- A. Installation of self-leveling concrete underlayment must be by an applicator using mixing equipment and tools approved by the manufacturer
- B. Underlayment shall be able to be installed from 1/8" to 1" in one pour and up to 5" with the addition of aggregate. It may also be feathered to match existing elevations.
- C. Underlayment to be applied to a minimum thickness of 1/8" over highest point in the subfloor, with an average typical thickness of 1/4".
- D. Underlayment compressive strength shall be 4100 psi after 28 days per ASTM C 109/mod (air cure only).

- E. Underlayment shall be walkable after 2 hours and allow floor covering to be installed after 16 hours at 70°F.
- F. Manufacturer's certification that the product is Portland cement-based having an inorganic binder content which is a minimum 100% Portland cement when tested per ASTM C 150: Standard Specification for Portland Cement.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in their unopened packages and protect from extreme temperatures and moisture. Protect liquids from freezing

1.6 SITE CONDITIONS

- A. Self-leveling concrete underlayment is a cementitious material. Observe the basic rules of concrete work. Do not install below 50°F surface temperature. Install quickly if floor is warm and follow hot weather precautions available from the manufacturer's Technical Service Department. Never mix with cement or additives other than manufacturer's approved products.

PART 2 - PRODUCTS

2.1 PRODUCTS

- A. The cement-based self-leveling underlayment shall be ARDEX K-15 Self-Leveling Underlayment Concrete, or equal.
- B. Primer for standard absorbent concrete shall be ARDEX P-51 Primer.
- C. Primer for non-porous subfloors, cutback and other adhesive residues, wooden subfloors shall be ARDEX P-82 Ultra Prime.
- D. The additive to be mixed with ARDEX K-15 when used over cutback adhesive, wooden subfloors shall be ARDEX E-25 Resilient Emulsion.
- E. If required, aggregate shall be well graded, washed gravel (1/8" to 1/4" or larger) for use when underlayment is installed over 1 1/2" thick.
- F. Water shall be clean, potable, and sufficiently cool (not warmer than 70°F).

2.2 MIX DESIGNS

- A. Standard mixing ratio: ARDEX K-15 is mixed in 2-bag batches at one time. Mix each bag of ARDEX K-15 (55 lb.) with 7 quarts of water. Product shall be mixed in an ARDEX T-10 Mixing Drum using an ARDEX T-1 Mixing Paddle and a 1/2" heavy-duty drill (min. 650 rpm). Mix thoroughly for approximately 2-3

minutes to obtain a lump-free mixture. Follow written instructions per the ARDEX K-15 bag label.

- B. Resilient mix for applications over cutback and non-water soluble adhesive residues, wood, and metal: Use 6 qt. of water and 2 qt. of ARDEX E-25 Resilient Emulsion for each bag of ARDEX K-15.
- C. Aggregate mix: For areas to be installed over 1 1/2" thick, aggregate may be added to reduce material costs. Mix ARDEX K-15 with water first, then add from 1/3 up to 1 part by volume of aggregate (1/8" to 1/4" or larger). Do not use sand.
- D. For pump installations, ARDEX K-15 shall be mixed using the ARDEX Levelcraft Automatic Mixing Pump. Start the pump at 210 gallons of water per hour, and then adjust to the minimum water reading that still allows self-leveling properties. **DO NOT OVERWATER!** Check the consistency of the product on the floor to ensure a uniform distribution of the sand aggregate at both the top surface and bottom of the pour. If settling is occurring, reduce the water amount and recheck. Conditions during the installation, such as variations in water, powder, substrate, and ambient temperature, require that the water setting be monitored and adjusted carefully to avoid overwatering.

PART 3 - EXECUTION

3.1 PREPARATION

- A. All subfloors must be sound, solid, cleaned, and primed:
 - 1. All concrete subfloors must be of adequate strength, clean, and free of all oil, grease, dirt, curing compounds and any substance that might act as a bondbreaker before priming. Mechanically clean if necessary using shot blasting or other. Acid etching and the use of sweeping compounds and solvents are not acceptable.
 - 2. Wooden subfloors must be clean and free of all foreign matter. Sand to bare wood then vacuum to remove all dust. Re-nail any loose boards exhibiting movement
 - 3. Metal subfloors must be clean and free of all rust and foreign matter. Where required, a corrosive resistant coating should be applied and allowed to dry before priming
 - 4. Cutback and other non-water soluble adhesive residues must be wet scraped to a thin, well-bonded layer
 - 5. Non-porous subfloors such as ceramic and quarry tile as well as terrazzo should be clean and free of all waxes and sealers. If necessary, have the surface professionally cleaned
 - 6. All cracks in the subfloor shall be repaired to minimize telegraphing through the underlayment
 - 7. Substrates shall be inspected and corrected for moisture or any other conditions that could affect the performance of the underlayment or the finished floor covering

3.2 JOINT PREPARATION

- A. Moving Joints - honor all expansion and isolation joints up through the underlayment
- B. Saw Cuts and Control Joints - fill all non-moving joints with ARDEX SD-F Feather

3.3 PRIMING

- A. Primer for standard absorbent concrete subfloors: Mix ARDEX P-51 1: 1 with water and apply evenly with a soft push broom. Do not leave any bare spots. Remove all puddles and excess primer. Allow to dry to a clear, thin film (min. 3 hours, max. 24 hours). Underlayment shall not be applied until the primer is dry. Primer coverage is approximately 400 to 600 sq. ft. per gallon
- B. Primer for extremely absorbent concrete subfloors: Make an initial application of ARDEX P-51 mixed with 3 parts water using a soft push broom. Do not leave any bare spots. Remove all puddles and excess primer. Allow to dry thoroughly before proceeding with the standard application of primer as described above for standard absorbent concrete
- C. Primer for non-porous subfloors, wooden or metal subfloors, or cutback and other non-water soluble adhesive residues over concrete: Prime with ARDEX P-82 Ultra Prime. Mix Part A (red) with Part B (white) and apply with a short-nap or sponge paint roller, leaving a thin coat of primer no heavier than a thin coat of paint. Do not leave any bare spots. Remove all puddles and excess primer. Allow to dry to a clear, slightly tack film (minimum 3 hours, maximum 24 hours). Underlayment shall not be installed until primer is dry. Primer coverage is approximately 200 to 400 square feet per gallon.
- D. Minimum drying time for ARDEX P-82 Ultra-Prime over cutback adhesive is 18 hours.

3.4 APPLICATION OF UNDERLAYMENT

- A. Installation
 - 1. Pour or pump the liquid ARDEX K-15 and spread in place with the ARDEX T-4 Spreader. Use the ARDEX T-5 Smoother for featheredge and touch-up. Wear baseball shoes with non-metallic cleats to avoid leaving marks in the liquid ARDEX K-15. Underlayment can be walked on in 2-3 hours at 70° F.

3.5 PREPARATION OF FLOORING INSTALLATION

- A. Underlayment can accept finish floor covering materials after 16 hours at 70°F and 50% relative humidity

- B. Due to the wide range of adhesives that are used to install floor coverings, some adhesives may dry more quickly over Ardex underlayments than over other substrates. If this condition occurs, priming the surface of the underlayment with ARDEX P-51 Primer diluted 1:3 with water will even out the drying of the adhesive. Allow the primer to dry 1-3 hours before proceeding with the adhesive installation.

3.6 FIELD QUALITY CONTROL

- A. Where specified, field sampling of the Ardex underlayment is to be done by taking an entire unopened bag of the product being installed to an independent testing facility to perform compressive strength testing in accordance with ASTM C 109/modified: air-cure only. There are no in situ test procedures for the evaluation of compressive strength.

3.7 PROTECTION

- A. Prior to the installation of the finish flooring, the surface of the underlayment should be protected from abuse by other trades by the use of plywood, masonite or other suitable protection course.

END OF SECTION 03 54 00

04 20 00 - UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, "General Conditions of the Contract for Construction", the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

- A. This Section includes the following:
1. Concrete unit masonry (cmu).
 2. Mortar and Grout.
 3. Reinforcing steel and joint reinforcement.
 4. Ties, anchors, flashing and lintels related to masonry construction.
- B. Products installed but not furnished under this Section include the following:
1. Steel lintels in unit masonry as specified in Section 05 50 00 "Metal Fabrications."
- C. Related Sections: The following sections contain requirements that relate to this Section:
1. Wood nailers and blocking built into unit masonry are specified in Section 06 10 00 "Rough Carpentry."
 2. Fire rated filler and caulk at tops of rated partitions are specified in Section 07 84 00, "Firestopping".
 3. Installation of recessed mounting hardware, backboxes, conduits, and related hardware is specified within Division 22, Division 23, Division 26, Division 27 and Division 28.
 4. Metal stud and gypsum board backup walls are specified in Section 09 21 00 "Gypsum Board Assemblies"
 - 5.

1.3 SYSTEM PERFORMANCE REQUIREMENTS

- A. Provide unit masonry that develops the following installed compressive strengths (f'm):
1. For concrete unit masonry: As follows:
 - a. f'm = 1500 psi.

1.4 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Product data for each different masonry unit, accessory, and other manufactured product indicated.
- C. Samples for verification purposes of the following:
 - 1. Full-size units for each different exposed masonry unit required showing full range of exposed color, texture, and dimensions to be expected in completed construction.
 - 2. Accessories embedded in the masonry.
- D. Material certificates for the following signed by manufacturer and Contractor certifying that each material complies with requirements.
 - 1. Each different cement product required for mortar and grout including name of manufacturer, brand, type, and weight slips at time of delivery.
 - 2. Each material and grade indicated for reinforcing bars.
 - 3. Each type and size of joint reinforcement.
 - 4. Each type and size of anchors, ties, and metal accessories.
- E. Material test reports from a qualified independent testing laboratory employed and paid by Contractor indicating and interpreting test results relative to compliance of the following proposed masonry materials with requirements indicated:
 - 1. Mortar complying with property requirements of ASTM C 270.
 - 2. Grout mixes. Include description of type and proportions of grout ingredients.
 - 3. Masonry units.

1.5 QUALITY ASSURANCE

- A. Unit Masonry Standard: Comply with ACI 530.1/ASCE 6 "Specifications for Masonry Structures," except as otherwise indicated.
 - 1. Revise ACI 530.1/ASCE 6 to exclude Sections 1.4 and 1.7; Parts 2.1.2, 3.1.2, and 4.1.2; and Articles 1.5.1.2, 1.5.1.3, 2.1.1.1, 2.1.1.2, and 2.3.3.9 and to modify Article 2.1.1.4 by deleting requirement for installing vent pipes and conduits built into masonry.

- B. Comply with ACI 530/ASCE5 "Building Code Requirements for Masonry Structures, Section 9.5 Lateral Support for bracing requirements of partitions.
- C. Fire Performance Characteristics: Where indicated, provide materials and construction identical to those of assemblies whose fire resistance has been determined per ASTM E 119 by a testing and inspecting organization, by equivalent concrete masonry thickness, or by another means, as acceptable to authorities having jurisdiction.
- D. Single-Source Responsibility for Masonry Units: Obtain exposed masonry units of uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from one manufacturer for each different product required for each continuous surface or visually related surfaces.
- E. Single-Source Responsibility for Mortar Materials: Obtain mortar ingredients of uniform quality from one manufacturer for each cementitious component and from one source and producer for each aggregate.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver masonry materials to project in undamaged condition.
- B. Store and handle masonry units off the ground, under cover, and in a dry location to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion, and other causes. If units become wet, do not place until units are in an air-dried condition.
- C. Store cementitious materials off the ground, under cover and in dry location.
- D. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- E. Store masonry accessories including metal items to prevent corrosion and accumulation of dirt and oil.
- F. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Comply with manufacturer's recommendations for handling, storage and protection during installation.
- G. Protect plastic insulation as follows:
 - 1. Do not expose to sunlight, except to extent necessary, for period of installation and concealment.
 - 2. Protect against ignition at all times. Do not deliver plastic insulating materials to project site ahead of installation time.
 - 3. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

- H. Fire Protection: Do not store rigid insulation or similar combustible materials within building.

1.7 PROJECT CONDITIONS

- A. Protection of Masonry: During erection, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
1. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.
 2. Where one wythe of multiwythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches down face next to unconstructed wythe and hold cover in place.
- B. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Remove immediately any grout, mortar, and soil that comes in contact with such masonry.
1. Protect base of walls from rain-splashed mud and mortar splatter by means of coverings spread on ground and over wall surface.
 2. Protect sills, ledges, and projections from mortar droppings.
 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes from mortar droppings.
- C. Cold-weather Construction: Comply with referenced unit masonry standard for cold-weather construction and the following:
1. Do not lay masonry units that are wet or frozen.
 2. Remove masonry damaged by freezing conditions.
 3. Refer to BIA Technical Note 1 for compliance with cold weather construction practices.
- D. Hot-Weather Construction: Comply with referenced unit masonry standard, BIA Technical Note 1.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Comply with referenced unit masonry standard and other requirements specified in this Section applicable to each material indicated.

2.2 CONCRETE MASONRY UNITS

- A. General: Comply with requirements indicated below applicable to each form of concrete masonry unit required.
1. Provide special shapes where indicated and as follows:
 - a. Furnish and install **bullnose units** for all outside corners unless otherwise indicated. (interior c.m.u. wall locations only). Bullnose units are not to be provided at shower stalls as depicted within shower plan details on drawing A-6.2.
 2. Size: Provide concrete masonry units complying with requirements indicated below for size that are manufactured to specified face dimensions within tolerances specified in the applicable referenced ASTM specification for concrete masonry units.
 - a. Concrete Masonry Units: Manufactured to specified dimensions of 3/8 inch less than nominal widths by nominal heights by nominal lengths indicated on drawings.
- B. Hollow and Solid Load-Bearing Concrete Masonry Units: ASTM C 90-90, C145, and Grade N and as follows:
1. Unit Compressive Strength: Provide units with minimum average net area compressive strength indicated below:
 - a. 1900 psi.
 2. Weight Classification: Lightweight.
 3. Aggregates: Lightweight, expanded shale, clay or slate produced by the rotary kiln method complying with ASTM C-331, and shall be graded (#4-0 Gradation) to assume constant texture. The blending of screenings or any other deleterious substance which will impair the fire rating or insulation values is prohibited.
 4. Units made with pumice or burn-off aggregates will not be accepted.
 5. **All cmu units exposed to view after completion of construction shall contain The Dry Block Integral Water Repellent System by W.R. Grace & Co.**
- D. Fire Rated Concrete Masonry Units: ASTM E 119, UL 618 and the American Insurance Association Specifications for the equivalent thickness for 2 hours or better, and meeting the requirements for concrete masonry units above.
1. to view shall have a fine-grained texture similar to natural stone, with no air voids in excess of 1/32 in. and the density of such voids shall be less than 3 occurrences per any 1 in.² and not obvious under direct daylight illumination at a 5 ft. distance.
 2. Units shall exhibit a texture approximately equal to the approved sample when viewed under direct daylight illumination at a 10 ft. distance.

2.3 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce required mortar color.
- B. Masonry Cement: ASTM C 91.
 - 1. For colored pigmented mortars use premixed colored masonry cements of formulation required to produce color indicated, or if not indicated, as selected from manufacturer's standard formulations.
 - 2. **Color of mortar to match existing grout to remain.**
- C. Products: Subject to compliance with requirements, provide one of the following:
 - 1. Colored Masonry Cement:
 - a. "Lafarge Masonry Cement," Lafarge North America Inc.
 - b. "Masonry Cement," Lehigh Hanson, Heidelberg Cement Group.
 - c. "Colored Masonry Cement," The Flamingo Brixment Corporation.
 - 2. Varying mortar colors may be selected for each type and color of masonry utilized.

2.4 REINFORCING STEEL

- A. General: Provide reinforcing steel complying with requirements of referenced unit masonry standard and this article.
- B. Steel Reinforcing Bars: Material and grade as follows:
 - 1. Grade 60.
- C. Deformed Reinforcing Wire: ASTM A 496.

2.5 JOINT REINFORCEMENT

- A. General: Provide joint reinforcement complying with requirements of referenced unit masonry standard and this article, formed from the following:
 - 1. Galvanized carbon steel wire, ASTM-A153, Class B-2, hot-dipped, 1.5 oz. galvanized coating.
- B. Description: Welded-wire units prefabricated with deformed continuous side rods and plain cross rods into straight lengths of not less than 10 feet, with prefabricated corner and tee units, and complying with requirements indicated below:
 - 1. Wire Diameter for Side Rods: 3/16 inch.

2. Wire Diameter for Cross Rods: 9 gage.
3. For single-wythe masonry provide type as follows with single pair of side rods:
 - a. Truss design with continuous diagonal cross rods spaced not more than 16 inches o.c.
 - b. Subject to compliance with requirements, provide one of the following:
 - 1) "120 Truss-Mesh, Extra Heavy Duty", by Hohman & Barnard, Inc., or equal.
4. For multiwythe masonry provide type as follows:
 - a. Truss design with single pair of side rods and adjustable rectangular tie eye sections spaced not more than 16 inches o.c.; with side rods spaced for embedment within each face shell of backup wythe and eyes extended to accommodate pintle ties which will engage the outer wythe by at least 1-1/2 inches.
 - b. Products: Subject to compliance with requirements, provide one of the following:
 - 1). "170-2X Lox-All Truss Style Adjustable Joint Reinforcement with Eyes and 2X hook, Extra Heavy Duty", by Hohman & Barnard, Inc., or equal.

2.6 TIES AND ANCHORS, GENERAL

- A. General: Provide ties and anchors specified in subsequent articles that comply with requirements for metal and size of referenced unit masonry standard and of this article.
- B. Galvanized Carbon Steel Wire: ASTM A 82, ASTM-A153, Class B-2, hot dipped, 1.5 oz. galvanized coating.
- C. Galvanized Steel Sheet: As follows:
 1. Galvanized Steel Sheet: ASTM A 366 (commercial quality) cold-rolled carbon steel sheet, hot-dip galvanized after fabrication to comply with ASTM A 525, Class B2 (for unit lengths over 15 inches) and Class B3 (for unit lengths under 15 inches), for all sheet metal ties and anchors.

2.7 ADJUSTABLE ANCHORS FOR CONNECTING MASONRY TO CONCRETE OR METAL STUD CONSTRUCTION

- A. General: A dual-diameter barrel with factory-installed EPDM washers to seal both the face of the insulation and the air/vapor barrier (an extra-large washer helps secure insulation to backup). Projecting Thermal Wings are steel reinforced and coated with highly flame resistant plastic to create a thermal break, decreasing thermal transfer through rigid insulation. The Wings accept a standard or seismic hook, spin to easily orient pintles / hooks to masonry joints, and

provide up to 1/2" of adjustability to account for variations in wall thickness.
Install with a standard 5/16" hex socket.

1. Performance Characteristics: Capable of withstanding a 200 lb. force in either tension or compression without deforming over, or developing play in excess of, .05 inch.
- B. Masonry Veneer Anchors: Units consisting of wire tie section and metal anchor section complying with the following requirements:
1. Wire Tie Diameter: 3/16 inch
 2. Wire Tie Shape: Double Leg Pintle.
 3. Wire Tie Length: 3 inch, 4 inch or 5 inch as required to extend 1-1/2 inches, but no closer than 1-1/4 inch from the outside face of masonry, into masonry wythe of veneer.
- C. Products: Subject to compliance with requirements, provide the following:
1. Screw-Attached Masonry Veneer Anchors:
 - a. "Thermal 2-Seal Wing Nut Anchor with 2X-Hook", Hohman & Barnard, Inc., or equal.
 - b. Stainless Steel barrel finish. Stainless Steel hook finish. Carbon Steel Screw finish.
 2. Provide powder-actuated fasteners, with a minimum working strength value of 100 lbs., driven through holes in the masonry veneer anchors into the concrete or metal stud.

2.8 ADJUSTABLE ANCHORS FOR CONNECTING MASONRY TO STRUCTURAL STEEL

- A. General: Two-piece assemblies as described below allowing vertical or horizontal differential movement between wall and structural steel parallel to plane of wall, but resisting tension and compression forces perpendicular to it.
1. Performance Characteristics: Capable of withstanding a 100 lb. force in either tension or compression without deforming over, or developing play in excess of, .05 inch.
- B. For anchorage of masonry inner wythes to the face of steel columns, and to the underside of structural steel members, furnish to the structural steel fabricator continuous channel slots formed from 16 ga. (mill) galvanized sheet steel.
1. Provide channel slot anchors formed from 3/16 inch diameter wire.
- C. Products: Subject to compliance with requirements, provide the following:
1. Channel Slots:

- a. "362-C Gripstay Channels", Hohmann & Bernard, or equal.
 2. Triangle Tie Slot Anchors:
 - a. "363 Flexible Gripstay Anchors", Hohmann & Bernard, or equal.
 1. Hot dipped galvanized finish
- D. For the anchorage of masonry to the webs of steel beams at cavity wall conditions, furnish to the structural steel fabricator channel anchor slots formed from 16 gauge brite sheet steel, 8" long.
1. Provide channel slot anchors formed from 16 gauge corrugated brite sheet metal, 3-1/2" long.
- E. Products: Subject to compliance with requirements, provide the following:
1. Channel Slots:
 - a. "360 Gripstay Channel", Hohmann & Bernard, or equal.
 2. Corrugated Channel Slot Anchors:
 - a. PTA 364 Anchors with clear butyrate tubes, Hohmann & Bernard, or equal.
 3. Hot dipped galvanized finish.

2.9 ANCHORS FOR CONNECTING MASONRY TO CONCRETE FOUNDATION WALL

- A. General: Two-piece assemblies as described below allowing vertical differential movement.
1. Performance Characteristics: Capable of withstanding a 100 lb. force in either tension or compression without deforming over, or developing play in excess of, .05 inch.
- B. For anchorage of masonry inner wythes to the face of foundation walls, furnish to the concrete trade contractor continuous dovetail slots formed from 16 ga. (mill) galvanized sheet steel.
- C. Products: Subject to compliance with requirements, provide the following:
1. Dovetail Slots:
 - a. 305 Dovetail Slot, Hohmann & Bernard, or equal.
 2. Triangle Tie Slot Anchors:
 - a. "315 Dovetail Triangular Ties, 14 gage, 3/16" wall tie diameter", Hohmann & Bernard, or equal.

2.10 ANCHORS FOR CONNECTING INTERIOR MASONRY PARTITIONS TO UNDERSIDE OF METAL DECKING AND JOINT STABILIZATION

- A. For anchorage of interior masonry partitions to the underside of metal decking or other structure above, and for joint stabilization assemblies at expansion, contraction or isolation joints. Spacing at 16 inches maximum centers.
- B. Products: Subject to compliance with requirements, provide the following:
 - 1. Joint Stabilization Anchors:
 - a. Slip Set Stabilizer, Hohmann & Bernard, or equal.

2.11 MISCELLANEOUS ANCHORS

- A. Provide 4 x 3 x 1/4 x 6 inch long steel clip angle anchors for laterally bracing masonry partitions to floor deck and underside of beams or girders above, arranged in pairs on each face of partition requiring bracing, spaced at 4' - 0" maximum centers.
 - 1. Provide these anchors in all locations where the length of a partition between lateral supports (buttresses, crosswalls, columns with ties), exceeds 36 times its thickness.
 - 2. Provide these anchors in all partitions interrupted by control joints (except crosswalls).

2.12 MISCELLANEOUS MASONRY ACCESSORIES

- A. Nonmetallic Control Joint and Brick Expansion Joint Strips: Premolded filler strips complying with ASTM D 1056, Type 2 (closed cell) , Class A (cellular rubber and rubber-like materials with specific resistance to petroleum base oils), Grade 1 (compression-deflection range of 2-5 psi), compressible up to 35 percent, of width and thickness indicated, formulated from the following material:
 - 1. Neoprene.
- B. Products: Subject to compliance with requirements, provide one of the following:
 - 1. "NS Closed Cell Neoprene Sponge", Hohmann and Barnard, Inc., or equal.
- C. Bond Breaker Strips: Asphalt-saturated organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).
- E. Wire Mesh Wall Ties: 2" x 2" x 16 gauge hot dipped galvanized wire for intersections of non-structural masonry walls.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. "MWT Mesh Wall Ties", Hohmann and Barnard, Inc., or equal.

- F. Mortar Net: Provide the following:
 - 1. High-density polyethylene in two (2) inch thickness. Product to be 90% open weave mesh in a dovetail configuration connected by a continuous bottom strip.
 - a. “Mortar Trap”, Hohmann & Bernard, or equal.

2.13 MORTAR AND GROUT MIXES

- A. General: Do not add admixtures including coloring pigments, air-entraining agents, accelerators, retarders, water repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.
 - 1. Do not use calcium chloride in mortar or grout.
- B. Mortar for Unit Masonry: Comply with ASTM C 270, Property Specification for job-mixed mortar and ASTM C 1142 for ready-mixed mortar, of types indicated below:
 - 1. For exterior, above-grade loadbearing and nonloadbearing walls and parapet walls, for reinforced masonry and where indicated, use type indicated below:
 - a. Type S.
 - 2. For interior loadbearing walls; for interior nonloadbearing partitions, and for other applications where another type is not indicated, use type indicated below:
 - a. Type S.
- C. Grout for Unit Masonry: Comply with ASTM C 476 and referenced unit masonry standard.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other specific conditions, and other conditions affecting performance of unit masonry.
- B. Examine rough-in and built-in construction to verify actual locations of piping connections prior to installation.
- C. Notify Architect and do not proceed until unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. Comply with referenced unit masonry standard and other requirements indicated applicable to each type of installation included in Project.
- B. Thickness: Build cavity and composite walls and other masonry construction to the full thickness shown. Build single-wythe walls to the actual thickness of the masonry units, using units of nominal thickness indicated.
- C. Build chases and recesses as shown or required to accommodate items specified in this and other Sections of the Specifications. Provide not less than 8 inches of masonry between chase or recess and jamb of openings and between adjacent chases and recesses.
- D. Leave openings for equipment to be installed before completion of masonry. After installation of equipment, complete masonry to match construction immediately adjacent to the opening.
- E. Cut masonry units with motor-driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide continuous pattern and to fit adjoining construction. Use full-size units without cutting where possible.

3.3 CONSTRUCTION TOLERANCES

- A. Comply with construction tolerances of referenced unit masonry standard.

3.4 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint widths and for accurate locating of openings, movement-type joints, returns, and offsets. Avoid the use of less-than-half-size units at corners, jambs, and where possible at other locations.
- B. Lay up walls to comply with specified construction tolerances, with courses accurately spaced and coordinated with other construction.
- C. Bond Pattern for Exposed Masonry: Lay exposed masonry in the following bond pattern; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.
 - 1. Running bond with vertical joint in each course centered on units in courses above and below.
- D. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 2 inches. Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.

- E. Stopping and Resuming Work: In each course, rake back 1/4-unit length for one-half running bond; do not tooth. Clean exposed surfaces of set masonry, wet clay masonry units lightly (if required), and remove loose masonry units and mortar prior to laying fresh masonry.
- F. Built-In Work: As construction progresses, build-in items specified under this and other Sections of the Specifications. Fill in solidly with masonry around all built-in items.
 - 1. Fill space between hollow metal frames and masonry solidly with mortar, unless otherwise indicated.
 - 2. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath in the joint below and rod mortar or grout into core.
 - 3. Fill cores in hollow concrete masonry units with grout 3 courses (24 inches) under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.

3.5 MORTAR BEDDING AND JOINTING

- A. Lay solid brick masonry units with completely filled bed and head joint; butter ends with sufficient mortar to fill head joints and shove into place. Do not slush head joints.
- B. Lay hollow concrete masonry units as follows:
 - 1. With full mortar coverage on horizontal and vertical face shells.
 - 2. Bed webs in mortar in starting course on footings and in all courses of piers, columns, and pilasters, and where adjacent to cells or cavities to be filled with grout.
 - 3. For starting course on footings where cells are not grouted, spread out full mortar bed including areas under cells.
- C. Cut joints flush for masonry walls to be concealed or to be covered by other materials.
- D. Tool joints for masonry walls to be exposed in compliance with referenced masonry standard.
- E. Tool joints in block and brick veneer as directed by the Architect.

3.6 STRUCTURAL BONDING OF MULTI-WYTHE MASONRY

- A. Use individual metal ties and pintles installed in continuous horizontal joint reinforcement, embedded in horizontal mortar joints to bond wythes together.

- B. Use pintles of lengths required to extend 1-1/2 inches into back of veneer wythe, and no closer than 1-1/4 inch from the exterior mortar surface.
- C. Corners: Provide interlocking masonry unit bond in each course at corners, unless otherwise shown.
 - 1. Provide continuity with horizontal joint reinforcement at corners using prefabricated "L" units, in addition to masonry bonding.
- D. Intersecting and Abutting Walls: Provide vertical control joints at junctures, provide same type of bonding specified for structural bonding between wythes and space as follows:
 - 1. Locate and provide control joints not to exceed 18 feet between joints, unless noted otherwise.
 - 2. Provide continuity with horizontal joint reinforcement using prefabricated "T" units.
- E. Nonbearing Interior Partitions: Build full height of story to within 1/2 inch of underside of floor or roof deck above and as follows:
 - 1. Install pressure-relieving joint filler in joint between top of non-fire rated partition and underside of deck above.
 - 2. Installation of fire rated filler and caulk by Section 07270 - Firestopping.

3.7 HORIZONTAL JOINT REINFORCEMENT

- A. General: Provide continuous horizontal joint reinforcement as indicated. Install longitudinal side rods in mortar for their entire length with a minimum cover of 5/8 inch on exterior side of walls, 1/2" inch elsewhere. Lap reinforcing a minimum of 6 inches.
- B. Provide continuity at corners and wall intersections by use of prefabricated "L" and "T" sections. Cut and bend reinforcement units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.8 ANCHORING MASONRY TO STRUCTURAL MEMBERS

- A. Anchor masonry to structural members where masonry abuts or faces structural members to comply with the following:
 - 1. Provide an open space not less than 1 inch in width between masonry and structural member, unless otherwise indicated. Keep open space free of mortar or other rigid materials

2. Anchor masonry to structural members with flexible anchors embedded in masonry joints and attached to structure.
3. Space anchors as indicated, but not more than 16 inches o.c. vertically and 32 inches o.c. horizontally.

3.9 MOVEMENT JOINTS

- A. General: Install control joints in unit masonry where indicated. Build in related items as the masonry progresses. Do not form a continuous span through movement joints unless provisions are made to prevent in-plane restraint of wall or partition movement.
- B. Form control joints in concrete masonry as follows:
 1. Form open joint of not less than 3/8 inch and insert nonmetallic compressible joint filler in width equal to actual width of concrete masonry units, less 3/8 inch for installation of backer rod and sealant by Section 07 92 00 "Joint Sealants".
 2. Where backer rod and sealant will be installed on both sides of masonry units, install joint filler in width equal to actual width of unit masonry, less 3/4 inch.

3.10 LINTELS

- A. Install steel lintels where indicated, and wherever openings of more than 2 feet for block size units are shown.
- B. Provide minimum bearing of 8 inches at each jamb, unless otherwise indicated.

3.11 INSTALLATION OF REINFORCED UNIT MASONRY

- A. General: Install reinforced unit masonry to comply with requirements of referenced unit masonry standard.
- B. Do not place grout until entire height of masonry to be grouted has attained sufficient strength to resist grout pressure.
- C. Install vertical reinforcing and secure with positioning ties before grout is placed.

3.12 FIELD QUALITY CONTROL

- A. Testing Frequency: Tests and evaluations listed in this article will be performed during construction for each 5000 sq. ft. of wall area or portion thereof.
 1. Mortar properties will be tested per property specification of ASTM C 270.
 2. Mortar composition and properties will be evaluated per ASTM C 780.

3. Grout compressive strength will be sampled and tested per ASTM C 1019.
- B. Evaluation of Quality Control Tests: In absence of other indications of noncompliance with requirements, masonry will be considered satisfactory if results from construction quality control tests comply with minimum requirements indicated.

END OF SECTION 04 20 00

05 50 00 METAL FABRICATIONS

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, "General Conditions of the Contract for Construction", the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.3 SUMMARY

- A. This Section includes furnishing and installing the following metal fabrications as described herein and indicated on the drawings:
 - 1. Loose steel lintels
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Section 04 20 00 "Unit Masonry" for installation of loose lintels in masonry work and furnishing and installing metal clip angles associated with masonry wall construction.

1.4 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Shop drawings detailing fabrication and erection of each metal fabrication indicated. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide templates for anchors and bolts specified for installation under other Sections.
- C. Welder certificates signed by Contractor certifying that welders comply with requirements specified under the "Quality Assurance" Article.
- D. Qualification data for firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include a list of completed projects with project name, addresses, names of architects and owners, and other information specified.

1.5 QUALITY ASSURANCE

- A. Fabricator Qualifications: Firm experienced in producing metal fabrications similar to those indicated for this Project with a record of successful in-service

performance, and with sufficient production capacity to produce required units without delaying the Work.

- B. Welding Standards: Comply with applicable provisions of AWS D1.1 "Structural Welding Code--Steel," AWS D1.2 "Structural Welding Code--Aluminum," and AWS D1.3 "Structural Welding Code--Sheet Steel."
 - 1. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone re-certification.
- C. Installer Qualifications: Arrange for steel fabrication installation specified in this Section by the same firm that fabricated them.
- D. Manufacturer: Provide metal fabrications as complete units produced by a single manufacturer, including necessary mounting accessories, fittings and fastenings.

1.6 PROJECT CONDITIONS

- A. Field Measurements: Check actual locations of walls and other construction to which metal fabrications must fit by accurate field measurements before fabrication. Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
 - 1. Where field measurements cannot be made without delaying the Work, guarantee dimensions and proceed with fabricating products without field measurements. Coordinate construction to ensure that actual dimensions correspond to guaranteed dimensions. Allow for trimming and fitting at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 FERROUS METALS

- A. Metal Surfaces, General: For metal fabrications exposed to view in the completed Work, provide materials selected for their surface flatness, smoothness, and freedom from surface blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.
- B. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- C. Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.

- D. Cast-in-Place Anchors in Concrete: Anchors of type indicated below, fabricated from corrosion-resistant materials capable of sustaining, without failure, the load imposed within a safety factor of 4, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.
 - 1. Threaded or wedge type; galvanized ferrous castings, either ASTM A 47 (ASTM A 47M) malleable iron or ASTM A 27/A 27M cast steel. Provide bolts, washers, and shims as required, hot-dip galvanized per ASTM A 153.
- E. Welding Rods and Bare Electrodes: Select according to AWS specifications for the metal alloy to be welded.

2.2 PAIN

- A. Shop Primer for Ferrous Metal: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with performance requirements of FS TT-P-664, selected for good resistance to normal atmospheric corrosion, compatibility with finish paint systems indicated, and capability to provide a sound foundation for field-applied topcoats despite prolonged exposure.
- B. Galvanizing Repair Paint: High-zinc-dust-content paint for re-galvanizing welds in galvanized steel, with dry film containing not less than 94 percent zinc dust by weight, and complying with DOD-P-21035 or SSPC-Paint 20.

2.3 FASTENERS

- A. General: Provide plated fasteners complying with ASTM B 633, Class Fe/Zn 25 for electro-deposited zinc coating, for exterior use or where built into exterior walls. Select fasteners for the type, grade, and class required.
- B. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.
 - 1. Material: Group 1 alloy 304 or 316 stainless-steel bolts and nuts complying with ASTM F 593 (ASTM F 738M) and ASTM F 594 (ASTM F 836M).

2.4 GROUT AND ANCHORING CEMENT

- A. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- B. Products: Subject to compliance with requirements, provide one of the following:
 - 1. Nonshrink, Nonmetallic Grouts:
 - a. Five Star Grout; Five Star Products.
 - b. Masterflow 928 and 713; Master Builders Technologies, Inc.
 - c. Sealtight 588 Grout; W. R. Meadows, Inc.
 - d. SonogROUT 14; Sonneborn Building Products--ChemRex, Inc.
- C. Erosion-Resistant Anchoring Cement: Factory-prepackaged, nonshrink, nonstaining, hydraulic controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without need for protection by a sealer or waterproof coating and is recommended for exterior use by manufacturer.
- D. Products: Subject to compliance with requirements, provide the following:
 - 1. Erosion-Resistant Anchoring Cement:
 - 2. "Super Por-Rok"; Division, Minwax Construction Products

2.5 FABRICATION, GENERAL

- A. Form metal fabrications from materials of size, thickness, and shapes indicated but not less than that needed to comply with performance requirements indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of each metal fabrication.
- B. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges.
- C. Shear and punch metals cleanly and accurately. Remove burrs.
- D. Ease exposed edges to a radius of approximately 1/32 inch (1 mm), unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- E. Remove sharp or rough areas on exposed traffic surfaces.
- F. Weld corners and seams continuously to comply with the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.
 4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.
- G. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints where least conspicuous.
- H. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
1. Include brackets, clips, miscellaneous fittings and anchors for interconnection and attachment of metal fabrications to other work.
 2. Furnish inserts, sleeves and other devices for connecting metal fabrications to concrete or masonry work.
- I. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for re-assembly and coordinated installation.
- J. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- K. Fabricate joints that will be exposed to weather in a manner to exclude water, or provide weep holes where water may accumulate.

2.6 LOOSE STEEL LINTELS

- A. Fabricate loose structural steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated.
- B. Weld adjoining members together to form a single unit where indicated.
- C. Size loose lintels as indicated on Contract Documents.

2.7 FINISHES, GENERAL

- A. Comply with NAAMM "Metal Finishes Manual" for recommendations relative to applying and designing finishes.
- B. Finish metal fabrications after assembly.

2.11 STEEL AND IRON FINISHES

- A. Preparation for Shop Priming: Prepare uncoated ferrous metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed metal fabrications:
 - 1. Interiors (SSPC Zone 1A): SSPC-SP 3 "Power Tool Cleaning."
- B. Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes or to be embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with requirements of SSPC-PA 1 "Paint Application Specification No. 111 for shop painting.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installing anchorages, including concrete inserts, sleeves, anchor bolts, and miscellaneous items having integral anchors that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.

3.2 INSTALLATION, GENERAL

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction. Include threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors as required.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing miscellaneous metal fabrications. Set metal fabrication accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- C. Provide temporary bracing or anchors in formwork for items that are to be built into concrete masonry or similar construction.

- D. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop-welded because of shipping size limitations. Do not weld, cut, or abrade the surfaces of exterior units that have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections.

- E. Field Welding: Comply with the following requirements:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and contour of welded surface matches those adjacent.

3.3 ADJUSTING AND CLEANING

- A. Touchup Painting: Clean and touchup paint of field welds, bolted connections, and abraded areas of the shop paint on miscellaneous metal.

- B. For galvanized surfaces, clean welds, bolted connections, and abraded areas, and apply galvanizing repair paint to comply with ASTM A 780.

END OF SECTION 05 50 00

06 10 53 – MISCELLANEOUS CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, “General Conditions of the Contract for Construction”, the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

- A. This Section includes the following:
1. Rough carpentry work not specified elsewhere and generally intended for support of other work.
 2. Wood blocking for trim
 3. Miscellaneous blocking, grounds, nailers, and panels to support wall mounted equipment, and accessories.
 4. Installation of door hardware and doors within frames.
 5. Installation of toilet and bath accessories
 6. Installation of visual display boards.
 7. Installation of equipment and/or accessories not specifically identified within the specifications.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
1. Section 03 30 00 "Cast-In-Place Concrete" for wood formwork.
 2. Drawing A-9.1 for door hardware furnished for installation under this section.
 3. Section 09 21 00 "Gypsum Board Assemblies" for metal-stud formed partitions, and gypsum sheathing.
 4. Section 10 11 00 "Visual Display Boards" for blocking required for markerboards.
 5. Section 10 28 00 “Toilet and Bath Accessories”
 6. Division 26 - Electrical for equipment furnished and installed by Electrical Contractor onto backer boards.
 7. Division 28 - Electronic Safety and Security for equipment furnished and installed by Security Contractor onto backer boards.

1.3 SUBMITTALS

- A. General: Submit the following according to Conditions of Contract and Division 1 Specification Sections.
- B. Wood treatment data from chemical treatment manufacturer. Include chemical treatment manufacturer's instructions for handling, storing, installing, and finishing treated material.
 - 1. Preservative Treatment: Include certification by treatment plant stating type of solution and pressure process used, net amount of preservative retained, and compliance with applicable standards.
 - 2. Waterborne Preservative Treatment: Include certification that moisture content of treated wood was reduced to levels specified prior to shipment to Project site.
 - 3. Warranty: Include warranty of chemical treatment manufacturer for each type of treatment.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Delivery and Storage: Keep materials under cover and dry. Protect against exposure to weather and contact with damp or wet surfaces. Stack material above ground level on uniformly spaced supports to prevent deformation.
 - 1. For material pressure treated with waterborne chemicals, place spacers between each bundle for air circulation.

PART 2 - PRODUCTS

2.1 LUMBER, GENERAL

- A. Standards: Furnish lumber manufactured to comply with PS 20 "American Softwood Lumber Standard" and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee's (ALSC) Board of Review.
- B. Grade Stamps: Furnish lumber with each piece factory-marked with grade stamp of inspection agency that indicates grading agency, grade, species, moisture content at time of surfacing, and mill.
 - 1. For exposed lumber, furnish pieces marked on ends or back of each piece.
- C. Sizes: Provide nominal sizes indicated, complying with PS 20 except where actual sizes are specifically noted as being required.
- D. Surfacing: Dressed lumber, S4S, unless otherwise indicated.

2.2 DIMENSION LUMBER FOR CONCEALED CONDITIONS

- A. Species: Same species as designated for exposed conditions.
- B. Moisture Content: Same moisture content as designated for exposed conditions.
- C. Grade: Same grade as designated for exposed conditions.

2.3 DIMENSION LUMBER FOR EXPOSED CONDITIONS

- A. Species: Any one of the following:
 - 1. Douglas fir.
 - 2. Hem-fir.
- B. Moisture Content: Kiln-dry, KD 19 or MC 19 (19 percent maximum moisture content).
- C. Grade: No. 1 or construction grade.

2.4 BOARDS FOR CONCEALED CONDITIONS

- A. Species: Same species as listed for exposed boards.
- B. Moisture Content: Same moisture content as designated for exposed boards.
- C. Grade: Same grade as listed for exposed boards.

2.5 BOARDS FOR EXPOSED CONDITIONS

- A. Species: Any one of the following:
 - 1. Douglas fir.
 - 2. Hem-fir.
- B. Moisture Content: Kiln-dry, KD 19 or MC 19 (19 percent maximum moisture content).
- C. Grade: No. 1, 1 Common.

2.6 CONSTRUCTION PANELS

- A. Standards: Comply with requirements of PS 1 Voluntary Product Standard "Construction and Industrial Plywood" for veneer plywood and APA PRP-108

"Performance Standards and Policies for Structural-Use Panels" for performance-rated panels.

1. Trademark: Furnish construction panels that are each factory-marked with APA trademark for grade specified.
- B. Miscellaneous Concealed Plywood: C-C Plugged Exterior, thickness as indicated but not less than 1/2 inch nominal.
- C. Miscellaneous Exposed Plywood: A-D Interior, thickness as indicated but not less than 5/8 inch nominal.
- D. Electrical/Telephone Backing Panels: Fire-rated panels, thickness as indicated but not less than 3/4" nominal. All panels to receive two (2) coats of grey (or black) paint / solid stain following installation. DO NOT paint over FR rating stamp (1 per plywood panel).

2.7 FASTENERS

- A. General: Where miscellaneous carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with a hot-dip zinc coating per ASTM A 153 or of AISI Type 304 stainless steel.
- B. Nails, Wire, Brads and Staples: FS FF-N-105.
- C. Wood Screws: ANSI B18.6.1.
- D. Bolts: ASTM A 307, Grade A; with ASTM A 563 hex nuts and flat washers.

2.8 PRESERVATIVE WOOD TREATMENT BY PRESSURE PROCESS

- A. General: Obtain preservative-treated lumber complying with AWPA Standard C2. Mark each treated item with AWPB or SPIB Quality Mark Requirements. Coat surfaces cut after treatment to comply with AWPA M4.
- B. Above-Ground Wood Treatment: Pressure treat with waterborne preservatives to a minimum retention of 0.25 pcf.
 1. Kiln-dry interior dimension lumber after treatment to 15 percent maximum moisture content.
 2. Kiln-dry interior construction panels after treatment to 15 percent maximum moisture content.
 3. Treat wood items indicated and in the following circumstances:
 - a. In contact with roofing, flashing, or waterproofing.

- b. In contact with masonry or concrete.
 - c. Within 18 inches of grade.
- C. Ground-Contact Wood Treatment: Pressure treat with waterborne preservatives to a minimum retention of 0.40 pcf.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Discard units of material with defects that impair quality of miscellaneous carpentry and in sizes that would require an excessive number or poor arrangement of joints.
- B. Cut and fit miscellaneous carpentry accurately. Install members plumb and true to line and level.
- C. Coat cut edges of preservative-treated wood to comply with AWWA M4.
- D. Securely fasten miscellaneous carpentry as indicated and according to applicable codes and recognized standards.
- E. Countersink nail heads on exposed carpentry work and fill holes.
- F. Use fasteners of appropriate type and length. Pre-drill members when necessary to avoid splitting wood.
- G. Nail decking to all supports and edge blocking in accordance with diaphragm nailing requirements noted on Structural drawings.

3.2 WOOD GROUNDS, NAILERS, BLOCKING, AND SLEEPERS

- A. Install where shown and where required for screeding or attachment of other work. Cut and shape to required size. Coordinate location with other work involved.
- B. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise indicated.
- C. Provide wood blocking for all wall mounted or recessed equipment including, but not limited to, toilet accessories, fire extinguisher cabinets, visual display boards, architectural casework, and wall mounted hardware.

3.3 DOOR HARDWARE INSTALLATION

- A. Mount hardware units at heights indicated in following applicable publications, except as specifically indicated or required to comply with governing regulations and except as otherwise directed by Architect.
 - 1. "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute.
- B. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Where cutting and fitting is required to install hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation or application of surface protection with finishing work specified in the Division 9 Sections. Do not install surface-mounted items until finishes have been completed on the substrates involved.
- C. Set units level, plumb, and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- D. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.
- E. Set thresholds for exterior doors in full bed of butyl-rubber or polyisobutylene mastic sealant complying with requirements specified in Division 7 Section "Joint Sealers."
- F. Weatherstripping and Seals: Comply with manufacturer's instructions and recommendations to the extent installation requirements are not otherwise indicated.

3.4 TOILET ACCESSORIES INSTALLATION

- A. Install each toilet accessories in compliance with the manufacturer's instructions and recommendations

END OF SECTION 06 10 53

07 84 00 - FIRESTOPPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, "General Conditions of the Contract for Construction", the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

- A. This Section includes furnishing and installing firestopping for the following:
 - 1. Joints along the top of fire-resistance-rated wall construction and the underside of structure above.
 - 2. Penetrations through fire-resistance-rated walls and partitions including both empty openings and openings containing cables, pipes, ducts, conduits, and other penetrating items.
 - 3. Sealant joints in fire-resistance-rated construction.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Section 07 92 00 "Joint Sealers" for non-fire-rated joint sealers.
 - 2. Division 22 Sections specifying ducts and piping penetrations.
 - 3. Division 23 Sections specifying Heating Ventilating and air conditioning
 - 4. Division 26 Sections specifying cable and conduit penetrations.
 - 5. Division 28 Sections specifying Electronic Safety and Security

1.3 SYSTEM PERFORMANCE REQUIREMENTS

- A. General: Provide firestopping systems that are produced and installed to resist the spread of fire, according to requirements indicated, and the passage of smoke and other gases.
 - 1. All firestopping systems shall be reviewed and approved for use by the local fire authority prior to submission to Architect.
- B. F-Rated Through-Penetration Firestop Systems: Provide through-penetration firestop systems with F ratings indicated, as determined per ASTM E 814, but not less than that equaling or exceeding the fire-resistance rating of the constructions penetrated.
- C. T-Rated Through-Penetration Firestop Systems: Provide through-penetration firestop systems with T ratings, in addition to F ratings, as determined per ASTM

E 814, where indicated and where systems protect penetrating items exposed to contact with adjacent materials in occupiable floor areas. T-rated assemblies are required where the following conditions exist:

1. Where firestop systems protect penetrations located outside of wall cavities.
 2. Where firestop systems protect penetrations located outside fire-resistive shaft enclosures.
 3. Where firestop systems protect penetrations located in construction containing doors required to have a temperature-rise rating.
 4. Where firestop systems protect penetrating items larger than a 4-inch-diameter nominal pipe or 16 sq. in. in overall cross-sectional area.
- D. Fire-Resistive Joint Sealants: Provide joint sealants with fire-resistance ratings indicated, as determined per ASTM E 119, but not less than that equaling or exceeding the fire-resistance rating of the construction in which the joint occurs.
- E. For firestopping exposed to view, traffic, moisture, and physical damage, provide products that do not deteriorate when exposed to these conditions.
1. For piping penetrations for plumbing and wet-pipe sprinkler systems, provide moisture-resistant through-penetration firestop systems.
 2. For penetrations involving insulated piping, provide through-penetration firestop systems not requiring removal of insulation.
- F. For firestopping exposed to view, provide products with flame-spread values of less than 25 and smoke-developed values of less than 450, as determined per ASTM E 84.
- G. All firestopping systems shall be FM Global approved and shall meet FM Approval Class Numbers 4435, 4450, 4451, 4454, 4470, 4471.

1.4 SUBMITTALS

- A. General: Submit the following according to Conditions of Contract and Division 1 Specification Sections.
- B. Product data for each type of product specified.
1. Certification by firestopping manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOCS) and are nontoxic to building occupants.
- C. Product test reports from, and based on tests performed by, a qualified testing and inspecting agency evidencing compliance of firestopping with requirements based on comprehensive testing of current products.

1.5 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: Provide firestopping that complies with the following requirements and those specified under the "System Performance Requirements" article:
 - 1. Firestopping tests are performed by a qualified testing and inspecting agency. A qualified testing and inspecting agency is UL or Warnock Hersey.
 - 2. Through-penetration firestop systems are identical to those tested per ASTM E 814 under conditions where positive furnace pressure differential of at least 0.01 inch of water is maintained at a distance of 0.78 inch below the fill materials surrounding the penetrating items in the test assembly. Provide rated systems complying with the following requirements:
 - a. Through-penetration firestop system products bear classification marking of qualified testing and inspecting agency.
 - b. Through-penetration firestop systems correspond to those indicated by reference to through-penetration firestop system designations listed by UL in their "Fire Resistance Directory," or by Warnock Hersey.
 - 3. Fire-resistive joint sealant systems are identical to those tested for fire-response characteristics per ASTM E 119 under conditions where the positive furnace pressure differential is at least 0.01 inch of water, as measured 0.78 inch from the face exposed to furnace fire. Provide systems complying with the following requirements:
 - a. Fire-Resistance Ratings of Joint Sealants: As indicated by reference to design designations listed by UL in their "Fire Resistance Directory" or by another qualified testing and inspecting agency.
 - b. Joint sealants, including backing materials, bear classification marking of qualified testing and inspection agency.
- B. Installer Qualifications: Engage an experienced Installer who has completed firestopping that is similar in material, design, and extent to that indicated for Project and that has performed successfully.
- C. Single-Source Responsibility: Obtain through-penetration firestop systems for each kind of penetration and construction condition indicated from a single manufacturer.
- D. Provide firestopping products containing no detectable asbestos as determined by the method specified in 40 CFR Part 763, Subpart F, Appendix A, Section 1, "Polarized Light Microscopy."
- E. Coordinating Work: Coordinate construction of openings and penetrating items to ensure that designated through-penetration firestop systems are installed per specified requirements.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver firestopping products to Project site in original, unopened containers or packages with intact and legible manufacturers' labels identifying product and manufacturer; date of manufacture; lot number; shelf life, if applicable; qualified testing and inspecting agency's classification marking applicable to Project; curing time; and mixing instructions for multi-component materials.
- B. Store and handle firestopping materials to prevent their deterioration or damage due to moisture, temperature changes, contaminants, or other causes.

1.7 PROJECT CONDITIONS

- A. Environmental Conditions: Do not install firestopping when ambient or substrate temperatures are outside limits permitted by firestopping manufacturers or when substrates are wet due to rain, frost, condensation, or other causes.
- B. Ventilation: Ventilate firestopping per firestopping manufacturers, instructions by natural means or, where this is inadequate, forced air circulation.

1.8 SEQUENCING AND SCHEDULING

- A. Do not cover up those firestopping installations that will become concealed behind other construction until the owner's Representative and authorities having jurisdiction, if required, have examined each installation.

PART 2 - PRODUCTS

2.1 FIRESTOPPING, GENERAL

- A. Compatibility: Provide firestopping composed of components that are compatible with each other, the substrates forming openings, and the items, if any, penetrating the firestopping under conditions of service and application, as demonstrated by firestopping manufacturer based on testing and field experience.
- B. Accessories: Provide components for each firestopping system that are needed to install fill materials and to comply with "System Performance Requirements" article in Part 1. Use only components specified by the firestopping manufacturer and approved by the qualified testing and inspecting agency for the designated fire-resistance-rated systems. Accessories include but are not limited to the following items:
 - 1. Permanent forming/damming/backing materials including the following:
 - a. Ceramic fiber.
 - b. Sealants used in combination with other forming/damming materials to prevent leakage of fill materials in liquid state.

- c. Joint fillers for joint sealants.
 2. Temporary forming materials.
 3. Substrate primers.
 4. Collars.
 5. Steel sleeves.
- C. Applications: Provide firestopping systems composed of materials specified in this Section that comply with system performance and other requirements.

2.2 FILL MATERIALS FOR THROUGH-PENETRATION FIRESTOP SYSTEMS

- A. Ceramic-Fiber Forming/Backing/Damming Material: Formulation of continuous filament ceramic fibers and inorganic binders.
- B. Products: Subject to compliance with requirements, provide one of the following:
1. Ceramic-Fiber Forming/Backing/Damming Material:
 - a. “Ultra Block”, Backer Rod Mfg. & Supply Co.
 - b. “Vedafeu C”, Veda Building Joints
 - c. “Everlastic Dynashield 600”, Williams Products
 2. Sealants:
 - a. “CP 606, Flexible Firestop Sealant”, Hilti
 - b. “SIL 300 Firestop Sealant”, Specified Technologies, Inc.
 - c. “CLK Firestop Sealant”, Hevi-Duty/Nelson.

2.3 FIRE-RESISTIVE ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealant Standard: Provide manufacturer's standard chemically curing, elastomeric sealants of base polymer indicated that complies with ASTM 920 requirements, including those referenced for Type, Grade, Class, and Uses, and requirements specified in this Section applicable to fire-resistive joint sealants.
- B. Sealant Colors: Provide color of exposed joint sealants to comply with the following:
1. Provide selections made by Architect from manufacturer's full range of standard colors for products of type indicated.
- C. Products: Subject to compliance with requirements, provide one of the following:
1. Single Component, Neutral Silicone Sealant:
 - a. “CP 601S”, Hilti.

- b. “864NST”, Pecora Corp.
 - c. “795”, Dow Corning Corp.
2. Multicomponent, Nonsag, Urethane Sealant:
- a. “Dynatrol II”, Pecora Corp.
 - b. “Sonolastic NP 2”, Sonneborn Building Products Div., BASF
 - c. “Dymeric 240”, Tremco Inc.

2.4 MIXING

- A. For those products requiring mixing prior to application, comply with firestopping manufacturer's directions for accurate proportioning of materials, water (if required), type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other procedures needed to produce firestopping products of uniform quality with optimum performance characteristics for application indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of firestopping. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning: Clean out openings and joints immediately prior to installing firestopping to comply with recommendations of firestopping manufacturer and the following requirements:
1. Remove all foreign materials from surfaces of opening and joint substrates and from penetrating items that could interfere with adhesion of firestopping.
 2. Clean opening and joint substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with firestopping. Remove loose particles remaining from cleaning operation.
 3. Remove laitance and form release agents from concrete.
- B. Priming: Prime substrates where recommended by firestopping manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration on to exposed surfaces.
- C. Masking Tape: Use masking tape to prevent firestopping from contacting adjoining surfaces that will remain exposed upon completion of Work and that

would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove smears from firestopping materials. Remove tape as soon as it is possible to do so without disturbing firestopping's seal with substrates.

3.3 INSTALLING THROUGH-PENETRATION FIRESTOPS

- A. Install forming/damming materials and other accessories of types required to support fill materials during their application and in the position needed to produce the cross-sectional shapes and depths required to achieve fire ratings of designated through-penetration firestop systems. After installing fill materials, remove combustible forming materials and other accessories not indicated as permanent components of firestop systems.
- B. Install fill materials for through-penetration firestop systems by proven techniques to produce the following results:
 - 1. Completely fill voids and cavities formed by openings, forming materials, accessories, and penetrating items.
 - 2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
 - 3. For fill materials that will remain exposed after completing Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.4 INSTALLING FIRE-RESISTIVE JOINT SEALANTS

- A. Install joint fillers to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability and develop fire-resistance rating required.
- B. Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint width that optimum sealant movement capability. Install sealants at the same time joint fillers are installed.
- C. Tool nonsag sealants immediately after sealant application and prior to the time skinning or curing begins. Form smooth, uniform beads of configuration indicated or required to produce fire-resistance rating, as well as to eliminate air pockets, and to ensure contact and adhesion of sealants with sides of joint. Remove excess sealant from surfaces adjacent to joint. Do not use tooling agents that discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.

3.5 FIELD QUALITY CONTROL

- A. The Owner's Representative will examine completed firestopping to determine, in general, if it is being installed in compliance with requirements.
- B. The Owner's Representative will report observations promptly and in writing to Contractor and Architect.
- C. Do not proceed to enclose firestopping with other construction until installations are approved.
- D. Where deficiencies are found, repair or replace firestopping so that it complies with requirements.

3.6 CLEANING

- A. Clean off excess fill materials and sealants adjacent to openings and joints as work progresses by methods and with cleaning materials approved by manufacturers of firestopping products and of products in which opening and joints occur.
- B. Protect firestopping during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated firestopping immediately and install new materials to produce firestopping complying with specified requirements.

END OF SECTION 07 84 00

07 92 00 - JOINT SEALANTS

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, "General Conditions of the Contract for Construction", the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

- A. This Section includes furnishing and installing joint sealants for the following locations:
 - 1. Interior joints in vertical surfaces and horizontal nontraffic surfaces as indicated below:
 - a. Control joints on exposed interior surfaces of exterior walls.
 - b. Control joints in ceilings and overhead surfaces.
 - c. Perimeter joints of all exterior openings.
 - d. Perimeter joints of all Manufactured Architectural Casework
 - e. Perimeter joints of all hollow metal frames, aluminum doors, aluminum windows, elevator door frames, curtain wall construction against dissimilar materials.
 - f. Vertical control joints on exposed surfaces of interior unit masonry and concrete walls and partitions.
 - g. Perimeter joints of all toilet fixtures.
 - h. All exposed joints between steel columns, drywall, or other dissimilar materials.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Section 07 84 00 "Firestopping" for fire-resistance-rated joint sealants.
 - 2. Section 08 80 00 "Glass & Glazing" for sealants used in glazing.
 - 3. Section 12 32 16 "Manufactured Architectural Casework" for sealants used in perimeter joints.
 - 4. Division 22 "Plumbing" for types, schedules, and locations for all plumbing fixtures.

1.3 SYSTEM PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that have been produced and installed to establish and to maintain watertight and airtight continuous seals without causing staining or deterioration of joint substrates.

- B. Provide joint sealants for interior applications that have been produced and installed to establish and maintain airtight continuous seals that are water resistant and cause no staining or deterioration of joint substrates.

1.4 SUBMITTALS

- A. Product data from manufacturers for each joint sealant product required.

1.5 QUALITY ASSURANCE

- A. **Installer Qualifications:** Engage an experienced Installer who has completed joint sealant applications similar in material, design, and extent to that indicated for Project that have resulted in construction with a record of successful in-service performance.
- B. **Single Source Responsibility for Joint Sealant Materials:** Obtain joint sealant materials from a single manufacturer for each different product required.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration period for use, pot life, curing time, and mixing instructions for multicomponent materials.
- B. Store and handle materials in compliance with manufacturer's recommendations to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.7 PROJECT CONDITIONS

- A. **Environmental Conditions:** Notify Architect and do not proceed with installation of joint sealants under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside the limits permitted by joint sealant manufacturer.
 - 2. When ambient and substrate temperature conditions are outside the limits permitted by joint sealant manufacturer or below 40 deg F (4.4 deg C).
 - 3. When joint substrates are wet.
- B. **Joint Width Conditions:** Notify Architect and do not proceed with installation of joint sealants where joint widths are less than allowed by joint sealant manufacturer for application indicated.
- C. **Joint Substrate Conditions:** Notify Architect and do not proceed with installation of joint sealants until contaminants capable of interfering with their adhesion are removed from joint substrates.

1.8 SEQUENCING AND SCHEDULING

- A. Sequence installation of joint sealants to occur not less than 21 nor more than 30 days after completion of waterproofing, unless otherwise indicated.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
- B. Colors: Provide color of exposed joint sealants to comply with the following:
 - 1. Provide selections made by Architect from manufacturer's full range of standard colors for products of types indicated.

2.2 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealant Standard: Provide manufacturer's standard chemically curing elastomeric sealants that comply with those requirements referencing ASTM 920 classifications for Type, Grade, Class, and Uses.
- B. Products: Subject to compliance with requirements, provide one of the following:
 - 1. Multi-Part, Non Sag Urethane Sealants:
 - a. "Dynatrol II", Pecora Corp.
 - b. "Sonolastic NP2", Sonneborn Building Products Division
 - c. "Dymeric Plus", Tremco.
 - 2. Multi-Part, Self Levelling Urethane Sealant:
 - a. "Sikaflex - 20 SL", Sika Corp.
 - b. "Sonolastic SL2", Sonneborn Building Products Division.
 - c. "Dynatrol II-SG", Pecora Corp.

2.3 LATEX JOINT SEALANTS

- A. General: Provide manufacturer's standard one-part, nonsag, mildew-resistant, paintable latex sealant of formulation indicated that is recommended for exposed applications on interior and protected exterior locations and that accommodates indicated percentage change in joint width existing at time of installation without failing either adhesively or cohesively.

- B. Acrylic-Emulsion Sealant: Provide product complying with ASTM C 834 that accommodates joint movement of not more than 5 percent in both extension and compression for a total of 10 percent.
- C. Products: Subject to compliance with requirements, provide one of the following:
 - 1. Acrylic-Emulsion Sealant:
 - a. "AC-20", Pecora Corp.
 - b. "Sonolac," Sonneborn Building Products Div., ChemRex, Inc.
 - c. "Tremco Acrylic Latex 834," Tremco, Inc.

2.4 SILICONE SEALANTS

- A. General: Provide manufacturer's standard one part, ultra-low modulus, self-leveling, elastomer joint sealant that is recommended for precast structural concrete panels and that provides an excellent adhesion to concrete surfaces once fully cured. Demonstrates superior weather resistance and remains flexible at extremely low temperatures.
- B. Color: Limestone
- C. Products: Subject to compliance with requirements, provide one of the following:
 - 1. Single-component, Polyurethane Hybrid Sealant:
 - a. "Pecora 310SL", Pecora Corp.
 - b. "Spectrem 900SL, Tremco

2.5 SPRAY FOAM INSULATING SEALANTS

- A. General: Provide manufacturer's standard two-part, fast rise closed-cell polyurethane spray foam that is recommended for concrete and clay masonry units and that provides an excellent adhesion to concrete surfaces once fully cured. Demonstrates superior weather resistance and remains flexible at extremely low temperatures.
- B. Fire Rating: ASTM E-84 (Tested according to ASTM E-84 at a maximum thickness of 2 inches and not to exceed this thickness as recognized by ICC-ES Evaluation Report #ESR-3183). Tested at 2". Flame Spread = 20. Smoke Development = 43.
- C. Products: Subject to compliance with requirements, provide one of the following:
 - 1. Two-part, closed-cell polyurethane Class 1 Spray Foam:
 - a. Basis of Design: "Tiger Foam", by Commercial Thermal Solutions, Inc. ph: 1-800-664-0063, e-mail: customerservice@tigerfoam.com
 - b. Or Equal (submit basis-of-design comparative technical chart)

2.6 JOINT SEALANT BACKING

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Plastic Foam Joint Fillers: Preformed, compressible, resilient, nonstaining, nonwaxing, nonextruding strips of flexible plastic foam of material indicated below and of size, shape, and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
 - 1. Open-cell polyurethane foam.
 - 2. Closed-cell polyethylene foam, nonabsorbent to liquid water and gas, non-outgassing in un-ruptured state.
 - 3. Proprietary, reticulated, closed-cell polymeric foam, non-outgassing, with a density of 2.5 pcf and tensile strength of 35 psi per ASTM D 1623, and with water absorption less than 0.02 gms/cc per ASTM C 1083.
 - 4. Any material indicated above.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.7 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming in any way joint substrates and adjacent nonporous surfaces, and formulated to promote optimum adhesion of sealants with joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and

other conditions affecting joint sealant performance. Notify Architect and do not proceed with installation of joint sealants until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with recommendations of joint sealant manufacturer and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean concrete, masonry, unglazed surfaces of ceramic tile, and similar porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.
 - 3. Remove laitance and form release agents from concrete.
 - 4. Clean metal, glass, porcelain enamel, glazed surfaces of ceramic tile, and other nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
- B. Joint Priming: Prime joint substrates where indicated or where recommended by joint sealant manufacturer based on preconstruction joint sealant-substrate tests or prior experience. Apply primer to comply with joint sealant manufacturer's recommendations. Confine primers to areas of joint sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint sealant manufacturer's printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.

- B. Installation of Sealant Backings: Install sealant backings to comply with the following requirements:
 - 1. Install joint fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - a. Do not leave gaps between ends of joint fillers.
 - b. Do not stretch, twist, puncture, or tear joint fillers.
 - c. Remove absorbent joint fillers that have become wet prior to sealant application and replace with dry material.
 - 2. Install bond breaker tape between sealants where backer rods are not used between sealants and joint fillers or back of joints.
- C. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability. Install sealants at the same time sealant backings are installed.
- D. Tooling of Nonsag Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents that discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.
 - 1. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.

3.4 CLEANING

- A. Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so that and installations with repaired areas are indistinguishable from original work.

3.6 WARRANTY, GUARANTEE AND CERTIFICATION

- A. This Contractor shall and hereby does guarantee that all sealant work will be free from defects of materials and workmanship for a period of five (5) years. The following types of failure will be adjusted:
 - 1. Leakage, cracking, crumbling, melting, shrinking or running of caulking, or staining of adjacent work by caulking.
- B. This Contractor shall repair and replace work which becomes defective during guarantee term without cost to the Owner.

3.7 SCHEDULE

- A. Interior Joints
 - 1. Control joints on exposed interior surfaces of exterior walls: Acrylic-Emulsion Sealant
 - 2. Control joints in ceilings and overhead surfaces: Acrylic-Emulsion Sealant
 - 3. Perimeter joints of all exterior openings: Acrylic-Emulsion Sealant
 - 4. Perimeter joints of all Manufactured Architectural Casework: Acrylic-Emulsion Sealant
 - 5. Perimeter joints of all hollow metal frames, aluminum doors, aluminum windows, elevator door frames, curtain wall construction against dissimilar materials: Acrylic-Emulsion Sealant
 - 6. Vertical control joints on exposed surfaces of interior unit masonry and concrete walls and partitions: Acrylic-Emulsion Sealant
 - 7. Perimeter joints of all toilet fixtures: Acrylic-emulsion Mildew-Resistant Sealant
 - 8. All exposed joints between steel columns, drywall, or other dissimilar materials: Urethane Sealant or Acrylic-Emulsion Sealant if in contact with epoxy paint.

END OF SECTION 07 92 00

08 11 13 – HOLLOW METAL FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, “General Conditions of the Contract for Construction”, the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

- A. This Section includes the following products manufactured in accordance with SDI Recommended Standards:
 - 1. Frames: Pressed steel frames for doors, sidelights, and interior glazed panels of following types: Welded unit type.
 - 2. Assemblies: Provide standard steel door and frame assemblies as required for the following: Labeled and fire rated.
 - 3. Provide factory primed doors and frames to be field painted.

1.3 RELATED SECTIONS

- A. Painting primed doors and frames is specified in Section 09 90 00, "Interior Painting."
- B. Wood doors are specified in another Section 08 14 00, "Flush Wood Doors".
- C. Door hardware is specified on drawing A-9.1.
- D. Glass and Glazing is by Section 08 80 00 "Glass & Glazing".
- E. Building in of anchors and grouting of frames in masonry construction is specified in Section 04 20 00, "Unit Masonry".
- F. Gypsum Board Assemblies is by Section 09 21 00 “Gypsum Board Assemblies”.

1.4 REFERENCES

- A. NFPA 80: Standard for Fire Doors and Other Opening Protectives
- B. NFPA 101: Life Safety Code
- C. NFPA 252: Standard Methods of Fire Tests of Door Assemblies
- D. NFPA 257: Standard on Fire Tests for Window and Glass Block Assemblies

- E. UL 10C: Standard for Positive Pressure Fire Tests of Door Assemblies
- F. ICC/ANSI A117.1: Accessible and Usable Buildings and Facilities
- G. ANSI A 250.4: Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcings
- H. ANSI A250.10: Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames
- I. ANSI/DHI A115.1G: Installation Guide for Doors and Hardware
- J. ASTM A 653: Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- K. ASTM A 1008: Standard Specification for Steel Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
- L. NAAMM HMMA 840-99: Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames
- M. C518 - 04 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus

1.5 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Product data for each type of door and frame specified, including details of construction, materials, dimensions, hardware preparation, core, label compliance, sound ratings, profiles, finishes, detail of molding, conduit and prep for power signal and control systems.
- C. Shop drawings showing fabrication and installation of standard steel doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of door and frame hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.
 - 1. Provide schedule of doors and frames using same reference numbers for details and openings as those on contract drawings.
 - 2. Indicate coordination of glazing frames and stops with glass and glazing requirements.

- D. Label Construction Certification: For door assemblies required to be fire-rated and exceeding limitations of labeled assemblies, submit manufacturer's certification that each door and frame assembly has been constructed to conform to design, materials and construction equivalent to requirements for labeled construction.

1.6 QUALITY ASSURANCE

- A. Provide doors and frames from a single source manufacturer.
- B. Distributor's qualifications: Five (5) years' experience in similar projects.
- C. Installer's qualifications: Five (5) years' experience in similar projects.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver frames cardboard-wrapped or crated to provide protection during transit and job storage. Provide additional protection to prevent damage to finish of factory-finished doors and frames.
- B. Inspect frames upon delivery for quantity and damage. Minor damages may be repaired provided refinished items are equal in all respects to new work and acceptable to Architect; otherwise, remove and replace damaged items as directed.
- C. Store and protect materials in accordance with NAAMM HMMA 840. Store frames at building site under cover. Place units on minimum 4-inches high wood blocking. Avoid use of non-vented plastic or canvas shelters which could create humidity chamber. If cardboard wrapper on door becomes wet, remove carton immediately. Provide 1/4-inches spaces between stacked doors to promote air circulation.
- D. Identify products with a label indicating:
 - 1. Manufacturer's name
 - 2. Architect's opening number
 - 3. Product description and dimensions

1.8 WARRANTY

- A. Provide written manufacturer's warranty for one (1) year from Substantial Completion of the project on both material and workmanship.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Manufacturer: Subject to compliance with requirements, provide standard steel frames by one of the following:
 - 1. Standard Steel Doors and Frames:
 - a. De la Fontaine Industries
 - b. Amweld Building Products, Inc.
 - c. Ceco Corp.
 - d. Republic Builders Products.
 - e. Steelcraft Manufacturing Co.

2.2 MATERIALS

- A. Steel requirements:
 - 1. Interior frames: Comply with ASTM A653, Designation A40.

2.3 FABRICATION

- A. Frames in new masonry construction
 - 1. Frame assembly: fully set-up and welded, dressed smooth with seamless face.
 - 2. Gauges
 - a. Interior openings up to 48" width: 16-gauge
 - b. Interior openings over 48" width: 14-gauge
 - c. Side light, transom and borrowed light: 16-gauge
 - 3. Side light, transom and borrowed light
 - a. Install screws on non-secure side.
 - b. Glazing bead: 18-gauge 5/8"x 5/8", screw applied with countersunk holes, butted corners.
 - c. Glazing by Section 08 80 00
- B. Frames in existing masonry construction
 - 1. Frame assembly: face welded, dressed smooth with seamless face.
 - 2. Gauges
 - d. Interior openings up to 48" width: 16-gauge
 - e. Interior openings over 48" width: 14-gauge
- C. Anchors
 - 1. Suitable for wall conditions.
 - 2. Located close to hinge reinforcements and at the same height on strike jamb.
 - a. Quantity: 2 per jamb up to 60" of door opening height, one additional anchor for each additional 30" of door height (or fraction thereof).
 - b. An additional floor anchor at the bottom of each jamb.
 - 3. Sidelight floor anchors at mullion of door jamb.
- D. Clearances
 - 1. On fire rated openings: comply with NFPA 80.
 - 2. On non-fire rated openings:
 - a. Between door and frame: 1/8"
 - b. Between meeting edges of pair of doors: 1/8"

- c. Between bottom of door and bottom of frame: $\frac{3}{4}$ " without threshold.

- E. Manufacturing tolerances:
 - 1. Frames: Width: $+1/16$ ", $-1/32$ "
Face, stop, rabbet and jamb depth: $\pm 1/32$

- F. Fire rated openings
 - 1. Manufacture frames as successfully tested, in accordance with:
 - a. NFPA 80
 - b. NFPA 252
 - c. NFPA 257
 - d. UL10C
 - 2. Identify each product with a fire label from one of the following testing agency:
 - a. Underwriters Laboratories (UL)
 - b. Warnock Hersey (ITS)

- G. Frame hardware preparation
 - 1. Surface-applied hardware: factory reinforced only, 12-gauge
 - 2. Mortise hardware: factory reinforced, drilled and tapped.
 - 3. Hinge and pivot reinforcements: to prevent door sagging.
 - a. 7-gauge flat hinge reinforcements at all locations or
 - b. 10-gauge high frequency hinge reinforcements, with a flange.
 - 4. Strike reinforcement: 16-gauge.
 - 5. Closer reinforcement: 12-gauge.
 - 6. Other reinforcements: 16-gauge.

- H. Finishing
 - 1. Hot dipped galvanized A40/A60
 - a. Factory applied primer to protect the area where zinc was removed in the welding process.
 - 2. Primer
 - a. Factory applied primer. Primer shall comply with ANSI A250.10.

2.4 ACCESSORIES

- A. Vision kits
 - 1. Sandwich overlapping kit.
 - 2. 20 gauge Steel.
 - 3. Countersunk holes.
 - 4. Install screws on non-secure side.
 - 5. 18-gauge channel reinforcements on half-glass doors.
 - 6. Glazing by Section 08 80 00.

- B. Frame accessories
 - 1. Dust/mortar box at strike location on drywall and masonry frames
 - 2. Mortar guards for hinge reinforcements on masonry frames

3. Shipping bars on welded frames
 - a. 1 for frames with less than 7" jamb depth
 - b. 2 for frames with 7" jamb depth and more
4. Drill holes for silencers:
 - a. Single openings: 3 per strike jamb.
 - b. Pair openings: 2 per header.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Inspect rough openings to detect problems that would prevent the proper installation of doors and frames.
- B. Rough openings shall be square, level and plumb with accurate dimensions.

3.2 INSTALLATION

- A. Plan and manage a pre-installation meeting to explain the proper methods to install hollow metal doors and frames.
- B. Remove shipping bars on welded frames before installation and verify frame dimensions.
- C. For grouted frames, apply, on site, a coat of bituminous coating inside the frame throat.
- D. Install frames in accordance with:
 1. Approved door and hardware schedule
 2. Approved shop drawings
 3. Manufacturer's recommendations
 4. Local building codes
 5. NFPA 80
 6. ANSI/DHI A115.1G
 7. NAAMM HMMA 840

3.3 ADJUSTING, CLEANING, AND PROTECTION

- A. Repair or replace damaged products.
- B. Correct defects in installation.
- C. Clean area in accordance with Section 01700.
- D. Protect frames until transfer of the building to the Owner.

END OF SECTION 08 11 13

08 14 00 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, "General Conditions of the Contract for Construction", the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY:

- A. This section includes furnishing solid core wood doors, fire rated and non-rated, high impact acrylic modified vinyl faced doors. Extent and location of each type of wood door is indicated on drawings and in schedules.
- B. Types of doors required include the following:
 - 1. Solid core flush wood doors with high impact acrylic modified vinyl faces.
- C. Factory-prefitting to frames and factory-premachining for hardware for wood doors is **mandatory**.
- E. Metal door frames for flush wood doors are specified in Section 08 11 13, "Hollow Metal Doors and Frames".
- F. Door hardware is specified on drawing A-9.1.
- G. Glazing of wood doors is specified in Section 08 80 00 "Glass & Glazing".

1.3 SUBMITTALS:

- A. Product Data: Door manufacturer's technical data for each type of door, including details of core and edge construction, trim for openings and factory-finishing specifications.
- B. Shop Drawings: Submit shop drawings indicating location and size of each door, elevation of each kind of door, details of construction, location and extent of hardware blocking, fire ratings, requirements for factory finishing and other pertinent data.
 - 1. For factory-premachined doors, indicate dimensions and locations of cutouts for locksets and other cutouts adjacent to light and louver openings.
- C. Samples: Submit samples for the following:

1. Doors for Transparent Finish: Door faces with solid wood edging representing typical range of color and grain for each species of veneer and solid lumber required.

1.4 QUALITY ASSURANCE:

- A. Quality Standards: Comply with the following standards:
 1. NWWDA Quality Standard: I.S.1 "Industry Standard for Wood Flush Doors", of National Wood Window and Door Association (NWWDA).
 2. AWI Quality Standard: "Architectural Woodwork Quality Standards"; including Section 1300 "Architectural Flush Doors", of Architectural Woodwork Institute (AWI) for grade of door, core construction, finish and other requirements exceeding those of NWWDA quality standard.
- B. NWWDA Quality Marking: Mark each wood door with NWWDA Wood Flush Door Certification Hallmark certifying compliance with applicable requirements of NWWDA I.S. 1 Series.
- C. Fire-Rated Wood Doors: Provide wood doors which are identical in materials and construction to units tested in door and frame assemblies per ASTM E 152 and which are labeled and listed for ratings indicated by UL or Warnock Hersey.
- D. Manufacturer: Obtain doors from a single manufacturer.
- D. Factory prefinishing shall meet the performance standards of AWI finish system TR-6 (AWI #5) and OP-6 (AWI #11) with stain coat.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING:

- A. Protect doors during transit, storage and handling to prevent damage, soiling and deterioration. Comply with requirements of referenced standards and recommendations of NWWDA pamphlet "How to Store, Handle, Finish, Install, and Maintain Wood Doors", as well as with manufacturer's instructions.
- B. Identify each door with individual opening numbers which correlate with designation system used on shop drawings for door, frames, and hardware, using temporary, removable or concealed markings.

1.6 PROJECT CONDITIONS:

- A. Conditioning: Do not deliver or install doors until conditions for temperature and relative humidity have been stabilized and will be maintained in storage and installation areas during remainder of construction period to comply with the following requirements applicable to project's geographical location:

1. Referenced AWI quality standard including Section 100-S-3 "Moisture Content".

1.7 WARRANTY:

- A. General: Warranties shall be in addition to, and not a limitation of, other rights the Owner may have under the Contract Documents.
- B. Door Manufacturer's Warranty: Submit written agreement in door manufacturer's standard form signed by Manufacturer, Installer and Contractor, agreeing to repair or replace defective doors that have warped (bow, cup or twist) or that show telegraphing of core construction in face veneers, or do not conform to tolerance limitations of referenced quality standards.
 1. Warranty shall also include reinstallation which may be required due to repair or replacement of defective doors where defect was not apparent prior to hanging.
 2. Warranty shall be in effect during following period of time after date of Substantial Completion.
 3. Solid Core Interior Doors:
 - a. Life of installation.
- C. Contractor's Responsibilities: Replace or refinish doors where Contractor's work contributed to rejection or to voiding of manufacturer's warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

- A. Basis-of-Design Product: Subject of compliance with requirements, provide Marshfield DoorSystems; "Durable Door" or a comparable product by one of the following:
 1. Solid Core Doors with high impact acrylic modified vinyl faces:
 - a. Algoma Hardwoods, Inc.
 - b. Eggers Industries, Architectural Door Division.
 - c. VT Industries, Inc.

2.2 INTERIOR FLUSH HIGH IMPACT WOOD DOORS:

- A. Comply with the following requirements:
 1. Grade: **Premium**
 1. WDMA Performance Grade I.S.1-A: Extra Heavy Duty.

2. Faces: Chemical-and stain-resistant, high-impact, acrylic modified vinyl faces. Color as selected from manufacturer's full range of **wood grain patterns** to match existing doors to remain.
3. Vertical edges shall be 1/8 inch matching high impact acrylic material bonded to structural composite lumber. Removable edges are not permitted.
4. Horizontal Edges: **Bond smooth PVC edge band to structural composite lumber providing cleanable surface.**
5. Core: Wood-based particleboard, structural composite lumber, or fire-resistant composite, as required per door schedule.
6. Construction: Five(5) plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before faces and crossbands are applied.

2.3 LOUVERS AND LIGHT FRAMES:

- A. Metal frames for light openings in fire doors: Manufacturer's standard frame formed of 18-gage cold-rolled steel, with baked enamel or powder coated finish, and approved for use in door of fire-rating indicated.
- B. Wood frames for light openings in non-rated doors: Manufacturer's standard wood frame compatible with door faces.

2.4 FABRICATION:

- A. Fabricate flush wood doors to produce doors complying with following requirements:
 1. In sizes indicated for job-site fitting.
- B. Metal Astragals: Premachine astragals and formed steel edges for hardware where required for pairs of fire-rated doors.
- C. Openings: Cut and trim openings through doors to comply with applicable requirements of referenced standards for kind(s) of doors required.
 1. Light Openings: Trim openings with moldings of material and profile indicated.
- D. Factory Finish Treatment: Transparent with stain coat to match color and finish of existing wood doors in existing building.

PART 3 - EXECUTION

3.1 EXAMINATION:

- A. Examine installed door frames prior to hanging door:

1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with plumb jambs and level heads.
 2. Reject doors with defects.
- B. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION:

- A. Hardware: see drawing A-9.1.
- B. Manufacturer's Instructions: Install wood doors to comply with manufacturer's instructions and of referenced AWI standard and as indicated.
1. Install fire-rated doors in corresponding fire-rated frames in accordance with requirements of NFPA No. 80.
- C. Job-Fit Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted with fire-rated doors. Machine doors for hardware. Seal cut surfaces after fitting and machining.
1. Fitting Clearances for Non-Rated Doors: Provide 1/8 inch, at jambs and heads; 1/16 inch per leaf at meeting stiles for pairs of doors; and 1/8 inch from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide 1/4 inch clearance from bottom of door to top of threshold.
 2. Fitting Clearances for Fire-Rated Doors: Complying with NFPA 80.
 3. Bevel non-rated doors 1/8 inch in 2 inches at lock and hinge edges.
 4. Bevel fire-rated doors 1/8 inch in 2 inches at lock edge; trim stiles and rails only to extent permitted by labeling agency.
- D. Prefit Doors: Fit to frames for uniform clearance at each edge.

3.3 ADJUSTING AND PROTECTION:

- A. Operation: Rehang or replace doors which do not swing or operate freely.
- B. Finished Doors: Refinish or replace doors damaged during installation.
- C. Protect doors as recommended by door manufacturer to ensure that wood doors will be without damage or deterioration at time of Substantial Completion.

END OF SECTION 08 14 00

08 31 13 - ACCESS DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, "General Conditions of the Contract for Construction", the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

- A. This Section includes furnishing access doors for installation in the following types of construction:
 - 1. Non-rated access panels for gypsum board wall/ceilings and masonry wall construction.

1.3 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
 - 1. Product data in form of manufacturer's technical data and installation instructions for each type of access door assembly, including setting drawings, templates, instructions, and directions for installation of anchorage, devices.

1.4 QUALITY ASSURANCE

- A. Single-Source Responsibility: Obtain access doors for entire project from one source from a single manufacturer.
- B. Size Variations: Obtain Architect's acceptance of manufacturer's standard size units, which may vary slightly from sizes indicated.
- C. Coordination: Furnish inserts and anchoring devices that must be built into other work for installation of access doors. Coordinate delivery with other work to avoid delay.

1.5 PROJECT CONDITIONS

- A. Verification: Obtain specific locations and sizes for required access doors from trades requiring access to concealed equipment, and indicate on submittal schedule.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide access doors by one of the following:
1. Cesco Products
 2. J.L. Industries
 3. Milcor, Inc.
 4. Nystrom, Inc.

2.2 MATERIALS AND FABRICATION

- A. General: Furnish each access door assembly manufactured as an integral unit, complete with all parts, and ready for installation.
- B. Steel Access Doors and Frames: Fabricate units of continuous welded steel construction unless otherwise indicated. Grind welds smooth and flush with adjacent surfaces. Furnish attachment devices and fasteners of type required to secure access panels to types of support shown.
- C. Frames: Fabricate from 16-gage steel.
1. Fabricate frame with exposed flange nominal 1-inch wide around perimeter of frame for units installed in the following construction:
 - a. Exposed masonry.
 - b. Drywall finish.
 - c. Plywood.
 2. For gypsum drywall furnish perforated frames with drywall bead.
 3. For installation in masonry construction, furnish frames with adjustable metal masonry anchors.
- D. Flush Panel Doors: Fabricate from not less than 14 gage sheet steel, with concealed continuous piano hinge set to open 175 degrees. Finish with manufacturer's factory-applied prime paint.
- E. Locking Devices: Furnish flush, screwdriver-operated cam locks of number required to hold door in flush, smooth plane when closed.
1. Provide one cylinder lock per access door. Furnish 2 keys per lock. Key all locks alike, unless otherwise scheduled.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with manufacturer's instructions for installation of access doors.
- B. Coordinate installation with work of other trades.
- C. Set frames accurately in position and securely attach to supports with face panels plumb or level in relation to adjacent finish surfaces.

3.2 ADJUST AND CLEAN

- A. Adjust hardware and panels after installation for proper operation.
- B. Remove and replace panels or frames that are warped, bowed, or otherwise damaged.

END OF SECTION 08 31 13

08 80 00 - GLASS AND GLAZING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, "General Conditions of the Contract for Construction", the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

- A. This Section includes furnishing and installing glazing for the following products, including those specified in other Sections where glazing requirements are specified by reference to this Section:

1. **Type S:** 7/16" tempered laminated glazing with impact film within wood doors as indicated on the drawings.
2. **Type T:** 1/4" tempered, clear vision lites within hollow metal frames as indicated on the drawings.

- B. Related Sections: The following sections contain requirements that relate to this Section.

1. Section 08 11 13 "Hollow Metal Frames", for hollow metal frames and vision lites requiring glazing.
2. Section 08 14 00 "Flush Wood Doors", for wood doors requiring glazing.
3. Section 10 28 00 "Toilet Accessories", for glass mirrors in frames.

1.3 QUALITY CONTROL

- A. Contractor Licensing Requirements: In accordance with Connecticut General Statute Chapter 393, Sections 20-330 through 20-341, all persons engaged in flat glass work must be licensed. Installation Contractor must submit evidence of current licensure under the following classification:

1. FG-1 (Unlimited Contractor's License for Flat Glass Work): The holder of this license may perform the installation, maintenance, or repair of flat glass in commercial structures.
2. FG-2 (Unlimited Journeyman's License for Flat Glass Work): The holder of this license may perform the installation, maintenance, or repair of flat glass in commercial structures.

1.4 SYSTEM PERFORMANCE REQUIREMENTS

- A. General: Provide glazing systems that are produced, fabricated, and installed to withstand normal thermal movement, wind loading, and impact loading (where applicable), without failure including loss or glass breakage attributable to the following: defective manufacture, fabrication, and installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; and other defects in construction.
- B. Glass Design: Glass thickness indicated on Drawings are for detailing only. Confirm glass thickness by analyzing Project loads and in-service conditions. Provide glass lites for the various size openings in the thickness and strengths (annealed or heat-treated) to meet or exceed the following criteria:
 - 1. Minimum glass thickness of lites, whether composed of annealed or heat-treated glass, are selected so the worst-case probability of failure does not exceed the following:
 - a. 8 lites per 1000 for lites set vertically or not over 15 degrees off vertical and under wind action. Determine minimum thickness of monolithic annealed glass according to ASTM E 1300. For other than monolithic annealed glass, determine thickness per glass manufacturer's standard method of analysis including applying adjustment factors to ASTM E 1300 based on type of glass.
- C. Normal thermal movement results from the following maximum change (range) in ambient and surface temperatures acting on glass-framing members and glazing components. Base engineering calculation on materials, actual surface temperatures due to both solar heat gain and nighttime sky heat loss.
 - 1. Temperature Change (Range): 120 deg F (67 deg C) ambient; 180 deg F (100 deg C), material surfaces.

1.5 SUBMITTALS

- A. General: Submit the following according to Conditions of Contract and Division 1 Specification Sections.
- B. Product data for each glass product and glazing material

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect glazing materials to comply with manufacturer's directions and as needed to prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.

1.7 WARRANTY

- A. General: Warranties specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.
- B. Manufacturer's Warranty on Insulating Glass: Submit written warranty signed by manufacturer of insulating glass agreeing to furnish replacements for insulating glass units that deteriorate, f.o.b. point of manufacture, freight allowed Project site, within specified warranty period indicated below. Warranty covers only deterioration due to normal conditions of use and not to handling, installing, protecting, and maintaining practices contrary to glass manufacturer's published instructions.
 - 1. Warranty Period: Manufacturer's standard but not less than ten (10) years after date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the products specified.

2.2 SECURITY GLAZING

- A. **Type S:** 9/16" Laminated Impact-Resistant Assembly consisting of an outer lite of 1/4" clear "Transparent" float glass, tempered, an interlayer of 0.090" PVB, and an inner layer of 1/4" clear "transparent" heat-strengthened glass.
- B. Subject to compliance with requirements, provide glass units by the manufacturers identified for Type T glazing.

2.3 TEMPERED FLOAT GLASS

- A. **Type T:** Uncoated, Clear, Heat-Treated Float Glass: ASTM C 1048, Condition A (uncoated surfaces), Type I (transparent glass, flat), Class 1 (clear), quality q3 (glazing select), kind as indicated below.
 - 1. Kind FT (fully tempered), 1/4 inch thickness.
 - 2. Products: Subject to compliance with requirements, provide heat treated glass units by the following:
 - a. PPG Industries, Inc., Pittsburgh, PA
 - b. Viracon, Inc., Owatonna, MN
 - b. Guardian Industries, Auburn Hills, MI
 - c. Cardinal Glass Industries, Eden Prairie, MN

- d. Oldcastle Building Envelope, Santa Monica, CA

2.4 MIRRORS

- A. Mirror: provide 1/4 inch thick tempered mirrored float glass, designated as **Type M**, meeting ASTM 1036-85, with stainless steel edge molding
1. Mirrors to be installed at full width vanities within Locker Rooms as indicated on Contract Documents.
 2. Products: Subject to compliance with requirements, provide mirrored glass units by the following:
 - a. LOF
 - b. Guardian
 - c. PPG

2.5 ELASTOMERIC GLAZING SEALANTS

- A. General: Provide products of type indicated, complying with the following requirements:
1. Compatibility: Select glazing sealants and tapes of proven compatibility with other materials they will contact, including glass products, seals of insulating glass units, and glazing channel substrates, under conditions of installation and service, as demonstrated by testing and field experience.
 2. Suitability: Comply with sealant and glass manufacturer's recommendations for selecting glazing sealants and tapes that are suitable for applications indicated and conditions existing at time of installation.
- B. Elastomeric Glazing Sealant Standard: Provide manufacturer's standard chemically curing, elastomeric sealants of base polymer indicated that comply with ASTM C 920 requirements.

2.6 GLAZING TAPES

- A. Back-Bedding Mastic Glazing Tape: Preformed, butyl-based elastomeric tape with a solids content of 100 percent, nonstaining and nonmigrating in contact with nonporous surfaces, with or without spacer rod as recommended by tape and glass manufacturers for application indicated, packaged on rolls with a release paper backing, and complying with AAMA 800 for products indicated below:
1. AAMA 804.1.
 2. AAMA 806.1.
 3. AAMA 807.1.

- B. Expanded Cellular Glazing Tape: Closed-cell, polyvinyl chloride foam tape, factory coated with adhesive on both surfaces, packaged on rolls with release liner protecting adhesive, and complying with AAMA 800 for product 810.5.

2.7 MISCELLANEOUS GLAZING MATERIALS

- A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials involved for glazing application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- B. Cleaners, Primers and Sealers: Type recommended by sealant or gasket manufacturer.
- C. Setting Blocks: Elastomeric material with a Shore A durometer hardness of 85 plus or minus 5.
- D. Spacers: Elastomeric blocks or continuous extrusions with a Shore A durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated.
- E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side-walking).
- F. Plastic Foam Joint Fillers: Preformed, compressible, resilient, nonstaining, nonextruding, nonoutgassing, strips of closed-cell plastic foam of density, size, and shape to control sealant depth and otherwise contribute to produce optimum sealant performance.

2.8 FABRICATION OF GLASS AND OTHER GLAZING PRODUCTS

- A. Fabricate glass and other glazing products in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with recommendations of product manufacturer and referenced glazing standard as required to comply with system performance requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine glass framing, with glazier present, for compliance with the following:
 - 1. Manufacturing and installation tolerances, including those for size, squareness, offsets at corners.
 - 2. Presence and functioning of weep system.

3. Minimum required face or edge clearances.
4. Effective sealing between joints of glass-framing members.

B. Do not proceed with glazing until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings that are not firmly bonded to substrates.

3.3 GLAZING, GENERAL

A. Comply with combined recommendations of manufacturers of glass, sealants, gaskets, and other glazing materials, except where more stringent requirements are indicated, including those in referenced glazing publications.

B. Protect glass from edge damage during handling and installation as follows:

1. Use a rolling block in rotating glass units to prevent damage to glass corners. Do not impact glass with metal framing. Use suction cups to shift glass units within openings; do not raise or drift glass with a pry bar. Rotate glass lites with flares or bevels on bottom horizontal edges so edges are located at top of opening, unless otherwise indicated by manufacturer's label.
2. Remove damaged glass from Project site and legally dispose of off site. Damaged glass is glass with edge damage or other imperfections that, when installed, weaken glass and impair performance and appearance.

C. Apply primers to joint surfaces where required for adhesion of sealants, as determined by pre-construction sealant-substrate testing.

D. Install elastomeric setting blocks in sill rabbets, sized and located to comply with referenced glazing standard, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.

E. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.

F. Provide spacers for glass sizes larger than 50 united inches (length plus height) as follows:

1. Locate spacers inside, outside, and directly opposite each other. Install correct size and spacing to preserve required face clearances, except where gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and comply with system performance requirements.

- 2. Provide 1/8-inch minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.
- G. Provide edge blocking to comply with requirements of referenced glazing publications, unless otherwise required by glass manufacturer.
- H. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

3.4 TAPE GLAZING

- A. Position tapes on fixed stops so that when compressed by glass their exposed edges are flush with or protrude slightly above sightline of stops.
- B. Install tapes continuously but not in one continuous length. Do not stretch tapes to make them fit opening.
- C. Where framing joints are vertical, cover these joints by applying tapes to heads and sills first and then to jambs. Where framing joints are horizontal, cover these joints by applying tapes to jambs and then to heads and sills.
- D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.
- E. Do not remove release paper from tape until just before each lite is installed.
- F. Apply heel bead of elastomeric sealant.
- G. Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.
- H. Apply cap bead of elastomeric sealant over exposed edge of tape.

3.5 PROTECTION AND CLEANING

- A. Protect exterior glass from breakage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces.
- B. Protect glass from contact with contaminating substances resulting from construction operations including weld splatter. If, despite such protection,

contaminating substances do come into contact with glass, remove them immediately as recommended by glass manufacturer.

- C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for build-up of dirt, scum, alkali deposits, or stains, and remove as recommended by glass manufacturer.
- D. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged in any way, including natural causes, accidents and vandalism, during construction period.
- E. Wash glass on both faces in each area of Project not more than 4 days prior to date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended by glass manufacturer.

END OF SECTION 08 80 00

09 21 00 - GYP SUM BOARD ASSEMBLIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, "General Conditions of the Contract for Construction", the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

- A. This Section includes furnishing and installing the following as indicated on the drawings and specified herein:
 - 1. Interior non-load-bearing steel framing members for gypsum board assemblies
 - 2. Moisture, Mold, and Mildew-resistant gypsum board attached to steel framing members
 - 3. Sound attenuation blankets in interior partitions as indicated.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Section 04 20 00 "Unit Masonry" for masonry veneer.
 - 2. Section 06 10 00 "Rough Carpentry" for the installation of wood framing, furring, blocking, and sheathing.
 - 3. Section 07 84 00 "Firestopping" for firestopping systems and fire-resistive rated joint sealants at gypsum board assemblies and penetrations.
 - 4. Section 12 32 00 "Manufactured Architectural Casework" for support requirements.

1.3 DEFINITIONS

- A. Gypsum Board Construction Terminology: Refer to ASTM C 11 and GA-505 for definitions of terms related to gypsum board assemblies not defined in this Section or in other referenced standards.

1.4 ASSEMBLY PERFORMANCE REQUIREMENTS

- A. Sound Transmission Characteristics: For gypsum board assemblies indicated to have STC ratings, provide materials and construction identical to those of assemblies whose STC ratings were determined per ASTM E 90 and classified per ASTM E 413 by a qualified independent testing agency.

1.5 SUBMITTALS

- A. General: Submit the following according to Conditions of the Contract and Division 1 Specification Sections.
- B. Product data for each type of product specified.
- C. Product certificates signed by manufacturers of gypsum board assembly components certifying that their products comply with specified requirements.

1.6 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: Where fire-rated gypsum board assemblies are indicated, provide materials and construction identical to those of assemblies tested for fire resistance per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Fire Resistance Ratings: As indicated by reference to GA File Numbers in GA-600 "Fire Resistance Design Manual" or to design designations in UL "Fire Resistance Directory".
- B. Single-Source Responsibility for Steel Framing: obtain steel framing members for gypsum board assemblies from a single manufacturer.
- C. Single-Source Responsibility for Panel Products: Obtain each type of gypsum board and other panel products from a single manufacturer.
- D. Single-Source Responsibility for Finishing Materials: obtain finishing materials from either the same manufacturer that supplies gypsum board and other panel products or from a manufacturer acceptable to gypsum board manufacturer.
- E. Testing: Materials and construction are subject to testing and inspection by the Owner's agent. Work or materials failing to meet the requirements of the Contract Documents and submitted design drawings will be subject to removal and replacement at no expense to the Owner.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer or supplier.
- B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Neatly stack gypsum panels flat to prevent sagging.
- C. Handle gypsum board to prevent damage to edges, ends, and surfaces.- Do not bend or otherwise damage metal corner beads and trim.

1.8 PROJECT CONDITIONS

- A. Environmental Conditions, General: Establish and maintain environmental conditions for applying and finishing gypsum board to comply with ASTM C 840 and with gypsum board manufacturers recommendations.
- B. Room Temperatures: For non-adhesive attachment of gypsum board to framing, maintain not less than 40 deg F (4 deg C). For adhesive attachment and finishing of gypsum board, maintain not less than 50 deg F (10 deg C) for 48 hours prior to application and continuously after until dry. Do not exceed 95 deg F (35 deg C) when using temporary heat sources.
- C. Ventilation: Ventilate building spaces, as required, for drying joint treatment materials. Avoid drafts during hot dry weather to prevent finishing materials from drying too rapidly.

PART2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Steel Framing and Furring:
 - a. Marino Industries Corp.
 - b. Gold Bond Building Products Div., National Gypsum Co.
 - c. Unimast Inc.
 - 2. Grid Suspension Assemblies:
 - a. Chicago metallic Corp.
 - b. National Rolling Mills Co.
 - c. USG Interiors, Inc.
 - 3. Gypsum Board and Related Products:
 - a. Domtar Gypsum.
 - b. Georgia-Pacific Corp.
 - c. Gold Bond Building Products Div., National Gypsum Co.
 - d. United States Gypsum Co.
 - 4. Exterior Sheathing Board:
 - a. G-P Gypsum Corp., DensGlass
 - b. Certainteed, GlasRoc

c. USG, Securock

2.2 STEEL FRAMING COMPONENTS FOR SUSPENDED AND FURRED CEILINGS

- A. General: Provide components of sizes indicated but not less than that required to comply with ASTM C 754 for conditions indicated.
- B. Powder-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers of type indicated, and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing per ASTM E II 90 conducted by a qualified testing agency.
- C. Wire for Hangers and Ties: ASTM A 641, Class I zinc coating, soft temper.
- D. Hanger Rods: Mild steel and zinc-coated or protected with rust-inhibitive paint.
- E. Angle-Type Hangers: Angles with legs not less than 7/8 inch wide, formed from 0.0635-inch-thick galvanized steel sheet complying with ASTM A 446 Coating Designation G90, with bolted connections and 5/16-inch-diameter bolts.
- F. Channels: Cold-rolled steel, 0.05980-inch-minimum thickness of base (uncoated) metal and 7/16-inch-wide flanges, and as follows:
 - 1. Carrying Channels: 2 inches deep, 590 lb per 1 000 feet, unless otherwise indicated.
 - 2. Carrying Channels: 1-1/2 inch deep, 475 lb per 1000 feet, unless otherwise indicated.
 - 3. Furring Channels: 3/4 inch deep, 300 lb per 1000 feet, unless otherwise indicated.
 - 4. Finish: Rust-inhibitive paint, unless otherwise indicated.
 - 5. Finish: G-60 hot-dip galvanized coating per ASTM A 525 for framing for exterior soffits and where indicated.
- G. Steel Studs for Furring Channels: ASTM C 645, with flange edges bent back 90 deg and doubled over to form 3/16-inch minimum lip (return), minimum thickness of base (uncoated) metal and minimum depth as follows:
 - 1. Thickness: 0.0329 inch, unless otherwise indicated.
 - 2. Protective Coating: Manufacturer's standard corrosion-resistant coating.
 - 3. Protective Coating: G40 hot-dip galvanized coating per ASTM A 525 for framing for exterior soffits and ceiling suspension members in areas within 10 feet of exterior walls.
- H. Steel Resilient Furring Channels: Manufacturer's standard product designed to reduce sound transmission, fabricated from steel sheet complying with ASTM A

525 or ASTM A 568 to form 7/8-inch-deep channel of the following configuration:

- I. Double-Leg Configuration: Hat-shaped channel, with 1-1/2-inch-wide face connected to flanges by double slotted or expanded metal legs (webs).
 1. Grid Suspension System for Interior Ceilings: ASTM C 645, manufacturer's standard direct-hung grid suspension system composed of main beams and cross furring members that interlock to form a modular supporting network.

2.3 STEEL FRAMING FOR INTERIOR WALLS AND PARTITIONS

- A. General: Provide steel framing members complying with the following requirements:
 1. Component Sizes and Spacings: As indicated but not less than that required to comply with ASTM C 754 under the following maximum deflection and lateral loading conditions:
 - a. Maximum Deflection: L/240 at 5 lbf per sq. ft.
 - b. Protective Coating: G40 hot-dip galvanized coating per ASTM A 525 for all interior framing members.
- B. Steel Studs and Runners: ASTM C 645, with flange edges of studs bent back 90 deg and doubled over to form 3/16-inch-wide minimum lip (return) and complying with the following requirements for minimum thickness of base (uncoated) metal and for depth:
 1. Thickness: 0.0179 inch, for less than 6 inch depth unless otherwise indicated.
 2. Thickness: 0.0329 inch for 6 inch and greater depth.
 3. Depth: As indicated on the drawings
- C. Fasteners for Metal Framing: Provide fasteners of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel framing and furring members securely to substrates involved; complying with the recommendations of gypsum board manufacturers for applications indicated.

2.4 GYPSUM BOARD PRODUCTS

- A. General: Provide gypsum board of types indicated in maximum lengths available to minimize end-to-end butt joints.
 1. Thickness: Provide gypsum board in thickness indicated or, if not otherwise indicated, in 5/8 inch thickness to comply with ASTM C 840 for application system and support spacing indicated.

- B. Gypsum Wallboard: ASTM C 36 and as follows:
- C. Moisture, Mold, and Mildew Resistant Gypsum Board: ASTM C 1396 or ASTM C 630, manufactured with additives to enhance the water resistance and fire resistance of the core; surfaced with moisture/mold/mildew resistant paper on front, back and long tapered edges, and Type X 5/8" minimum thickness:
1. Minimum Performance Properties
 - a. Mold and Mildew Resistance: (ASTM D 3273) Minimum panel score of 10 or greater.
 - b. Moisture Resistance: (ASTM C 473) shall not have surface absorption of not more than 5% of weight.
 - c. Surface Burning Characteristics: (ASTM E 84) Flame spread of 15 and smoke development of 0.
 2. Approved Products:
 - a. XP Wallboard, National Gypsum Company
 - b. Mold Tough, United States Gypsum Co.
 - c. Dens Armor Plus, Georgia Pacific
 3. To be utilized at all interior partitions where wood / metal studs / furring occurs.
 - a. Exceptions:
 - 1) Where surfaces are to receive cementitious fiber-mat reinforced sheathing at ventilation cavity framing.
 - 2) Where surfaces are to received plywood sheathing at ventilation cavity framing.

2.5 TRIM ACCESSORIES

- A. Accessories for Interior Installation: Corner beads, edge trim, and control joints complying with ASTM C 1047 and requirements indicated below:
1. Material: Formed metal, plastic, or metal combined with paper, with metal complying with the following requirement:
 - a. Sheet steel zinc-coated by hot-dip process.
 2. Shapes indicated below by reference to Fig. I designations in ASTM C1047:
 - a. Cornerbead on outside corners, unless otherwise indicated.
 - b. LC-bead with both face and back flanges; face flange formed to receive joint compound. Use LC-beads for edge trim unless otherwise indicated.

- c. U-bead with face and back flanges; face flange formed to be left without application of joint compound. Use U-bead where indicated.
- d. One-piece control joint formed with V-shaped slot, with removable strip covering slot opening.

2.6 JOINT TREATMENT MATERIALS

- A. General: Provide joint treatment materials complying with ASTM C 475 and the recommendations of both the manufacturers of sheet products and of joint treatment materials for each application indicated.
- B. Joint Tape for Gypsum Board: Paper reinforcing tape, unless otherwise indicated.
- C. Drying-Type Joint Compounds for Gypsum Board: Factory-packaged vinyl-based products complying with the following requirements for formulation and intended use.
 - 1. Ready-Mixed Formulation: Factory-mixed product.
 - 2. All-purpose compound formulated for both taping and topping compounds.

2.7 MISCELLANEOUS MATERIALS

- A. General: Provide auxiliary materials for gypsum board construction that comply with referenced standards and recommendations of gypsum board manufacturer.
- B. Spot Grout: ASTM C 475, setting-type joint compound recommended for spot grouting hollow metal door frames.
- C. Fastening Adhesive for Metal: Special adhesive recommended for laminating gypsum panels to steel framing.
- D. Steel drill screws complying with ASTM C 1002 for the following applications:
 - 1. Fastening gypsum board to steel members less than 0.03 inch thick.
 - 2. Fastening gypsum board to gypsum board.
- E. Steel drill screws complying with ASTM C 954 for fastening gypsum board to steel members from 0.033 to 0. 1 1/2 inch thick.
- F. Air Infiltration Barrier: Refer to Section 07 27 26 “Fluid Applied Membrane Air Barriers.
- G. Sound Attenuation Blankets: Unfaced mineral-fiber blanket insulation produced by combining mineral fibers of type described below with thermosetting resins to comply with ASTM C 665 for Type I (blankets without membrane facing):

1. Mineral-Fiber Type: Fibers manufactured from glass.
2. Sound Attenuation Batt Insulation, 3-1/2 inches thick, 16 inches wide, unfaced, or as indicated on the drawings.
3. Manufacturers:
 - a. "Ecotouch Sound Attenuation Batts", Owens Corning
 - b. "AcoustaTherm Batts", Certainteed
 - c. "Formaldehyde Free Fiberglass Insulation", Johns Manville

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates to which gypsum board assemblies attach or abut, installed hollow metal frames, cast-in-anchors, and structural framing with Installer present for compliance with requirements for installation tolerances and other conditions affecting performance of assemblies specified in this Section. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Ceiling Anchorages: Coordinate installation of ceiling suspension systems with installation of overhead structural assemblies to ensure that inserts and other provisions for anchorages to building structure have been installed to receive ceiling hangers that will develop their full strength and at spacing required to support ceilings.

3.3 INSTALLING STEEL FRAMING, GENERAL

- A. Steel Framing Installation Standard: Install steel framing to comply with ASTM C 754 and with ASTM C 840 requirements that apply to framing installation.
- B. Install supplementary framing, blocking, and bracing at termination's in gypsum board assemblies to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction. Comply with details indicated and with recommendations of gypsum board manufacturer or, if none available, with "Gypsum Construction Handbook" published by United States Gypsum Co.
- C. Isolate steel framing from building structure at locations indicated to prevent transfer of loading imposed by structural movement. Comply with details shown on Drawings.
 1. Where building structure abuts ceiling perimeter or penetrates ceiling.
 2. Where partition framing and wall furring abut structure except at floor.

- a. Provide slip- or cushioned-type joints as detailed to attain lateral support and avoid axial loading.
- D. Do not bridge building expansion and control joints with steel framing or furring members. Independently frame both sides of joints with framing or furring members as indicated.
- E. All steel frame wall assemblies including gypsum board and sound attenuation blankets, are to extent to underside of structure above. All voids at mechanical, electrical, fire protection, or plumbing to be filled solid.

3.4 INSTALLING STEEL FRAMING FOR SUSPENDED AND FURRED CEILINGS

- A. Suspend ceiling hangers from building structural members and as follows:
 - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 - 2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with the location of hangers required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
 - 3. Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eyescrews, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause them to deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 - 4. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eyescrews, or other devices and fasteners that are secure and appropriate for structure as well as for type of hanger involved, and in a manner that will not cause them to deteriorate or fail due to -age, corrosion, or elevated temperatures.
 - 5. Do not support ceilings directly from permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
 - 6. Do not attach hangers to steel deck tabs.
 - 7. Do not attach hangers to steel roof deck. Attach hangers to structural members.
 - 8. Do not connect or suspend steel framing from ducts, pipes or conduit.
- B. Sway-brace suspended steel framing with hangers used for support.

- C. Install suspended steel framing components in sizes and at spacings indicated but not less than that required by the referenced steel framing installation standard.
 - 1. Wire Hangers: 0.1620-inch (8-gage) diameter, 4 feet O.C.
 - 2. Carrying Channels (Main Runners): 1-1/2 inch, 4 feet O.C.
 - 3. Rigid Furring Channels (Furring Members): 16 inches O.C.
- D. Installation Tolerances: Install steel framing components for suspended ceilings so that cross-furring members or grid suspension members are level to within 1/8 inch in 12 feet as measured both lengthwise on each member and transversely between parallel members.
- E. Wire-tie or clip furring members to main runners and to other structural supports as indicated.
- F. Grid Suspension System: Attach perimeter wall track or angle where grid suspension system meets vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.

3.5 INSTALLING STEEL FRAMING FOR WALLS AND PARTITIONS

- A. Install runners (tracks) at floors, ceilings, and structural walls and columns where gypsum board stud assemblies abut other construction.
- B. Installation Tolerances: Install each steel framing and furring member so that fastening surfaces do not vary more than 1/8 inch from the plane formed by the faces of adjacent framing.
- C. Extend partition framing full height to structural supports or substrates above suspended ceilings. Cut studs 1/2 inch short of full height. Continue framing over frames for doors and openings and frame around ducts penetrating partitions above ceiling to provide support for gypsum board.
 - 1. For STC-rated and fire-resistive-rated partitions requiring partitions to extend to the underside of floor/roof slabs and decks or other continuous solid structural surfaces to obtain ratings, install framing around structural and other members extending below floor/roof slabs and decks, as needed, to support gypsum board closures needed to make partitions continuous from floor to underside of solid structure.
- D. Install steel studs and furring in sizes and at spacings indicated but not less than that required by the referenced steel framing installation standard to comply with maximum deflection and minimum loading requirements specified:
 - 1. Single Layer Construction: Space studs at 16 inches o.c., or as indicated on drawings.

- E. Install steel studs so that flanges point in the same direction and so that leading edges or ends of each gypsum board can be attached to open (unsupported) edges of stud flanges first.
- F. Frame door openings to comply with details indicated, with GA-219, and with applicable published recommendations of gypsum board manufacturer. Attach vertical studs at jambs with screws either directly to frames or to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.
- G. Extend vertical jamb studs through suspended ceilings and attach to underside of floor or roof structure above.
- H. Frame openings other than door openings to comply with details indicated or, if none indicated, in same manner as required for door openings. Install framing below sills of openings to match framing required above door heads.

3.6 APPLYING AND FINISHING GYPSUM BOARD, GENERAL

- A. Gypsum Board Application and Finishing Standards: Install and finish gypsum panels to comply with ASTM C 840 and GA-216.
- B. Install sound attenuation blankets in all required interior partitions prior to installing gypsum panels unless blankets are readily installed after panels have been installed on one side.
- C. Install ceiling board panels across framing to minimize the number of abutting end joints and avoid abutting end joints in the central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- D. Install wall/partition board panels to minimize the number of abutting end joints or avoid them entirely. Stagger abutting end joints not less than one framing member in alternate courses of board. At high walls, install panels horizontally with end abutting joints over studs and staggered.
- E. Locate both edge or end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Position adjoining panels so that tapered edges abut tapered edges, and field-cut edges abut field-cut edges and ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions. Avoid joints at corners of framed openings where possible.
- F. Attach gypsum panels to steel studs so that the leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- G. Attach gypsum panels to framing provided at openings and cutouts.

- H. Form control joints and expansion joints at locations indicated and as detailed, with space between edges of adjoining gypsum panels, as well as supporting framing behind gypsum panels.
- I. Cover both faces of steel stud partition framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chase walls that are braced internally.
 - 1. Except where concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
 - 2. Fit gypsum panels around ducts, pipes, and conduits.
- J. Isolate perimeter of non-load-bearing gypsum board partitions at structural abutments, except floors, as detailed. Provide 1/4-inch-to-1/2-inch-wide spaces at these locations and trim edges with U-bead edge trim where edges of gypsum panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- K. Seal construction at perimeters, behind control and expansion joints, openings, and penetrations with a continuous bead of acoustical sealant including a bead at both faces of the partitions. Comply with ASTM C 919 and manufacturer's recommendations for location of edge trim and closing off sound-flanking paths around or through gypsum board assemblies, including sealing partitions above acoustical ceilings.
- L. Space fasteners in gypsum panels according to referenced gypsum board application and finishing standard and manufacturer's recommendations.

3.7 GYPSUM BOARD APPLICATION METHODS

- A. Single-Layer Application: Install gypsum wallboard panels as follows:
 - 1. On ceilings, apply gypsum panels prior to wall/partition board application to the greatest extent possible and at right angles to framing, unless otherwise indicated.
 - 2. On partitions/walls 10 feet or less in height, apply gypsum panels vertically (parallel to framing), unless otherwise indicated, and provide panel lengths that will minimize end joints.
 - 3. On partitions walls greater than 10 feet in height, apply gypsum panels horizontally (perpendicular to framing), unless parallel application is required for fire-resistive-rated assemblies. Use maximum-length panels to minimize end joints.
- B. Wall Tile Substrates: For substrates indicated to receive thin-set ceramic tile and similar rigid applied wall finishes, comply with the following:
 - 1. Install water resistant gypsum board to comply with ANSI A1 08.1 1.

- C. Single-Layer Fastening Methods: Apply gypsum panels to supports as follows:
 - 1. Fasten with screws.

3.8 INSTALLING TRIM ACCESSORIES

- A. General: For trim accessories with back flanges, fasten to framing with the same fasteners used to fasten gypsum board. otherwise, fasten trim accessories according to accessory manufacturer's directions for type, length, and spacing of fasteners.
- B. Install corner beads at external corners.
- C. Install edge trim where edge of gypsum panels would otherwise be exposed or semi-exposed. Provide edge trim type with face flange formed to receive joint compound except where other types are indicated.
 - 1. Install LC-bead where gypsum panels are tightly abutted to other construction and back flange can be attached to framing or supporting substrate.
 - 2. Install U-bead where indicated.
- D. Install control joints at locations indicated, and where not indicated according to ASTM C 840, and in locations approved by Architect for visual effect.

3.9 FINISHING GYPSUM BOARD ASSEMBLIES

- A. General: Apply joint treatment at gypsum board joints (both directions); flanges of corner bead, edge trim, and control joints; penetrations; fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration and levels of gypsum board finish indicated.
- B. Prefill open joints, rounded or beveled edges, and damaged areas using setting-type joint compound.
- C. Apply joint tape over gypsum board joints except those with trim accessories having concealed face flanges not requiring taping to prevent cracks from developing in joint treatment at flange edges.
- D. Levels of Gypsum Board Finish: Provide the following levels of gypsum board finish per GA-214.
 - 1. Level 1 for ceiling plenum areas, concealed areas, and where indicated, unless a higher level of finish is required for fire-resistive-rated assemblies and sound-rated assemblies.
 - 2. Level 4 for gypsum board surfaces unless otherwise indicated.

3. Level 5 for gypsum board surfaces at all exposed gypsum board ceilings and horizontal and vertical face of exposed soffits.

- E. For level 4 gypsum board finish, embed tape in joint compound and apply three separate coats of joint compound over joints, angles, fastener heads, and accessories. Touch up and sand between coats and after last coat as needed to produce a surface free of visual defects and ready for decoration. Use the following joint compound combination:
 1. Embedding and First Coat: Ready-mixed, drying-type, all-purpose or taping compound.
 2. Fill (Second) Coat: Ready-mixed, drying-type, all-purpose or topping compound.
 3. Finish (Third) Coat: Ready-mixed, drying-type, all-purpose or topping compound.

- F. Where level 5 gypsum board finish is indicated, apply joint compound combination specified for level 4 plus a thin, uniform skim coat of joint compound over entire surface. Use joint compound specified for the finish (third coat) or a product specially formulated for this purpose and acceptable to gypsum board manufacturer. Produce surfaces free of tool marks and ridges ready for decoration of type indicated.

- G. Where level 1 gypsum board finish is indicated, apply joint compound specified for embedding coat.

- H. Finish water-resistant gypsum backing board forming base for ceramic tile to comply with ASTM C 840 and board manufacturer's directions for treatment of joints behind tile.

3.10 CLEANING AND PROTECTION

- A. Promptly remove any residual joint compound from adjacent surfaces.

- B. Provide final protection and maintain conditions, in a manner suitable to Installer that ensures gypsum board assemblies remain without damage or deterioration at time of Substantial Completion.

- C. Protect gypsum sheathing that will be left exposed to weather for more than one month as follows:
 1. Protect cutouts, corners, and joints in the sheathing by filling with a flexible sealant or by applying sheathing tape recommended by sheathing manufacturer at the time sheathing is applied.

END OF SECTION 09 21 00

09 51 00 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, "General Conditions of the Contract for Construction", the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

- A. This Section includes furnishing and installing acoustical panel ceilings installed with exposed suspension systems and accessories.
- B. Related Sections: The following sections contain requirements that relate to this section:
 - 1. Division 23 for grilles, registers, and diffusers in acoustical ceilings.
 - 2. Division 26 for lighting fixtures in acoustical ceilings.

1.3 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
 - 1. Product data for each type of product specified.
 - 2. Samples for verification purposes of each type of exposed finish required, prepared on samples of size indicated below and of same thickness and material indicated for final unit of Work. Where finishes involve normal color and texture variations, include sample sets showing full range of variations expected.
 - a. 6-inch-square samples of each acoustical panel type, pattern, and color.
 - b. Set of 12-inch-long samples of exposed suspension system members, including moldings, for each color and system type required.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who has successfully completed acoustical ceilings similar in material, design, and extent to those indicated for Project. Installer shall thoroughly review Contract Documents and be familiar with structure and all necessary requirements for attachment to same.

- B. Fire-Performance Characteristics: Provide acoustical ceilings that are identical to those tested for the following fire-performance characteristics, per ASTM test method indicated below, by UL or other testing and inspecting organizations acceptable to authorities having jurisdiction. Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.
 - 1. Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with ASTM E 1264 for Class A products.
 - a. Flame Spread: 25 or less.
 - b. Smoke Developed: 50 or less.
- C. Single-Source Responsibility for Ceiling Units: Obtain each type of acoustical ceiling unit from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.
- D. Single-Source Responsibility for Suspension System: Obtain each type of suspension system from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.
 - 1. Obtain suspension system from same manufacturer that produces acoustical ceiling units.
- E. Coordination of Work: Coordinate layout and installation of acoustical ceiling units and suspension system components with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system components.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical ceiling units, permit them to reach room temperature and stabilized moisture content.
- C. Handle acoustical ceiling units carefully to avoid chipping edges or damaging units in any way.

1.6 PROJECT CONDITIONS

- A. Space Enclosure: Do not install interior acoustical ceilings until space is enclosed and weatherproof, wet-work in space is completed and nominally dry, work above

ceilings is complete, and ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

1.7 EXTRA MATERIALS

A. Deliver extra materials to Owner. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with appropriate labels.

1. Acoustical Ceiling Units: Furnish quantity of full-size units equal to 2.0 percent of amount installed.
2. Exposed Suspension System Components: Furnish quantity of each exposed component equal to 2.0 percent of amount installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Ceiling Panel Products: Subject to compliance with requirements, provide one of the following:

1. For use in 2 x 4 Grid Systems where indicated on drawings:
 - a. 2 x 4 x 5/8 inch panels, "Dune" Item #1773HRC, fine texture, square lay-in, Armstrong, or equal.
 - b. 15% or greater recycled content
 - c. NRC Range: .50
 - d. CAC: 33
 - e. Light Reflectance: 0.83
 - f. Sag resistance: Humigard Plus
 - g. Fire rating: Class A
 - h. Color: White
 - g. Warranty: 30 years against visible sag, mold/mildew & bacteria.

B. Ceiling Grid Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Non-Fire-Resistance-Rated Wide-Face Double-Web Steel Suspension Systems for use in ceilings designated:
 - a. "15/16" Prelude XL", Armstrong World Industries, Inc., or equal.
2. Edge Moldings:
 - a. "7/8" Angle Edge Molding", Armstrong World Industries, Inc., or equal

2.2 ACOUSTICAL CEILING UNITS, GENERAL

- A. Standard for Acoustical Ceiling Units: Provide manufacturers' standard units of configuration indicated that comply with ASTM E 1264 classifications as designated by reference to types, patterns, acoustical ratings, and light reflectance's, unless otherwise indicated.
 - 1. Mounting Method for Measuring NRC: Type E-400 (plenum mounting in which face of test specimen is 15-3/4 inches [400 mm] away from the test surface) per ASTM E 795.
- B. Colors and Patterns: Provide products to match appearance characteristics indicated under each product type. Color: white.

2.3 METAL SUSPENSION SYSTEMS, GENERAL

- A. Standard for Metal Suspension System: Provide manufacturer's standard metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable ASTM C635 and ASTM E580 requirements.
- B. Finishes and Colors: Provide manufacturer's standard factory-applied finish for type of system indicated. Color: white.
- C. Attachment Devices: Size for 5 times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.
- D. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper.
 - 1. Gage: Provide wire sized so that stress at 3 times hanger design load (ASTM C 635, Table 1, Direct-Hung), will be less than yield stress of wire, but provide not less than 0.106-inch diameter (12 gage).
- E. Edge moldings and Trim: Metal of manufacturer's standard moldings for edges and penetrations that fit type of edge detail and suspension system indicated.
 - 1. For lay-in panels with reveal edge details, provide stepped edge molding that forms reveal of same depth and width as that formed between edge of panel and flange at exposed suspension member.
 - 2. For narrow faced suspension systems, provide suspension system manufacturer's standard edge moldings that match width and configuration of exposed runners.

2.4 NON-FIRE-RESISTANCE-RATED DIRECT-HUNG SUSPENSION SYSTEMS

- A. Wide-Face Capped Double-Web Steel Suspension System: Main and cross-runners roll-formed from prepainted or electrolytic zinc-coated cold-rolled steel sheet, with prefinished 15/16-inch-wide metal caps on flanges; other characteristics as follows:

1. Structural Classification: Intermediate-Duty system.
2. End Condition of Cross-Runners: Override or Butt-edge type, as stated with Manufacturer.
3. Cap Material and Finish: Steel sheet painted white.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and structural framing to which ceiling system attaches or abuts, with Installer present, for compliance with requirements specified in this and other sections that affect installation and anchorage of ceiling system. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less-than-half-width units at borders, and comply with reflected ceiling plans.

3.3 INSTALLATION

- A. General: Install acoustical ceiling systems to comply with installation standard referenced below, per manufacturer's instructions and CISCA "Ceiling Systems Handbook."
 1. Standards for Installation of Ceiling Suspension Systems: Comply with ASTM C 636 and ASTM E 580 for areas requiring seismic restraint. See structural drawings for appropriate Seismic Design Category.
- B. Arrange acoustical units and orient directionally patterned units in a manner shown by reflected ceiling plans.
- C. Suspend ceiling hangers from building structural members and as follows:
 1. Install hangers plumb and free from contact with insulation or other objects within ceiling space that are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 2. Where width of ducts and other construction within ceiling space produces hanger spacings that interfere with the location of hangers at spacings required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.

3. Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eyescrews, or other devices that are secure and appropriate for substrate, and in a manner that will not cause them to deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 4. Do not attach hangers to steel roof deck. Attach hangers to structural members.
 5. Space hangers not more than 4 feet-0 inch o.c. along each member supported directly from hangers, unless otherwise shown, and provide hangers not more than 8 inches from ends of each member.
- D. Install edge moldings of type indicated and size required by seismic provisions of ASTM E580 at perimeter of acoustical ceiling area and where necessary to conceal edges.
- E. Install acoustical panels in coordination with suspension system, with edges concealed by support of suspension members. Scribe and cut panels to fit accurately at borders and at penetrations.
1. Install hold-down clips in areas where required by governing regulations; space as recommended by panel manufacturer unless otherwise indicated or required.
- F. Remove, store, protect and reinstall acoustic panels in existing areas as necessary for the installation of work of other trades.
1. Exercise caution in handling of existing panels to avoid damage. All tiles damaged by this Contract (by any Contractor or Subcontractor) shall be replaced at no cost to the Owner.

3.4 CLEANING

- A. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 09 51 00

09 65 00 – RESILIENT FLOORING AND BASE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201-2007, “The General Conditions of the Contract for Construction,” the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and/or Subcontractor who performs this work. Note also all Addenda.

1.2 SUMMARY

- B. Section includes furnishing and installing the following as indicated on the drawings and specified herein:
 - 1. Resilient Tile –Solid Vinyl Tile Flooring (SVT).
 - 2. Resilient – Rubber Base (B) and accessories (RRS).
- C. Related Sections:
 - 1. Section, 09 68 13- Carpeting.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Initial Selection: For each type of product indicated.
- C. Samples for Verification: For each type of product indicated, in manufacturer's standard-size samples of each resilient product color, texture, and pattern required.
- D. Product Schedule: For resilient products. Use same designations indicated on Drawings.

1.4 QUALITY ASSURANCE

- A. Mockups: Provide resilient products with mockups specified in other Sections.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by the manufacturer, but not less than 55 deg F (13 deg C) or more than 85 deg F (29 deg C).

1.6 PROJECT CONDITIONS

- A. Install resilient products after other finishing operations, including painting, have been completed.
- B. Maintain ambient temperatures within range recommended by the manufacturer, but not less than 65 deg F (18 deg C) or more than 85 deg F (29 deg C) in spaces to receive resilient products during the following time periods:
 - 1. 48 hours before installation
 - 2. During installation
 - 3. 48 hours after installation
- C. Maintain the ambient relative humidity between 40% and 60% during installation.
- D. Until Substantial Completion, maintain ambient temperatures within range recommended by the manufacturer, but not less than 55 deg F (13 deg C) or more than 85 deg F (29 deg C).

PART 2 - PRODUCTS

2.1 RESILIENT FLOORING, BASE, AND ACCESSORY PRODUCTS:

- A. SOLID VINYL TILE. Subject to compliance with requirements, limited to the following:
 - 1. Manufacturer: Azrock /Tarkett Co.
 - a. Type: Cortina Grande.
 - b. Size: 16" x 16" x 1/8"
 - c. Fire Resistance: Exceeds ASTM E648
ASTM E 662, Smoke Density - Less Than 450
Critical Radiant Flux: Astm E-648- Less than 1.0 watts per Square Centimeter
 - d. Static Load Limit: 800 psi
 - e. Slip Resistance: ADA Compliant.<0.6 COF
 - f. Contact: Carrie Bartucca, (Michael Halebian & CO.,inc) cbartucca@michaelhalebian.com, cell: 860-305-2599.

Equal Products:

- 1. Armstrong World Industries, inc., Armstrong LVT- Natural Creations Earth-cuts, Metal Creations 18" x 18".
- 2. Mannington Commercial, LVT- Nature's Path Select Tile, Modular 18" x 18". Kevin O'Bryan, kevin_o'bryan@mannington.com, cell: 314-276-3012.

- B. RUBBER COVE BASE. Subject to compliance with requirements, limited to the following:
 - 1. Manufacturer: Johnsonite, Tarkett Group.
 - a. Type: Rubber with Toe
 - b. Height: 4”
 - c. Contact: Carrie Bartucca, (Michael Halebian & CO. Inc)
cbartucca@michaelhalebian.com, cell: 860-305-2599.
- A. RESILIENT ACCESSORIES. Subject to compliance with requirements, limited to the following:
 - 1. RRS-1:
 - a. Manufacturer: Johnsonite, Tarkett Group.
 - b. Type: Adaptor from 1/4” Carpet to 1/8” VCT.
 - c. Model #: CTA-XX

PART – 3 EXECUTION

3.1 EXAMINATION

- a. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the work.
- b. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.
- c. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Prepare substrates according to the Manufacturer’s written instructions to ensure adhesion of Resilient Tile Flooring.
- B. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
- C. Remove substrate paint, coatings and other substances that are incompatible with adhesives or contain soap, wax, oil, solvents, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
- D. Mechanically remove contamination on the substrate that may cause damage to the resilient flooring material. Permanent and non-permanent markers, pens, crayons, paint, etc., must not be used to write on the back of the flooring material

or used to mark the substrate as they could bleed through and stain the flooring material.

- E. Prepare Substrates according to ASTM F 710 including the following:
1. **Moisture Testing:** Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
 - a. Perform anhydrous calcium chloride test, ASTM F 1869. Results must not exceed 5 lbs. Moisture Vapor Emission Rate per 1,000 sq. ft. in 24 hours.
 - b. Perform relative humidity test using in situ probes, ASTM F 2170. Must not exceed 80%.
 - c. Perform relative humidity test using situ probes according to ASTM F 2170. Proceed with installation only after substrate are below 95% relative humidity level.
 - d. A pH test for alkalinity must be conducted. Results should range between 7 and 9. If the test results are not within the acceptable range of 7 to 9, the installation must not proceed until the problem has been corrected.
 - e. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer.
 - f. Do not install over OSB (Oriented Strand Board), particle board, chipboard, lauan or composite type underlayments.
 2. Fill cracks, holes, depressions and irregularities in the substrate with good quality Portland cement based underlayment leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.
 3. Floor covering shall not be installed over expansion joints.
 4. Do not install resilient products until they are same temperature as the space where they are to be installed.
 5. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.
 6. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

3.3 INSTALLATION.

1. Comply with manufacturer's written instructions for installing resilient tile flooring.

A. INSTALLATION- SOLID VINYL TILE (SVT).

1. Install with Manufacturer's adhesive specified for the site conditions and follow adhesive label for proper use.
2. Follow Manufacturer's recommendation for monolithic installation of tiles. C. Batch numbers should not be mixed during the installation.
3. Square the area and establish reference points on the substrate.
4. Apply the adhesive to the substrate. Follow directions on adhesive label for proper adhesive use.
5. Use established reference points and install the flooring.
6. Lay tiles so graining is going in the same direction (monolithic).
7. Do not force tiles together creating a ledge condition at the seams and the corners. Sliding tiles will force the adhesive out between the seams.
8. Periodically lift the corner of an installed tile to ensure proper transfer of adhesive.
9. Roll the flooring in both directions using a 100 pound three-section roller. Use a hand roller in areas that cannot be reached with a large roller.

B. INSTALLATION OF RESILIENT COVE BASE.

1. General: Installation shall be as recommended by manufacturer.
2. Fit joints tight and vertical. Use as long lengths as is practicable. Miter internal corners. Use pre-formed outside corners.
3. Scribe to fit to doorframes and other obstructions.

E. INSTALLATION MATERIALS FOR COVE BASE , B-1,2 AND FLOOR ACCESSORIES, TRANSITION STRIPS, REDUCERS, ADAPTORS ETC.

1. Rubber Base Adhesive
 - a. Type: #960 Solvent-free, Environmentally Safe Acrylic Cove.
 - b. Base Adhesive.
 - c. Trowel Size: 1/8" x 1/8" x 1/8" SQ Notch.
 - d. Follow manufacturer's standards.

3.4 CLEANING AND PROTECTION FOR RESILIENT PRODUCTS.

A. CLEANING AND PROTECTION FOR VINYL ENHANCED TILE, SVT.

Comply with manufacturer's written instructions for cleaning and protection of resilient products.

1. Comply with manufacturer's written instructions for cleaning and protection of resilient products.
2. Prepare a cleaning solution of recommended pH neutral cleaning solution.

3. Apply the solution with nylon or rayon mop.
4. Let cleaning solution dwell for 5-15 minutes.
5. Scrub the flooring using a single disc rotary machine equipped with a blue Or green pad.
6. Removing the cleaning solution using a wet vacuum or mop.
7. Rinse the floor with clean water.
8. Allow the floor to dry completely.
9. Dry buff the floor using a single disc, high speed, rotary machine (1000-1500 RPM) equipped with a white, tan or red pad.
10. A regular maintenance program must be started after the initial cleaning.

B. CLEANING AND PROTECTION FOR RUBBER COVE BASE, AND ACCESSORIES SERIES, RSS-X. Comply with manufacturer's written instructions for cleaning and protection of resilient products.

1. Perform the following operations immediately after completing resilient product installation:
2. Remove adhesive and other blemishes from exposed surfaces.
3. Wipe down with clean cloth rubber base surfaces thoroughly.
4. Damp-mop floor surfaces to remove marks and soil.
5. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

END OF SECTION 09 65 00

09 90 00 – PAINTING

PART 1 - GENERAL

1.1 **RELATED DOCUMENTS**

- A. Instructions to Bidders, AIA Document A201-2007, “The General Conditions of the Contract for Construction,” the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and/or Subcontractor who performs this work. Note also all Addenda.

1.2 **SUMMARY / DESCRIPTION OF WORK**

- A. This Section includes surface preparation, all necessary materials and painting for **all interior surfaces** in new construction where so specified. The extent of painting work is shown on Drawings/ Schedules. Work shall include: latex wall and ceiling paint, ceiling and trim paint, epoxy paint, and polyurethane for unfinished wood items and brick cleaner/ sealer.
- B. Manufacturer's products and colors shall be as noted in Drawings / Schedules as shown and specified.
- C. Related Sections: The following sections contain requirements that relate to this section:
 - 1. Division 5 for painting of Metal Fabrications.
 - 2. Division 8 for painting of Steel Frames.
 - 3. Division 9 for painting of Gypsum Board Walls Assemblies.

1.3 **WORK NOT INCLUDED**

- A. Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper and similar finished materials will not require painting under this Section, unless so noted.
- B. Do not paint the moving parts of operating units, mechanical or electrical parts such as valve operators, linkages, sensing devices and motor shafts.
- C. Do not paint over required labels or equipment identification, performance rating name or nomenclature plates.
- D. Painting not required for shop finished millwork items.
- E. Do not paint ceramic tile or similar finished materials.

1.4 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
 - 1. Materials data sheet for each type of product specified with an electronic copy.
 - 2. Samples for verification purposes of each type of exposed finish required, prepared on samples of size indicated below. Where finishes involve normal color and texture variations, include sample sets showing full range of variations expected. Provide 3 sets of “draw down” samples for each color with the proper finish. See color legend.
- B. Two samples **8”x10” samples of each paint color and each scheme**. Each sample should be labeled with the item ID (P-x, EP-x, TR-x). See Finish Schedule for colors.
- C. Coating Maintenance Manual: Upon conclusion of the project, the Contractor or paint manufacturer/supplier shall furnish a coating maintenance manual, such as Sherwin-Williams “Custodian Project Color and Product Information” report or equal. Manual shall include an Area Summary with finish schedule, Area Detail designating where each product/color/finish was used, product data pages, Material Safety Data Sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who has successfully completed painting projects similar in material, design, and extent to those indicated for Project. Installer shall thoroughly review Contract Documents and be familiar with structure and all necessary requirements for attachment to same.
- B. Fire-Performance Characteristics: Conform to Building Code for Flame Rating Requirement for finishes.
- C. Coordination of Work: Coordinate work with other construction.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver paint materials and floor system materials to project site in original, labeled, unopened packages and store them in a fully enclosed space where they will be protected against damage. Labeling to include manufacturer’s name, type of paint, brand name, color designation, drying time, clean up and instructions for mixing and use.
- B. Store paint materials and floor system materials at a minimum ambient temperature of 45 degrees F and a maximum ambient temperature of 90 degrees F in a well-ventilated area, unless otherwise directed by manufacturer’s instructions.

- C. Take precautionary measures to prevent fire hazards and spontaneous combustion.

1.7 PROJECT CONDITIONS

- A. Provide continuous ventilation and heating of space to maintain surface and ambient temperature above 65 degrees F for 24 hours before, during and 48 hours after application of finishes, unless otherwise indicated by manufacturer or specifications herein.

- A. Provide lighting level of 80 foot-candles measured mid-height at substrate surface.

1.8 EXTRA MATERIALS

- A. Deliver extra materials to Owner. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with appropriate labels.
 - 1. Minimum of one quart of each finish specified. Labeling shall include manufacturer, type, color name and number.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers:
 - 1. The Sherwin Williams Company, Contact: Mark Weiner, mark.t.weiner@sherwinwilliams.com, Office: 401-245-5176.
 - 2. Benjamin Moore & Company, Fran Ducharme, - frances.ducharme@benjaminmoore.com, ph. 401-465-3668.
 - 3. Pittsburgh Paints, PPG. - Contact: ppgacit@ppg.com
 - 4. Prosoco Inc. Contact: Thomas.Lane@prosoco.com.

2.2 MATERIALS- GENERAL

- A. Provide products which will meet all Federal regulations for amount of lead in paint (Less than 0.06% lead in non-volatile ingredients).
- B. Coatings: Provide best quality grade of various types of coatings. Materials not displaying manufacturer's identification as a standard, best-grade product will not be accepted.
- C. Use only thinners approved by paint manufacturers for applications intended and use only within recommended limits.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and verify that conditions are ready to receive work as instructed by the product manufacturer.
- B. Beginning of installation means acceptance of substrate.

3.2 PREPARATION

- A. Remove electrical plates, hardware, light fixture trim and fittings prior to preparing the finishes for painting.
- B. Correct minor defects and clean surfaces which may affect the work of this section.
- D. Shellac and seal marks that may bleed through surface finishes.
- E. Gypsum Board Surfaces: Latex fill minor defects. Spot prime defects after repair.
- F. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- G. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove loose dirt, loose mortar, scale, salt, or alkali powder or other foreign matter. Remove oil or grease with a solution of tri-sodium phosphate. Rinse well and allow to dry.
- H. Uncoated Steel and Iron Surfaces: Remove grease, scale, dirt and rust. Where heavy coatings of scale are evident, remove by wire brushing. Clean with solvent. Spot prime paint after repairs.
- I. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
- J. Interior Wood Items (Painted): Wipe off dust and grit prior to priming. Seal knots, pitch streaks and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats.
- K. Wood and Metal Doors Scheduled for Painting: Seal top and bottom edges with primer. Seal wood door edges after trimming to prevent absorption of moisture.

3.3 PROTECTION

- A. Protect elements surrounding the work of this Section from damage or disfiguration.
- B. Repair damage to other surfaces caused by work of this Section.
- C. Furnish drop cloths, shields and protective methods to prevent spray or droppings from other surfaces.
- D. Remove all empty paint containers from site.

3.4 APPLICATION

- A. Apply all products in accordance with manufacturer's instructions.
- B. No work shall be performed in spaces that are not broom clean and free of dust and waste.
- C. Apply each coat to a uniform finish, free of brush or roller marks, drops, runs or sags.
- D. Sand lightly between coats to achieve required finish.
- E. Allow applied coat to dry before next coat is applied. Allow a minimum of 48 hours for enamel paints to dry before recoating.
- F. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
- G. All non-finished interior woodwork, wood shelving, wood closet poles, wood wainscot and wood chair rail a satin polyurethane.
- H. Finish doors on tops, bottoms and side edges same as exterior faces.
- I. As work proceeds, promptly remove paint where spilled, splashed or spattered.
- J. Collect cloths and materials which may constitute a fire hazard, place in a closed metal container and remove daily from site.

3.5 CLEANING

- A. At the completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

3.6 SCHEDULE-INTERIOR SURFACES

- A. Gypsum Board, Matte / Flat Finish (for above Science Islands, vertical soffit-CP-2):

1. One coat latex primer sealer.
 2. Two coats acrylic latex, flat finish.
- A.1 Latex Systems: Flat Finish:
1. 1st Coat: S-W ProMar 200 Zero VOC Primer, B28W2600 Series (4.0 mils wet, 1.5 mils dry).
 2. 2nd Coat: S-W ProMar 400 Latex Flat. (4.0 mils wet, 1.2 mils dry per coat).
 3. 3rd Coat: S-W ProMar 400 Latex Flat. (4.0 mils wet, 1.2 mils dry per coat).
- B. Gypsum Board, Satin/ Eggshell finish:
1. One coat latex primer sealer.
 2. Two coats acrylic latex, eggshell / satin finish.
- B.1 Latex Systems: Eg-Shel / Satin Finish:
1. 1st Coat: S-W Pro Mar 200 Zero VOC Primer, B28W2600 Series (4.0 mils wet, 1.5 mils dry).
 2. 2nd Coat: S-W Pro Mar 200 Zero VOC Latex Eg-Shel Acrylic, B20 Series.
 3. 3rd Coat: S-W ProMar 200 200 Zero VOC Latex Eg-Shel, B20 Series (4.0 mils wet, 1.7 mils dry per coat).
- C.1 Latex Systems: Standard Drywall / gypsum Ceiling (for Non-Wet Areas/ and Soffits):
1. 1st Coat: S-W Pro Mar 200 Zero VOC Primer, B28W2600 Series (4.0 mils wet, 1.0 mils dry).
 2. 2nd Coat: S-W Pro Mar, Ceiling Paint Latex. (5.0 mils wet, 1.2 mils dry).
 3. 3rd Coat: S-W Pro Mar, Ceiling Paint Latex. (5.0 mils wet, 1.2 mils dry).
- C.2 Epoxy Systems: for drywall / gypsum Ceilings (lavatories)
1. 1st Coat: S-W Pro Mar 200 Zero VOC Primer, B28 Series (4.0 mils wet, 1.0 mils dry).
 2. 2nd Coat: S-W Pro Industrial Water Based Catalyzed Epoxy, B73- (5.0 mils wet, 2.0 mils dry).
 3. 2nd Coat: S-W Pro Industrial Water Based Catalyzed Epoxy, B73- (5.0 mils wet, 2.0 mils dry).
- D. Epoxy Systems (Water Base):Eg-Shel/Low Luster Finish (for walls - lavatories):
1. 1st Coat: S-W Loxon Concrete & Masonry Primer Sealer, A24W8300 (8 mils wet, 3.2 mils dry).
 2. 2nd Coat: S-W Pro Industrial Water Based Catalyzed Epoxy, B73-360 Series.
 3. 3rd Coat: S-W Pro Industrial Water Based Catalyzed Epoxy, B73-360

Series (5 mils wet, 2.0 mils dry per coat).

E. Steel- Primed

E.1 Latex Systems: Eg-Shel / Satin High Performance:

1. 1st Coat: S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series (5.0 mils wet, 2.0 mils dry).
2. 2nd Coat: S-W Pro Industrial DTM Eg-Shel Acrylic Coating B66 Series.
3. 3rd Coat: S-W Pro Industrial DTM Eg-Shel Acrylic Coating B66 Series (6.0 mils wet, 2.5 mils dry per coat).

END OF SECTION 09 90 00

10 28 00 - TOILET AND BATH ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, "General Conditions of the Contract for Construction", the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

- A. This Section includes toilet and bath accessory items as shown on the drawings and as specified herein.
- B. Installation of wood blocking is specified in Section 06 10 53, "Miscellaneous Carpentry".

1.3 SUBMITTALS

- A. General: Submit the following according to Conditions of Contract and Division 1 Specifications Sections.
- B. Product data for each toilet accessory item specified, including construction details relative to materials, dimensions, gages, profiles, mounting method, specified options, and finishes.
- C. Schedule indicating types, quantities, sizes, and installation locations (by room) for each toilet accessory item to be provided for project.
- D. Setting drawings where cutouts are required in other work, including templates, substrate preparation instructions, and directions for preparing cutouts and installing anchorage devices.
- E. Maintenance instructions including replaceable parts and service recommendations.

1.4 QUALITY ASSURANCE

- A. Inserts and Anchorages: Furnish accessory manufacturers' standard inserts and anchoring devices that must be set in concrete or built into masonry. Coordinate delivery with other work to avoid delay.
- B. Single-Source Responsibility: Provide products of same manufacturer for each type of accessory unit and for units exposed to view in same areas, unless otherwise acceptable to Architect.

- C. Catalog Standards: Manufacturer's catalog numbers may be shown on drawings for convenience in identifying certain work. Unless modified by notation on drawings or otherwise specified, catalog description for indicated number constitutes requirements for each item.
 - 1. The use of catalog numbers and specific requirements set forth in drawings and specifications are not intended to preclude the use of any other acceptable manufacturer's product or procedures which may be equivalent, but are given for purpose of establishing standard of design and quality for materials, construction, and workmanship.
 - 2. The approval of other listed manufacturers, products does not relieve the Contractor from compliance with the detailed requirements of this Section.

1.5 PROJECT CONDITIONS

- A. Coordination: Coordinate accessory locations, installation, and sequencing with other work to avoid interference with and ensure proper installation, operation, adjustment, cleaning, and servicing of toilet accessory items.

1.6 WARRANTY

- A. Warranty: Submit a written warranty executed by mirror manufacturer, agreeing to replace any mirrors that develop visible silver spoilage defects within warranty period.
- B. Warranty Period: 15 years from date of Substantial Completion.
- C. The warranty shall not deprive the Owner of other rights the owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide toilet accessories by one of the following:
 - 1. Bobrick Washroom Equipment, Inc. Clifton Park, NY
 - 2. American Specialties, Inc. (ASI), Yonkers, NY
 - 3. A & J Washroom Accessories (A&J), New Windsor, NY
 - 4. Georgia-Pacific Professional, Atlanta, GA
 - 5. Acuity Specialty Products, dba Zep Sales and Service, Atlanta, GA

2.2 MATERIALS, GENERAL

- A. Stainless Steel: AISI Type 302/304, with polished No. 4 finish, 0.034-inch (22-gage) minimum thickness.
- B. Brass: Leaded and unleaded, flat products, ASTM B 19; rods, shapes, forgings, and flat products with finished edges, ASTM B 16; Castings, ASTM B 30.
- C. Sheet Steel: Cold-rolled, commercial quality ASTM A 366, 0.04-inch (20-gage) minimum. Surface preparation and metal pretreatment as required for applied finish.
- D. Galvanized Steel Sheet: ASTM A 527, G60.
- E. Chromium Plating: Nickel and chromium electro-deposited on base metal, ASTM B 456, Type SC 2.
- F. Galvanized Steel Mounting Devices: ASTM A 153, hot-dip galvanized after fabrication.
- G. Fasteners: Screws, bolts, and other devices of same material as accessory unit, or of galvanized steel where concealed.

2.3 GRAB BARS (G.B. R. / G.B.S. / G.B.V.)

- A. Stainless Steel Type: Provide grab bars with wall thickness not less than 0.05 inch (18 gauge) and as follows:
 - 1. Mounting: Concealed, manufacturer's standard flanges and anchorages.
 - 2. Clearance: 1-1/2-inch clearance between wall surface and inside face of bar.
 - 3. Gripping Surfaces: Peened gripping surface.
 - 4. Heavy-Duty Size: Outside diameter of 1-1/2 inches.
 - 5. Subject to conformance with requirements, provide grab bar units as follows:
 - a. For **(G.B.R.)** installations:
 - 1. Bobrick Washroom Equipment, Inc.: Model "B-6806.99x36",
 - 2. American Specialties, Inc.: Model "3800-01-Px36",
 - 3. A&J Accessories, Inc.: Model "UG30X-A36".
 - b. For **(G.B.S.)** installations:
 - 1. Bobrick Washroom Equipment, Inc.: Model "B-6806.99x42",
 - 2. American Specialties, Inc.: Model "3800-01-Px42",
 - 3. A&J Accessories, Inc.: Model "UG30X-A42".
 - c. For **(G.B.V.)** installations:
 - 1. Bobrick Washroom Equipment, Inc.: Model "B-6806.99x18",
 - 2. American Specialties, Inc.: Model "3800-01-Px18",
 - 3. A&J Accessories, Inc.: Model "UG30X-A36".

2.4 MIRRORS WITH FRAMES (F.H.M. / M.W.F.)

- A. Mirrors with frames: Provide mirrors with stainless steel frames as follows:
1. Mounting: Fully concealed mechanically anchored metal wall hanger system which automatically locks to mirror upon installation.
 2. Frame: Type 430 stainless steel, 1/2 inch by 1/2 inch by 3/8 inch channel minimum.
 3. Mirror: Guaranteed for 15 years against silver spoilage.
 4. Subject to conformance with requirements, provide mirror units manufactured by:
 - a. For (F.H.M.) installations:
 1. Bobrick Washroom Equipment, Inc.: "Model B-165-2460"
 2. American Specialties, Inc.: "Model 0620-2460"
 3. A&J Accessories, Inc.: "Model U711-2460"
 - b. For (M.W.F.) installations:
 1. Bobrick Washroom Equipment, Inc.: "Model B-165-2436"
 2. American Specialties, Inc.: "Model 0620-2436"
 3. A&J Accessories, Inc.: "Model U711-2436"

2.5 PIPE COVERING (P.C.)

- A. Waste and Supply Piping Covers:
1. Mounting: Built-in internal fasteners
 2. Construction: 1/8" nominal wall thickness molded vinyl with a durometer hardness of 70-80 Shore A.
 3. Bacteria/Fungus: 0 growth resistance in accordance with ASTM G21 and G22.
 4. Color: China White
 5. Subject to conformance with requirements, provide "Accessory #105 E-Z", IPS Corporation TrueBro Lav Guard 2.

2.6 PAPER TOWEL DISPENSER AND WASTE RECEPTACLE (P.T.D.W.R.R.)

- A. Recessed Paper Towel Dispenser and Waste Receptacle:
1. Recessed paper towel dispenser and waste receptacle, Contura series.
 2. Cabinet: 18-8, type 304, heavy gauge stainless steel. Welded construction, Exposed surfaces have satin finish.
 3. Door: 18-8, type 304, 18 gauge stainless steel with satin finish. Drawn one-piece seamless construction. Secured to cabinet with a full-length stainless steel piano hinge. Equipped with tumbler lock keyed like other washroom accessories.
 4. Waste Receptacle: 18-8, type 304, 22 gauge stainless steel with satin finish. Formed, one-piece, seamless construction. Removable front panel has same degree of arc as front of paper towel dispenser door. Top edge hemmed for safe handling. Capacity: 3.0 gallons. Unit equipped with

LinerMate trash liner holder fabricated with molded plastic trash liner holder sleeve and a 20-gauge, u-shaped support strap, riveted construction.

5. Accepts 350 C-fold or 475 multifold paper towels.
6. Subject to conformance with requirements, provide "Model B-4369", Bobrick, or equal.

2.7 PAPER TOWEL DISPENSER AND WASTE RECEPTACLE (P.T.D.W.R.S.)

A. Surface-Mounted Paper Towel Dispenser and Waste Receptacle:

1. Surface-mounted paper towel dispenser and waste receptacle, Contura series.
2. Cabinet: 18-8, type 304, heavy gauge stainless steel. Welded construction, Exposed surfaces have satin finish.
3. Door: 18-8, type 304, 18 gauge stainless steel with satin finish. Drawn one-piece seamless construction. Secured to cabinet with a full-length stainless steel piano hinge. Equipped with tumbler lock keyed like other washroom accessories.
4. Waste Receptacle: 18-8, type 304, 18 gauge stainless steel with satin finish. Formed, one-piece, seamless construction. Removable front panel has same degree of arc as front of paper towel dispenser door. Top edge hemmed for safe handling. Capacity: 15.0 gallons. Unit equipped with LinerMate trash liner holder fabricated with molded plastic trash liner holder sleeve and a 20-gauge, u-shaped support strap, riveted construction.
5. Accepts 600 C-fold or 800 multifold paper towels.
6. Subject to conformance with requirements, provide "Model B-43949", Bobrick, or equal.

2.8 ROBE HOOKS (R.H.)

A. Single-Prong Single Robe Hook: Heavy-duty satin finished stainless steel single-prong robe hook; rectangular wall bracket with backplate for concealed mounting.

1. Subject to conformance with requirements, provide:
 - a. Bobrick Washroom Equipment, Inc.: Model "B-2116",
 - b. American Specialties, Inc.: Model "0751",
 - c. A&J Accessories, Inc.: Model "UB17".

2.9 SOAP DISPENSERS (S.D.)

A. Stainless steel Surface Mounted "Classic" Series Soap Dispenser:

1. Mounting: Surface mounted, concealed anchorage.
2. Container: 18-8, type 304, 22-gauge stainless steel with satin finish equipped with clear acrylic refill-indicator window and a locked, hinged stainless steel lid for top filling.
3. Capacity: 40 fluid ounces.

4. Dispenser: Corrosion-resistant valve that dispenses commercially marketed all-purpose hand soaps and non-iodine based soap.
5. Operation: Valve shall be operable with one hand and with less than 5 pounds of force (22.2 N) to comply with accessible design guidelines (ANSI A117.1 and ADAAG).
6. Subject to conformance with requirements, provide "Model B-2111", Bobrick.

2.10 SANITARY NAPKIN DISPOSAL (S.N.D.)

- A. Wall Mounted "Classic" Series Sanitary Napkin Disposal:
1. Construction: Satin finish stainless steel. Door has tumbler lock. Self-closing panel covers disposal opening. Removable, leak proof. All welded construction.
 2. Subject to conformance with requirements, provide "Model B-254", BOBRICK.

2.11 STAINLESS STEEL SHELF (SS.SH.)

- A. Wall Mounted Shelf:
1. Construction: 18-8, type 304, 18 gauge stainless steel with satin finish. 3/4" return edges for maximum rigidity. Front edge is hemmed for safe handling. Mounting brackets, welded to shelf, shall be 16 gauge stainless steel.
 2. Subject to conformance with requirements, provide "Model B-295x18", BOBRICK.

2.12 TOILET TISSUE DISPENSERS (T.T.D.)

- A. Stainless Steel Surface Mounted "Classic" Series Multi-Roll Toilet Tissue Dispenser:
1. Mounting: Surface mounted, concealed anchorage.
 2. Cabinet: Satin finish stainless steel unit with stainless steel dispensing mechanism. Door has flat face with protruding tumbler lock. Theft resistant, heavy duty spindles. Equipped with a tumbler lock keyed like other toilet accessories.
 3. Capacity: Spindles accommodate two toilet tissue rolls up to 5-1/4" diameter.
 4. Subject to conformance with requirements, provide "Model B-2888", Bobrick.

2.13 FABRICATION

- A. General: Only a maximum 1-1/2-inch-diameter, unobtrusive stamped manufacturer logo, as approved by Architect, is permitted on exposed face of toilet or bath accessory units. on either interior surface not exposed to view or back surface, provide additional identification by either a printed, waterproof

label or a stamped nameplate, indicating manufacturer's name and product model number.

- B. Surface-Mounted Toilet Accessories, General: Except where otherwise indicated, fabricate units with tight welded seams and joints, exposed edges rolled. Hang doors or access panels with continuous stainless steel piano hinge. Provide concealed anchorage wherever possible.
- C. Framed Mirror Units, General: Fabricate frames for glass mirror units to accommodate wood, felt, plastic, or other glass edge protection material. Provide mirror backing and support system that will permit rigid, tamperproof glass installation and prevent moisture accumulation, as follows:
 - 1. Provide galvanized-steel backing sheet, not less than 0.034 inch (22 gage) and full mirror size, with non-absorptive filler material. Corrugated cardboard is not an acceptable filler material.
- D. Mirror Unit Hangers: Provide system for mounting mirror units that will permit rigid, tamperproof, and theft proof installation, as follows:
 - 1. Heavy-duty wall brackets of galvanized steel, equipped with concealed locking devices requiring a special tool to remove.
- E. Keys: Provide universal keys for access to toilet accessory units requiring internal access for servicing, resupply, etc. Provide minimum of six keys to Owner's representative.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install toilet accessory units according to manufacturers, instructions, using fasteners appropriate to substrate as recommended by unit manufacturer. Install units plumb and level, firmly anchored in locations and at heights indicated.
 - 1. Reinforcement of stud walls to support wall-mounted cabinets will be accomplished during wall erection by trade involved; however, indicating accurate location and sizing of reinforcement is responsibility of toilet and bath accessories installer.
 - 2. Install toilet accessory units furnished by the owner using fasteners appropriate to substrate as required.
- B. Secure mirrors to walls in concealed, tamperproof manner with special hangers, toggle bolts, or screws. Set units plumb, level, and square at locations indicated, according to manufacturer's instructions for type of substrate involved.

- C. Install grab bars to withstand a downward load of at least 250 lbs, complying with ASTM F 446.

3.2 ADJUSTING AND CLEANING

- A. Adjust toilet accessories for proper operation and verify that mechanisms function smoothly. Replace damaged or defective items.
- B. Clean and polish all exposed surfaces strictly according to manufacturer's recommendations after removing temporary labels and protective coatings.

END OF SECTION 10 28 00

SECTION 10426 - PANEL ROOM SIGNS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201-2007, “The General Conditions of the Contract for Construction,” Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and/or Subcontractor who performs this work. Note also all Addenda.

1.2 SUMMARY

- A. This Section includes the following types of signs:
 - 1. Interior, panel rooms signs

1.3 SUBMITTALS

- A. Samples: Provide samples of each sign component for initial selection of color, pattern and surface texture as required and for verification of compliance with requirements indicated.
- B. Product Data: Include manufacturer's construction details relative to materials, dimensions of individual signs, profiles, and finishes for each type of sign required.
- C. Full size or scaled proof of each type of sign for approval before fabrication.

1.3 QUALITY ASSURANCE

- A. Code Compliance: Provide panel room signs in conformance with the Uniform Federal Accessibility Standards; Section 4.30, ANSI A117.1; 521 CMR, section 41.1; and Americans with Disabilities Act (ADA), sections 4.28.2, -.3, -.5.
- B. Single-Source Responsibility: For each separate type of sign required, obtain signs from one source from a single manufacturer.

1.4 PROJECT CONDITIONS

- A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication to ensure proper fitting. Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Provide 1/2" thick SPE acrylic or ES engraving plastic per ANSI A117 and ADA requirements. Letters and graphics shall be raised and braille shall be raised tactical type detail.
- B. Fasteners: Double sided foam vinyl VHB tape shall be used to fasten to mounting surface.

2.2 PANEL ROOM SIGNS

- A. Panel Room Signs: Comply with requirements indicated for materials, thickness, finishes, colors, designs, shapes, sizes, and details of construction.
 - 1. Produce smooth, even, level sign panel surfaces, constructed to remain flat under installed conditions within a tolerance of plus or minus 1/16 inch measured diagonally.
- B. Unframed Panel Room Signs: Fabricate signs with edges mechanically and smoothly finished to conform to the following requirements:
 - 1. Edge Condition: Square cut.
 - 2. Corner Condition: Square
 - 3. Handicapped Accessible Toilet Room Signs: approximately 10" x 8" required, including wheelchair pictogram symbol, and room name in the text below.
 - 5. Color: Backgrounds to be manufacturer's standard color, as selected by Architect, to match existing signage.
- C. Graphic Content and Style: Provide signs that comply with format and wording indicated in Schedule, Section 3.3, and conforming to the following characteristics:
 - 1. Letters and Numerals: 5/8" high Sans Serif, with a width-to-height ratio of 3:3.5, and a stroke-width to height ratio of 1:5. Upper case only.
 - 2. Braille: Grade 2.
 - 3. Pictograms: Accompanied by the equivalent verbal description placed directly below the pictogram.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Locate sign units and accessories where indicated, using mounting methods of the type described and in compliance with the manufacturer's instructions.

1. Install signs level, plumb, and at the height indicated, with sign surfaces free from distortion or other defects in appearance.
- B. Wall Mounted Panel Signs: Attach panel signs to wall surfaces using the methods indicated below:
 1. Vinyl-Tape Mounting: Use double-sided VHB foam tape to mount signs. A blank sign is required to be mounted on the reverse side of any glass-mounted sign.
 2. Mounting Location and Height: Install signs on the wall adjacent to the latch side of the door. Where there is no wall space to the latch side of the door, including at double leaf doors, install signs at the nearest adjacent wall. Mounting height shall be 60" above the finish floor to the centerline of the sign. Mounting location for such signage shall be so that a person may approach within 3" of signage without encountering protruding objects or standing within the swing of a door.

3.2 CLEANING AND PROTECTION

- A. At completion of the installation, clean soiled sign surfaces in accordance with the manufacturer's instructions. Protect units from damage until acceptance by the Owner.

3.3 SCHEDULE

<u>Room and/or Door Location</u>	<u>Quantity</u>	<u>Text</u>
DOOR 100A	1	UNISEX RESTROOM W/ PICTOGRAM W/ HANDICAP GRAPHIC

END OF SECTION 10 42 60

12 32 16 - MANUFACTURED ARCHITECTURAL CASEWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Instructions to Bidders, AIA Document A201 - 2007, "General Conditions of the Contract for Construction", the Supplementary General Conditions and Division 1, General Requirements, are a part of this Section and shall be binding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

- A. This Section includes furnishing and installing the following:
 - 1. Laminate clad cabinets (plastic-covered casework).
 - 2. Backsplashes, filler panels and scribe pieces for complete installation.
- B. Related Sections: The following sections contain requirements that relate to this section:
 - 1. Furring, blocking, and other carpentry work that is not exposed to view is specified in Section 06 10 00 "Rough Carpentry".
 - 2. Section 12 35 53 "Laboratory Casework" for resin countertops / sinks.

1.3 DEFINITIONS

- A. Exposed Surfaces: Surfaces visible when drawers and opaque doors are closed; behind clear glass doors; bottoms of casework 43 inches or more above finished floor.
- B. Semi-exposed Surfaces: Surfaces which become visible when opaque doors are open or drawers are extended; bottoms of casework are more than 30 inches and less than 42 inches above finished floor.
- C. Concealed Surfaces: Surfaces considered concealed when surfaces not visible after installation; bottoms of casework less than 30 inches above finished floor; tops of casework over 78 inches above finished floor and not visible from an upper level; stretchers, blocking, and components concealed by drawers.
- D. Flush Overlay: Door and drawer faces cover cabinet frame with space between faces sufficient for operating clearance.

1.4 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

- B. Product data for each type of product and process specified in this section and incorporated into items of architectural casework during fabrication, finishing, and installation.
- C. Shop drawings for casework and fittings showing plan layout, elevations, ends, cross-sections, service run spaces, location and type of service fittings, together with associated service supply connection required.
 - 1. Include details and location of anchorages and fitting to floors, walls, and base, including required blocking or back-blocking.
 - 2. Include layout of units with relation to surrounding walls, doors, windows, and other building components.
 - 3. Coordinate shop drawings with other work involved.
 - 4. Include manufacturer's recommendations for blocking and securing of casework units and fittings.
- D. Samples for initial selection purposes of the following in form of manufacturer's color charts consisting of actual units or sections of units showing full range of colors, textures, and patterns available for each type of material indicated.
 - 1. Plastic laminate.
 - 2. Exposed cabinet hardware, including locks, one unit of each type and finish.
- E. Product certificates signed by casework manufacturer certifying that products comply with specified requirements.
- F. Qualification data for firms and persons specified in "Quality Assurance" article to demonstrate their capabilities and experience. Include list of completed projects with project names, addresses, names of Architects and Owners, and other information specified.

1.5 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** Firm experienced in successfully producing architectural casework similar to that indicated for this Project, with sufficient production capacity to produce required units without causing delay in the Work.
- B. **Single-Source Manufacturing and Installation Responsibility:** Engage a qualified Manufacturer to assume undivided responsibility for casework specified in this section, including fabrication, finishing, and installation.
- C. **AWI Quality Standard:** Comply with applicable requirements of "Architectural Casework Quality Standards" published by the Architectural Casework Institute (AWI) except as otherwise indicated.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect casework during transit, delivery, storage, and handling to prevent damage, soilage, and deterioration. Keep covered with polyethylene film or other protective coating.
- B. Do not deliver casework until painting, wet work, grinding, and similar operations that could damage, soil, or deteriorate casework have been completed in installation areas. If casework must be stored in other than installation areas, store only in areas whose environmental conditions meet requirements specified in "Project Conditions."
 - 1. Follow procedures and schedules as provided by the General Contractor.

1.7 PROJECT CONDITIONS

- A. Environmental Conditions: Do not install casework until optimum temperature and humidity conditions for casework have been attained and stabilized so that casework is within plus or minus 1.0 percent of optimum moisture content from date of installation through remainder of construction period.
- B. Field Measurements: Where casework is indicated to be fitted to other construction, check actual dimensions of other construction by accurate field measurements before manufacturing casework; show recorded measurements on final shop drawings. Coordinate manufacturing schedule with if construction progress to avoid delay of Work.
 - 1. Where field measurements cannot be made without delaying the Work, guarantee dimensions and proceed with manufacture of casework without field measurements. Coordinate other construction to ensure that actual dimensions correspond to guaranteed dimensions.
- C. Field Measurements: Verify countertop size and shape prior to fabrication by field measurements taken after base units are installed.

1.8 GUARANTEE

- A. Casework to be guaranteed for a period of three (3) years for manufacturing and workmanship defects from the date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PLASTIC LAMINATE

- A. High pressure plastic laminate shall be used on all exposed surfaces of cabinets, doors, filler strips, and drawer faces and shall meet all NEMA standards.
- B. Colors to be selected from full range of colors and patterns, or as scheduled on drawings.
 - 1. Wilsonart, Paige Plourde, 978-809-9578

2. Nevamar
3. Lab Designs, Nancy Royer, nancyr@surfacematerials.com, 203-605-1441

2.5 MELAMINE LAMINATED PARTICLE BOARD

- A. Thermofused impregnated decorative overlay bonded to 45 pound density industrial grade particle board for all non-exposed surfaces only that are exposed to view upon final installations.
- B. Particle board shall have a moisture content not to exceed 8%.
- C. Interior melamine laminate color is white.
- D. White melamine laminate for cabinet interiors behind doors and drawers and interior of all open cabinets.

2.6 LAMINATE EDGES

- A. Front edges of cabinet boxes to match door/drawer face in a PVC or high pressure laminate edgebanding.
- B. Door and drawer front edges to be PVC edge banding, 3mm thick, in choice of colors. Architect to select final color from manufacturer's colors to closely match the laminate face.
 1. Dollken
 2. Canplast
 3. Charter Industries

2.7 HARDWARE

- A. Hinges: One pair per door up to and including 42 inch height. One and one-half pair over 42 inches in height.
 1. Fully concealed, spring loaded, self-closing hinge opens to 170 degree and fully adjustable in all dimensions,
- B. Pulls
 1. 4" metal wire pull - Brushed chrome finish
- C. Drawer guides
 1. Standard drawers, side mounted, manufactured from zinc plated roll formed steel. Ball bearing/nylon roller action with positive stop, 100 lb. load rating.
- D. Adjustable shelf supports.

1. Shelf support clip for adjustable cabinet shelves to be heavy duty steel pin surrounded by molded nylon.

E. Manufacturers

1. Hafele
2. Knape & Vogt
3. Blum

2.8 CABINET CONSTRUCTION

A. Bases

1. Cabinet bases shall be integral to cabinet with loose front toe board for continuous field installation. Rubber or vinyl base furnished and installed by others.

B. Cabinet Tops and Bottoms

1. Wall and tall cabinets (and base cabinet bottoms) $\frac{3}{4}$ " thick melamine laminated particle board. White on inside and outside surfaces.
2. Base Cabinets to have two stretchers across top of cabinet, $\frac{3}{4}$ " thick x 3- $\frac{3}{4}$ " deep melamine laminated particle board. Cabinets over 27" wide shall have a third stretcher between door and drawer.
3. Exposed edges of cabinets shall match door/drawer face color, in high pressure laminate edgebanding.

C. Cabinet Ends

1. Exposed ends $\frac{3}{4}$ " thick, laminated particle board. White melamine on inside surface and high pressure plastic laminate on outside surface.
2. Concealed Ends $\frac{3}{4}$ " thick melamine laminated particle board. White on inside and outside surface.
3. Front edges shall match door/drawer face color, in high pressure laminate edgebanding.
4. All standard cabinets sides 21" or higher to have holes drilled for adjustable shelves 1- $\frac{1}{4}$ " on center.

D. Fixed and Adjustable Shelves

1. $\frac{3}{4}$ " white melamine laminated particle board two sides for all shelving not exposed to view upon final installation. Front edge of shelves to be edge

banded in PVC. 1" thick shelves for cabinets over 30" wide. All exposed shelving to have high pressure laminate finish to match door/drawer face color.

E. Cabinet Backs

1. Standard cabinet backs to be 3/4" particle board with white melamine laminate on inside surface and tan color melamine laminate on outside surface. All edges dadoed to fit into sides, tops and bottoms.
2. Exposed exterior backs to be high pressure laminate to match door/drawer face.

F. Doors and Drawer Fronts

1. All doors and drawer fronts to be 11/16" thick, 45 lb density particle board with high pressure plastic laminate, .030 in thickness on faces and white high pressure cabinet liner on inside faces.
2. Door and drawer front edges shall be edged to match face in 3mm PVC edgebanding.
3. Glazed doors shall have reinforced corners to mitigate warping and sagging.
4. Glazed doors shall have rabbet edge for flush glazing installation. Provide continuous glazing tape within rabbet to mitigate glass rattle.
5. All doors are to be provided with rubber silencers at top and bottom on strike side of door.

G. Drawers

1. Drawer fronts shall be applied to drawer sub front.
2. Drawer sides, back and subfront to be 3/4", white melamine laminated particle board. All exposed edges are PVC edge banded, color to match laminate.
3. Drawer sides, back and subfront to be dowel and glue assembly for a secure fit.
4. Drawer bottom to be 1/4" white melamine laminated particle board and is dadoed and glued into drawer sides, back and sub front.

H. Countertops

1. Plastic Laminate

- A. Horizontal grade plastic laminate on 45 pound particle board.
 - B. 1-1/2" thickness with square self edging.
 - C. Melamine plastic laminate backing.
 - D. Color to be as selected by owner.
- I. Workmanship
- 1. All exterior, exposed, vertical surfaces shall be finished with high pressure plastic laminate unless otherwise indicated.
 - 2. Cabinet parts shall be accurately machined and constructed with glue and dowel method.
 - 3. Cabinet ends shall be dadoed to receive bottoms, tops and backs. Backs shall be securely glued into sides, tops and bottoms.
 - 4. Drawer bottom shall be fully housed into drawer sides, back and sub front using dadoed construction. Drawer sides, backs and subfront shall be glue and dowel construction for a secure fit.
 - 5. All cases shall be square, plumb and true.

PART 3 - EXECUTION

3.1 STORAGE AND PROTECTION

- A. Casework shall be protected in transit. Store under cover in a ventilated building not exposed to extreme temperature and humidity changes. Do not install casework in building until concrete, masonry and gypsum board work is dry.

3.2 WORKMANSHIP

- A. Erect casework straight, level and plumb and securely anchor in place. Scribe and closely fit to adjacent work. Cut and fit work around pipes, ducts, etc.
- B. Install all items complete and adjust all moving parts to operate properly.
- C. Leave surfaces clean and free from defects at time of final acceptance.
- D. Provide vertical, clear, and consistent reveals at all door and drawer installations. Failure to maintain a consistent reveal through normal hardware adjustments will require the removal and reinstallation of doors / drawers or cabinets prior to final acceptance by the Owner.

3.3 CLEAN UP

- A. Installer to remove all cartons, debris, sawdust, scraps, etc. and leave spaces clean and all casework ready for use.

END OF SECTION 12 32 00