CONTRACT BIDDING DOCUMENTS

FOR

LOCKER ROOM AND STAIR RENOVATIONS

AT

WEST HARTFORD
POLICE DEPARTMENT

BID # 6391F

TOWN OF WEST HARTFORD

INFORMATION

LOCKER ROOM AND STAIR RENOVATIONS
AT
WEST HARTFORD POLICE DEPARTMENT
103 RAYMOND ROAD
WEST HARTFORD, CT
BID# 6391F

ARCHITECT

BRIAN HUMES, AIA, LEED A.P.
JACUNSKI HUMES, LLC
15 MASSIRIO DRIVE, SUITE 101
BERLIN, CT 06037

PROJECT MANAGER

HUGH F. SCHWEITZER, AIA, LEED A.P.
CAPITAL PROJECTS MANAGER

ALL QUESTIONS TO

PURCHASING SERVICES
TAMMY BRADLEY
SENIOR BUYER

All questions must be submitted in writing and mailed to the Purchasing Office emailed to Tammyb@westhartford.org or faxed to 860-561-7507 at least seven calendar days prior to the date established for the opening of bids. Please do not call the Engineer/ Architect, Project Manager or Purchasing Office with questions.

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PROJECT NARRATIVE

The intent of the project is to renovate and expand the existing men's locker and toilet rooms. In addition, the kitchenette/day room will be renovated, as well as existing stair tower A2. The work includes, but is not limited to:

- Selective demolition of structure, interior finishes, mechanical, electrical, plumbing, fire protection and life safety systems.
- Provision of new structure, finishes, lockers, toilets and other fixtures that comprise the completed locker, shower, toilet, kitchen and day rooms.
- Provision of new or modified mechanical, electric, plumbing, fire protection and life safety systems.
- In stair tower A2:
    - Provision of new finishes and lighting.
    - Modification to existing guardrails and handrails.

Under a separate prior project, the Owner will abate hazardous materials as may be needed, before handing the spaces over to the Contractor.

Please refer to the drawings and specifications for the full range of details and requirements.

LIST OF DRAWINGS

A-0 ARCHITECTURAL GENERAL INFORMATION
A-1 DEMOLITION AND PROPOSED FLOOR PLANS
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E-1.1 ELECTRICAL POWER FLOOR PLANS
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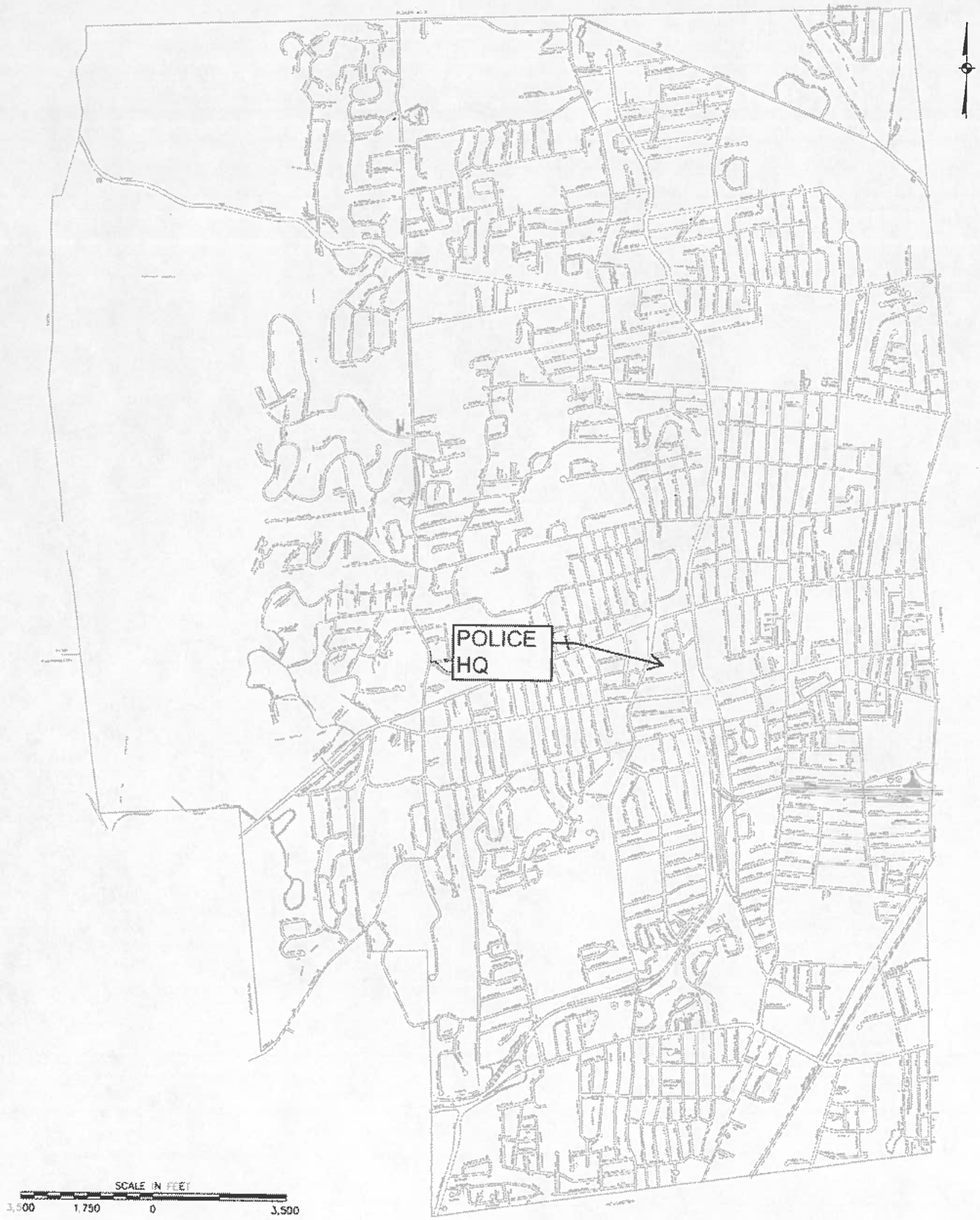
TOWN OF WEST HARTFORD
PROJECT LOCATION MAP



General

1. Contractor, supervisory, and trades personnel will be required to be familiar with and adhere to the Project work rules. Failure to comply with these Work Rules may result in being banned from the project site.
2. The Contractor shall take direction only from the Capital Projects Manager or their representative.
3. All construction activities that are disruptive to school operations (due to noise, vibration, dust, odors, etc.) shall occur outside regular school instructional hours.
4. Contractors shall not use Town-owned dumpsters for refuse disposal unless given prior written permission from the Town's capital projects manager.
5. No entry into the building is allowed without prior permission of the Town. When entry is granted each individual must sign in at the main office and obtain a visitor's badge.
6. Have staff available on site to receive and unload your materials whenever deliveries are made. If Contractor staff is not available the delivery will be refused.
7. The Contractor shall maintain, at the site, one copy of the drawings, specifications, addenda, change orders and other modifications, in good order and marked currently; and one copy of approved shop drawings, product data, samples and similar required submittals.
8. Maintain complete files of Material Safety Data Sheets (MSDS) on the jobsite.
9. The Owner does not provide secure storage for the Contractor's materials and tools.

Foreman/Supervisory Personnel

1. The Trade Foreman/Superintendent must be on the jobsite whenever their staff is on site. This includes subcontractor personnel.

All Contractor Personnel

1. Contractors, subcontractors, and all their personnel shall wear a uniform with the company's logo while on site.
2. The Town, at its discretion, may require security background checks for Contractor staff proposed for schools and other sites.
3. Job hours are 7:00 AM to 3:30 PM for first shift and 3:30 PM to 11:00 PM for second shift. Additional time may be subject to custodial overtime charges of approximately $25.00 per hour.
4. Material deliveries or movement of construction vehicles is not permitted among buses and students during student drop-off of pick-up times. 8:00-8:45 AM & 3:15-3:45 PM Monday, Tuesday, Thursday, Friday and 1:45 PM-2:15 PM on Wednesday. Times vary among elementary, middle and high schools are will be confirmed with the Contractor.
5. No alcohol or controlled substances are allowed on the school property.
6. No smoking is allowed within the building or on the school property.
7. No food is to be eaten in the building. All food-related trash is to be removed from the site at the end of each day.
8. Use of radios and other amplified sound systems is disruptive to building occupants and is not permitted during classroom instructional hours.
9. Clean up all work areas daily. Keep the job clean and debris free.
10. Coordinate your work with the work of other trades. Check preceding work prior to starting new work. Do not proceed unless preceding work is completely acceptable.
11. Protect your work at all times from damage.
12. Park in designated areas only. Keep parking areas accessible for emergency vehicles. Privately owned vehicles are not permitted in areas of construction.
13. Elevators are not to be used by Contractors for transporting materials.

Safety

1. All work activities are to be planned with Safety as the #1 priority.
2. A copy of the Contractor's safety program shall be present at job site.
3. A first aid kit appropriate to the size of the work crew is to be provided by the Contractor.
4. Appropriate fire extinguishing supplied by the Contractor shall be present at the work area.
5. All personnel in work areas will have, at a minimum, hard hats, safety glasses, work shoes, shirts with sleeves, and long pants. Hard hats have to have company and employees name.
6. No interruption of building services (e.g. power, water, fire alarm intercom, ventilation, heating, cooling, etc.) without prior coordination with, and permission from, the Owner.
7. No use of any tools, equipment or supplies, other than those supplied by the Contractor.

L. Noise created as a result of or relating to an emergency.

M. Noise generated by construction activity shall be exempted between the hours of 7:00 a.m. to one hour after sundown, Monday through Saturday.

N. Noise created by blasting other than that conducted in connection with construction activities shall be exempted, provided that the blasting is conducted between 8:00 a.m. and 5:00 p.m. local time at specified hours previously announced to the local public or provided that a permit for such blasting has been obtained from local authorities.

O. Noise created by on-site recreational or sporting activity which is sanctioned by the state or local government, provided that noise discharged from exhausts is adequately muffled to prevent loud and/or explosive noises therefrom.

P. Patriotic or public celebrations not extending longer than one calendar day.

Q. Noise created by aircraft.

R. Noise created by products undergoing test, where one of the primary purposes of the test is the evaluation of product noise characteristics and where practical noise control measures have been taken.

S. Noise generated by transmission facilities, distribution facilities and substations of public utilities providing electrical powers, telephone, cable television or other similar services and located on property which is not owned by the public utility and which may or may not be within utility easements.

INVITATION TO BID

Sealed bids marked "**LOCKER ROOM AND STAIR RENOVATIONS AT WEST HARTFORD POLICE DEPARTMENT BID# 639IF**" will be received at the office of the Purchasing Division, Room 223, Town Hall, 50 South Main Street, West Hartford, Connecticut until **2:00 PM** on **July 8, 2014** at which time they will be publicly opened and read.

Plans and specifications are available for downloading at www.westhartford.org/living_here/on-line_services/bid_list_caveat.php Any questions concerning this request for bid shall be addressed to the Purchasing Agent at the address above.

A pre-bid conference will be held on June 24, 2014 at 10:00 AM at West Hartford Police Department, 103 Raymond Road at which time questions concerning the project will be answered. Prospective bidders are expected to attend the pre-bid meeting as this will be the only opportunity to verbalize questions relative to this project and view the job site with the Town's project team.

All Bidders must file with their bid a bid bond, certified or treasurer's check in the amount of 10% of the total of the base bid made payable to the Town of West Hartford.

Performance and Labor and Material Payment bonds in the amount of 100% of the contract price will be required of the successful bidder if the contract pursuant to this request for bids exceeds $50,000.00.

No bid may be withdrawn for a period of ninety (90) days after the opening of bids without the approval and written consent of the Town of West Hartford.

The right is reserved to reject any and all bids, to waive any informalities in the bidding and to make awards in any manner that is the most beneficial to the Town.

Bidders are encouraged to attend the Town's bid opening at which time the public is afforded an opportunity to record bid prices received in response to the Town's solicitation. Bidders who would like the results of the bid but are unable to attend the bid opening, may check the Town website, http://www.westhartford.org/living_here/on-line_services/bid_results.php a week after the bid opening date. Bidders calling the Purchasing Office for bid results will be referred to the above procedure.

TOWN OF WEST HARTFORD
PETER PRIVITERA
PURCHASING AGENT

AIA® Document A701™ – 1997

Instructions to Bidders

for the following PROJECT:
(Name and location or address)
LOCKER ROOM AND STAIR RENOVATIONS AT WEST HARTFORD POLICE DEPARTMENT BID# 6391F
103 RAYMOND ROAD
WEST HARTFORD, CT 06107

THE OWNER:
(Name, legal status and address)
TOWN OF WEST HARTFORD
50 SOUTH MAIN STREET
WEST HARTFORD, CT 06107

THE ARCHITECT:
(Name, legal status and address)
JACUNSKI HUMES ARCHITECTS LLC
15 MASSIRIO DR, 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.

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§ 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 BIODING 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.

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§ 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

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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)

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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.

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INSTRUCTIONS TO BIDDERS

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.

SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

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.

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 1 - Definition

1.3 Delete paragraph 1.3 in its' entirety and substitute the following: Addenda are written or graphic instruments issued by the Architect and distributed by the Owner prior to the bid opening which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.

Article 2 - Bidder's Representation

Add the following as paragraphs 2.2 and 2.3

2.2 A pre-bid conference may be held prior to bidding, at which time all interested parties are requested to attend. The intent of the project and Bidding Documents will be discussed. There will be a question and answer period, during which time prospective bidders are invited to request clarification or interpretation of any and all parts of the Bidding Documents. See Invitation to Bid for date, time, and location of Conference.

2.3 Guided tours of the Project Site, at the discretion of the owner, may be conducted prior to the pre-bid conference. Questions and or requests for clarification will not be addressed while the tour is being conducted.

ARTICLE 3 - BIDDING DOCUMENTS

3.1.1: Delete second sentence and substitute with the following:

Refer to instructions on Invitation to Bid Page 00201-1.

3.1.2: Delete Paragraph 3.1.2.

3.2.2: Delete the word "Architect" and substitute the word "Owner".

3.3.4: Delete paragraph 3.3.4 in its entirety and substitute with the following:

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. Substitutions sball be submitted in accordance with the requirements listed in Article 3.3.2.

3.3.5: Add new paragraph 3.3.5 as follows:

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.

3.4.1: Delete paragraph 3.4.1 in its' entirety and substitute with the following:

Addenda will be issued by the Owner and will be mailed to all who are known by the Owner to bave received a completed set of Bidding Documents.

ARTICLE 4 - BIDDING PROCEDURES

4.1.6: Add the following words to the beginning of paragraph - "Unless otherwise provided in the Contract Bidding Documents".

4.1.7: Delete paragraph 4.1.7 in its' entirety and substitute with the following:

Each copy of the Bid shall include the legal name of the bidder and a statement that the Bidder is a sole proprietor, partnership, corporation or other legal entity. 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, if the Owner so requests, 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.

4.2.2: Delete paragraph 4.2.2 in its' entirety and substitute with the following:

Surety Bonds shall be written on forms substantially 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 BID

5.1.1: Add new paragraph 5.1.1 as follows:

Bidders are encouraged to attend the Town's bid opening at which time tbe public is afforded an opportunity to record bid prices received in response to the Town's solicitation. Bidders who would like the results of the bid but are unable to attend the bid opening must submit with their bid a self addressed stamped envelope and note requesting a copy of the bid results. **BIDDERS CALLING THE PURCHASING OFFICE FOR BID RESULTS WILL BE REFERRED TO THE ABOVE PROCEDURE.**

5.3.1: Delete 1st sentence and substitute the following:

It is the intent of the Owner to award a Contract to the bidder providing the best value to the Owner and is in accordance with requirements of the Bidding Documents and does not exceed the funds available.

5.3.3: Add new paragraph 5.3.3 as follows:

The Owner in awarding the Contract shall be guided by pertinent provisions of the "Town Charter" and "Code of Ordinances".

5.3.4: Add new paragraph 5.3.4 as follows:

A Bid may be rejected if the Bidder cannot show that he has the necessary supervisory staff, labor, capital, materials, machinery and resources 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 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, had previously performed similar work in an unsatisfactory manner, or in the judgment of the Owner is deemed unable to satisfactorily perform the Work.

5.3.5: Add new paragraph 5.3.5 as follows:

Prior to the award of a Contract, if so requested, 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, labor, capital, materials, and machinery, resources and responsibilities to conduct and complete the work to be contracted for in accordance with the Contract Documents and to begin it promptly when ordered.

ARTICLE 6 - POST BID INFORMATION

6.3.3: Delete paragraph 6.3.3 in its' entirety and substitute with the following:

Prior to the award of the Contract, the Owner will notify the Bidder in writing if either the Owner or the Architect, after due investigation, has a reasonable objection to any such proposed person or entity. If the Owner or Architect has reasonable objection to any such proposed person or entity, the Bidder may, at his option, (1) withdraw his Bid, or (2) submit an acceptable substitute person or entity. In the event of withdrawal under this sub-paragraph, Bid Security will not be forfeited, notwithstanding the provisions of Paragraph 4.4.1.

ARTICLE 7 - PERFORMANCE BOND AND PAYMENT BOND

7.1.1: Delete paragraph 7.1.1 in its' entirety and substitute with the following:

If the amount of the Contract to be awarded is Fifty Thousand Dollars ($50,000) or more, the successful Contract Bidder shall 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.

The Contractor shall increase the principal amount of the performance and labor and materials payments bond(s) in direct proportion to any increase in the value of the Contract resulting from such change orders.

7.2.1: Delete paragraph 7.2.1 and substitute the following:

The Bidder shall deliver the required bonds to the Owner prior to execution of a contract and not later than (5) five days from notice of the Owner's intent to award the Contract to the bidder.

ARTICLE 9 - SUPPLEMENTARY INSTRUCTIONS

9.1: Add new paragraph 9.1 as follows:

9.1.1 - The Contractor shall agree that, except in the case of bona fide occupational qualification or need, neither he nor his Subcontractors and/or agents will refuse to hire or employ, or will bar or discharge from employment, or will otherwise discriminate against any individual in compensation or in terms, conditions, or privileges of employment because of race, color, national origin, ancestry, present or past history of mental disorder, mental retardation, or physical disability, including, but not limited to, blindness.

9.1.2 - The Contractor shall further agree that neither he nor his subcontractors and/or agents will discharge, expel, or otherwise discriminate against any person because he/she has opposed any discriminatory employment practice or because he has filed a complaint or testified or assisted in any proceeding under Connecticut General Statutes Sections 46a-82, 46a-83, or 46a-84 or as may be amended.

9.1.3 - The Contractor shall further agree that, except in the case of a bona fide occupational qualification or need, neither he nor his subcontractors and/or agents will advertise employment opportunities in such manner as to restrict such employment so as to discriminate against individuals because of their race, color, religious creed, age, sex, marital status, national origin, ancestry, present or past history of mental disorder, mental retardation or physical disability, including, but not limited to, blindness.

9.1.4 - The terms used in paragraphs 9.1.1, 9.1.2, and 9.1.3 shall have the definitions set forth in Connecticut General Statutes Section 46a-51 or as may be amended.

9.1.5 - The Contractor further agrees, for himself, his subcontractors, and agents, not to otherwise discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, sex, marital status, national origin, ancestry, present or past history of mental disorder, mental retardation or physical disability (including but not limited to blindness) in any manner prohibited by the laws and regulations of the United States, State of Connecticut or Town of West Hartford.

9.2: Add new paragraph 9.2 as follows:

Time: The Contractor to whom this Contract may be awarded, will be required to commence work at the site within ten (10) days of Contract signing unless, otherwise indicated in the sample AIA Standard Form of Agreement Form A101. The work shall be executed diligently thereafter and shall be completed in accordance with the Contract Documents.

9.3: Add new paragraph 9.3 as follows:

The Bidder is directed to the Bid Forms for additional information, instructions, qualifications and requirements.

Bid of _____, BIDDER,
(Name of Bidder)

FOR **LOCKER ROOM AND STAIR RENOVATIONS AT WEST HARTFORD POLICE DEPARTMENT BID# 6391F"** FOR THE TOWN OF WEST HARTFORD, CONNECTICUT.

To: Town of West Hartford
Peter Privitera, Purchasing Agent
Purchasing Services

The undersigned proposes to furnish all labor, materials and equipment, and to perform all work described in the Contract Bidding Documents for **LOCKER ROOM AND STAIR RENOVATIONS AT WEST HARTFORD POLICE DEPARTMENT BID# 6391F"** in accordance with the Contract Bidding Documents for the amounts shown herein under Schedule of Bids.

Receipt acknowledged of the following addenda:

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

It is understood and agreed that the Owner has the privilege of rejecting any or all Bids and of waiving informality in any Bid.

It is further understood and agreed that this Bid shall be irrevocable for ninety (90) calendar days after Bid receipt date.

SCHEDULE OF BIDS

1. Base Bid No. 1 for furnishing all labor, materials, equipment and all else whatsoever necessary to perform all work described in the Contract Bidding Documents for Scope 1, Locker and Toilet Rooms only **LOCKER ROOM AND STAIR RENOVATIONS AT WEST HARTFORD POLICE DEPARTMENT BID# 6391F**

   for the lump sum of _____

   _____Dollars ($_____)

2. Base Bid No.2 for furnishing all labor, materials, equipment and all else whatsoever necessary to perform all work described in the Contract Bidding Documents for Scope 2, Stairs only **LOCKER ROOM AND STAIR RENOVATIONS AT WEST HARTFORD POLICE DEPARTMENT BID# 6391F**

   for the lump sum of _____

   _____Dollars ($_____)

3. Base Bid No. 3 for furnishing all labor, materials, equipment and all else whatsoever necessary to perform all work described in the Contract Bidding Documents for Both Scope 1 and Scope 2, performed simultaneously**LOCKER ROOM AND STAIR RENOVATIONS AT WEST HARTFORD POLICE DEPARTMENT BID# 6391F**

   for the lump sum of _____

   _____Dollars ($_____)

UNIT PRICING

Should the amount of improvements required to be increased due to special considerations found at the site, or because of a request of the Owner, the undersigned agrees that the following supplemental UNIT PRICES will be the basic price in place for computing the EXTRA or CREDIT. Each UNIT PRICE shall include all equipment, tools, labor, permits, fees, etc., incidental to the installation and completion of the work involved:

1. Floor Leveling Compound $ _____ per bag (55 lb.)

ALLOWANCES

Included in Base Bid Lump Sum is a total of 150 bags (55 lb.) of new leveling compound furnished and applied as specified. The actual amount of leveling compound applied shall be adjusted in accordance with the UNIT PRICE for this work.

CONTRACT TIME

The undersigned Bidder will accomplish all Work required by the Contract Bidding Documents and will provide Substantial completion by **September 26, 2014**, and will provide the Project, ready for Final Completion, by **October 3, 2014**.

BIDDER QUALIFICATIONS

A: If the Bidder is a Corporation, fill out:

The Bidder is a Corporation, organized under the laws of _____, having its principal office at ____. The Principal officers of said Corporation, with their titles and addresses, are as follows:

_____

_____

_____

_____

All persons interested in the Bid as principals are to be named above.

B. Bid must be accompanied by either a certified check, treasurer's check or a Bid Bond, as provided in the Invitation to Bid. If a check is enclosed herein, fill out the following:

_____

(Name of Bank) (Address of Bank) (Amount of Check)

C. Attached hereto are two forms entitled "Summary of Work History". The Bidder is required to complete Form 1 and 2.

D. The Bidder is required to submit a Certificate of Insurance in amounts and types specified in Article 11 of the Supplementary General Conditions or provide a letter from the Bidder's insurance agent or broker that such insurance is obtainable at the time of execution of the Agreement and that a Certificate of Insurance shall be provided to that effect not later than the date of Contract signing. (See page #00204- 7)

E. Contract award will be by AIA Agreement Form 101. A copy of the AIA Form 101 is included for the Bidder's information. The parties shall enter into an Agreement in substantially the same form as the attached subject to technical and other modifications as the parties mutually agree. A purchase order shall be issued by the Town subsequent to the execution of the Agreement.

F. The Contractor by executing this Bid agrees and represents that no person acting for or employed by the Town of West Hartford is directly or indirectly interested in the Bid or proposed Agreement or in the supplies or works to which it relates, or will receive any part of the profit or any commission there from in any manner which is unethical or contrary to the best interest of the Owner.

G. The Contractor agrees and warrants that in the performance of this Contract it will not discriminate or permit discrimination against any person or group of persons on the grounds of sex, race, color, religion, age, marital status, ancestry, national origin, past history of mental disorder, mental retardation or physical disability or other basis in any manner prohibited by the laws of the United States, the State of Connecticut, or the Town of West Hartford.

H. The Contractor shall employ a full time, on-the-job Project Superintendent as his representative.

I. The Contractor and/or Subcontractor offers and agrees to assign to the Town of West Hartford and/or the West Hartford Board of Education all rights, titles and interest in all causes of action it may have under Section 4 of the Clayton Act., 15 U.S.C. Section 15, or under Connecticut General Statutes 35-24 et. seq., as amended, arising out of the purchase of services, property, or intangibles of any kind pursuant to the Agreement, or Subcontracts thereunder. This assignment shall be made and become effective at the time the Town/Board awards or accepts such Agreement, without further acknowledgment by the parties. In the alternative, at the option of the Town, the Contractor and/or Subcontractor agrees to pay to the Town its proportionate share of recoveries for anti-trust violations which relate to purchases pursuant to this Contract, or Subcontracts hereunder. The Contractor and/or Subcontractor agrees promptly to notify the Purchasing Agent of the Town of West Hartford of suspected anti-trust violations and claims.

J. The Bidder is aware of and agrees that, if awarded an Agreement, he is bound by the following indemnification language:

1. To the fullest extent permitted by law, the Contractor shall release, defend, indemnify, and hold harmless the Town of West Hartford, and the West Hartford Board of Education, their respective boards, commissions, officers, officials, employees, agents, representatives, and servants from any and all suits, claims, losses, damages, costs (including without limitation reasonable attorneys' fees), compensation, penalties, fines, liabilities or judgments or any name or nature for:

    1. Bodily injury, sickness, disease, or death; and/or

    2. Damage to or destruction of property, real or personal; and/or

    3. Financial losses (including, without limitation, those caused by loss of use)

    sustained by any person or concern, including officers, employees, agents, Subcontractors or servants of the Town, the Board of Education, or the Contractor, or by the public, which is cause or alleged to have been caused in whole or in part by the negligent act(s) or omission(s) of the Contractor, its officers, employees, agents, or Subcontractors, in the performance of tbis Agreement or from the inaccuracy of any representation or warranty of the Contractor contained in the Contract Documents. This indemnity shall not be affected by other portions of the Agreement relating to insurance requirements.

2. To the fullest extent permitted by law, the Contractor agrees to release, defend, indemnify, and hold harmless the West Hartford Board of Education, and the Town of West Hartford, their respective boards and commissions, officials, officers, employees, agents, representatives, and servants from any loss, claim, cost penalty, fine or damage that may arise out of the failure of the Contractor, its officers, agents, employees or Subcontractors to comply with any laws or regulations of the United States of America, the State of Connecticut, the Town of West Hartford, West Hartford Board of Education, or their respective agencies. This undertaking shall not be affected by other portions of the Agreement relating to insurance requirements.

K. Substantial completion must be achieved by **September 26, 2014** and final completion must be achieved by **October 3, 2014**. The Contractor shall pay the Owner liquidated damages in the amount of Three Hundred Dollars ($300.00) per calendar day, which sum is hereby agreed upon, and shall be assessed not as a penalty, but as liquidated damages which the Owner shall suffer by reason of such default. The Owner and Contractor shall acknowledge that failure to effect substantial completion as noted above will precipitate inconvenience and disruption. The Owner and Contractor shall acknowledge that such damages are uncertain or difficult to prove and that the amounts established herein are reasonable assessment of these damages.

BIDDER:

_____
COMPANY

Bidder must sign. Failure to provide an original signature will result in rejection of the bid.

®

_____
SIGNATURE BY DULY AUTHORIZED
(SEAL)

_____
PRINT OR TYPE NAME

The bidder agrees that by affixing their signature to this request for bids, the authorized signatory grants approval to the Town of West Hartford to obtain third party credit reports for the purpose of assessing the financial capacity of the business entity tendering such bid to the Town.

_____
TITLE

_____
DATE

_____
ADDRESS

_____
TELEPHONE

_____
FAX #

_____
VENDOR FEIN #

BID FORMS TO BE SUBMITTED IN DUPLICATE

If you are not registered with the Town of West Hartford, please go to https://west-hartford.com/e-proc/mod/whar/includes/default_whar.asp and select register. Only registered vendors can be awarded the contract.

TO: Town of West Hartford
Peter Privitera
Purchasing Agent

FROM:

CLIENT:

DATE:

Dear Mr. Privitera:

In accordance with page 00204-3, Paragraph D of the "Bid Form", please be advised that my client currently has or will have by the date of the execution of the Agreement for this project, a Certificate of Insurance in amounts and types as specified in Article 11 of the Supplementary General Conditions.

_____

Signature
Authorized Agent or Broker

SUMMARY OF WORK HISTORY

1. **The bidder is required to state in the spaces provided below work that the bidder has performed of a similar character to the work described in the Contract Bidding Documents.**

Project Name	Project Description	Contract Award Amount	Client	Contact Person	Telephone #

SUMMARY OF WORK HISTORY

2. **The bidder is further required to furnish a complete list of all projects for which he has signed a construction contract within the past 36 months.**

Project Name	Project Description	Contract Award Amount	Client	Contact Person	Telephone #

3.0 LABOR REQUIREMENTS

Since there are other projects anticipated to be in progress at this location during this time period, ALL BIDS MUST INCORPORATE STATE OF CONNECTICUT PREVAILING WAGE RATES AS PROVIDED IN THIS DOCUMENT. The awarded bidder will be required to pay prevailing wages.

3.01 PREVAILING WAGE RATES

3.01.01 The Contractor shall certify in writing and under oath to the Labor Commissioner the pay scale to be used by the Contractor and any Subcontractors. The provisions of this section shall not apply where the total cost of all work to be performed by ALL Contractors and Subcontractors in connection with new construction of any public works project is less than FOUR HUNDRED thousand dollars or where the total cost of all work to be performed by ALL Contractors and Subcontractors in connection with any remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project is less than ONE HUNDRED thousand dollars. The Contractor shall fully comply with all provisions of Connecticut General Statutes (CGS) 31-53 and shall be subject to such sanctions mandated for violations of said Public Act.

3.01.02 The wages paid on an hourly basis to any mechanic, laborer or workman employed upon the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such employee to any employee welfare fund, as defined in CGS 31-53 shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the Town in which such public works project is being constructed. Any contractor who is not obligated by agreement to make payment or contribution on behalf of such employees to any such employee welfare fund shall pay to each employee as part of his wages the amount of payment or contribution for his classification on each pay day.

3.01.03 The contractor shall not be paid in accordance with the payment provisions of these Contract Bidding Documents unless the contractor is in full compliance with the mandates of CGS 31-53.

3.01.04 Bidders are further advised that if the initial consideration due and payable pursuant to the Contract exceeds the mandatory limits at which prevailing wages rates are required, then the contractor and any subcontractors shall pay the appropriate prevailing wages retroactive to the date of commencement of work on the project. The contractor shall not receive any additional compensation from the Owner as a result of an occurrence of the aforementioned event.

Project: Locker Room And Stair Renovations At West Hartford Police Department

Minimum Rates and Classifications
for Building Construction

ID# : B 19309

Connecticut Department of Labor
Wage and Workplace Standards Division

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

Project Number:
State#:

Project Town: West Hartford
FAP#:

Project: Locker Room And Stair Renovations At West Hartford Police Department

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	35.00	27.41
1b) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters.**See Laborers Group 7**		
2) Boilermaker	35.24	25.01

As of: **Friday, June 06, 2014**

Project: Locker Room And Stair Renovations At West Hartford Police Department

3a) Bricklayer, Cement Mason, Concrete Finisher (including caulking), Stone Masons	32.50	27.46 + a
3b) Tile Setter	33.05	23.28
3c) Terrazzo Mechanics and Marble Setters	31.69	22.35
3d) Tile, Marble & Terrazzo Finishers	25.95	19.82
3e) Plasterer	32.50	27.46

------LABORERS------

As of: **Friday, June 06, 2014**

Project: Locker Room And Stair Renovations At West Hartford Police Department

4) Group 1: Laborers (common or general), acetylene burners, carpenter tenders, concrete specialists, wrecking laborers, fire watchers.	27.05	17.80
4a) Group 2: Mortar mixers, plaster tender, power buggy operators, powdermen, fireproofer/mixer/nozzleman (Person running mixer and spraying fireproof only)..	27.30	17.80
4b) Group 3: Jackhammer Operators/Pavement Breaker, mason tender (brick) and mason tender (cement/concrete)	27.55	17.80
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	27.30	17.80
4d) Group 5: Air track operators, Sand blasters	27.80	17.80
4e) Group 6: Nuclear toxic waste removers, blasters	30.05	17.80

As of: **Friday, June 06, 2014**

Project: Locker Room And Stair Renovations At West Hartford Police Department

4f) Group 7: Asbestos/lead removal and encapsulation (except it's removal from mechanical systems which are not to be scrapped)	28.05	17.80
4g) Group 8: Bottom men on open air caisson, cylindrical work and boring crew	27.55	17.80
4h) Group 9: Top men on open air caisson, cylindrical work and boring crew	27.05	17.80
4i) Group 10: Traffic Control Signalman	16.00	17.80
5) Carpenter, Acoustical Ceiling Installation, Soft Floor/Carpet Laying, Metal Stud Installation, Form Work and Scaffold Building, Drywall Hanging, Modular-Furniture Systems Installers, Lathers, Piledrivers, Resilient Floor Layers.	31.00	22.50
5a) Millwrights	31.60	22.75

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6) Electrical Worker (including low voltage wiring) (Trade License required: E1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	37.60	22.22+3% of gross wage
7a) Elevator Mechanic (Trade License required: R-1,2,5,6)	47.15	26.785+a+b
-----LINE CONSTRUCTION----		
Groundman	24.37	6.5%+10.04
Linemen/Cable Splicer	44.30	6.5%+17.70
8) Glazier (Trade License required: FG-1,2)	34.18	17.75

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9) Ironworker, Ornamental, Reinforcing, Structural, and Precast Concrete Erection	33.50	28.98

----OPERATORS----

Group 1: Crane handling or erecting structural steel or stone, hoisting engineer 2 drums or over, front end loader (7 cubic yards or over); work boat 26 ft. and over. (Trade License Required)	36.80	22.30 + a
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)	36.48	22.30 + a
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)	35.74	22.30 + a
Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper).	35.35	22.30 + a

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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)	34.76	22.30 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller; Pile Testing Machine.	34.76	22.30 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	34.45	22.30 + 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).	34.11	22.30 + a
Group 8: Mechanic, grease truck operator, hydroblaster; barrier mover; power stone spreader; welding; work boat under 26 ft.; transfer machine.	33.71	22.30 + a
Group 9: Front end loader (under 3 cubic yards), skid steer loader regardless of attachments, (Bobcat or Similar): forklift, power chipper; landscape equipment (including Hydroseeder).	33.28	22.30 + a

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Group 10: Vibratory hammer; ice machine; diesel and air, hammer, etc.	31.24	22.30 + a
Group 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment.	31.24	22.30 + a
Group 12: Wellpoint operator.	31.18	22.30 + a
Group 13: Compressor battery operator.	30.60	22.30 + a
Group 14: Elevator operator; tow motor operator (solid tire no rough terrain).	29.46	22.30 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	29.05	22.30 + a

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Group 16: Maintenance Engineer/Oiler.	28.40	22.30 + a
Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	30.60	22.30 + a
Group 18: Power safety boat; vacuum truck; zim mixer; sweeper; (Minimum for any job requiring a CDL license).	30.29	22.30 + a
------PAINTERS (Including Drywall Finishing)-------		
10a) Brush and Roller	30.62	17.75
10b) Taping Only/Drywall Finishing	31.37	17.75

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10c) Paperhanger and Red Label	31.12	17.75
10e) Blast and Spray	33.62	17.75
11) Plumber (excluding HVAC pipe installation) (Trade License required: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2)	39.31	26.27
12) Well Digger, Pile Testing Machine	33.01	19.40 + a
13) Roofer (composition)	31.70	17.36
14) Roofer (slate & tile)	32.20	17.36

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15) Sheetmetal Worker (Trade License required for HVAC and Ductwork: SM-1,SM-2,SM-3,SM-4,SM-5,SM-6)	33.84	31.18
16) Pipefitter (Including HVAC work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4, G-1, G-2, G-8 & G-9)	39.31	26.27
------TRUCK DRIVERS------		
17a) 2 Axle	28.33	19.14 + a
17b) 3 Axle, 2 Axle Ready Mix	28.43	19.14 + a
17c) 3 Axle Ready Mix	28.48	19.14 + a

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17d) 4 Axle, Heavy Duty Trailer up to 40 tons	28.53	19.14 + a
17e) 4 Axle Ready Mix	28.58	19.14 + a
17f) Heavy Duty Trailer (40 Tons and Over)	28.78	19.14 + a
17g) Specialized Earth Moving Equipment (Other Than Conventional Type on-the-Road Trucks and Semi-Trailers, Including Euclids)	28.58	19.14 + a
18) Sprinkler Fitter (Trade License required: F-1,2,3,4)	39.76	19.87 + a
19) Theatrical Stage Journeyman	22.22	6.53

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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 $1.00 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 journeyperson 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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Project: Locker Room And Stair Renovations At West Hartford Police Department

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: **Friday, June 06, 2014**

Opportunity * Guidance * Support

CONNECTICUT DEPARTMENT OF LABOR

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.

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

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

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

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

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

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

Informational Bulletin

THE 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE

(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 ULTMATELY ARISE CONCERNIG 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.

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.

OCCUPATIONAL CLASSIFICATION BULLETIN

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

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

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

- **ASBESTOS WORKERS**
  - Applies all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems.
- **ASBESTOS INSULATOR**
  - Handle, install apply, fabricate, distribute, prepare, alter, repair, dismantle, heat and frost insulation, including penetration and fire stopping work on all penetration fire stop systems.
- **BOILERMAKERS**
  - Erects hydro plants, incomplete vessels, steel stacks, storage tanks for water, fuel, etc. Builds incomplete boilers, repairs heat exchanges and steam generators.
- **BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, MARBLE MASONS, PLASTERERS, STONE MASONS, PLASTERERS, STONE MASONS, TERRAZZO WORKERS, TILE SETTERS**
  - Lays building materials such as brick, structural tile and concrete cinder, glass, gypsum, terra cotta block. Cuts, tools and sets marble, sets stone, finishes concrete, applies decorative steel, aluminum and plastic tile, applies cements, sand, pigment and marble chips to floors, stairways, etc.
- **CARPENTERS, MILLWRIGHTS, PILEDRIVERMEN, LATHERS, 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.
- **CLEANING LADORER**
  - The clean up of any construction debris and the general cleaning, including sweeping, wash down, mopping, wiping of the construction facility, washing, polishing, dusting, etc., prior to the issuance of a certificate of occupancy falls under the *Labor classification.*
- **DELIVERY PERSONNEL**
  - If delivery of supplies/building materials is to one common point and stockpiled there, prevailing wages are not required. If the delivery personnel are involved in the distribution of the material to multiple locations within the construction site then they would have to be paid prevailing wages for the type of work performed: laborer, equipment

operator, electrician, ironworker, plumber, etc.

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

- **ELECTRICIANS**
  - Install, erect, maintenance, alteration or repair of any wire, cable, conduit, etc., which generates, transforms, transmits or uses electrical energy for light, heat, power or other purposes, including the Installation or maintenance of telecommunication, LAN wiring or computer equipment, and low voltage wiring. ***License required per Connecticut General Statutes: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9.**
- **ELEVATOR CONSTRUCTORS**
  - Install, erect, maintenance and repair of all types of elevators, escalators, dumb waiters and moving walks. ***License required by Connecticut General Statutes: R-1,2,5,6.**
- **FORK LIFT OPERATOR**
  - Laborers Group 4) Mason Tenders - operates forklift solely to assist a mason to a maximum height of nine (9) feet only.
  - Power Equipment Operator Group 9 - operates forklift to assist any trade, and to assist a mason to a height over nine (9) feet.
- **GLAZIERS**
  - Glazing wood and metal sash, doors, partitions, and 2 story aluminum storefronts. Installs glass windows, skylights, store fronts and display cases or surfaces such as building fronts, interior walls, ceilings and table tops and metal store fronts. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers which requires either a blended rate or equal composite workforce.
- **IRONWORKERS**
  - Erection, installation and placement of structural steel, precast concrete, miscellaneous iron, ornamental iron, metal curtain wall, rigging and reinforcing steel. Handling, sorting, and installation of reinforcing steel (rebar). Metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers which requires either a blended rate or equal composite workforce. Insulated metal and insulated composite panels are still installed by the Ironworker.
- **INSULATOR**
  - Installing fire stopping systems/materials for "Penetration Firestop Systems": transit to cables, electrical conduits, insulated pipes, sprinkler pipe penetrations, ductwork behind radiation, electrical cable trays, fire rated pipe penetrations, natural polypropylene, HVAC ducts, plumbing bare metal, telephone and communication wires, and boiler room ceilings. Past practice using the applicable licensed trades, Plumber, Sheet Metal, Sprinkler Fitter, and Electrician, is not inconsistent with the Insulator classification and would be permitted.
- **LABORERS**
  - Acetylene burners, asphalt rakers, chain saw operators, concrete and power buggy operator, concrete saw operator, fence and guard rail erector (except metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation.), hand operated concrete vibrator operator, mason tenders, pipelayers (installation of storm drainage or sewage lines on the street only), pneumatic drill operator, pneumatic gas and electric drill operator, powermen and wagon drill operator, air track operator, block paver, curb setters, blasters, concrete spreaders.
- **PAINTERS**
  - Maintenance, preparation, cleaning, blasting (water and sand, etc.), painting or application of any protective coatings of every description on all bridges and appurtenances of highways, roadways, and railroads. Painting, decorating, hardwood finishing, paper hanging, sign writing, scenic art work and drywall hanging+ 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 I-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**
  - ates several types of power construction equipment such as compressors, pumps, hoists, derricks, cranes, shovels, tractors, scrapers or motor graders, etc. Repairs and maintains equipment. ***License required, crane operators only, per Connecticut General Statutes.**
- **ROOFERS**
  - Covers roofs with composition shingles or sheets, wood shingles, slate or asphalt and gravel to waterproof roofs, including preparation of surface. (tear-off and/or removal of any type of roofing and/or clean-up of any and all areas where a roof is to be relaid)
- **SHEETMETAL WORKERS**
  - Fabricate, 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, facia, louvers, partitions, wall panel siding, canopies, cornice, column covers, awnings, beam covers, cladding, sun shades, lighting troughs, spires, ornamental roofing, metal ceilings, mansards, copings, ornamental and ventilation hoods, vertical and horizontal siding panels, trim, etc. The sheet metal classification also applies to the vast variety of coated metal material panels and composite metal material panels that have evolved over the years as an alternative to conventional ferrous and non-ferrous metals like steel, iron, tin, copper, brass, bronze, aluminum, etc. Insulated metal and insulated composite panels are still installed by the Iron Worker. Fabrication, handling, assembling, erecting, altering, repairing, etc. of architectural metal roof, standing seam roof, composite metal roof, metal and composite bathroom/toilet partitions, aluminum gutters, metal and composite lockers and shelving, kitchen equipment, and walk-in coolers.
- **SPRINKLER FITTERS**
  - Installation, alteration, maintenance and repair of fire protection sprinkler systems. ***License required per Connecticut General Statutes: F-1,2,3,4.**
- **TILE MARBLE AND TERRAZZO FINISHERS**
  - Assists and tends the tile setter, marble mason and terrazzo worker in the performance of their duties.
- **TRUCK DRIVERS**
  - **Definitions:**
    - 1) "Site of the work" (29 Code of Federal Regulations (CFR) 5.2(l)(b) is the physical place or places where the building or work called for in the contract will remain and any other site where a significant portion of the building or work is constructed, provided that such site is established specifically for the performance of the contact or project;
      - (a) Except as provided in paragraph (l) (3) of this section, job headquarters, tool yards, batch plants, borrow pits, etc. are part of the "site of the work"; provided they are dedicated exclusively, or nearly so, to the performance of the contract or project, and provided they are adjacent to "the site of work" as defined in paragraph (e)(1) of this section;
      - (b) Not included in the "site of the work" are permanent home offices, branch plant establishments, fabrication plants, tool yards etc, of a contractor or subcontractor whose location and continuance in operation are determined wholly without regard to a particular State or political subdivision contract or uncertain and indefinite periods of time involved of a few seconds or minutes duration and where the failure to count such time is due to consideration justified by industrial realities (29 CFR 785.47)
    - 2) "Engaged to wait" is waiting time that belongs to and is controlled by the employer which is an integral part of the job and is therefore compensable as hours worked. (29 CFR 785.15)
    - 3) "Waiting to be engaged" is waiting time that an employee can use effectively for their own purpose and is not compensable as hours worked. (29 CFR 785.16)
    - 4) "De Minimus" is a rule that recognizes that unsubstantial or insignificant periods of time which cannot as a practical administrative matter be precisely recorded for payroll purposes, may be disregarded. This rule applies only where there are uncertain and indefinite periods of time involved of a short duration and where the failure to count such time is due to consideration justified by worksite realities. For example, with respect to truck drivers on prevailing wage sites, this is typically less than 15 minutes at a time.
  - **Coverage of Truck Drivers on State or Political subdivision Prevailing Wage Projects**
    - Truck drivers **are covered** for payroll purposes under the following conditions:
      - Truck Drivers for time spent working on the site of the work.
      - Truck Drivers for time spent loading and/or unloading materials and supplies on the site of the work, if such time is not de minimus
      - Truck drivers transporting materials or supplies between a facility that is deemed part of the site of the

work and the actual construction site.

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

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

- Truck Drivers **are not** covered in the following instances:
  - Material delivery truck drivers while off "the site of the work"
  - Truck Drivers traveling between a prevailing wage job and a commercial supply facility while they are off the "site of the work"
  - Truck drivers whose time spent on the "site of the work" is de minimus, such as under 15 minutes at a time, merely to drop off materials or supplies, including asphalt.

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

For example:

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

Any questions regarding the proper classification should be directed to:

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

200 Folly Brook Boulevard, Wethersfield, CT 06109 / Phone: 860-263-6000
Home | CTgov Home | Send Feedback<%end if%><%if cbool (request.Cookies(Application("HOME_NAME"))("AA")=true and request.Cookies(Application("HOME_NAME"))("CA")<>"CF83C8C7" then call Session_WriteString(" | Admin") end if%>
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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.

AIA® Document A101™ – 2007

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

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

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

TOWN OF WEST HARTFORD
50 SOUTH MAIN STREET
WEST HARTFORD, CT 06107

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

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

LOCKER ROOM AND STAIR RENOVATIONS AT WEST HARTFORD POLICE DEPARTMENT BID# 6391F
103 RAYMOND ROAD
WEST HARTFORD, CT 06107

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

JACUNSKI HUMES ARCHITECTS LLC
15 MASSIRIO DR, SUITE 101
BERLIN, CT 06037

The Owner and Contractor agree as follows.

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

AIA Document A201™–2007, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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TABLE OF ARTICLES

1 THE CONTRACT DOCUMENTS

2 THE WORK OF THIS CONTRACT

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4 CONTRACT SUM

5 PAYMENTS

6 DISPUTE RESOLUTION

7 TERMINATION OR SUSPENSION

8 MISCELLANEOUS PROVISIONS

9 ENUMERATION OF CONTRACT DOCUMENTS

10 INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

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

ARTICLE 2 THE WORK OF THIS CONTRACT

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

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.
(Insert the date of commencement if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

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

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

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than September 26, 2014 and Final Completion of the work not later than October 3, 2014.
(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

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Portion of Work	Substantial Completion Date

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

Liquidated damages in the amount of $300.00 per calendar day shall be assessed for the failure to achieve Substantial Completion of the work not later than September 26, 2014 and Final Completion of the work not later than October 3, 2014.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be ($), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:
(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

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

Item	Units and Limitations	Price Per Unit ($0.00)

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

Item	Price

ARTICLE 5 PAYMENTS

§ 5.1 PROGRESS PAYMENTS

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

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

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the First day of a month, the Owner shall make payment of the certified amount to the Contractor not later than the first Friday after the Fifteenth day of the same month. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner not later than Fifteen (15) days after the Architect receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the

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

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

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

.1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of Five percent (5.00 %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™–2007, General Conditions of the Contract for Construction;

.2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of Five percent (5.00 %);

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

.4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201–2007.

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

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

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

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

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

§ 5.2 FINAL PAYMENT

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

.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2.2 of AIA Document A201–2007, and to satisfy other requirements, if any, which extend beyond final payment; and

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

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

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ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 INITIAL DECISION MAKER

The Architect will serve as Initial Decision Maker pursuant to Section 15.2 of AIA Document A201–2007, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

§ 6.2 BINDING DISPUTE RESOLUTION

For any Claim subject to, but not resolved by, mediation pursuant to Section 15.3 of AIA Document A201–2007, the method of binding dispute resolution shall be as follows:
(Check the appropriate box. If the Owner and Contractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.)

[X] Arbitration pursuant to Section 15.4 of AIA Document A201–2007

[ ] Litigation in a court of competent jurisdiction

[ ] Other *(Specify)*

ARTICLE 7 TERMINATION OR SUSPENSION

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

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

ARTICLE 8 MISCELLANEOUS PROVISIONS

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

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

0.00 % per annum

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

HUGH SCHWEITZER, CAPITAL PROJECTS MANAGER 860 561-7523
TOWN OF WEST HARTFORD
50 SOUTH MAIN STREET
WEST HARTFORD, CT 06107

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

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

§ 8.6 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

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

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

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

§ 9.1.3 The Supplementary and other Conditions of the Contract are those contained in the Project Specification Document BID#6391F and are as follows:

Document	Title	Date	Pages

INSTRUCTIONS TO BIDDERS
00101 PROJECT INFORMATION PAGE
00102 TABLE OF CONTENTS
00103 PROJECT NARRATIVE
00104 LIST OF DRAWINGS
00105 LOCATION MAP
00106 WORK RULES
00107 NOISE ORDINANCE
BIDDING REQUIREMENTS AND FORMS
00201 INVITATION TO BID
00202 INSTRUCTIONS TO BIDDERS - AIA DOCUMENT A-701 - 1997
00203 SUPPLEMENTARY INSTRUCTIONS TO BIDDERS
00204 BID FORMS
00205 SAMPLE AGREEMENT FORM
LABOR REQUIREMENTS
00303 CONTRACT LABOR RATES
GENERAL CONDITIONS
00401 GENERAL CONDITIONS - AIA DOCUMENT A-201
00402 SUPPLEMENTARY GENERAL CONDITIONS

§ 9.1.4 The Specifications are those contained in the Project Specification Document BID#6391F as in Section 9.1.3 and are as follows:

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

Section	Title	Date	Pages

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DIVISION 1 - GENERAL REQUIREMENTS
SECTION 01010 - SPECIAL CONDITIONS
SECTION 01040 - PROJECT COORDINATION
SECTION 01300 - SUBMITTALS AND PRODUCT SUBSTITUTIONS
SECTION 01400 - QUALITY CONTROL SERVICES
SECTION 01600 - REFERENCE STANDARDS, DEFINITIONS, MATERIALS AND EQUIPMENT
SECTION 01700 - PROJECT CLOSEOUT
SECTION 01740 - WARRANTIES & BONDS
DIVISION 2 - SITEWORK
SECTION 02070 - SELECTIVE DEMOLITION
SECTION 02075 - CUTTING AND PATCHING
DIVISION 3 - CONCRETE
SECTION 03540 - SELF-LEVELING UNDERLAYMENT
DIVISION 4 - MASONRY
SECTION 04200 - UNIT MASONRY
DIVISION 5 - METALS
SECTION 05500 - METAL FABRICATIONS
DIVISION 6 - WOOD AND PLASTICS
SECTION 06105 - MISCELLANEOUS CARPENTRY
SECTION 06402 - ARCHITECTURAL WOODWORK
DIVISION 7 - THERMAL AND MOISTURE PROTECTION
SECTION 07270 - FIRE STOPPING
SECTION 07920 - JOINT SEALERS
DIVISION 8 - DOORS AND WINDOWS
SECTION 08100 - STANDARD STEEL DOORS AND FRAMES
SECTION 08710 - DOOR HARDWARE AND SCHEDULE
SECTION 08800 - GLASS AND GLAZING
DIVISION 9 - FINISHES
SECTION 09255 - GYPSUM BOARD ASSEMBLIES
SECTION 09300 - CERAMIC TILE
SECTION 09500 - ACOUSTICAL PANEL CEILINGS
SECTION 09650 - RESILIENT FLOORING AND BASE
SECTION 09680 - CARPETING
SECTION 09900 - PAINTING
DIVISION 10 - SPECIALTIES
SECTION 10155 - TOILET COMPARTMENTS
SECTION 10260 - CORNER GUARDS
SECTION 10420 - LETTERS AND PLAQUES
SECTION 10426 - PANEL ROOM SIGNS
SECTION 10500 - WARDROBE LOCKERS
SECTION 10800 - TOILET AND BATH ACCESSORIES
DIVISION 11 - EQUIPMENT
SECTION 11452 - RESIDENTIAL APPLIANCES
DIVISION 12 - FURNISHINGS
SECTION 12300 - MANUFACTURED ARCHITECTURAL CASEWORK
SECTION 12510 - HORIZONTAL BLINDS
DIVISION 15 - MECHANICAL
SECTION 15010 - GENERAL PROVISIONS
SECTION 15050 - BASIC MECHANICAL MATERIALS & METHODS
SECTION 15250 - MECHANICAL INSULATION
SECTION 15300 - FIRE PROTECTION
SECTION 15500 - HEATING, VENTILATING & AIR CONDITIONING EQUIPMENT

DRAFT

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DIVISION 16 - ELECTRICAL
SECTION 16010 - GENERAL PROVISIONS
SECTION 16050 - BASIC MATERIALS & METHODS
SECTION 16500 - LIGHTING FIXTURES
SECTION 16700 - COMMUNICATIONS

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

Number	Title	Date

A-0	ARCHITECTURAL GENERAL INFORMATION
A-1	DEMOLITION AND PROPOSED FLOOR PLANS
A-2	REFLECTED CEILING PLAN AND DETAILS
A-3	DEMOLITION AND PROPOSED STAIR PLANS
A-4	LARGE SCALE TOILET PLANS
A-5	MISCELLANEOUS DETAILS
A-6	DOOR ELEVATIONS AND DETAILS
A-7	CASEWORK PLANS AND DETAILS
F-0	FINISHES KEY
F-1	FINISHES AND FURNITURE FLOOR PLANS
FP 1.1	FIRE PROTECTION FLOOR PLANS
P-1.1	PLUMBING FLOOR PLANS
P-2.1	PLUMBING DETAILS
M-1.1	MECHANICAL FLOOR PLANS
M-2.1	MECHANICAL DETAILS
E-1.1	ELECTRICAL POWER FLOOR PLANS
E-2.1	ELECTRICAL POWER DETAILS
EL-1.1	ELECTRICAL LIGHTING FLOOR PLANS

§ 9.1.6 The Addenda, if any:

Number	Date	Pages

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

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

.1 AIA Document E201™–2007, Digital Data Protocol Exhibit, if completed by the parties, or the following:

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

Contractors bid response attached herein.

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ARTICLE 10 INSURANCE AND BONDS

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

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

Type of insurance or bond	Limit of liability or bond amount ($0.00)

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

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
Peter Privitera, Purchasing Agent Town of West Hartford	
(Printed name and title)	*(Printed name and title)*

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AIA® Document A201™ – 2007

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)
LOCKER ROOM AND STAIR RENOVATIONS AT WEST HARTFORD POLICE DEPARTMENT BID# 6391F
103 RAYMOND ROAD
WEST HARTFORD, CT 06107

THE OWNER:
(Name, legal status and address)
TOWN OF WEST HARTFORD
50 SOUTH MAIN STREET
WEST HARTFORD, CT 06107

THE ARCHITECT:
(Name, legal status and address)
JACUNSKI HUMES ARCHITECTS LLC
15 MASSIRIO DR, 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 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.

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§ 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 INTERPRETATIDN

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

§ 3.6 TAXES

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

§ 3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

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

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

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

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

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

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§ 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.

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

§ 3.9 SUPERINTENDENT

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

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

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

§ 3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

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

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

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

§ 3.11 DOCUMENTS AND SAMPLES AT THE SITE

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

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§ 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

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

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

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

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

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

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

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

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

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

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

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completeness of the services, certifications and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance and design criteria specified in the Contract Documents.

§ 3.13 USE OF SITE

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

§ 3.14 CUTTING AND PATCHING

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

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

§ 3.15 CLEANING UP

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

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

§ 3.16 ACCESS TO WORK

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

§ 3.17 ROYALTIES, PATENTS AND COPYRIGHTS

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

§ 3.18 INDEMNIFICATION

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

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§ 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 Ccotract Documents as if singular in number.

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

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

§ 4.2 ADMINISTRATION OF THE CONTRACT

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

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

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

§ 4.2.4 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

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

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

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

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

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

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

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

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

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

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

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

ARTICLE 5 SUBCONTRACTORS

§ 5.1 DEFINITIONS

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

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

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§ 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

§ 5.2.1 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Architect may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect has reasonable objection to any such proposed person or entity or (2) that the Architect requires additional time for review. Failure of the Owner or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

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

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

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

§ 5.3 SUBCONTRACTUAL RELATIONS

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

§ 5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

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

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

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

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

§ 5.4.3 Upon such assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the

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Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

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

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

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

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

§ 6.2 MUTUAL RESPONSIBILITY

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

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

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

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

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

§ 6.3 OWNER'S RIGHT TO CLEAN UP

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

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ARTICLE 7 CHANGES IN THE WORK

§ 7.1 GENERAL

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

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

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

§ 7.2 CHANGE ORDERS

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

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

§ 7.3 CONSTRUCTION CHANGE DIRECTIVES

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

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

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

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

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

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

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

§ 7.3.7 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the method and the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount

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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.

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

§ 8.3 DELAYS AND EXTENSIONS OF TIME

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

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

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

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 CONTRACT SUM

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

§ 9.2 SCHEDULE OF VALUES

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

§ 9.3 APPLICATIONS FOR PAYMENT

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

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

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

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

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or

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encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.4 CERTIFICATES FOR PAYMENT

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

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

§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION

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

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

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

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

§ 9.6 PROGRESS PAYMENTS

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

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§ 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.

§ 9.9 SUBSTANTIAL COMPLETION

§ 9.9.1 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.

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

§ 9.9.3 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.

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§ 9.9.4 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.

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

§ 9.9 PARTIAL OCCUPANCY OR USE

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

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

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

§ 9.10 FINAL COMPLETION AND FINAL PAYMENT

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

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

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

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

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

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

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 SAFETY PRECAUTIONS AND PROGRAMS

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

§ 10.2 SAFETY OF PERSONS AND PROPERTY

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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§ 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 onder Section 3.18.

§ 11.1.2 The insurance required by Section 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Contract Documents.

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

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

§ 11.2 OWNER'S LIABILITY INSURANCE

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

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§ 11.3 PROPERTY INSURANCE

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

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

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

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

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

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 shall not commence until the insurance company or companies providing property insurance have consented to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse or reduction of insurance.

§ 11.3.2 BOILER AND MACHINERY INSURANCE

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

§ 11.3.3 LOSS OF USE INSURANCE

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

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

§ 11.3.5 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment

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property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Section 11.3.7 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

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

§ 11.3.7 WAIVERS OF SUBROGATION

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

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

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

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

§ 11.4 PERFORMANCE BOND AND PAYMENT BOND

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

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

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ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 UNCOVERING OF WORK

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

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

§ 12.2 CORRECTION OF WORK

§ 12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

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

§ 12.2.2 AFTER SUBSTANTIAL COMPLETION

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.4.

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

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

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

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

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

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§ 12.3 ACCEPTANCE OF NONCONFORMING WORK

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

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 GOVERNING LAW

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

§ 13.2 SUCCESSORS AND ASSIGNS

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

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

§ 13.3 WRITTEN NOTICE

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

§ 13.4 RIGHTS AND REMEDIES

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

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

§ 13.5 TESTS AND INSPECTIONS

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

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

§ 13.5.3 If such procedures for testing, inspection or approval under Sections 13.5.1 and 13.5.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by

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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.

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GENERAL

A. RELATED DOCUMENTS

AIA Document A 201 "General Conditions of the Contract for Construction", (Sixteenth Edition, Copyright 2007, The American Institute of Architects, Articles 1 through 15) and the Town of West Hartford's Supplementary General Conditions (Section 00402 Articles 1-15) are bound herein, and are hereby made a part of the Contract Bidding Documents and shall apply to all Contractors and Subcontractors.

B. AMENDMENTS TO THE GENERAL CONDITIONS

a. The Supplementary General Conditions include:

1. Any and all revisions to, deletions from, replacement of, and additions to portions of the AIA General Conditions, Articles 1 through 15.

2. Sucb additional articles beyond Article 15 as may be included herein.

b. Certain articles of the AIA General Conditions, or portions thereof, are revised by, are deleted, are replaced by, or are supplemented by the requirements of the following Supplementary Conditions. Such revisions, deletions, replacements, or additions shall take precedence over the AIA General Conditions.

c. Where any such Article is revised, deleted, or replaced, the provisions of such Article not so specifically revised, deleted or replaced shall remain in effect.

d. The following paragraphs are numbered in sequence corresponding to those of the General Conditions. Revised paragraphs and clauses have the same numerical designations occurring in the General Conditions. Additions to paragraphs, sub-paragraphs and clauses are numbered in sequence.

ARTICLE 1 – GENERAL PROVISIONS

1.1.1 Delete the word "not" on line 7 so that the sentence begins "The Contract Documents do include."

1.1.3 Add the following words after the word "obligations" in line 3:

or to be provided by Subcontractors, material suppliers, or any other entity for wbom the Contractor is responsible under or pursuant to the Contract Documents.

1.2.4 Add new subparagraph 1.2.4 as follows:

In case of any conflict or inconsistency among the Contract Documents, the Architect's decision shall govern. If there is any inconsistency in the Drawings, or between the Drawings and the Specifications, unless otherwise ordered in writing by the Architect or the Owner, the Contractor shall provide the better quality of, or the greater quantity of, work or materials.

1.2.5 Add new subparagraph 1.2.5 as follows:

Where a typical or representative detail is shown on the Drawings, such detail shall constitute the standard of workmanship and materials throughout corresponding portions of the Work. Where necessary, the Contractor shall adopt such detail for use in said corresponding portions of the Work in a manner that is satisfactory to the Architect.

1.5.1 Add the following after the first sentence:

Such drawings, specifications, other documents and copies thereof are and shall remain the joint property of the Architect and Owner.

ARTICLE 2 - OWNER

2.2.1 Delete third and forth sentences.

2.2.2 Add the following at the end of 2.2.2 "unless otherwise provided in the contract documents."

2.2.3 Delete the words "and utility locations" on line 1.

2.2.4 Delete the second sentence of 2.2.4.

2.2.5 Delete subparagraph 2.2.5 in its' entirety and substitute with the following:

The Contractor will be furnished up to fifteen (15) sets of the Contract Bidding Documents at no charge.

2.3 Change subparagraph 2.3 as follows:

Delete the word "repeatedly" in line 2.
Add the following at the end of 2.3:

The Owner's right to order the Contractor to stop the Work shall not relieve the Contractor of any of his responsibilities and obligations under or pursuant to the Contract Documents.

2.5 Add new paragraph 2.5 as follows:

2.5 - Additional Rights

The rights stated in Article 2 shall be in addition to and shall not be in limitation of any other rights of the Owner granted in the Contract Documents or at law or in equity.

ARTICLE 3 - CONTRACTOR

3.2.2 Delete subparagraph 3.2.2 in its' entirety and substitute with the following:

The Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by the Owner pursuant to subparagraph 2.2.3 and 3.2.3 and shall at once report to the Architect errors, inconsistencies or omissions discovered, or any varianee from applicable laws, statutes, ordinances, building codes, rules, regulations or any lawful orders of any governmental body, or public or quasi-public anthority. The Contractor shall not be liable to the Owner or Architect for damage resulting from errors, inconsistencies or omissions in the Contract Documents unless the Contractor recognized or should have recognized such error, inconsistency or omission and failed to report it to the Architect. If the Contractor performs any construction activity knowing it involves a recognized error, inconsistency or omission in the Contract Documents without such notice to the Architect, the Contractor shall assume responsibility for such performance and shall bear an appropriate amount of the attributable costs for correction.

3.2.3 Delete subparagraph 3.2.3 in its' entirety and substitute with the following:

The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies or omissions discovered shall be reported to the Architect at once. After reporting to the Architect any error, inconsisteney or omission the Contractor may discover in the Contract Documents, the Contractor shall not proceed with any work so affected without the Architect's written modifications to the Contract Documents.

3.2.4 Delete subparagraph 3.2.4 in its' entirety and substitute with the following:

The Contractor shall fully comply, or assure full compliance by Subcontractors or others under his direction, with Connecticut General Statutes Section 16-345, et seq. ("Call Before You Dig") and the regulations pertaining thereto. The Contractor shall be responsible to make certain of the exact location of the public and private mains, ducts, poles and utility services prior to excavation. The utility mains, ducts,

poles and services in the construction area where referred to on the Project plans or elsewhere in the Contract Documents are at the approximate locations furnished by various Utilities concerned. These locations are subject to possible errors in the source of the information and also errors in transcription. Connecticut General Statutes Section 16-349, as amended, makes it mandatory to notify Utilities of any proposed excavation, discharge of explosives, or demolition within the purview of Connecticut General Statutes Section 16-345, et seq. The Contractor shall call 1-800-922-4455 (toll free), 7:00 A.M. to 6:00 P.M., Monday through Friday, at least forty-eight hours prior to beginning the excavation, diseharge of explosives, or demolition. The Owner shall be notified in a similar manner. This "Call Before You Dig" service is provided by the Utility companies. Once the call is made, it is the utilities' responsibility to analyze the site and identify and mark their underground facilities. Privately or Town-owned utility mains, ducts, poles and services may be located in the construction area and the Contractor shall contact the Architect to verify their existence and location.

3.3.1 Delete the last sentence of subparagraph 3.3.1 and add the following:

Should the Contractor fail to perform his work to the satisfaction of the Architect and Owner, the Architect and Owoer have the right to order that all work must stop until the work is rectified.

3.3.4 Add new subparagraph 3.3.4 as follows:

The Contractor will be required to attend weekly Project Meetings from the time the Agreement is executed until Final Acceptance.

3.4.4 Add new subparagraph 3.4.4 as follows:

The Contractor is encouraged to use local labor where feasible, but not wben it is at the expense of poor workmanship and/or higher costs. The Contractor shall not discriminate or permit discrimination in employment or in the award of sub-contracts or in the selection of materials suppliers, in any manner prohibited by the laws and regulations of the United States, the State of Connecticut or the Town of West Hartford.

3.5 Add the words "or Owner" after the word "Architect" in line 8.

3.6 Delete subparagraph 3.6 in its' entirety and substitute the following:

No amount shall be included in the Bid for Connecticut Sales or Service Taxes or for Federal Excise Tax on materials or supplies purchased for this project. If applicable, the owner shall provide tax exempt documentation for the contractor's records.

3.7.2 Add the following sentence: A copy of the State license for general and major Subcontractors issued in accordance with C.G.S Section 20-341gg shall be furnished to the Owner upon request.

3.7.4 Add the following before the word "If" on line 1: "Except as in regards to claims relating to hazardous materials which are discussed in Article 3.7.8.."

Line 6, place a period after disturbed and delete rest of sentence.

If the Contractor performs work contrary to laws, statutes, ordinances, building codes, and rules and regulations, the Contractor shall assume responsibility for such work and shall bear the costs attributable to correction.

3.7.6 Add new subparagraph 3.7.6 as follows:

The requirements of subparagraphs preceding 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.

3.7.7 Add new subparagraph 3.7.7 as follows:

The Town of West Hartford Building Permit Fee will be waived, however, the General Contractor must apply for the Building Permit, and in all other ways comply with procedures of the office of the Building Official for the Town of West Hartford.

3.7.8 Add new subparagraph 3.7.8 as follows:

The Owner and Architect shall bear no responsibility to the Contractor, or sub-contractor(s) for any delay damages claimed to have resulted from activities claimed to relate to the detection, abatement, or handling of hazardous materials known to exist or subsequently discovered upon the premises. The sole remedy of the Contractor under such circumstances shall be an appropriate extension of contract completion time. No damages shall be paid by the Architect or Owner, their agents, servants or independent Contractors as a result of any such claim.

3.12.10 Delete the word "properly" in line 9 and suhstitute the word "Connecticut".

3.17 Delete subparagraph 3.17 and substitute with the following:

The Contractor shall pay all royalties and license fees. The Contractor shall defend all suits or claims for infringement of any copyrights and patent rights and shall hold the Owner harmless from loss (including, but not limited to, attorneys' fees and any litigation expenses) unless a particular design, process or the product of a particular

manufacturer or manufacturers is specified in the Contract Documents or where copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Architect; provided, however, that if the Contractor has reason to believe that the design, process or product specified is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless the Contractor promptly gives such information to the Architect and Owner.

3.18.1 Delete subparagraph 3.18.1 in its' entirety and substitute the following:

3.18.1 To the fullest extent permitted by law, the Contractor shall release, defend, indemnify, and hold harmless the Town of West Hartford, the Board of Education, their respective boards, commissions, officers, officials, employees, agents, representatives, and servants from any and all suits, claims, losses, damages, costs (including without limitation reasonable attorneys' fees), compensation, penalties, fines, liabilities or judgments of any name or nature for:

.1 Bodily injury, sickness, disease, or death; and/or
.2 Damage to or destruction of real and/or personal property; and/or
.3 Financial losses (including, without limitation, those caused by loss of use) sustained by any person or concern, including officers, employees, agents, Subcontractors, materialmen, or servants of the Town, the Board of Education, or the Contractor, or by the public, which is caused or alleged to have been caused in whole or in part by the negligent act(s) or omission(s) of the Contractor, or any Subcontractor, or materialmen, or anyone directly or indirectly employed by them arising from or related to the performance of this Contract or from the inaccuracy of any representation or warranty contained in the Contract Documents. This indemnity shall not be affected by other portions of the Contract relating to insurance requirements

3.18.3 Add new subparagraph 3.18.3 as follows:

To the fullest extent permitted by law, the Contractor shall release, defend, indemnify, and hold harmless the West Hartford Board of Education and the Town of West Hartford, their respective boards and commissions, officials, officers, employees, agents, representatives, and servants from any and all suits, claims, damages, costs, (including without limitation reasonable attorneys' fees), compensation, penalties, fines, liabilities or judgments that may arise out of the

failure of the Contractor, its officers, agents, Subcontractors, materialmen or anyone directly or indirectly employed by them to comply with any laws, statutes, ordinances, building codes, and rules and regulations of the United States of America, the State of Connecticut, the Town of West Hartford, or their respective agencies. This undertaking shall not be affected by other portions of the Contract relating to insurance requirements.

ARTICLE 4 - ARCHITECT

4.1.2 Delete subparagrapb 4.1.2 in its' entirety and substitute the following:

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 agreement of the Owner and Architect. The Contractor shall be notified of such restriction, modification or extension in writing.

4.1.3 Delete the words "as to whom the Contractor makes no reasonable objection and".

ARTICLE 5 - SUB-CONTRACTORS

5.2.1 Delete the word "after" on the second line and substitute with the words "prior to" award.

5.2.3 Delete subparagraph 5.2.3 in its' entirety and substitute with the fotlowing:

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 no suitable substitute is agreed upon, the Owner will allow the Contractor to withdraw its bid without penalty.

ARTICLE 6 - CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.1.1 Add the word "unreasonable" before the word "delay" in the last sentence, line 4.

6.1.4 Delete subparagraph 6.1.4 in its' entirety.

6.2.3 Delete the second sentence of subparagraph 6.2.3.

6.2.4 Delete the word "wrongfully" on line 1.

ARTICLE 7 - CHANGES IN THE WORK

7.3.3 Delete subparagraph 7.3.3.1 - 7.3.3.4 and substitute with the following:

.1 Unit prices stated in the Contract Documents or subsequently agreed upon.

.2 In the absence of unit prices, the mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation, to be determined as follows:

A. The cost of labor performed and material used by the Contractor with his own forces.

B. The cost of Worker's Compensation, Federal Social Security, and Connecticut Unemployment Compensation at established rates, actual additional cost of payment and performance bonds.

C. Actual cost of rental rates for equipment (exclusive of hand tools) employed and used directly on the work.

D. Fifteen percent (15%) of (A), (B), and (C) above mentioned for overhead, superintendence and profit. However, if the work to be performed results in a credit to the Owner, no percentage of overhead and profit will apply.

E. On work to be performed by a Subcontractor, the Contractor's allowance, for overhead superintendence and profit, is to be ten percent (10%) applied to total cost of Subcontractor's work, including his allowance as per paragraph G.

F. 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, superintendence and profit in accordance with paragraph E above.

G. On work to be performed by a Subcontractor, the Subcontractor's allowance is to be fifteen percent (15%) for his overhead, superintendence and profit applied to paragraphs A, B, and C.

H. The Contractor, when performing the work under A, B and C above shall, when requested, pnmptly 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.

7.3.4 Delete the word "shall" in line 4 and substitute the word "may".

7.3.7 Delete subparagraph 7.3.7 and substitute with the following:

If the Contractor does not respond promptly or disagrees with the method of adjustment in the Contract Sum, the method and adjustment shall be determined by the Architect in accordance with subparagraph 7.3.3. Under subparagraph 7.3.3 the Contractor sball keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data.

7.3.8 Add the following sentence at the beginning of subparagraph 7.3.8:

"Pending final determination of cost to the Owner, amounts not in dispute may be included in Application for Payment."

7.3.9 Delete subparagraph 7.3.9 in its' entirety and substitute the following:

"If the Owner and Contractor do not agree with the adjustment in Contract Time or the method for determining it, the adjustment or the method shall be referred to the Architect for determination."

ARTICLE 8 - TIME

8.2.1 Delete second sentence only and change to read as follows:

By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work and that he is capable of properly completing the Work within the Contract Time.

8.3.1 Delete the words "and arbitration" on line 4 and substitute with the words "or resolution of claims or disputes".

ARTICLE 9 – PAYMENTS AND COMPLETION

9.2 Add the words "and the Owner" after the word Architect on line 2 and add the words "or the Owner" after the word Architect on line 4.

9.2.1 Add subparagrapb 9.2.1 as follows:

The Schedule of Values to be submitted by the Contractor, will include, as a minimum, a separate line item for each Division of the Specifications. Any

allowances called for in the Drawings and Specifications will be shown as a separate line item. Additional items to be listed may be required by the Architect.

9.3.1 Delete subparagraph 9.3.1 in its' entirety and substitute with the following:

Not later than the first day of each calendar month, the Contractor shall submit to the Architect an itemized Application for Payment for work performed during the previous month, notarized, supported by such data substantiating the Contractor's

right to payment as the Owner or the Architect may require, and reflecting retainage, if any, as provided elsewhere in the Contract Documents.

9.3.1.1 Delete 9.3.1.1 in its' entirety and substitute with the following:

In order to expedite monthly payments during the course of the project, the Contractor shall, no later than the first day of the month, review with the Architect and Owner a preliminary draft of the 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 materials delivered and suitably stored at the site to the time of such estimate. The Owner shall retain five (5) percent of such estimated value until a maximum of five (5) percent of the Agreement sum has been retained, said retainage to be held by the Owner as part security for the fulfillment of the Agreement by the Contractor. Final payment, including the retainage, shall be due thirty (30) days after final completion of the work, provided the work be then fully completed and the Agreement fully performed.

9.3.3 Delete subparagrapb 9.3.3 in its' entirety and substitute with the following:

The Contractor warrants that title to all work covered by an Application for Payment, except materials and equipment suitably stored on or off the site, will pass to the Owner no later than the time of payment. However, title to materials and equipment suitably stored on or off site shall not pass to the Owner until sucb time as said materials and equipment are properly installed by the Contractor even though payment for sucb materials and equipment may have been previously effected. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment bave 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. This provision may not be explained, supplemented, or modified by a course of dealing, a usage of trade, a course of

performance or other interpretation that may arise out of the commercial context in which this provision is used.

9.4.1 Delete subparagraph 9.4.1 in its' entirety and substitute with the following:

The Architect, will, not later than the seventh (7th) day of each calendar month, either issue and deliver to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determined is properly due, or notify the Contractor and Owner in writing the Architect's reasons for withholding a Certificate as provided in sub-paragraph 9.5.1.

9.4.3 Add new subparagraph 9.4.3 as follows:

If the Application for Payment discloses any problems, the Architect shall immediately bring such problems to the Owner's attention.

9.5.1 Delete the word "reasonably" in line 1; delete the words "in the Architect's opinion" in lines 2 and 8; delete the word "repeated" in sub-subparagraph 9.5.1.7.

9.5.2 Add the following to subparagraph 9.5.2:

The Owner shall not be deemed in default by reason of withholding payment while any of the above grounds remain uncured as stated in paragraph 9.5.1.

9.5.4 Add new subparagraph 9.5.4 as follows:

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

9.6.1 Delete subparagraph 9.6.1 in its' entirety and substitute with the following:

After the Architect has issued a Certificate for Payments, the Owner shall make payment to the Contractor not later than the first Friday after the 15th day of the calendar month during which the Application has been submitted. Delays in submitting the application for payment in accordance with subparagraph 9.3.1 above will result in a corresponding delay in payment.

9.7 Delete the word "seven" on lines1, 2 and 4 and replace with the word "fourteen" on both lines. Delete the words "plus interest as provided for in the Contract Documents" on line 7.

9.8.2 Change subparagraph 9.8.2 as follows:

In line 1, add the words "and Architect" after the word "Owner" and change the word "agrees" to "agree" in line 1. Add the words "and Owner" after the word "Architect" on line 3.

9.8.3 Insert the words "and Owner" after the word "Architect" on lines 1 and 6. Insert the words "and Owner's" after the word "Architect's" on line 2.

9.8.5 Delete subparagraph 9.8.5 in its' entirety and substitute the following:

"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 Substantial Completion of the Work or designated portion thereof and upon application by the Contractor and certification by the Architect, the Owner shall make payment reflecting adjustments in retainage, if any, for such work or portion thereof as provided in the Contract Documents."

9.10.1 Add the words "and Owner" on both lines 2 and 3 after the word "Architect".

9.10.2 Delete subparagraph 9.10.2 in its' entirety and substitute with the following:

Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect in a form satisfactory to the Owner (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 after written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) final prints for record drawing use marked by the Contractor with record information as set forth in the Contract Documents, (6) a final sworn statement from the Contractor duly executed and acknowledged showing all Subcontractors to be fully paid and similar swom statements from Subeontractors and, wbere appropriate, from Sub-Subcontractors, (7) 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 or Sub-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 sucb lien remains unsatisfied after payments are made, or is not bonded over as provided in the preceding sentence, the Contractor shall promptly pay to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attomeys' fees.

ARTICLE 10 - PROTECTION OF PERSONS AND PROPERTY

10.2.1.4 Add the following as new sub-subparagraph 10.2.1.4:

the environment, including, without limitation, air, water, land, including wetlands, and other natural resources, and plant and animal life of all types.

10.2.2 Delete subparagraph 10.2.2 in its' entirety and substitute with the following:

The Contractor shall give notices and comply with applicable laws (including, without limitation, the requirements of Connecticut General Statutes Section 31-40m relating to toxic substances and the requirements of the Occupational Safety and Health Act and the Construction Safety Act of 1969, as amended, and regulations and standards promulgated thereunder), ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or the environment or their protection from damage, injury, destruction, pollution or loss. Said laws, ordinances, rules, regulations, standards, and lawful orders are incorporated herein by reference.

10.2.2.1 Add new sub-subparagraph 10.2.2.1 as follows:

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

10.2.4 Add the following to subparagraph 10.2.4:

The Contractor shall comply fully and require compliance with all applicable laws, including Connecticut General Statutes Sec. 16-345, et. seq., and the regulations promulgated thereunder, relating to discharge of explosives.

10.2.5 Add the number "10.2.1.4" after the number "10.2.1.3" on lines 2 and 5.

10.2.8 Delete the number "21" in line 4 and replace with the number "10".

10.2.9 Delete the number "21" in line 4 and replace with the number "10".

Add new subparagraph 10.2.9 as follows:

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 Add new subparagraph 10.2.10 as follows:

The Contractor shall protect all streets, roads and sidewalks and shall make all necessary repairs at his own expense, and shall maintain these reasonably clean of dirt, mud or other debris that is due to the construction operation.

10.2.11 Add new subparagraph 10.2.11 as follows:

It shall be the Contractor's responsibility to protect finished sidewalks and curbs against damage caused by trucks, etc., driving over them. If they are damaged they must be replaced by the Contractor without cost to the Owner.

10.2.12 Add new subparagraph 10.2.12 as follows:

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.

10.3.2 Delete subparagraph 10.3.2 in its' entirety and substitute with the following:

The Owner shall obtain the services of a licensed laboratory to verify the presence of absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to verify that it has been rendered harmless. When the material or substance has been rendered harmless, work in the affected area shall resume. The Contract Time may be extended appropriately.

10.3.3 Delete subparagraph 10.3.3 in its' entirety.

10.3.4 Insert a period after the word "Site" on line 2 and delete the rest of the paragraph.

10.3.6 Delete paragraph 10.3.6 in its' entirety.

ARTICLE 11 - INSURANCE AND BONDS (March 27, 2013)

11.1.2 - 11.4.10 - Delete paragraphs 11.1.2 through 11.4.10 of Article 11 in their entirety and replace with the following:

11.1.2 For the purpose of Article 11: the term "Contractor" shall also include their respective agents, representatives, employees or subcontractors; and the term "Town of West Hartford, and West Hartford Board of Education" (hereinafter called the "Owner") shall include their respective boards, commissions, officials, officers, agents, consultants, volunteers and employees.

11.1.3 The insurance required by Subparagraph 11.1.1 shall be written for not less than limits of liability specified by Subparagraph 11.1.4 or required by applicable federal, state, and/or municipal law, regulation or requirement, whichever coverage is greater. It is agreed that the scope and limits of insurance coverage specified by Subparagraph 11.1.4 are minimum requirements and shall in no way limit or exclude the Owner from additional limits and coverage provided under the Contractor's policies. All required insurance, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Work until date of final payment and termination of any coverage required to be maintained after final payment. The Contractor shall pay all costs, premiums, and audit charges earned and payable under the required insurance.

Acceptance by the Town of insurance submitted by the Contractor does not relieve or decrease in any manner the liability of the Contractor for performance of Work under the contract including, but not limited to, environmental remediation work, waste materials hauling or disposal work. The Contractor is responsible for any losses, claims and costs of any kind which exceed the Contractor's limits of liability, or which may be outside the coverage scope of the policies, or a result of non-compliance with any laws including, but not limited to, environmental laws. The limits and coverage requirements may be revised at the option of the Town. The requirements herein shall in no way be construed to limit or eliminate the liability of the Contractor that arises from performance of work under the contract.

11.1.4 **Minimum Scope and Limits of Insurance All Contractors:**

.1 **Commercial General Liability:**
$1,000,000 combined single limit per occurrence / $1,000,000 aggregate for premises-operations, independent contractors' protective, products-completed operations, contractual liability, personal injury and broad form property damage (including coverage for explosion, collapse and underground hazards). Contractor shall continue to provide products-completed operations coverage for two (2) years after Final Completion of the Work.

.2 **Automobile Liability & Pbysical Damage:**
$ 1,000,000 combined single limit per occurrence for any auto, including statutory uninsured/underinsured motorists coverage and $1,000 medical payments. The policy shall include collision and comprehensive coverage for any auto used for purpose of this contract.

.3 **Workers' Compensation:**
COVERAGE A/Workers' Compensation: statutory limits as required by the Labor Code of the State of Connecticut or applicable to the Work to be performed with an Experience Modification Rate of 1.0 or less.

COVERAGE B/Employer's Liability: limits of $1,000,000 each accident, $1,000,000 disease/policy limit, $1,000,000 disease/each employee.

If the Contractor decides not to procure workers' compensation in accordance with Connecticut law, the Contractor agrees to comply with the Connecticut Workers' Compensation Act's (Act) requirements for withdrawing from the provisions of the Act, including, but not limited to, filing the appropriate notice of withdrawal with the commissioner. The Contractor is wholly responsible for taking the actions necessary to withdraw from the provisions of the Act. In lieu of procuring workers' compensation insurance and providing the Town with proof thereof, the Contractor agrees to hold the Town of West Hartford, the West Hartford Board of Education, their respective boards and commissions, officers, agents, officials, employees, servants, volunteers, contractors and representatives harmless from any and all suits, claims, and actions arising from personal injuries sustained by the Contractor or Contractor's employees during the course of the performance of this contract, however caused.

.4 **Umbrella Liability:**
$2,000,000 per occurrence / $2,000,000 aggregate, following form.

.5 **Property:**
"All risk" property insurance on a replacement cost basis to cover portions of the Work stored on and off the site, in transit, or interior portion of buildings under construction from rain, sleet or snow, whether or not driven by wind, when the installation of the roof, walls and windows of such building has not been completed. The insurance shall cover the value of personal property belonging to the Contractor located on the Owner's property or worksite, while in use or in storage. The insurance shall include interests of the Owner, Contractor, their Subcontractors and Sub-subcontractors.

.6 **Contractor's Pollution Coverage:**
$3,000,000 per occurrence **project specific** limit / $3,000,000 aggregate, dedicated to Work performed under this contract only, unless otherwise approved by the Town's Risk Manager. **Policy must specifically include pollution coverage for bodily injury, property damage, cleanup costs, defense costs, contractual liability and completed operations for all Work performed by or on behalf of the Contractor under the contract (including but not limited to asbestos and lead abatement, drum removal and disposal, demolition, excavation, off-site incineration of soils etc.)** Contractor shall continue to provide completed operations

coverage for two (2) years after Final Completion of the Work. Exclusions or limitations affecting Work performed must be deleted. Policy form must be "pay on behalf of" rather then "indemnity" and insurance company must have the "right and duty" to defend. Any "insured vs. .insured" language must be amended to "named insured vs. named insured" or not apply to "additional insureds". The policy shall not contain any provision or definition that would serve to eliminate third party action over claims for employees of the Contractor. Policy shall state that insolvency or bankruptcy of the insured or the insured's estate will not relieve the insurance company of its obligations.

.7 **Hazardous Waste Transporter Coverage:**
Any Contractor transporting hazardous waste shall have automobile liability coverage written for not less than $1,000,000 per occurrence or as specified in the Motor Carrier Act of 1980, whichever coverage is greater. The pollution exclusion shall be amended to cover loading, unloading and transportation activities including hauling of waste from the project site to the final disposal location, and non-owned disposal site endorsement (claims-made) with scheduled landfill or provide evidence of insurance from disposal site operator. **Policy shall be endorsed to include the MCS-90 endorsement and the reimbursement provision of the MCS-90 endorsement will he horne by the Contractor.** The Contractor must submit to the Town a list of transfer and disposal sites to be used, along with all warranties, permits evidencing ability to accept the type of waste being delivered, and limits of financial responsibility, including closure/post closure bonds. Contractor must comply with all applicable D.O.T. and E.P.A. requirements.

.8 **Pollution Legal Liability:**
$3,000,000 each loss / $3,000,000 aggregate. The transporter who consolidates, transfers, stores or disposes of waste at any location, a sudden and non-sudden pollution legal liability policy must be provided for on-site and off-site bodily injury, property damage, cleanup costs, and defense costs for the location acceptiog the waste.

11.1.5 Additional Insured Endorsement:

All liability policies (with the exception of Workers' Compensation) shall include the Town of West Hartford, the West Hartford Board of Education, and their respective officers, agents, officials, employees, volunteers, boards and commissions as an additional insured with respect to liability arising out of or in connection with the activities performed by or oo bebalf of the Contractor; products and completed operations of the Contractor; premises owned, leases or used by the Contractor; or automobiles owned, leased, hired or borrowed by the

Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the Owner.

11.1.6 Acceptability of Insurers:

Contractor's policies shall be written by insurance companies licensed to do business in the State of Connecticut, with a Best's rating of no less than A: VII, or otherwise deemed acceptable by the Town's Risk Manager.

11.1.7 Subcontractors:

Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor. Subcontractor's coverage shall be subject to all of the requirements stated herein.

11.1.8 Waiver of Subrogation:

Contractor shall provide that all insurance policies include a waiver of subrogation clause that states that it is agreed that in no event shall the insurance company have any right of recovery against the Owner. When the Contractor is self-insured, it is agreed that in no event shall the Contractor have any right of recovery against the Owner.

11.1.9 Claims-Made Form:

If the insurance coverage is underwritten on a claims-made basis, the retroactive date shall be prior to or coincident with the date of the contract. The certificate of insurance shall state the retroactive date and that the coverage is claims-made. The Contractor shall maintain coverage for the duration of the contract and for the two (2) years following the completion of the contract. Evidence of such coverage shall be provided to the Owner thirty (30) days prior to each policy expiration.

11.1.10 Aggregate Limits:

If a general aggregate is used, the general aggregate limit shall apply separately to the project. All aggregate limits must be declared to the Owner. It is agreed that the Contractor shall notify the Owner with reasonable promptness with information concerning the erosion of limits due to claims paid under the general aggregate during the contract term. If the aggregate limit is eroded for the full limit, the Contractor agrees to reinstate or purchase additional limits to meet the minimum limit requirements stated herein. The Contractor sball pay the premium.

11.1.11 Deductibles and Self-Insured Retentions:

Contractor must declare any deductibles or self-insured retentions to the Owner. All deductibles or self-insured retentions are the sole responsibility of the Contractor to pay and/or to indemnify.

11.1.12 Notice of Cancellation or Nonrenewal:

For other than non-payment of premium, each insurance policy required by this exhibit shall be endorsed to state that coverage shall not be suspended, voided, canceled, or reduced in coverage or in limits except after thirty (30) days prior written notice has been given to the Owner. Ten (10) days prior written notice shall be given for non-payment of premium.

11.1.13 Other Insurance Provisions:
All liability policies required herein shall contain, or be endorsed to contain, the following provisions:

.1 The Contractor's insurance shall be primary with respect to the Owner. Any insurance or self-insurance maintained by the Owner shall be excess and non-contributory to the Contractor's insurance.

.2 The Contractor's insurance shall apply separately to each insured against whom a claim is made or suit is brought.

.3 Any failure to comply with the claim reporting provisions of the policy shall not affect coverage provided to the Owner.

11.1.14 Verification of Coverage:

.1 Contractors shall furnish to the Owner prior to the commencement of the Work, certificates of insurance and copies of all endorsements for the insurance required by Subparagraph 11.1.1 and Subparagraph 11.1.4. The certificates and endorsements for each insurance policy are to be signed by a person authorized by the insurer to bind coverage on its behalf. Renewal of expiring certificates shall be filed thirty (30) days prior to expiration. If any insurance coverage is required to remain in force after final payment, an additional certificate evidencing continuation of such coverage shall be submitted with the final Application for Payment as required by Subparagraph 9.10.2. The Owner reserves the rights to require complete, certified copies of all required policies, at any time.

.2 One (1) copy of the certificate of insurance shall be mailed to the Purchasing Division, and one (1) copy to the Risk Management Division, Town of West Hartford, 50 South Main Street, West Hartford, Connecticut 06107.

11.1.15 Failure to Purchase or Maintain Insurance:

.1 If the Contractor fails to purchase or maintain the required insurance specified by Article 11, the failure shall be treated as a default in Work. The Owner may (but shall not be obligated to) purchase such insurance on the Contractor's behalf and shall be entitled to be repaid for any premiums paid therefore by the Contractor in the manner set forth in Paragraph 2.4.

.2 If the Owner or the Contractor is damaged by failure of the Contractor to purchase or maintain insurance required under Article 11, the Contractor shall bear all reasonable costs including, but not limited to, attorney's fees and costs of litigation, properly attributable thereto.

11.1.16 Additional Insurance:

If requested by the Owner after the date of the Owner-Contractor Agreement, the Contractor shall promptly procure, at the Owner's expense, insurance coverage in such amounts as the Owner may request coverage not listed in Subparagraph 11.1.4.

11.2 Owner's Insurance

11.2.1 The Owner shall be responsible for purchasing and maintaining his own liability insurance and, at his option, may purchase and maintain sucb insurance as will protect him against claims that may arise from operations under the contract.

11.2.2 The Owner shall be responsible for purchasing and maintaining Builder's risk "all risk" property insurance upon the Work installed at the site to the full insurable value, including boiler and machinery with the exception of the interior portion of the buildings under construction from rain, sleet or snow, whether of not driven by wind, when the installation of the roof, walls and windows of such buildings bas not been completed. Any loss insured is to be adjusted and settled with the Owner and made payable to the Owner.

11.2.3 The Owner does not agree to waive any rights of subrogation, nor any rights of action against the Contractor, in connection with or arising out of any claims or damages which may arise from the operations under the contract.

11.4.3 Add new paragraph as follows:

The Contractor shall increase the principal amount of the performance and labor and materials payments bond(s) in direct proportion to any increase in the value of the Contract resulting from such change orders.

ARTICLE 12 - UNCOVERING AND CORRECTION OF WORK

12.1.1 Add the words "or Owner's" after the word "Architect's" in lines 1 and 3. Add the words "or Owner" after the word "Architect" in line 2.

12.1.2 Add the words "or Owner" after the word "Architect" on lines 1 and 2.

12.2.2 Delete sub-subparagrapbs 12.2.2.1, 12.2.2.2 and 12.2.2.3 in their entirety and substitute with the following:

12.2.2 If, within one year after the date of final completion of the Work or designated portion thereof, or after the date for commencement of warranties established under subparagrapb 9.9.1, or by terms of any 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 at the Contractor's sole expense 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. This period of one year shall be extended with respect to portions of Work first performed after final completion, by the period of time between final completion and the actual performance of the Work. This obligation under this subparagraph 12.2.2 shall survive acceptance of the Work under the Contract and termination of the Contract. The Owner shall give such notice promptly after discovery of the condition.

ARTICLE 13 - MISCELLANEOUS PROVISIONS

13.1 Add the following to the end of subparagrapb 13.1:

The Work shall comply with all applicable laws, statutes, ordinances, codes, rules, regulations or orders during its performance and its completion.

13.4.1 Delete the words "by law" in line 3 and substitute with the words "at law or in equity".

13.4.3 Add new subparagraph 13.4.3 as follows:

No provision contained in the Contract Documents shall create or give to third parties any claim or right of action against the Owner or the Contractor except as specifically provided herein.

13.5.1 Delete subparagrapb 13.5.1 in its' entirety and substitute with the following:

If the Contract Documents, or any laws, ordinances, building codes, rules, regulations or orders of any governmental body or public or quasi-public authority

having jurisdiction over the Work or the site of the Project require any portion of the Work to be inspected, tested or approved, the Contractor shall give the Architect and the Owner timely notice thereof so Architect and Owner may observe such inspection, testing or approval. The Contractor shall bear all costs of such inspections, test or approvals except where the Contract Documents provide otherwise.

13.6 Delete subparagraph 13.6 in its' entirety.

13.7 Delete paragraph 13.7 in its' entirety.

13.8 CAPTIONS

13.8. The captions and headings of various Articles and Paragraphs in the Contract Documents are for convenience only and are not to be construed as defining or limiting, in any way, the scope or intent of the provisions hereof.

13.9 Add a new Paragraph 13.9 as follows:

13.9 SEVERABILITY

13.9 The invalidity of any covenant, restriction, condition, limitation in any other part or provision of the Contract Documents shall not impair or affect in any manner the validity, enforceability or effect of the remainder of the Contract Documents.

13.10 Add a new Paragraph 13.10 as follows:

In the event of any unavoidable cause beyond the control of the parties, whether natural or man-made, which renders the performance of this contract impossible, the contract shall be terminated. Such occurrences shall include, without limitation, death of the Contractor (in the event that the Contractor is a sole proprietor); destruction of all, or a major portion of the Contractor's equipment; legal order by a court of competent jurisdiction, or referendum barring performance of the contract;

war, famine, flood, plague, pestilence or act of God. Any amounts due to either party by the other as the result of actions taken pursuant to the contract prior to the occurrence which renders performance impossible shall be paid, but no further sums shall be due from either party to the other, by way of damages for the termination of the contract.

13.11 Add new paragraph 13.11 as follows:

The Contractor shall comply with Section 12-43 of the Connecticut General Statutes as may be amended.

Sec. 12-43. Property of nonresidents. All owners of real estate, or of tangible personal property located in any town for three months or more during the assessment year immediately preceding any assessment day, wbo are nonresidents of sucb town, shall file lists of such real estate and personal property with the assessors of the town in which the same is located on such assessment day, if located in such town for three months or more in such year, otherwise, in the town in which such property is located for the three months or more in such year nearest to sucb assessment day, under the same provisions as apply to residents, and such personal property shall not be liable to taxation in any other town in this state. The list of each nonresident taxpayer shall contain his post-office and street address. The assessors shall mail to each nonresident, or to his attorney or agent having custody of his taxable property, at least fifteen days before the expiration of the time for filing lists, blank forms for filing lists of sucb property. The lists of taxable property of nonresidents shall be arranged in alphabetical order and separate from the lists of residents, provided no sucb separation shall be necessary in any town the board of assessors of which, upon the request of its property tax collector, has made rules and regulations approved by the secretary of the office of policy and management setting up an alternative method of arrangement.

ARTICLE 14 - TERMINATION OR SUSPENSION OF THE CONTRACT

14.1.1 Delete the number "30" on line 1 and substitute with the number "60".

14.1.3 Delete subparagrapb 14.1.3 in its entirety and substitute with the following:

If one of the reasons described in subparagraph 14.1.1 or 14.1.2 exists, the Contractor may, upon seven additional days written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for work executed.

14.2.1 Delete subparagraph 14.2.1 in its' entirety and substitute with the following:

14.2.1 The Owner may terminate the Contract for any of the following causes:

14.2.1.1 If the Contractor shall institute or consent to proceedings requesting relief or arrangement under the Federal Bankruptcy Act or any similar or applicable federal or state law or if a petition under any federal or state bankruptcy or insolvency law is filed against the Contractor and such petition is not dismissed within sixty (60) days from the date of said filing, or if the Contractor admits in writing his inability to pay his debts generally as they become due, or if he makes a general assignment for the benefit of his creditors, or if a

receiver, liquidator, trustee or assignee is appointed on account of his bankruptcy or insolvency; or

14.2.1.2 If a receiver of all or any substantial portion of the Contractor's properties is appointed; or

14.2.1.3 If the Contractor abandons the Works; or

14.2.1.4 If the Contractor fails to prosecute the Work promptly and diligently; or

14.2.1.5 If the Contractor fails or refuses to supply enough properly skilled workers or proper materials for the Work; or

14.2.1.6 If the Contractor submits an Application for Payment, sworn statement, waiver of lien, affidavit or document of any nature whatsoever which is intentionally falsified; or

14.2.1.7 If the Contractor fails to make prompt payment to Subcontractors or for materials or labor or otherwise breaches his obligations under any Subcontract with a Subcontractor; or

14.2.1.8 If a mechanic's or materialman's lien or notice of lien is filed against any part of the Work or the site of the Project and not promptly bonded or insured over by the Contractor in a manner satisfactory to the Owner; or

14.2.1.9 If the Contractor disregards any laws, statutes, ordinances, rules, regulations or orders of any governmental body or public or quasi-public authority having jurisdiction of the Work or the site of the Project; or

14.2.1.10 If the Contractor otherwise substantively violates any provision of the Contract Documents.

14.2.2.1 Delete the semicolon after "Contractor" in line 2 and add:

and may request that the Contractor remove any part or all of his equipment, machinery, and supplies from the site of the Project within seven (7) days from the date of such request, and in the event of Contractor's failure to do so, may remove or store such equipment, machinery and supplies at the Contractor's expense;

14.2.4 Delete subparagraph 14.2.4 in its' entirety and substitute with the following:

If the unpaid balance of the Contract Sum exceeds all costs to the Owner of completing the Work, then the Contractor shall be paid for all Work performed by the Contractor to the date of termination. If such costs to the Owner of completing the Work exceed such unpaid balance, the Contractor shall pay the difference to the Owner immediately upon the Owner's demand. The costs to the Owner of completing the Work shall include (but not be limited to) the cost of any additional architectural, managerial and administrative services required thereby, any costs incurred in retaining another Contractor or other Subcontractors, any additional interest or fees which the Owner must pay by reason of a delay in completion of the Work, attorney's fees and expenses, and any other damages, costs and expenses the Owner may incur by reason of completing the Work or any delay thereof. The amount, if any, to be paid to the Owner or Contractor shall be certified by the Architect, upon application, in the manner provided in Paragraph 9.4, and this obligation for payment shall survive the termination of the Contract".

14.3.2 In line 1, delete "shall" and insert "may".

14.4.3 On line 2, insert a period after the word "termination" and delete the remaining words on lines 2 and 3.

ARTICLE 15 – CLAIMS AND DISPUTES

15.1.2 Delete the number "21" in line 4 and replace with the number "10".

15.2.1 Delete subparagraph 15.2.1 and substitute the following:

Decision of Architect. Claims, including those alleging an error or omission by the Architect, shall be referred initially to the Architect for decision. A decision by the Architect shall be required as a condition precedent to mediation, litigation or other formal method of dispute resolution of all Claims between the Contractor and the Owner arising prior to the date final payment is due, unless no decision has been rendered by the Architect within 45 days of referral of the Claim to the Architect or the Architect fails to provide a decision as scheduled in subparagraphs 15.2.2 through 15.2.5, whichever is later.

15.2.2 On line 4 add the word "or" after the word "Claim," and add a period after the word "compromise." Delete the balance of the paragraph after the word "compromise".

15.2.3 On lines 3 and 4 replace the words "Owner" and "Owner's" with "claimant" and "claimant's".

15.2.4 Delete the last sentence of subparagraph 15.2.4 and substitute the following:

"Within 10 days of receipt of the response or supporting data, if any, the Architect will either reject or approve the claims in whole or in part, or suggest a compromise."

15.2.5 Delete the second sentence of subparagraph 15.2.5.

15.2.9 Add new subparagraph 15.2.9 as follows:

If a claim has not been resolved after consideration of steps described in subparagraphs 15.2.1 through 15.2.5, then the parties shall make an additional good faith effort to resolve the claim through an informal dispute resolution process mutually agreeable to the parties. If the claim is still not capable of resolution within ten days or such other time period that is mutually agreed upon, the parties may proceed to arbitration, litigation, or formal alternate dispute resolution.

15.2.10 Add new subparagraph 15.2.10 as follows:

If no form of dispute resolution is mutually agreed upon, no party may compel arbitration, mediation or alternate dispute resolution, and the parties may pursue whatever legal remedies are available to them.

15.3 (15.3.1 – 15.3.3) Delete in its' entirety.

15.4 (15.4.1 – 15.4.3) Delete in its' entirety.

END OF SUPPLEMENTARY GENERAL CONDITIONS

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LOCKER ROOMS
103 RAYMOND ROAD
WEST HARTFORD, CONNECTICUT

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LOCKER ROOMS
103 RAYMOND ROAD
WEST HARTFORD, CONNECTICUT

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A-6 DOOR ELEVATIONS AND DETAILS
A-7 CASEWORK PLANS AND DETAILS

FINISH DRAWINGS

F-0 FINISHES KEY
F-1 FINISHES AND FURNITURE FLOOR PLANS

PLUMBING DRAWINGS

FP-1.1 FIRE PROTECTION FLOOR PLANS

PLUMBING DRAWINGS

P-1.1 PLUMBING FLOOR PLANS
P-2.1 PLUMBING DETAILS

MECHANICAL DRAWINGS

M-1.1 MECHANICAL FLOOR PLANS
M-2.1 MECHANICAL DETAILS

ELECTRICAL DRAWINGS

E-1.1 ELECTRICAL POWER FLOOR PLANS
E-2.1 ELECTRICAL POWER DETAILS
EL-1.1 ELECTRICAL LIGHTING FLOOR PLANS

END OF LIST OF DRAWINGS

SECTION 01010 - SPECIAL CONDITIONS

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 wbo performs this Work. Note also all Addenda.

1.02 USE OF BUILDING BY THE OWNER

A. Tbe West Hartford Police Department will be occupied during the construction process. All work must be carefully coordinated with the Town and Architect to insure satisfactory operational conditions for patrons and staff.

1.03 EXISTING CONDITIONS AND MEASUREMENTS

A. Each Bidder will be held to have examined the premises and satisfied himself with the conditions whicb 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 _____, _____ __, 2014, at 10:00 AM local time at the West Hartford Police, 103 Raymond Road, West Hartford, CT.

1.04 INTENT

A. These Specifications with the accompanying Drawings are intended to describe and illustrate all material, labor, equipment and wbatsoever else necessary to complete the Locker Room Renovations for the West Hartford Police, West Hartford, CT.

B. For convenience of reference, these Specifications are separated into titled Divisions and Sections. Such separations shall not, bowever, operate to make the Architect an arbiter to establish limits to Contracts between the Contractor and Subcontractors. Tbe 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 sbown 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 manufacturers 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 metbod 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 if installation, erection, fabrication and workmanship listed or mentioned herein.

1.05 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 eacb 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.

1.06 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.

1.07 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 within 180 calendar days. 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.

B. Submit immediately after the Contract is let, an itemized breakdown of estimated cost in detail.

1.08 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 he allowed for conditions resulting from lack of said cooperation and coordination.

1.09 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 hrought to points of use on the site. Each sball 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 not available for the Contractor. Contractors shall make arrangements for their own water supply.

C. Electrical Service

1. Existing service is not availahle for Contractor. Contractors shall make arrangements for their own temporary power service.

2. Contractors shall be responsible for furnishing such light bulbs and extension cords as may he essential to the execution of their respective hranches 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 Contractor.

E. Job Telephone - Existing telephone service within the building is not available to the Contractor. Contractors shall make arrangements for their own telephone communication.

1.10 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 whicb 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 sball fully restore tbe 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 sboring, 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 sball 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 wben 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 building 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 sball be stored in or close to the building at any time.

H. Precaution must be exercised at all times for the protection of persons and property. The safety provisions of applicable laws, construction codes must be observed; Contractor shall take or cause to be taken such additional safety and bealth 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.

1. 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 sball be repaired to the satisfaction of the Arcbitect at no additional cost to the Owner.

1.11 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.

1.12 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 building exit ways shall be maintained at all times during the work day.

1.13 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.

1.14

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.

1.15 FIRE EXTINGUISHERS

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

1.16 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.

1.17 GENERAL COORDINATION

A. There sball be cooperation and coordination with respect to time, space, work, etc., between the General Contractor, Subcontractors and all otber 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 Arcbitect 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 sucb 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.

1.18 DELIVERY STORAGE AND HANDLING

A. All materials and equipment shall be so delivered, stored and bandled 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 whicb could be affected by dampness sball be stored in suitable substantial watertight storage facilities maintained in good condition throughout their use.

C. Rigid insulation board shall not be stored within the building. Provision shall be made for its protection from the weather and vandals elsewhere on the site.

1.19 FINAL CLEANING

A. All accumulated rubbisb shall be removed from the building 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. Tboroughly 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 use seven (7) prior to achieving Substantial Completion of the project. 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.

1.20 SOCIAL SECURITY TAXES

A. The Contractor and eacb 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. Tbe Contractor shall also indemnify and hold the Owner barmless 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.

1.21 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.

1.22 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 bave 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 whicb may be incurred by reason of their agents, employees, material men or Subcontractors failing to so comply.

C. Tbe 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.

1.23 JOB MEETINGS

A. Meetings conducted at the job site hy the Architect's representative for the purpose of coordinating and ohserving the work shall be mandatory for the General Contractor and or his/her superintendent. Also, at times, the Architect's representative will designate certain Suhcontractors to attend.

1.24 LIST OF CONTACTS

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

1.25 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 he availahle at all times to the Architect or his authorized representatives.

1.26 DRAWINGS FURNISHED

A. Six (6) copies of the Drawings and Specifications will be allowed the General Contractor hy the Owner. If more are required, the General Contractor shall pay the cost of reproduction.

END OF SECTION 01010

SECTION 01040 - 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. Field engineering is included in Sections 01050, "Field Engineering" and Section 02219, "Excavating, Filling, and Grading".

C. Requirements for the Contractor's Construction Schedule are included in Section 01010, "Summary of Work".

D. Requirements for the Scheduling and Coordination of Tests and Inspections are included in Section 01400, "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 scbeduled 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 01300, "Submittals and Product Substitutions."
4. Refer to Division - 15, Section "Basic Mechanical Requirements," and Division - 16, Section "Basic Electrical Requirements" for specific coordination drawing requirements for mecbanical 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 eacb 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 he 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.
   h. 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 he 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 eacb meeting.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION PROVISIONS

A. Inspection of Conditions: Require the Installer of eacb major component to inspect both the substrate and conditions under whicb Work is to be performed. Do not proceed until unsatisfactory conditions bave 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 eacb 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 Heigbts: 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, sucb exposures include, but are not limited to, the following:

1. Excessive static or dynamic loading.
2. Excessive internal or external pressures.
3. Excessively higb or low temperatures.
4. Tbermal 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 01040

SECTION 01300 - 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 01400 "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 eacb item listed:

   a. Generic name.
   b. Related Specification Section.
   c. Change Orders (numbers) that bave affected value.
   d. Dollar value.
   e. Percentage of Contract Sum to tbe 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 Scbedule of Values for initial cost of the materials, for eacb subsequent stage of coinpletion, and for total installed value of that part of the Work.
7. Sbow 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. Highligbt, 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. Sbop 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. Sbeet Size: Except for templates, patterns and similar full size Drawings, submit Sbop Drawings on sheets at least 8 ½" x 11", but no larger than 24" x 36".
7. Do not use Sbop 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 eacb element of construction or system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color cbarts, 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. Wbere 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 finisbed 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 matcb 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 cbeck 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. Wbere 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 cbaracteristics.

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, which ever 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 tbe 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. Returoed 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: Tbe 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. Tbe 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. Tbe 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 01300

SECTION 01400 - 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. Tbese 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 reasouable 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: Tbe 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. Neitber 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. Tbe General Contractor is responsible for scbeduling 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. Tbe 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 finisb 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 01400

SECTION 01600 - 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. Tbis 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 01300, "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 sbown, noted, scheduled, and specified are used to belp the reader locate the reference. There is no limitation on location.

C. Directed: Terms such as directed, requested, autborized, 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 authoritles 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, assemhly, installation, and similar operations.

G. Install: The term install descrihes operations at the Project site including the actual unloading, unpacking, assemhly, 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 he performed hy specialists who are recognized experts in those operations. The specialists must he engaged for those activities, and their assignments are requirements over which the Contractor has no choice or option. However, the ultimate responsihility 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 huilt.

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 nsed 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 **West Hartford Police Department, 103 Raymond Road, West Hartford, 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 Arcbitect, 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: Furnisb all materials and accomplisb 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 wbere 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 sbown 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: Eacb 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. Wbere such acronyms or abbreviations are nsed 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. Scbedule 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 bandling, 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 weathertigbt enclosure, with ventilation adequate to prevent condensation. Maintain temperature and bumidity 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 tbe 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. Semiproprietary 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 01600

SECTION 01700 - 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 - 2 through - 16.

C. Refer also to Project Phasing requirements (Section 01010) and how they relate to closeout of each phase of construction.

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 finisbes.

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 wbere 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. Reinspection 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 reinspection, 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 sbown. 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 sbeets, 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 and included in Section 01500 "Temporary Facilities".

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 bard-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 01700

SECTION 01740 - 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 01710 "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 - 16.
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 bas 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 bas 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 rigbt to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.

E. Tbe 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 sucb 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 01740

SECTION 02070 - 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.

B. Related Work Specified Elsewhere, including but not limited to:

1. Division 15 - Mechanical
2. Division 16 - 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 fnr 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 finisb 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 metbods 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 State of Connecticut 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 demolisbed 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 wbere 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 scbedule 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 througbout structure and remove materials so as to not impose excessive loads to supporting walls, floors, or framing.

D. Below-Grade Construction: Demolisb foundation walls and other below-grade construction, including concrete slabs, to a depth of not less than 42 incbed below finisb 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 02070

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 boles 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 patcb 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 Arcbitect'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 patcbed in a visually unsatisfactory manner.

F. If possible, retain the original installer or fabricator, or another recognized experienced and specialized firm to cut and patcb 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 patcbing of structural work involves the addition of reinforcement, submit details and engineering calculations to show bow 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 mecbanical 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 scbeduled 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 band or small power tools designed for sawing or grinding, not bammering and cbopping. cut through concrete and masonry using a cutting machine such as a carborundum saw or core drill to insure a neat bole. Cut boles and slots neatly to size required with minimum disturbance of adjacent work. To avoid marring existing finisbed surfaces, cut or drill from the exposed or finisbed side into concealed surfaces. Temporarily cover openings wben not in use.

D. By-pass utility services such as pipe and conduit, before cutting, where sucb 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 02075

SECTION 03540 – SELE-LEVELING CONCRETE 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 09650 - Resilient Flooring and Base
2. Section 09900 - Carpeting

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 wbich 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 sball be ARDEX P-51 Primer.

C. Primer for non-porous subfloors, cutback and other adhesive residues, wooden subfloors sball 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 wben 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! Cbeck 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. Mecbanically 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 sball 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 througb 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 pusb 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 pusb 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, sligbtly 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 bours.

3.4 APPLICATION OF UNDERLAYMENT

A. Installation

1. Wooden subfloors require the use of the mesh-reinforced ARDEX K-15 + E-25 Underlayment System. After priming, install 3.4 galvanized diamond metal lath by stapling to the wooden subfloor approximately every 6 inches on center.

2. 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 03540

SECTION 04200 - 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 and anchors related to masonry construction.

B. Products installed but not furnished under this Seetion include the following:

1. Steel lintels in unit masonry as specified in Section 05500 "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 06105 "Miscellaneous Carpentry.
2. Fire rated filler and caulk at tops of rated partitions are specified in Section 07270, "Firestopping".

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 eacb 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 bandle 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 wbere 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. 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 eacb day's work. Cover partially completed masonry wben 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.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Comply with referenced unit masonry standard and other requirements specified in this Section applicable to eacb 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)

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. Concrete Building Brick: Specified dimensions as follows:

1) Standard Modular: 3-5/8 incbes wide by 2-1/4 inches high by 7-5/8 incbes long.

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. Type M or S sbould be used. 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.

C. Products: Subject to compliance with requirements, provide one of the following:

1. Colored Masonry Cement:

a. "Colorbond Custom Color Masonry Cement," Centurion
b. "Atlas Custom Color Masonry Cement," Lehigh Portland Cement Co.
c. "Flamingo Color Masonry Cement," The Riverton Corporation.

2. Varying mortar colors may be selected for type 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: 0.1875 inch.
2. Wire Diameter for Cross Rods: 0.1483 inch (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) "Truss Type, Extra Heavy Duty", by Dur-O-Wal, Inc.
2) "Truss Tie-Wall, Heavy Class", by National Wire Products, Inc.
3) "Standard Truss", Keywall.

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:

a. 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 incbes), for all sheet metal ties and ancbors.

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

A. General: Two-piece assemblies as described below allowing vertical or horizontal differential movement between wall and framework 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. Screw-Attached Masonry Veneer Anchors: Units consisting of wire tie section and metal anchor section complying with the following requirements:

1. Wire Tie Diameter: 3/16 incb
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. Neoprene Gaskets: Screw-attached masonry veneer anchor manufacturer's standard closed cell neoprene gaskets manufactured to fit hehind anchor plate and to prevent moisture from penetrating through screw holes.

D. Products: Subject to compliance with requirements, provide the following:

1. Screw-Attached Masonry Veneer Anchors:

a. D/A 213, type .5, 1, 1.5 or 2 Extra Heavy Duty," Dur-O-Wal, Inc.
b. D/A 5213, Dur-O-Wal, Inc.

2. Provide powder-actuated fasteners, with a minimum working strength value of 100 lhs., 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 descrihed helow allowing vertical or horizontal differential movement hetween 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 fahricator 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: Suhject to compliance with requirements, provide the following:

1. Channel Slots:

a. D/A 904, Dur-O-Wal, Inc.

2. Triangle Tie Slot Anchors:

a. D/A 918-922, Dur-O-Wal, Inc.

D. For the anchorage of masonry to the webs of steel beams at cavity wall conditions, furnish to the structural steel fahricator channel anchor slots formed from 16 gauge brite sheet steel, 8" long.

1. Provide cbannel slot ancbors formed from 16 gauge corrugated brite sheet metal, 3-1/2" long.

E. Products: Subject to compliance with requirements, provide the following:

1. Cbannel Slots:

a. D/A 901, Dur-O-Wal, Inc.

2. Corrugated Channel Slot Anchors:

a. D/A 912, Dur-O-Wal, Inc.

2.10 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 ancborage 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. D/A 100, Dur-O-Wal, Inc.

2. Triangle Tie Slot Anchors:

a. D/A 720-724, Dur-O-Wal, Inc.

2.11 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. D/A 2200, Dur-O-Wal, Inc.

2.12 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 ancbors in all locations wbere 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).

2.13 SELF-ADHERING MEMBRANE MATERIALS

A. Flexible rubberized aspbalt, self adhering and self-sealing through-wall flashing: Manufacturer's standard flashing of type indicated below:

1. PERM-A-BARRIER wall flashing as manufactured by Grace Construction Products, or equal.

a. Weight: 32 mil of self-adhesive rubberized asphalt integrally bonded to 2 mil of cross-laminated, high density polyethylene film to provide a min 1.0 mm (40 mil) thick membrane. Membrane shall be interleaved with disposable silicone-coated release paper until installed.

2. Application: Use where flashing is fully concealed in masonry, wbere self-adhering membrane is protecting structural steel from exposed cavity, and as indicated on the drawings.

2.14 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. "Rapid Expansion Joint, D/A 2015", Dur-O-Wal, Inc.
2. "NS Closed Cell Neoprene Sponge", Hohmann and Barnard, Inc.
3. "032 Expansion Joint", National Wire Products Ind.

C. Bond Breaker Strips: Asphalt-saturated organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

D. Weep Holes: Provide the following:

1. Cell Vents: Cell vents shall consist of many small adjacent passageways bonded together in one unit. Cellular composition provides easy drainage for moisture along the full height of the head joint.
2. Size: For cmu veneers, 3/8"w. x 3-3/8"h. x 4"l, jumbo
   For brick veneers, 3/8"w. x 2-1/2"b. x 3-3/8"l., regular
3. Color: Clear
4. Products: Subject to compliance with requirements, provide one of the following:

   a. "No. 85 Cell Vent", Heckmann Building Projects, Inc., or equal.

E. Wire Mesb Wall Ties: 2" x 2" x 16 gauge bot dipped galvanized wire for intersections of non-structural masonry walls.

1. Products: Subject to compliance with requirements, provide one of the following:

   a. "No. 269 Wire Mesh Wall Tie", Heckman Building Products, Inc.

F. Mortar Net: Provide the following:

1. High-density polyethylene in two inch thickness. Product to be 90% open weave mesh in a dovetail configuration connected by a continuous bottom strip.
2. #MN 10-2, as manufactured by Mortar Net USA Ltd, or equal.

2.15 CAVITY WALL INSULATION

A. Extruded Polystyrene Board Insulation: Rigid cellular polystyrene thermal insulation with closed cells and integral higb-density skin, formed by the expansion of polystyrene base resin in an extrusion process to comply with ASTM C 578, Type IV; in manufacturer's standard lengths and widths; thicknesses as indicated.

B. Adhesive: Type recommended by insulation board manufacturer for application indicated.

2.16 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.

2.17 FLUID-APPLIED AIR AND VAPOR BARRIER MEMBRANE

A. Description: A fluid-applied air and vapor barrier material shall be water-based and an elastomeric, single-component, polymer-modified, asphaltic membrane, and contain less than 100 gm/l VOC.

B. Acceptable Materials: ExoAir 120 fluid-applied air and vapor barrier membrane by Tremco Inc., Beachwood, Ohio and Toronto,Ontario, Phone 800-321-7906. www.tremcosealants.com, or equal.

C. Apply to all double wythe masonry cavity walls where the exterior side of the inner wythe is exposed to environmental conditions.

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 rougb-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 sbown. Build single-wythe walls to the actual thickness of the masonry units, using units of nominal thickness indicated.

C. Build cbases 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 matcb 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 that nominal 4-inch horizontal face dimensions at corners or jambs.

1. Running bond **to match the existing building** 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 hond 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 masonry units with completely filled bed and head joint; hutter 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 wehs 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 hed including areas under cells.

C. Cut joints flush for masonry walls to be concealed or to be covered hy other materials.

D. Tool joints for masonry walls to be exposed in compliance with referenced masonry standard **and to match existing masonry wall construction**.

E. Tool joints in block veneer as directed by the Architect **and to match existing masonry wall construction**.

3.6 STRUCTURAL BONDING OF MULTIWYTHE 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 ½ 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 CAVITIES / AIR SPACES

A. Keep cavities/air spaces clean of mortar droppings and other materials during construction. Strike joints facing cavities/air spaces flush.

B. Tie exterior wythe to backup with individual metal tie pintles set into continuous horizontal joint reinforcing.

C. Provide weep holes in exterior wythe of cavity wall located immediately above ledges and flashing, spaced 2 feet o.c., unless otherwise indicated.

D. Apply damproofing as specified to exterior face of backup wythe prior to applying insulation.

3.8 CAVITY WALL INSULATION

A. On units of extruded polystyrene board insulation, install small pads of adhesive spaced approximately 1 feet o.c. both ways on inside face or attach to inside face with plastic fasteners designed for this purpose. Fit courses of insulation between wall ties and other confining obstructions in cavity, with edges butted tightly both ways. Cut insulation board to 16 incb width to fit typical vertical spacing of ties, or closer if required to accommodate smaller spacing as may occur. Press units firmly against inside wythe of masonry or other construction as sbown.

1. Fill all cracks and open gaps in insulation with crack sealer compatible with insulation and masonry.

3.9 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, M 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.

3.10 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 betwcen 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.

3.11 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 non metallic 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 07920.

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 ¾ inch.

3.12 LINTELS

A. Install steel lintels where indicated, and wherever openings of more than 2 feet for block size units are shown. Provide minimum bearing of 5 inch at each jamb, unless otherwise indicated.

B. Provide minimum bearing of 8 inches at each jamb, unless otherwise indicated.

3.13 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.

3.14 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 04200

SECTION 05500 - METAL FABRICATIONS

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 sball 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 metal fabrications:

1. Loose steel lintels
2. Steel pipe guardrails and handrails.
3. Miscellaneous brackets, clip angles, pipe sleeves.

B. Related Sections: Tbe following Sections contain requirements that relate to this Section:

1. Section 04200 "Unit Masonry" for installation of loose lintels in masonry work.

1.3 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.

B. Sbop 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.

F. 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. 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 Dl.1 "Structural Welding Code--Steel," AWS Dl.2 "Structural Welding Code--Aluminum," and AWS Dl.3 "Structural Welding Code--Sheet Steel."

1. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, bas undergone re-certification.

1.5 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 sbop drawings. Coordinate fabrication scbedule 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.

1.6 PERFORMANCE REQUIREMENTS

A. Structural Performance: Engineer, fabricate, and install handrails and railing systems to withstand the following structural loads without exceeding the allowable design working stress of the materials involved, including anchors and connections. Apply eacb load to produce the maximum stress in eacb of the respective components of eacb metal fabrication.

1. Handrails Not Serving as Top Rails: Capable of withstanding the following loads applied as indicated:

a. Concentrated load of 200 lbf applied at any point and in any direction.
b. Uniform load of 50 lbf per linear foot applied in any direction.
c. Concentrated and uniform loads above need not be assumed to act concurrently.

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, wasbers, 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 PAINT

A. Sbop 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 Ancbors: 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 sbop 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 strengtb and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finisb exposed welds and surfaces smooth and blended so that no roughness sbows after finishing, and contour of welded surface matcbes those adjacent.

G. Form exposed connections with hairline joints, flusb and smooth, using concealed fasteners wberever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts. Locate joints wbere 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 ancbors for interconnection and attachment of metal fabrications to other work.
2. Furnisb 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 STEEL PIPE HANDRAILS AND RAILING SYSTEMS

A. General: Fabricate pipe handrails and railing systems to comply with requirements indicated for design, dimensions, details, finish, and member sizes, including wall thickness of pipe, post spacings, and anchorage, but not less than that required to support structural loads.

B. Interconnect railing and handrail members by butt-welding or welding with internal connectors, at fabricator's option, unless otherwise indicated.

1. At tee and cross intersections, cope ends of intersecting members to fit contour of pipe to which end is joined, and weld all around.

C. Form changes in direction of handrails and rails as follows:

1. By bending.

D. Form simple and compound curves by bending pipe in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross section of pipe throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of pipe.

E. Provide wall returns at ends of wall-mounted handrails, unless otherwise indicated.

F. Close exposed ends of pipe by welding 3/16-inch-thick steel plate in place or with prefabricated fittings, except where clearance of end of pipe and adjoining wall surface is 1/4 inches or less.

G. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, end closures, flanges, miscellaneous fittings, and anchors for interconnections of pipe and attachment of handrails and railing systems to other work. Furnish inserts and other anchorage devices for connecting handrails and railing systems to concrete or masonry work.

H. For galvanized handrails and railing systems, provide galvanized fittings, brackets, fasteners, sleeves, and other ferrous components.

I. For non-galvanized steel handrails and railing systems, provide non-galvanized ferrous metal fittings, brackets, fasteners, and sleeves, except galvanize anchors embedded in exterior masonry and concrete construction.

2.8 FINISHES, GENERAL

A. Comply with NAAMM "Metal Finishes Manual" for recommendations relative to applying and designing finishes.

B. Finish metal fabrications after assemhly.

2.9 STEEL AND IRON FINISHES

A. Galvanizing: For those items indicated for galvanizing, apply zinc coating by the hot-dip process complying with the following requirements:

1. ASTM A 123 for galvanizing both fabricated and unfabricated iron and steel products made of uncoated rolled, pressed, and forged shapes, plates, hars, and strip 0.0299 inch (0.76 mm) thick or thicker.
2. Galvanize miscellaneous metals in the following locations:

1. Exterior locations.
2. Other locations as indicated on the Contract Documents.

B. 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 fahrications:

1. Exteriors (SSPC Zone 1B): SSPC-SP 6 "Commercial Blast Cleaning."
2. Interiors (SSPC Zone 1A): SSPC-SP 3 "Power Tool Cleaning."

C. Apply shop primer to uncoated surfaces of metal fahrications, except those with galvanized finishes or to he embedded in concrete, sprayed-on fireproofing, or masonry, unless otherwise indicated. Comply with requirements of SSPC-PA 1 "Paint Application Specification No. 11I 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.

B. Set sleeves in concrete with tops flush with finish surface elevations. Protect sleeves from water and concrete entry.

3.2 INSTALLATION, GENERAL

A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fahrications 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 establisbed lines and levels.

C. Provide temporary bracing or ancbors 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 sbop-welded because of shipping size limitations. Do not weld, cut, or abrade the surfaces of exterior units that have been bot-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, finisb exposed welds and surfaces smooth and blended so that no roughness sbows after finishing, and contour of welded surface matches those adjacent.

3.3 INSTALLING STEEL PIPE RAILINGS AND HANDRAILS

A. Adjust handrails and railing systems prior to anchoring to ensure matching alignment at abutting joints. Space posts at spacing indicated or, if not indicated, as required by design loading. Plumb posts in eacb direction. Secure posts and railing ends to building construction as follows:

1. Ancbor posts to steel by welding directly to steel supporting members.
2. Anchor posts in concrete by means of pipe sleeves preset and ancbored into concrete. After posts have been inserted into sleeves, fill annular space between post and sleeve solid with the following anchoring material, mixed and placed to comply with anchoring material manufacturer's directions.

   a. Anchoring Cement.
   b. Leave anchorage joint exposed, wipe off surplns anchoring material, and leave 1/8 inch build-up, sloped away from post. For installations exposed on exterior, or to flow of water, seal anchoring material to comply with grout manufacturer's directions.

3. Anchor handrail ends into concrete and masonry with steel round flanges welded to rail ends and anchored into wall construction with drilled-in expansion anchors.

B. Secure handrails to wall with wall brackets and end fittings. Provide bracket with 1-1/2-incb clearance from inside face of handrail and finished wall surface. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads. Secure wall brackets and wall return fittings to building construction as follows:

1. Use type of bracket with predrilled hole for exposed bolt ancborage.
2. For concrete and solid masonry ancborage, use drilled-in expansion anchor.
3. For hollow masonry anchorage, use toggle bolts having square heads.

3.4 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 05500

SECTION 06105 - 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 roofing, roof venting, curbs, and plywood sheathing at roof construction (new and existing) as indicated on the drawings.
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 and protective wall guard systems
6. Installation of visual display boards and projection screens
7. Installation of equipment, appliances, and/or accessories not specifically identified within the specifications

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

1. Section 08710 "Door Hardware" for hardware furnished for installation under this Section.
2. Section 09255 "Gypsum Board Assemblies" for metal-stud formed partitions, and gypsum sheathing.
3. Section 10110 "Visual Display Boards" for blocking required for markerboards and tackboards.
4. Division 16 - Electrical, for backer boards, furnished and installed by Electrical Contractor.

1.3 SUBMITTALS

A. General: Submit the following according to Conditions of Contract and Division 1 Specification Sections.

B. Wood treatment data from cbemical treatment manufacturer. Include cbemical 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 cbemicals, 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: Furnisb 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 eacb 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 EXPOSED AND CONCEALED CONDITIONS

A. Species: Any one of the following:

1. Douglas fir.

B. Moisture Content: Kiln-dry, KD 19 or MC 19 (19 percent maximum moisture content).

C. Grade: No. 2, or better.

2.3 BOARDS FOR EXPOSED AND CONCEALED CONDITIONS

A. Species: Any one of the following:

1. Douglas fir.

B. Moisture Content: Kiln-dry, KD 19 or MC 19 (19 percent maximum moisture content).

C. Grade: No. 2, or better.

2.4 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 5/8 inch nominal.

C. Miscellaneous Exposed Interior Plywood: A-D Interior, thickness as indicated but not less than 5/8 inch nominal.

D. Roofing Plywood at Roof construction: 5/8" CD-EXT, exterior grade plywood, thickness as indicated but not less than 5/8 inch nominal.

E. Electrical/Telephone Backing Panels: Refer to Specification Division 16 for work performed by Electrical Contractor.

2.5 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.

2.6 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 witb masonry or concrete.
c. Within 18 inches of grade.

C. Construction Panels: Pressure treat with waterborne preservatives to a minimum retention of 0.25 pef. Provide thickness as indicated, but not less that 5/8 inch nominal.

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 AWPA 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. Predrill members when necessary to avoid splitting wood.

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, telephone cabinets, visual display boards and wall mounted hardware.

3.3 DOOR HARDWARE INSTALLATION

A. Mount bardware units at heigbts 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 bardware 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 ancbors 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 06105

SECTION 06402 - ARCHITECTURAL WOODWORK

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. Hardware and accessory materials as indicated.

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 06105 "Miscellaneous Carpentry".
2. Section 09900 "Painting" for final finishing of installed architectural woodwork.
3. Section 12300 "Manufactured Architectural Casework" for all plastic laminate and solid surface casework, cabinetry, and countertops.

1.3 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 woodwork during fabrication, finishing, and installation.

C. Shop drawings for woodwork and fittings showing plan layout, elevations, ends and cross-sections.

D. Product certificates signed by woodwork manufacturer certifying that products comply with specified requirements.

E. 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.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Firm experienced in successfully producing architectural woodwork 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 woodwork specified in this section, including fabrication, finishing, and installation.

C. AWI Quality Standard: Comply with applicable requirements of "Architectural Woodwork Quality Standards" published by the Architectural Woodwork Institute (AWI) except as otherwise indicated.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect woodwork 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 woodwork until painting, wet work, grinding, and similar operations that could damage, soil, or deteriorate woodwork have been completed in installation areas. If woodwork 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 Construction Manager.

C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.6 PROJECT CONDITIONS

A. Environmental Conditions: Do not install woodwork until optimum temperature and humidity conditions for woodwork have been attained and stabilized so that woodwork 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 woodwork is indicated to be fitted to other construction, check actual dimensions of other construction by accurate field measurements before manufacturing woodwork; show recorded measurements on final shop drawings. Coordinate manufacturing schedule with 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 woodwork without field measurements. Coordinate other construction to ensure that actual dimensions correspond to guaranteed dimensions.

C. Field Measurements: Verify sizes and shapes prior to fabrication by field measurements taken after base materials are installed.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Provide materials that comply with requirements of the AWI woodworking standard for each type of woodwork and quality grade indicated.

B. Lumber Standards: Comply with PS 20 "American Softwood Lumber Standard" for lumber and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee Board of Review.

C. Plywood Standards: Comply with PS 1 "U.S. Prnduct Standard for Construction and Industrial Plywood" for plywood and, for products not manufactured under PS 1, with APA PRP-108.

D. Hardwood Lumber Standard: Comply with NHLA, National Hardwood Lumber Association rules.

E. Inspection Agencies: Inspection agencies and the abbreviations used to reference them with lumber grades and species include the following:

1. SPIB - Southern Pine Inspection Bureau.
2. WCLIB - West Coast Lumber Inspection Bureau.
3. WWPA - Western Wood Products Association.

F. Woodworking Standard: Where indicated for a specific product, comply with specified Divisions of the following:

1. Architectural Woodwork Institute (AWI) Quality Standards.

G. Glued-Up Lumber Standard: Comply with PS 56.

2.2 FABRICATION, GENERAL

A. Wood Moisture Content: Comply with requirements of referenced quality standard for moisture content of lumber in relation to relative humidity conditions existing during time of fabrication and in installation areas.

B. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to radius indicated for the following:

1. Corners and edges of solid wood (lumber) members less than 1 inch in nominal thickness: 1/16 inch.
2. Edges of rails and similar members more than 1 inch in nominal thickness: 1/8 inch.

C. Complete fabrication, including assembly, finishing, and bardware application, before shipment to project site to maximum extent possible. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

D. Factory-cut openings, to maximum extent possible, to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Smooth edges of cutouts and, where located in countertops and similar exposures, seal edges of cutouts with a water-resistant coating.

2.3 HARDWARE AND ACCESSORY MATERIALS

A. Hardware Standard: Comply with ANSI/BHMA A156.9 "American National Standard for Cabinet Hardware" for items indicated by reference to BHMA numbers or referenced to this standard.

B. Wardrobe Rod: Manufacturer's standard 1-1/16 inch diameter metal tubing, polished finish Chrome flange mounting brackets.

C. Intermediate Closet and Utility Sbelving Supports: Painted steel with welded diagonal support and framed rod support.

2.4 CLOSET AND UTILITY SHELVING

A. Quality Standard: Comply with AWI Section 600.

B. Grade: Custom.

C. Edge Treatment: bullnose

D. Shelving: MDF with bullnose, 1 incb thickness.

1. Provide steel intermediate supports for shelving spanning more than 36".

E. Ends and Back Cleats: MDF, species matching shelving, ¾ inch x 3-½ inch.

F. Finish: Transparent finish by Section 09900, "Painting".

2.5 WINDOW AND DOOR TRIM

A. Quality Standard: Comply with AWI Section 600.

B. Grade: Custom.

C. Wood Species: MDF

D. All fasteners to be filled with wood filler to completely conceal fasteners.

E. Refer to drawings for dimensional information and outlines of required sills, stools, and required trims.

F. Finisb: Solid paint finisb by Section 09900, "Painting".

2.6 FASTENERS AND ANCHORS

A. Screws: Select material, type, size, and finisb required for each use. Comply with FS FF-S-111 for applicable requirements.

1. For metal framing supports, provide screws as recommended by metal framing manufacturer.

B. Nails: Select material, type, size, and finish required for each use. Comply with FS FF-N-105 for applicable requirements.

1. Countersink nails, fill surface flusb, and sand where face nailing is unavoidable.

C. Anchors: Select material, type, size, and finisb required by eacb substrate for secure anchorage. Provide nonferrous metal or bot-dip galvanized ancbors and inserts on inside face of exterior walls and elsewhere as required for corrosion resistance. Provide toothed steel or lead expansion bolt devices for drilled-in-place anchors. Furnisb inserts and anchors, as required, to be set into concrete or masonry work for subsequent woodwork anchorage.

D. Adhesives: Comply with manufacturer's recommendations for adhesives.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates for compliance with requirements for installation tolerances and other conditions affecting installation and performance of finish carpentry. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Condition woodwork to average prevailing humidity conditions in installation areas before installing.

B. Deliver inserts and similar anchoring devices to be built into substrates well in advance of time substrates are to be built.

C. Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including back priming and removal of packing.

3.3 INSTALLATION

A. Quality Standard: Install woodwork to comply with AWI Section 1700 for same grade specified in Part 2 of this section for type of woodwork involved.

B. Install woodwork plumb, level, true, and straight with no distortions. Shim as required with concealed shims. Install to a tolerance of 1/8 inch in 8 feet-0 inch for plumb and level (including tops) and with no variations in flushness of adjoining surfaces.

C. Scribe and cut woodwork to fit adjoining work and refinish cut surfaces or repair damaged finish at cuts. All surfaces of exterior trim to receive primed finish following cutting and scribing.

D. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation. Except where prefinished matching fastener heads are required, use fine finishing nails for exposed nailing, countersunk and filled flush with woodwork and matching final finish where transparent finish is indicated.

E. Caulk all exposed joints of installed woodwork prior to receiving finish paint.

3.4 PROTECTION

A. Provide final protection and maintain conditions in a manner acceptable to manufacturer and installer that ensures woodwork is without damage or deterioration at time of Substantial Completion.

END OF SECTION 06402

SECTION 07270 - 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 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, partitions and floors including both empty openings and openings containing cables, pipes, ducts, conduits, and other penetrating items.
5. Sealant joints in fire-resistance-rated construction.

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

1. Section 04200 "Unit Masonry" for joint fillers for non-fire-resistive-rated masonry construction.
2. Section 07920"Joint Sealers" for non-fire-rated joint sealers.
3. Division 15 Sections specifying ducts and piping penetrations.
4. Division 16 Sections specifying cable and conduit penetrations.

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 pet 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. Wbere firestop systems protect penetrations located in construction containing doors required to bave 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.

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. Througb-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 througb-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 cbaracteristics per ASTM E 119 under conditions wbere the positive furnace pressure differential is at least 0.01 inch of water, asmeasured 0.78 incb 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 bas 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 cbanges, 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 eacb 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.

2. Silicone Sealants:

a. Dow Corning Firestop Sealant SL 2002, Dow Corning Corp.
b. Pensil 100 Firestop Sealant, General Electric Co.
c. Nelson 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. 864/Pecora Corp.
b. Dow Corning 795, Dow Corning Corp.
c. Silproof, General Electric Company

2. Multicomponent, Nonsag, Urethane Sealant:

a. Dynatrol II, Pecora Corp.
b. Sonolastic NP 2, Sonneborn Building Products Div., ChemRex Inc.
c. Dymeric Plus, 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 07270

SECTION 07920 - JOINT SEALERS

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 joint sealants for the following locations:

1. Exterior joints in vertical surfaces and nontraffic horizontal surfaces as indicated below:
   a. Control joints and expansion joints in unit masonry where exposed to view.
   b. Perimeter joints between unit masonry and frames of doors, windows, and louvers.
   c. Control and expansion joints in soffits and overhead surfaces.
   d. Other joints as indicated.

2. 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 exterior openings.
   d. Vertical control joints on exposed surfaces of interior unit masonry and concrete walls and partitions.
   e. Perimeter joints of porcelain toilet fixtures
   f. All exposed joints between steel columns, masonry, drywall, or other dissimilar materials.

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

1. Section 05800 "Expansion Control" for building expansion and seismic control.
2. Section 07270 "Firestopping" for fire-resistance-rated joint sealants.
3. Section 07550 "Roofing" for sealing joints related to flashing and sheet metal for roofing.
4. Section 08800 "Glazing" for sealants used in glazing.

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 installarion 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.

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 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 contrul 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, nonoutgassing in unruptured state.
3. Proprietary, reticulated, closed-cell polymeric foam, nonoutgassing, 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 wbere such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.5 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, mecbanical 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 wbere 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 sbapes 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 eacb joint configuration, and providing uniform, cross-sectional sbapes 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 GUARANTEE AND CERTIFICATION

A. This Contractor shall guarantee **in writing** 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 whicb becomes defective during guarantee term without cost to the Owner.

3.7 SCHEDULE

A. Exterior Joints:

1. Metal frame and louver perimeters: Multi-Part, Non-Sag Urethane Sealant
2. All exposed joints between dissimilar materials: MultiPart, Non-Sag Urethane Sealant

B. Interior Joints

1. Masonry to door frames: Acrylic-Emulsion Sealant
2. Masonry or drywall to window frames: Acrylic-Emulsion Sealant
3. Masonry to drywall: Acrylic-Emulsion Sealant
4. All expansion and control joints: Acrylic-Emulsion Sealant
5. Steel frame and louver perimeters: Acrylic-Emulsion Sealant
6. Porcelain Plumbing fixtures: Acrylic-emulsion Mildew-Resistant Sealant
7. All exposed joints between steel columns and masonry, drywall or other dissimilar materials: Urethane Sealant or Acrylic-Emulsion Sealant if in contact with epoxy paint.

END OF SECTION 07920

SECTION 08100 - STANDARD STEEL DOORS AND 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:
   1. Doors: standard steel doors for interior and exterior locations.
   2. Frames: Pressed steel frames for doors, sidelights, borrowed lite, transom frames
   3. Assemblies: Provide standard steel door and frame assemblies as required for the following:
      a. Labeled and fire rated.
      b. Thermal rated (insulated).

1.3 RELATED SECTIONS

A. Painting primed doors and frames is specified in Section 09900, "Painting."

B. Wood doors are specified in Section 08212, "Stile and Rail Wood Doors".

C. Door bardware is specified in Section 08710 "Door Hardware".

D. Glass and Glazing is by Section 08800 "Glazing".

E. Building in of anchors and grouting of frames in masonry construction is specified in Section 04200, "Unit Masonry".

1.4 REFERENCES

A. NFPA 80: Standard for Fire Doors and Other Opening Protective

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 Sbeet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

K. ASTM A 1008: Standard Specification for Steel Sbeet, 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, finisbes, detail of molding, conduit and prep for power signal and control systems.

C. Sbop drawings sbowing fabrication and installation of standard steel doors and frames. Include details of eacb 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. Sbow 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 experiencc in similar projects.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver doors and 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 doors and 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 doors and 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 doors and 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.
f. Pella Corporation

2.2 MATERIALS

A. Steel requirements
1. Interior doors and frames: Comply with ASTM A653, Designation A40.
2. Exterior doors and frames: Comply with ASTM A653, Designation A60.

B. Door cores
1. Interior openings: Impregnated Honeycomb, with 1" cell diameter.
2. Exterior openings: Polyurethane with an R value of 8.66 (hr °F-sq/ft)/BTU or better

2.3 FABRICATION

A. Frames
1. Frame assembly: face 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. Exterior openings: 14-gauge
d. 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 08800

B. Anchors
1. Suitable for wall conditions.
2. Located close to hinge reinforcements and at the same beigbt on strike jamb.
a. Quantity: 2 per jamb up to 60" of door opening height, one additional ancbor for each additional 30" of door heigbt (or fraction thereof).
b. An additional floor anchor at the bottom of eacb jamb.

C. Doors
1. Interior openings: Full flusb lock seam on edge, 18-gauge
2. Exterior openings: Full flusb lock seam on edge, 16-gauge
3. Door performance: Comply with ANSI A250.4
a. Level A (heavy duty) for exterior doors
b. Level B (moderate duty) for interior doors
4. End channels: 16-gauge, spot welded every 6".

a. Interior openings: Steel flush channel unfilled at top location. Steel inverted channel at bottom location.
b. Exterior openings: Steel flush channel sealed water tight at top location. Steel inverted channel with weep holes at bottom location.

5. Vertical edges on active doors:
   a. Beveled edges on both sides: 1/8" in 2".
   b. **Square vertical edges are not acceptable.**

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: ¾" without threshold.

E. Manufacturing tolerances:
1. Frames: Width: +1/16", -1/32"
   Face, stop, rabbet and jamh depth: +/-1/32
2. Doors: Width and height: +/- 3/64"
   Thickness: +/- 1/16"
   Flatness: +/- 1/16"
   Door Twist: +/- 1/16"

F. Fire rated openings
1. Manufacture doors and 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 lahel from one of the following testing agency:
   a. Underwriters Lahoratories (UL)
   h. 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. Door hardware preparation
1. Surface-applied hardware: factory reinforced only, 16-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 higb frequency hinge reinforcements, with a flange.
4. Lock front reinforcement: 12-gauge
5. Flush bolt reinforcement: 12-gauge
6. Closer reinforcement: 16-gauge
7. Other reinforcements: 16-gauge

I. 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.
3. Countersunk boles.
4. Install screws on non-secure side.
5. 18-gauge channel reinforcements on half-glass doors.
6. Glazing by Section 08800.

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 doors and 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

3.2 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 doors and frames until transfer of the building to the owner.

END OF SECTION 08100

SECTION 08710 - DOOR HARDWARE

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 items known commercially as finish or door hardware that are required for swing, sliding, and folding doors, except special types of unique hardware specified in the same Sections as the doors and door frames on which they are installed. Furnish and deliver all door hardware necessary for all doors, also hardware as specified berein and as enumerated in hardware sets and as indicated and required by actual conditions at the huilding. The hardware shall include the furnishing of all necessary screws, bolts, expansion shields, drop plates, and all other devices necessary for the proper application of the hardware.

B. *Hardware Supplier:* Must employ an experienced *Architectural Hardware Consultant (AHC)* who is available to Owner, Architect, and Contractor, at reasonable times during the course of the Work, for consultation.

C. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 08 Section "Hollow Metal Doors and Frames".
2. Division 08 Section "Flush Wood Doors".
3. Division 26 Section "Electrical".

1.3 REFERENCES

A. Standards:

1. ANSI/BHMA A156.1-2013 - Butts & Hinges
2. ANSI/BHMA A156.4-2008 - Door Controls - Closers
3. ANSI/BHMA A156.6-2010 - Architectural Door Trim
4. ANSI/BHMA A156.7-2009 - Template Hinge Dimensions
5. ANSI/BHMA A156.8-2010 - Door Controls - Overhead Stops and Holders
6. ANSI/BHMA A156.13-2012 - Mortise Locks & Latches, Series 1000
7. ANSI/BHMA A156.17-2010 - Self Closing Hinges & Pivots
8. ANSI/BHMA A156.18-2012 - Materials and Finishes
9. ANSI/BHMA A156.21-2009 - American National Standard for Thresholds

10. ANSI/BHMA A156.26-2012 - Continuous Hinges
11. ANSI/BHMA A156.28-2007 - Recommended Practices for Keying Systems
12. ANSI/BHMA A156.31-2007 - American National Standard for Electric Strikes and Frame Mounted Actuators
13. ANSI/BHMA A156.115-2006 - Hardware Preparation in Steel Doors and Steel Frames
14. NFPA 80 – Fire Doors and Windows
15. UL10C – Positive Pressure Fire Tests of Door Assemblies

B. Codes: (CT)

1. 2005 Connecticut State Building Code (CSBC) including:

   a) 2003 International Building Code (IBC).
   b) ICC/ANSI A117.1-2003 Accessible and Usable Buildings and Facilities.
   c) 2009 and 2011 State of Connecticut Amendments/State Building Code.

2. 2005 Connecticut Fire Safety Code (CSFSC) including:

   a) 2003 International Fire Code (IFC), including all referenced standards.
   b) 2009 and 2012 State of Connecticut Amendments/State Fire Code.

3. 2010 ADA Standards for Accessible Design.

4. NFPA 105 – Smoke and Draft Control Door Assemblies.

C. UL Underwriters Laboratories

1. UL 10C – Fire Tests of Door Assemblies
2. UL 305 – Panic Hardware

D. DHI – Door and Hardware Institute

1. Sequence and Form and for the Hardware Schedule
2. Recommended Locations for Builders Hardware

1.4 SUBMITTALS

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

B. Product data including manufacturer's technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish of door bardware.

C. Final hardware schedule coordinated with doors, frames, and related work to ensure proper size, thickness, hand function, and finish of door hardware.

1. Final Hardware Schedule Content: Based on hardware indicated, organize schedule into *"HARDWARE SETS"* indicating complete designation of every item required for each door or opening. Include the following information:

Type, style, function, size, and finish of eacb hardware item.
a) Name and manufacturer of eacb item.
b) Fastenings and other pertinent information.
c) Location of Hardware Set, cross-referenced to indication of Drawings both on floor plans, in door, and frame schedule.
d) Explanation of all abbreviations, symbols, and codes contained in schedule.
e) Mounting locations for hardware.
Door handles, pulls, latches, locks and other operating devices shall be installed 34 inches (864 mm) minimum and 48 inches (1219 mm) maximum above the finish floor. Locks used only for security purposes and not used for normal operation are permitted at any height.
Provide "DHI" Standard Mounting Locations in the Hardware Submittal.
f) Door and frame sizes and materials.
g) Keying information.
h) Name and phone number for the local manufacturer's representative for each product.

2. Submittal Sequence: submit final schedule at earliest possible date particularly wbere acceptance of hardware schedule must precede fabrication of other work that is critical in the Project construction schedule. Include with schedule the product data, samples, shop drawings of other work affected by door bardware, and other information essential to the coordinated review to schedule.
3. Keying Schedule: After a keying meeting between representatives of the Owner, Architect, hardware supplier, and, if requested, the representative for the lock manufacturer, provide a keying schedule, listing the levels of keying, as well as an explanation of the key system's function, the key symbols used, and the door numbers controlled.

D. Samples: If requested by Architect, submit samples of each type of exposed hardware unit in finish indicated and tagged with full description for coordination with schedule. Submit samples prior to submission of final hardware scbedule.

1. Samples will be returned to the supplier. Units that are acceptable and remain undamaged through submittal, review, and field comparison process may, after final check of operation, be incorporated in the Work, within limitations of keying coordination requirements.

E. Templates for doors, frames, and other work specified to be factory prepared for the installation of door hardware. Check shop drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

F. Wiring Diagrams: Upon final approval of the hardware schedule, submit wiring and riser diagrams as required for the complete and proper installation of all electrical, electromechanical, and electromagnetic products. Submittals must represent that coordination has occurred with the security system submittals and shop drawings. Also, that shop drawings submitted and schedules developed have been specifically reviewed and coordinated for both physical equipment fitment and power requirements with the security system contractor approved shop drawings.

G. Electrified Hardware: Electrified Hardware to be used for security purposes must be UL Listed for Burglary Applications.

H. At the completion of hardware installation, and prior to issuance of certificate of occupancy, prepare and submit the hardware inspection report to include the following:

1. Current and predictable problems of substantial nature in the performance of the hardware.
2. Hardware has been installed and adjusted in accordance with manufacturer's recommendations and instructions.

I. At the completion of the project, provide Owner with two (2) copies of an Operation and Maintenance Manual. This manual shall consist of a hard cover (3) ring binder with the project name listed on the front. Included will be:

1. A final copy of the approved and as built hardware schedule.
2. A final copy of the approved keying schedule.
3. Catalog cuts for each item used in the project.
4. Parts list and numbers for each item used.
5. Maintenance instructions for all items.
6. Name, address and phone number of local representative for each item used.

1.5 QUALITY ASSURANCE

A. Substitutions: Products are to be those specified to ensure a uniform basis of acceptable materials. Requests for substitutions must be made in accordance with Section 1 requirements. If proposing a substitute to a specified item, indicate basis for substitution and savings to be made. Provide sample if requested. Certain products have been selected for their unique characteristics and particular project suitability. All Hardware is "Basis-of-Design" product specification as defined in Section 08710. Model numbers (and Manufacturer's) listed in "Hardware Set Schedule" are "Basis-of-Design".

1. Items specified, as "no substitution" shall be provided exactly as listed.

2. Items listed with no substitute manufacturers listed have been requested by the Owner or Architect to match existing for continuity and/or future performance and maintenance standards or because there is no known equal product.
3. If no other products are listed in a category, then "no substitution" is implied.

B. Supplier Qualifications: A recognized architectural door hardware supplier, with warehousing facilities in the Project's vicinity, that has a record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that employs an experienced architectural hardware consultant (AHC) who is available to Owner, architect, and Contractor, at reasonable times during the course of the Work, for consultation.

1. Require supplier to meet with Owner to finalize keying requirements and to obtain final instructions in writing.

C. A pre-installation meeting shall be held to instruct installers on the proper installation and adjustment of door hardware. A representative of each major hardware category, including, but not limited to, Locks, Exit Devices, & Closers, shall instruct the installers on the correct installation of their products. The manufacturers of the Door Hardware provided on this project shall certify to the Architect that the door hardware installer for this project has been trained in the proper installation procedures and is certified to install the door hardware.

D. Fire-Rated Openings: Provide door hardware for fire-rated openings that complies with NFPA Standard No. 80 and requirements of authorities having jurisdiction. Provide only items of door hardware that are listed and are identical to products tested by UL, Intertek Testing Services, Warnock Hersey, Factory Mutual, or other testing and inspecting organization acceptable to authorities having jurisdiction for use on types and sizes of doors indicated in compliance with requirements of fire-rated door and door frame labels.

E. Accessible Hardware: Door Hardware; *Handles, pulls, latches, locks and other operable parts on accessible doors shall have a shape that is easy to grasp with one hand and does not require tight grasping, pinching, or twisting of the wrist to operate. Such hardware shall 34 inches (865 mm) minimum and 48 inches (1220 mm) maximum above the floor or ground. Where sliding doors are in the fully open position, operating hardware shall be exposed and usable from both sides.* EXCEPTION: *Locks used only for security purposes and not used for normal operation are permitted in any location.*

F. Accessible Hardware: Door-Opening Force; Fire Doors shall have the minimum opening force allowable by the appropriate administrative authority. The maximum force for pushing open or pulling open doors other than fire doors shall be as follows:

1. Interior hinged door: 5.0 pounds
2. Sliding or folding door: 5.0 pounds

3. Fire Doors: Minimum opening force allowable by authorities having jurisdiction, but not greater than 10 lbf

These forces do not apply to the force required to retract latch bolts or disengage other devices that hold the door in a closed position. The maximum force required to release the latch shall not exceed 15 lbf.

4. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch high.
5. Adjust door closer sweep periods so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches from the latch, measured to the leading edge of the door.

1.6 PRODUCT HANDLING

A. Tag each item or package separately with identification related to final hardware scbedule, and include basic installation instructions with each item or package.

B. Each item of hardware shall be individually packaged in manufacturer's original container.

C. Receiving and storing of door bardware is responsibility of supplier. Prior to delivery of door hardware to the project, Hardware Supplier must sort and clearly mark with appropriate hardware set number to match set numbers of approved hardware schedule. Two or more identical sets may be packed in same container.

D. Inventory door hardware jointly with representatives of hardware supplier and hardware installer until eacb is satisfied that count is correct.

E. Deliver individually packaged door hardware items promptly to place of installation (shop or Project site).

F. Provide secure lock-up for door hardware delivered to the Project, but not yet installed. Control handling and installation of hardware items that are not immediately replaceable so that completion of the Work will not be delayed by hardware losses both before and after installation.

1.7 MAINTENANCE

A. Maintenance Tools and Instructions: Furnish two (2) complete sets of specialized tools and maintenance instructions as needed for Owner's continued adjustment, maintenance, and removal and replacement of door hardware. Furnish two (2) extra screws or fasteners of each type size and of the same finish used in this project.

1.8 WARRANTY

A. Provide manufacturer's warrantees as follows:

1.	Closers:	10 years, except electronic closers, 2 years.
2.	Exit Devices:	3 years, except electrified devices, 1 year.
3.	Hinges:	Life of the building.
4.	Continuous Hinges:	10 years.
5.	All other hardware:	1 year

B. Starting date for all warranty periods to be date of substantial completion of the Project.

C. No liability is to be assumed where damage or faulty operation is due to improper installation, improper use, or abuse.

D. Products judged to be defective during the warranty period shall be replaced or repaired in accordance with the manufacturer's warranty, at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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

1. Continuous Hinges:

   a) Hager Companies

2. Cylinders and Locks:

   a) Corbin-Russwin Architectural Hardware, Div of Assa Abloy, "ML2000" Series.

3. Overhead Surface Closers:

   a) LCN, Div. of Ingersoll-Rand. "4000 (Heavy Duty Arms)" Series

4. Electric Strikes:

   a) HES, Inc.
   b) Folger Adam Co.
   c) Security Door Controls
   d) Von Duprin, Div. of Ingersoll-Rand

5. Kick and Mop Plates:

   a) Hager Companies
   b) Burns Manufacturing, Inc.
   c) Ives, Div. of Ingersoll-Rand.
   d) Rockwood

6. Door Stops

   a) Hager Companies
   b) Burns Manufacturing, Inc
   c) Glynn Johnson, Div. of Ingersoll-Rand.
   d) H.B. Ives, Div. of Ingersoll-Rand
   e) Rockwood Manufacturing

2.2 SCHEDULED HARDWARE

A. Requirements for each type of door bardware are indicated on the "Door Schedule", and in the Schedule at the end of this Section. Products are identified by using hardware designation numbers of the following:

1. Manufacturer's Product Designations: The product designation and name of one manufacturer are listed for each bardware type required for the purpose of establishing minimum requirements. Manufacturer and model numbers indicated in Hardware Sets constitute a "Basis-of-Design" product specification as defined in this Section.

2.3 MATERIALS AND FABRICATION

A. Manufacturer's Name Plate: Do not use manufacturers' products that have manufacturer's name or trade name displayed in a visible location (omit removable nameplates) except in conjunction with required fire-rated labels and as otherwise acceptable to Architect.

1. Manufacturer's identification will be permitted on rim of lock cylinders only.

B. Base Metals: Product hardware units of basic metal and forming methods indicated, using manufacturer's standard metal alloy, composition, temper, and hardness, but in no case of lesser (commercially recognized), quality than specified for applicable hardware units by applicable ANSI/BHMA A156 series standards for each type of hardware item and with ANSI/BHMA A156.18 for finish designations indicated. Do not furnish "optional" materials or forming methods for those indicated, except as otherwise specified.

C. Fasteners: Provide hardware manufactured to conform to published templates generally prepared for machine screw installation. Do not provide hardware that has been prepared for self-tapping sheet metal screws, except as specifically indicated.

D. Furnish screws for installation with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match hardware finish or, if exposed in surfaces of other work, to match finish of this other work as closely as possible including "prepared for paint" surfaces to receive paint.

E. Provide concealed fasteners. Provide tamper resistant fasteners when they cannot be concealed. Fasteners shall be of the same finish as the balance of the hardware. Where thru-bolts are used as a means of reinforcing the work, provide sleeves for each thru-bolt or use sex screw fasteners.

2.4 HINGES, BUTTS, AND CONTINUOUS HINGES

A. Templates: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template-produced units.

B. Screws: Provide Phillips flat-head screws complying with the following requirements:

1. For metal doors and frames install machine screws into drilled and tapped holes.
2. For wood doors and frames install wood screws.
3. For fire-rated wood doors install #12 x ¼ inch, threaded-to-the-head steel wood screws.
4. Finish screw heads to match surface of hinges or pivots.

C. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:

1. Out-Swing Exterior Doors: Non-removable pins.
2. Interior Doors: Non-rising pins.

D. Number of Hinges: Provide number of hinges indicated but not less than 3 hinges per door leaf for doors 90 inches of additional height.

1. Fire-Rated Doors: Not less than 3 hinges per door leaf for doors 86 inches or less in height with same rule for additional hinges.

E. Size and weight of butts:

1. See Hardware Sets for Details.

2.5 LOCK CYLINDERS AND KEYING

A. Review the keying system with the Owner and provide the type required grandmaster or great-grandmaster, integrated with Owner's existing system.

B. Equip locks with manufacturer's 6-pin tumbler "interchangeable core" cylinder employing "RESTRICTED KEYWAY". Such cylinders have cores that are removable by the use of a special "control key". Deliver hardware to the contractor with temporary cores installed and keyed alike. Permanent cores are to be mastered keyed as directed by the owner. Deliver permanent cores and keys to the owner when notified by the owner in writing. Temporary cores and keys are to be returned to the hardware supplier by the contractor within 10 days of their replacement by permanent cores.
(Do Not Provide Extra Key Blanks if Restricted Keyway has been specified.)

1. Furnish 12 each "Temporary Change Keys" and 2 each "Temporary Core Control Keys".
2. Key Quantity: Furnish 3 change keys for each lock, 5 master keys for eacb master system, and 5 grandmaster keys for eacb grandmaster system. Furnish 6 each "Core Control Keys". Furnish 12 Temporary Change Keys and 2 Temporary Core Control Keys.
3. Furnish 12 eacb additional core for owners stock.
4. Deliver keys to Owner.

C. Metals: Construct lock cylinder parts from brass or bronze, stainless steel, or nickel silver.

D. Comply with Owner's instructions for master keying and, except as otherwise indicated, provide individual cbange key for each lock that is not designated to be keyed alike with a group of related locks.

E. Key Material: Provide keys of nickel silver only.

2.6 LOCKS, LATCHES, AND BOLTS

A. Strikes: Provide manufacturer's standard wrought box strike for each latcb or lock bolt, with curved lip extended to protect frame, finished to match hardware set, unless otherwise indicated.

1. Provide flat lip strikes for locks with 3 pieces, anti-friction latchbolt as recommended by manufacturer.
2. Provide recess type top strikes for bolts locking into head frames, unless otherwise indicated.
3. Provide dust-proof strikes for foot bolts, except where special threshold construction provides non-recessed strike for bolt.

4. Provide roller type strikes where recommended by manufacturer of the latch and lock units.

B. Accessihility Requirements: Where handles, pulls, latches, locks, and other operating devices are indicated to comply with accessibility requirements, comply with the 2010 ADA Standards, ICC/ANSI A117.1

1. Comply with the following maximum opening-force requirements:

a) Interior, Non-Fire-Rated Hinged Doors: 5 lbf applied perpendicular to door.
b) Folding Doors: 5 lhf applied parallel to door at latch.
c) Fire Doors: Minimum opening force allowable hy authorities having jurisdiction, but not greater than 10 lbf.

2. Comply with the following maximum closing speed requirements:

a) Adjust closers so that from an open position of 90 degrees, the time required to move the door to an open position of 12 degrees is to be 5 seconds minimum.
b) Adjust closers so that from an open position of 70 degrees, the time required to move the door to an open position of 3 inches from the latch is to be 3 seconds minimum.

C. Mortise Locks

1. Mortise locks shall be certified as ANSI A156.13, Series 1000, Operational and Security Grade 1, and meets A117.1 Accessihility Code, and shall be manufactured from heavy gauge steel, containing components of steel with zinc dichromate plating for corrosion resistance. Lock case shall be multi-function and field reversible for handling.
2. Locks are to have a standard 2-3/4" backset with a full ¾" throw 2-piece stainless steel mechanical anti-friction latch-bolt.
3. Lever trim shall be solid brass, bronze, or stainless steel, cast or forged in the design specified, with wrought roses and external Security requirement. Levers shall be thru-bolted to assure proper alignment, and shall have a 2-piece spindle. Lever trim on the secure side of doors serving rooms considered by the authority having jurisdiction to be hazardous shall have a tactile warning.

2.7 CLOSERS AND DOOR CONTROL DEVICES.

A. Size of Units: Except as otherwise specifically indicated, comply with the manufacturer's recommendations for size of door control unit depending on size of door, exposure to weather, and anticipated frequency of use.

1. Where parallel arms are indicated for closers, provide closer with Heavy Duty Arm.
2. Provide parallel arms for all overhead closers, except as otherwise indicated.

3. Closers must operate at 180 degree opening where indicated on plans and door schedule.
4. Provide all necessary Drop Plate Brackets, Shims, and Angle Brackets, where required to complete installation of closers on doors and frames.
5. Furnish and Install "THRU BOLTS" on Aluminum, Hollow Metal, and Wood Doors.

B. Access-Free Manual Closers: Where manual closers are indicated for doors required to be accessible to the physically handicapped, provide adjustable units complying with ANSI A117.1 provisions for door opening force and closing speed.

2.8 DOOR STOPS AND HOLDERS

A. It shall be the responsibility of the hardware supplier to provide door stops for all doors in accordance with the following requirements. Provide Door Stops as indicated in Hardware Sets.

2.9 DOOR TRIM UNITS

A. Fasteners: Provide manufacturer's standard exposed fasteners for door trim units consisting of either machine screws or self-tapping screws.

B. Fabricate protection plates not more than 2 inches less than door width on push side of door and by height indicated.

1. Metal Plates: Stainless steel, 0.050 inch (U.S. 18 gage).

2.10 MISCELLANEOUS HARDWARE

A. Furnish four (4) extra screws or fasteners of each type, used for the hinges, door closers, bolders and protective plates of the same finish used in this project.

B. Furnish two (2) additional adjusting wrenches for the door closers.

2.11 HARDWARE FINISHES

A. Match items to the manufacturer's standard color and texture finish for the latch and lock sets (or push-pull units if not latcb or lock sets).

B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.

C. The designations used in schedules and elsewhere to indicate hardware finishes are those listed in ANSI/BHMA A156.18, "Materials and Finishes", including coordination with the traditional U.S. finishes show by certain manufacturers for their products.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Prior to installation of any hardware, examine all doors, frames, walls and related items for conditions that would prevent proper installation of door hardware. Correct all defects prior to proceeding with installation.

3.2 INSTALLATION

A. All hardware to be installed hy qualified tradesmen, skilled in the application of commercial grade hardware. For technical assistance if necessary, installers may contact the manufacturer's rep for the item in question, as listed in the hardware schedule.

B. Furnish and Install "THRU BOLTS" on Hollow Metal and Wood Doors.

C. Electronic hardware shall be furnished and installed hy qualified tradesmen, but shall be wired by the security system contractor. Door Hardware installer shall he present to complete final adjustments to door hardware, when security contractor completes electrical terminations.

D. Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware for Standard Steel Doors and Frames" by the Door and Hardware Institute.

E. Install each hardware item in compliance with the manufacturer's instructions and recommendations, using only the fasteners provided hy the manufacturer.

F. Do not install surface mounted items until finishes have heen completed on the substrate. Protect all installed hardware during painting.

G. Set units level, plumh and true to line and location. Adjust and reinforce the attachment suhstrate as necessary for proper installation and operation.

H. All operating parts shall move freely and smoothly without binding, sticking, or excessive clearance.

3.3 ADJUSTING, CLEANING, AND DEMONSTRATING

A. Adjust and check each operating item of hardware and each door, to insure proper operation or function of every unit. Replace units, which cannot be adjusted to operate freely and smoothly.

B. Where door hardware is installed more than one month prior to acceptance or occupancy of a space or area, return to the installation during the week prior to acceptance or occupancy to perform a final cbeck and adjustment of all hardware items in such space or area. Clean operating doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

C. Clean adjacent surfaces soiled by hardware installation.

D. At the completion of "BALANCING" of all "AIR HANDLING SYSTEMS", prior to owner taking occupancy, 'Hardware Installer" will re-adjust all closer closing and latching cycles.

E. Approximately six months after the Date of Substantial Completion, the installer shall perform the following:

1. Examine and readjust each item of door hardware as necessary to ensure function of doors, door hardware, and electrified hardware.
2. Consult with and instruct owners' personnel on recommend maintenance procedures.
3. Replace door hardware items that have deteriorated or failed due to faulty design, materials, or installation of door hardware units.

3.4 FIELD QUALITY CONTROL

A. Prior to Substantial Completion, the installer, accompanied by representatives of the manufacturers of latchsets and locksets, door closers, and exit devices, and of other major bardware suppliers, shall perform the following work.

B. Examine (by representatives of the manufacturers) and re-adjust (by hardware installer) each item of door hardware as necessary to restore function of doors and hardware to comply witb specified requirements.

C. Consult with and instruct Owner's personnel in recommended additions to the maintenance procedures.

D. Replace hardware items that have deteriorated or failed due to faulty design or materials (work to be performed by representatives of the manufacturers including removal and reinstallation).

E. Replace hardware items that have deteriorated or failed due to incorrect installation (work to be performed by hardware installer including removal and reinstallation) of bardware units.

F. Prepare a written report of current and predictable problems of substantial nature in the performance of the hardware.

3.5 PROTECTION

A. Provide for the proper protection of all items of hardware until the Owner accepts tbe project as complete. Damaged or disfigured hardware shall be replaced or repaired by the responsible party.

3.6 HARDWARE SCHEDULE

A. General: Provide hardware for each door to comply with requirements of this Section, Door and Hardware Schedule Section 08 06 10", and the following Hardware Sets. The door bardware sets listed herein shall not be considered as a complete hardware scbedule and sball only be considered as an indication of the hardware requirements desired by the Owner. It shall be this Contractor's responsibility to visit the site, examine the drawings and door scbedule and provide all necessary hardware as shown. Sucb items shall be of same quality, quantity and type as that scbeduled for similar doors or parts of the building used for similar purposes.

Hardware Set 001

1	Hinge, Continuous Geared	780 - 224 HD - 83" - CLEAR - Concealed Leaf	Roton
1	Lockset, Storeroom/Closet	ML2057 - CSA - 626- M17	Corbin-Russwin
1	Electric Strike SMART Pac III	1006 - 630 x KM - 630 - FAIL SECURE - 2005M3:	H.E.S.
1	Closer, Overhead Regular Arm	4011 - AL	L.C.N.
1	Kick Plate	16" x 34" - 18 ga. - US32D	Rockwood
3	Silencer, HM Dr. Frame	608 - Gray	Rockwood

Hardware Set 002

1	Hinge, Continuous Geared	780 - 224 HD - 83" - CLEAR - Concealed Leaf	Roton
1	Lockset, Storeroom/Closet	ML2057 - CSA - 626- M17	Corbin-Russwin
1	Electric Strike SMART Pac III	1006 - 630 x KM - 630 - FAIL SECURE - 2005M3:	H.E.S.
1	Closer, Overhead Parallel Arm	4111 - CUSH - AL	L.C.N.
1	Armor Plate	34" x 34" - 18 ga. - US32D	Rockwood
1	Stop, Wall	409 - US26D	Rockwood
3	Silencer, HM Dr. Frame	608 - Gray	Rockwood

END OF SECTION 08710

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SCHEDULES FOR OPENINGS

DOOR											FRAME							FIRE RATING		HARDWARE - SEE SPECIFICATIONS											
											SEE DWG	SEE DETAIL'S ON DWG.								FIRE CODE				DISABLED REQUIREMENTS						
OPENING NUMBER	SHEET NUMBER	SINGLE DOOR LEAF	DOUBLE DOOR LEAF	ACTIVE LEAF	ACTIVE LEAF (PRH & PP Hardware)	IN - ACTIVE LEAF	HEIGHT	THICKNESS	HANDING	DEGREE OF SWING REQUIRED	DOOR MATERIAL	FRAME MATERIAL	HEAD DETAIL	JAMB DETAIL	SILL / THRESHOLD DETAIL	SOUND DOOR AND GASKETING		U. L. RATING (IN MINUTES)	GASKETS AND SMOKE SEALS	PANIC RELEASE HARDWARE	POSITIVE LATCHING	AUTOMATIC CLOSING	ELECT. MAG. DOOR RELEASE	PUSH / PULL (Interior Openings)	"U" HANDLE / LEVER HANDLE	MOP, KICK, & ARMOR PLATES	TACTILE WARNING	ACCESSIBLE THRESHOLD	ELECTRICAL / SECURITY	HARDWARE SET NO.	OPENING NOTES
001	A-1	●		3' 0"			7' 0"	1-3/4"	LHR		HM-1	HMF-1	H-1	J-1	S-3						●	●			●	●		●	●	002	ES3
002	A-1	●		3' 0"			7' 0"	1-3/4"	RH		HM-1	HMF-1	H-1	J-1	S-2						●	●			●	●			●	001	ES3
003	A-1	●		3' 8"			7' 0"	1-3/4"	CO			HMF-3	H-3	J-3	S-1															NHR	NDCO
004	A-1	●		3' 8"			7' 0"	1-3/4"	CO			HMF-2	H-2	J-2	S-1															NHR	NDCO
005	A-1	●		3' 8"			7' 0"	1-3/4"	CO			HMF-2	H-2	J-2	S-1															NHR	NDCO
006	A-1	●		3' 0"			7' 0"	1-3/4"	LHR		HM-1	HMF-1	H-1	J-1	S-3						●	●			●	●		●	●	002	ES3

● NEW WORK

DRAWING NO: *A-1* ***OEMOLITION & PROPOSEO FLOOR PLANS***

SCHEDULE GENERAL NOTES

A. Hardware Supplier: Must employ an experienced Architectural Hardware Consultant (AHC) who is available to Owner, Architect, and Contractor, at reasonable times during the course of the Work, for consultation. All Door Hardware must come from one Door Hardware Distributor.
All "Locks" shall be of the same Manufacturer.
All "Door Closers" shall be of the same Manufacturer unless specified as no substitution.

"HARDWARE SUPPLIER SHALL CONFIRM SPECIFIED LOCK FUNCTIONS WITH OWNER AT THE KEYING MEETING" - - - - - -

B. Shall schedule a pre - installation meeting to instruct installers on proper installation and adjustment of finish hardware.
A manufacturers' representative of each major hardware category shall be present to complete the instructions.
Manufacturers of Finish Hardware, Locks, Exit Devices, and Closers, shall certify to the Architect,
that the door hardware installer has been trained in the proper installation procedures and is certified to install the finish hardware;
See "Specification Section - 08 71 00 - 1.4 - SUBMITTALS, paragraph "I"

C. Shall coordinate an inspection, with all manufacturer's representatives to confirm that all hardware has been installed and adjusted properly;
See "Specification Section - 08 71 00 - 3.2 - INSTALLATION, paragraph "A"

D. Template Hardware Installation so that Door will be able to swing a Minimum of 90 degrees.
Doors swinging less than 90 Degrees will be reinstalled to meet ADA requirements.

SCHEDULES FOR OPENINGS

DOOR												FRAME						FIRE RATING		HARDWARE - SEE SPECIFICATIONS										
											SEE DWG		SEE DETAIL'S ON DWG.							FIRE CODE				DISABLED REQUIREMENTS						
OPENING NUMBER	SHEET NUMBER	SINGLE DOOR LEAF	DOUBLE DOOR LEAF	ACTIVE LEAF	ACTIVE LEAF (PRH & PP Hardware)	IN - ACTIVE LEAF	HEIGHT	THICKNESS	HANDING	DEGREE OF SWING REQUIRED	DOOR MATERIAL	FRAME MATERIAL	HEAD DETAIL	JAMB DETAIL	SILL / THRESHOLD DETAIL	SOUND DOOR AND GASKETING		U.L. RATING (IN MINUTES)	GASKETS AND SMOKE SEALS	PANIC RELEASE HARDWARE	POSITIVE LATCHING	AUTOMATIC CLOSING	ELECT. MAG. DOOR RELEASE	PUSH / PULL (Interior Oenpings)	"U" HANDLE / LEVER HANDLE	MOP, KICK, & ARMOR PLATES	TACTILE WARNING	ACCESSIBLE THRESHOLD	ELECTRICAL / SECURITY	HARDWARE SET NO.

● NEW WORK

OPENING NOTES

E. All "DOOR HARDWARE FASTENERS" used during installation must be original hardware manufacturer's supplied fasteners. The use of drywall screws or non "OEM" self tapping screws will be rejected, reinstallation of hardware will be required. Fastener holes in doors and frames from the use of improper hardware fasteners will not be acceptable, doors and frames will be replaced at no cost to the owner.

F. "DOOR HARDWARE INSTALLATION" All door hardware shall be installed according to manufactures' instructions. This includes following the template required to complete the intended operation of the door hardware, and all fastener holes required shall be drilled and tapped to the correct size as detailed in the template.

G. Provide Blocking in walls for all Door Hardware (i.e., but not limited to: Door Closers, Wall & Overhead Stops)

H. Provide Blocking for Door Closers in Wood Doors (USE THRU BOLTS WHEN INSTALLING DOOR CLOSERS)

J. DOOR PROTECTION PLATES:
"KICKPLATES" Install on "PUSH SIDE" of Door.
"ARMOR PLATES" Install on "PUSH SIDE" of Door.

M. GLAZING TYPES - See Drawing A8.01

N. HARDWARE / ELECTRICAL / SECURITY Sections:
1. All Conduits required for Power and Control Wiring, and Power Wiring, to be furnished and installed by Electrical Contractor.
2. Door Frame Supplier must coordinate Door Contact Frame Prep with Security Contractor.
3. Hardware supplier must provide, Diagrams - Elevation and Riser & Point to Point, to Electrical Contractor.
4. Controls and Control Wiring (provide 16 ga. Wire unless noted otherwise) of Electrified Devices, Transfer Hinges, and Power Supplies to be provided by Security Contractor.
5. Door and Frame Suppliers must prep doors and frames to accommodate all electrified hardware, including all required conduits in doors and frames, when prepping doors and frames for door hardware.
6. "CARD READER" by OWNER.

SCHEDULES FOR OPENINGS

DOOR												FRAME						FIRE RATING		HARDWARE - SEE SPECIFICATIONS											
											SEE DWG		SEE DETAIL'S ON DWG.							FIRE CODE				DISABLED REQUIREMENTS						● NEW WORK
OPENING NUMBER	SHEET NUMBER	SINGLE DOOR LEAF	DOUBLE DOOR LEAF	ACTIVE LEAF	ACTIVE LEAF (PRH & PP Hardware)	IN - ACTIVE LEAF	HEIGHT	THICKNESS	HANDING	DEGREE OF SWING REQUIRED	DOOR MATERIAL	FRAME MATERIAL	HEAD DETAIL	JAMB DETAIL	SILL / THRESHOLD DETAIL	SOUND DOOR AND GASKETING		U. L. RATING (IN MINUTES)	GASKETS AND SMOKE SEALS	PANIC RELEASE HARDWARE	POSITIVE LATCHING	AUTOMATIC CLOSING	ELECT. MAG. DOOR RELEASE	PUSH / PULL (Interior Openings)	"U" HANDLE / LEVER HANDLE	MOP, KICK, & ARMOR PLATES	TACTILE WARNING	ACCESSIBLE THRESHOLD	ELECTRICAL / SECURITY	HARDWARE SET NO.	OPENING NOTES

OPENING NOTES

ES3 ELECTRIC STRIKE: ES by Section 08 71 00.
Verify Voltage Required with Electrical Contractor
CONDUIT & WIRING: All Conduit and Non Low Voltage Wires are furnished and installed by the Electrical Contractor.
All Low Voltage Access Control Wiring and Terminations are furnished and installed by OWNER.

NDCO "CASED OPENING" Door Hardware is not Hardware Required;
Existing Frames: Section 087100, provide Filler Plates at Hinge and Strike locations.

SECTION 08800 – GLASS AND GLAZING

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

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

1. Insulated and non-insulated tempered glazing within aluminum entrances, sidelights, transom lights, and transaction windows.
2. Vision lites within wood and hollow metal doors
3. Glazing of hollow metal frames
4. Full width mirrors over Locker Room vanities (Male and Female)

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

1. Section 08100 "Standard Steel Doors and Frames" for glazed hollow metal doors and frames.
2. Section 08200 "Flush Wood Doors" for glazed wood doors.
3. Section 08360 "Overhead Sectional Doors", for factory glazed aluminum sectional doors.
4. Section 08400 "Aluminum Entrances", for glazed aluminum doors, side lights, transom lights, and storefront framing.
5. Section 08520 "Aluminum Windows", for factory glazed aluminum windows.
6. Section 08582 "Sliding Transaction Window", for glazed aluminum transaction windows at Public Lobby.
7. Section 10800 "Toilet Accessories", for factory 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 Journeyperson'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 (wbere 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, wbether 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 cbange (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: Suhmit 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 hy 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 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 MIRRORS

A. Mirror: provide ¼ inch thick tempered mirrored float glass, 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

2.3 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 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 08800

SECTION 09255 - GYPSUM 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 the following:

1. Non-load-bearing interior steel framing members for gypsum board and sheathing board assemblies.
2. Gypsum board assemblies attached to steel framing.
3. Abuse resistant gypsum board finishes as indicated.
4. Exterior sheathing board at cavity wall construction for screw-attachment to steel framing.
5. Moisture, Mold, and Mildew-resistant gypsum backing board installed with gypsum board assemblies.
6. Cementitious fiber-mat reinforced sheathing located at all tiled wall areas.
7. Sound attenuation blankets in interior partitions as indicated.

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

1. Section 06105 "Miscellaneous Carpentry" for the following:
   a. Wood blocking and furring.
2. Section 07270 "Firestopping" for firestopping systems and fire-resistive rated joint sealants.
3. Section 09300 "Tile" for ceramic tile.

1.3 DEFINITIONS

A. Gypsum Board Construction Terminology: Refer to ASTM C I 1 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 1 19 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 manufacturer's 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 bot 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. Unimast Inc.
c. or equal

2. Grid Suspension Assemblies:

a. Chicago metallic Corp.
b. National Rolling Mills Co.
c. USG Interiors, Inc.

3. Gypsum Board and Related Products:

a. Georgia-Pacific Corp.
b. Gold Bond Building Products Div., National Gypsum Co.
c. United States Gypsum Co.

4. Exterior Sheathing Board:

a. G-P Gypsum Corp.

b. National Gypsum

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 bangers 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 lI 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 incb 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-incb-wide flanges, and as follows:

1. Carrying Channels: 2 inches deep, 590 lb per l 000 feet, unless otberwise 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 bot-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 lhf per sq. ft.
b. Protective Coating: Manufacturers standard corrosion-resistant coating.
c. Protective Coating: G40 hot-dip galvanized coating per ASTM A 525 for framing members attached to and within 10 feet of exterior walls.

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 incb, for less than 6 inch depth unless otherwise indicated.
2. Thickness: 0.0329 inch for 6 inch and greater depth.
3. Depth: As indicated.

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 availahle 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:

1. Type: Regular for vertical surfaces, unless otberwise indicated.
2. Type: Type X where required for fire-resistive-rated assemblies.
3. Edges: Tapered.
4. Tbickness: 5/8 incb, or as indicated on the drawings.
5. Products: Subject to compliance with requirements, provide one of the following products:

   a. Fire-Shield G, Gold Bond Building Products Div., National Gypsum Co.
   b. SHEETROCK Brand Gypsum Panels, FIRECODE C Core, United States Gypsum Co.
   c. approved equal.

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) sball not bave surface absorption of not more tban 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 <u>all toilet rooms and janitor's closets where ceramic tile **is not** indicated for final wall finish</u>.

D. Cementitious Fiber-Mat Reinforced Sbeathing: ASTM C 1325; ANSI A118.9; Cementitious backer and as follows:

1. Thickness: 5/8 inch thick.
2. Size: 48 by 96 inches.
3. Products: Subject to compliance with requirements, provide one of the following products where proprietary gypsum wallboard is indicated:

a. DUROCK Brand Cement Board by United States Gypsum Company.
b. PermaBase® BRAND Cement Board, National Gypsum Company.
c. approved equal.

4. To be utilized at all toilet rooms where ceramic tile is indicated for final wall finish.

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. 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. Owens Corning, Sound Attenuation Batt Insulation, 3-1/2 inches thick, 16 inches wide, or equal.

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 bangers 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 bangers 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 bangers to steel deck tabs.
7. Do not attacb bangers 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 incbes 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 eacb 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 incbes 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 publisbed recommendations of gypsum board manufacturer. Attach vertical studs at jambs with screws either directly to frames or to jamb ancbor 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 finisb 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 wbere possible.

F. Attach gypsum panels to steel studs so that the leading edge or end of eacb 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 wbere 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 finisbing 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 heigbt, 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 Al 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 wbere not indicated according to ASTM C 840, and in locations approved by Architect for visual effect.

3.09 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 ceilings and falsework.

E. For level 4 gypsum board finish, embed tape in joint compound and apply three separate coats of joint compound over joints, angles, fastener beads, and accessories. Touch up and sand between coats and after last coat as needed to produce a surf ace free of visual defects and ready for decoration. Use the following joint compound combination:

1. Emhedding 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. Wbere level 5 gypsum board finisb 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 09255

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 WORK

A. The extent of tile work is shown on Drawings/ Schedules. The work includes thin-set ceramic tile walls, floors and base, marble thresholds at doorways of ceramic tiled spaces, and all accessories as required.

1. Tile dimensions, coursing, colors, and manufacturer's products shall be as noted in Drawings/ Scbedules as shown and specified.
2. Glazed wall tile and base.
3. Porcelain ceramic floor tile and base.
4. Marble thresbolds.

B. Waterproofing Anti-Crack Membrane for all areas receiving Ceramic Floor Tile.

C. Related Work Specified Elsewbere:

Install Toilet Accessories: Section 06105.
Gypsum Wallboard Systems: Section 09255.
Furnish Toilet Accessories: Secti on 10800.

1.3 QUALITY ASSURANCE:

A. Furnish tile conforming with the Standard Grade Requirements of ANSI/TCA 137.1.

B. When using setting and grouting materials manufactured under TCA license, include identification and formula number on each container.

C. Provide materials obtained from only one source for eacb type of tile and color to minimize variations in appearance and quality.

D. Manufacturer's Products: Provide ceramic tile products, colors, textures, patterns, as noted on Drawings. Products where noted should be calibrated to insure dimensional accuracy required to create patterns as shown in drawings.

1.4 SUBMITTALS

A. Manufacturer's Data:

For information only, submit 2 copies of manufacturer's technical information and installation instructions for all materials required, except bulk materials. Include certifications and other data as may be required to show compliance with these specifications. Transmit a copy of each instruction to the Installer.

B. Samples:

1. Tile: Submit 3 samples of each type and color of tile required, not less than 12" square on plywood or hardboard backing, and grouted as required.
2. Marble: Submit 6" section of unit proposed for use.
3. Colored Grout: Manufacturer's standard range of mineral oxide pigment grout colors.

C. Maintenance Stock:

1. After completion of work deliver replacement materials to the project site, as follows:
   a. For each type and color of tile, including trim and special shapes of each color and type, not less than 5 % of total tiled area.
2. Furnish replacement materials from same manufactured lot as material installed.

D. Tile Grade Certificate: Provide manufacturer's Master Grade Certificate bearing TCA certification mark for each shipment of tile.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING:

A. Deliver packaged materials and store in original containers with seals unbroken and labels intact until time of use, in accordance with manufacturer's directions.

1.6 JOB CONDITIONS AND COORDINATION

A. Contractor shall phase ceramic tile work to proceed only after all toilet room lighting has been installed.

PART 2 - PRODUCTS

2.1 GENERAL:

A "Standard Grade" units, complying with ANSI/TCA 137.1. Provide cushion edge units of colors and sizes noted on Drawings.

2.2 TILE:

A. Ceramic Floor Tile: CT-1:

1. Manufacturer: American Olean
2. Type: Colorbody Porcelain Tile, Rectified Edges
3. Style: St. Germain
4. Size: 12" x 24" x 3/8"
5. Finish: Matte
6. Recommended grout joint: 3/16"
7. Coefficient of Friction: ≥0.60 Wet, ≥0.70 Dry
8. Pattern: 1/3 Offset Brick

B. Ceramic Floor Tile: CT-2:

1. Manufacturer: American Olean
2. Type: Colorbody Porcelain Tile, Rectified Edges
3. Style: St. Germain
4. Size: 1" x 2" x 3/8". Mesh Mounted
5. Finish: Matte
5. Recommended grout joint: 1/8"
6. Coefficient of Friction: ≥0.60 Wet, ≥0.70 Dry
7. Pattern: Mesh Mounted Pattern

C. Ceramic Floor Tile: CT-3:

1. Manufacturer: American Olean
2. Style: Unglazed Colorbody Porcelain Mosaic Tile
3. Type: Unglazed Mosaic Porcelain Tile
4. Size: 2"x 2" x 1/4" Thick
5. Finish: Unglazed
6. Recommended Grout Width: 1/8"
7. Cove Base: # C-833, 1" x 2"
8. Cove Base Incorner: # CB-813
9. Bullnose: # S-886, 2" x 2"
10. Bullnose Corner: # SC-886
11. Stretcher: # S-832, 2" x 2"

D. Ceramic Wall Tile: CWT-1

1. Manufacturer: Daltile
2. Type: Porcelain Field Tile
3. Size: 12" x 24" x 3/8" Thick
4. Style: Fabrique
5. Recommended Grout Width: 3/16"
6. Horizontal termination of ceramic tile at wainscot to receive top course of S-43C9, 3" x 12" Surface Bullnose, In Horizontal Design

E. Ceramic Wall Tile: CWT-2

1. Manufacturer: Daltile
2. Type: Porcelain Field Tile
3. Size: 4-1/4" x 4-1/4" x 5/16" Thick
4. Style: Semi-Gloss
5. Recommended Grout Joint: 1/16"
6. Bullnose at termination of tile: # S-449, 4-1/4" x 4-1/4"

2.3 CERAMIC BASE:

A. Ceramic Wall Base: CB-1:

1. Manufacturer: American Olean
2. Style: St Germain # S36C9T
3. Size: 6" x 12" Cove Base
4. Finish: Matte
5. Recommended grout width: 3/16"
6. Outcorners: #SC-36C9T

B. Ceramic Wall Base: CB-2:

1. Manufacturer: American Olean
2. Style: Unglazed Porcelain Mosaic
3. Type: C-833, Cove Base
4. Size: 1"x 2" High
5. Cove Base Incorner: # CB-813

2.4 MARBLE THRESHOLDS:

A. Provide sound Group "A" Travertine marble 7/8" thick, shaped as shown, with an abrasive hardness of not less than 10.0, when tested in accordance with ASTM C241. Top of threshold shall not be more than 3/8" above lowest finish floor.

2.5 METAL EDGE STRIP PROTECTION:

A. Stainless Steel Reducer:

1. Manufacturer: Schluter
2. Type: Reno-U Reducer from 3/8" Ceramic Tile to 1/8" vinyl tile.
3. Finish: Brushed Stainless Steel

2.6 METAL EXPANSION JOINT:

A. Stainless Steel Expansion Joint:

1. Manufacturer: Schluter
2. Type: Expansion Joint

3. Style: Dilex BT, # AEBT100
4. Finish: Anodized Aluminum

2.7 WATERPROOFING MEMBRANE:

A. All floor tile to receive waterproofing anti-crack membrane prior to installation of floor tile.

1. Manufacturer: Laticrete
2. Type: 9235 Waterproofing Membrane and Laticrete Waterproofing Anti-Fracture Fabric System.
3. Installation: Per manufacturer's written instructions.

2.8 SETTING MATERIALS:

A. Provide thin-set application as indicated on Drawings and per manufacturer's recommendations.

1. Dry-Set Portland Cement Mortar: ANSI A118.1

2. Latex-Portland Cement Mortar: ANSI A118.4. Latex additive (water emulsion): Manufacturer's standard, serving as replacement for part or all of gauging water, combined at job site with prepackaged dry mortar mix supplied or specified by latex additive manufacturer.

2.9 GROUTING MATERIALS:

A. All floor tile to receive grouting as indicated on Drawings and per Manufacturer's recommendation.

1. Manufacturer: Mapei
2. Type: Opticolor Stain Proof Grout
3. Sealing: Not required
4. Built in Mold and Mildew Resistance
5. Installation: Per manufacturer's written instructions.

PART 3 - EXECUTION

3.1 INSPECTION:

A. Installer must examine the substrate and conditions under which ceramic tile is to be installed and notify the Contractor in writing of any conditions detrimental to the proper and timely completion of work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.

3.2 INSTALLATION- GENERAL:

A. Comply with the ANSI standard installation specifications for applications indicated.

B. Handle, store, mix and apply proprietary setting and grouting materials in compliance with the manufacturer's instructions.

C. For pre-grouted sbeets, field grout perimeters of individual sheets and other un-grouted joints using same elastomeric material as used in the factory or as recommended by manufacturer for specific application.

D. Extend tile work into recesses and under equipment and fixtures, to form a complete covering without interruptions, except as otherwise shown. Terminate work neatly at obstructions, edges and coruers without disruption of pattern or joint alignment.

E. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight, aligned joints. Fit tile closely to electrical outlets, piping and fixtures so that plates, collars, or covers overlap tile.

F. Acceptability of Surfaces: Before tiling, be sure variations of surface to be tiled fall within maximum variations of 1/8" in 8' for walls and 1/16" in 8' for floors.

G. Surface preparation: Surface must be free of dust, grease, wax, plaster drippings or other extraneous material to assure proper adhesion. All movement joints must be located prior to starting to lay tile.

H. Cuts must be planned to be in the least conspicuous locations, and cuts under 2" (5 cm) should be avoided.

I. Install in accordance with the applicable standards.

3.3 SETTING AND GROUTING:

A. Use setting materials only on properly prepared smooth, flat surfaces.

B. Unless otherwise shown, lay tile in grid pattern for ceramic tile. Align joints when adjoining tiles on floor, base, walls, and trim are the size. Lay out tile work and center tile fields both directions in each space or on each wall area. Adjust to minimize tile cutting. Pruvide uniform joint widths.

C. Set marble saddles in same setting material as floor tile.

D. Tint grout as directed by Architect to match samples.

E. Apply grout to all tile joints and at marble saddle in accordance with instructions and recommendations of approved grout manufacturer.

3.4 CLEAN, SEALING AND PROTECTION

A. Cleaning and Sealing:

1. Clean grout and setting materials from face of tile and marble wbere materials are workable. Leave surfaces clean and free of all foreign matter. Stained material will not be accepted.

2. Unglazed tile may be cleaned with acid solutions only when permitted by tbe tile and grout manufacturer's printed instructions, but not sooner than 14 days after installation. Protect metal surfaces, cast iron and citreous plumbing fixtures from effects of acid. Flusb the surface with clean water before and after cleaning.

3. Leave finished installation clean and free of cracked, chipped, broken, un-bonded, or otherwise defective tile work.

B. Protection:

1. When recommended by tile manufacturer, apply a protective coat of neutral protective cleaner to complete tile walls and floors.

2. Protect installed tile work with Kraft paper or other beavy covering during the construction period to prevent damage and wear.

3. Prohibit all foot and wheel traffic from using tiled floors for at least 5 days.

4. Before final inspection, remove protective coverings and rinse neutral cleaner from all tile surfaces.

END OF SECTION 09300

SECTION 09500 - 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 with exposed suspension systems.

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

1. Division 15 for grilles, registers, and diffusers in acoustical ceilings.
2. Division 16 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 finisbes involve normal color and texture variations, include sample sets sbowing full range of variations expected.

a. 6-incb-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, hy UL or other testing and inspecting organizations acceptahle to authorities having jurisdiction. Identify acoustical ceiling components with appropriate markings of applicahle 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 Responsihility 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 a 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 bumidity 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 matcb 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 as indicated on drawings:

a. 2 x 4 x 5/8 inch panels, "Dune" Item #1773, fine texture, square lay-in, Armstrong, or equal.
b. NRC Range: .50
c. Light Reflectance: 0.83
d. Sag resistance: Humigard Plus
e. Fire rating: Class A
f. Color: White
g. Warranty: 10 years

2. For use in 2 x 2 Grid Systems as indicated on drawings:

a. 2 x 2 x 5/8 inch panels, "Dune" Item #1772, fine texture, square lay-in, Armstrong, or equal.
b. NRC Range: .50
c. Light Reflectance: 0.83
d. Sag resistance: Humigard Plus
e. Fire rating: Class A
f. Color: White
g. Warranty: 10 years

B. Ceiling Grid Manufacturers: Subject to compliance witb 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. "Prelude XL", Armstrong World Industries, Inc.
   b. "200 Snap-Grid System", Chicago Metallic Corporation.
   c. "DX System", USG Interiors, Inc.

2. Edge Moldings:

   a. Armstrong World Industries, Inc.
   b. Chicago Metallic Corporation.
   c. National Rolling Mills, Inc.

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 requirements.

B. Finishes and Colors: Provide manufacturer's standard factory-applied finisb 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 I 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 prefinisbed 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 wbite.

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 eacb 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.

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 banger 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 bangers 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 incbes from ends of each member.

D. Install edge moldings of type indicated at perimeter of acoustical ceiling area and wbere 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 wbere required by governing regulations; space as recommended by panel manufacturer unless otherwise indicated or required.

3.4 CLEANING

A. Clean exposed surfaces of aconstical 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 09500

SECTION 09650 – RESILIENT FLOORING

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 sball be binding on tbe Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 DESCRIPTION OF WORK

A. The extent of resilient flooring is shown on Drawings. The work includes floor preparation per Manufacturer's recommendations; resilient flooring and all accessories and adhesives needed to form a complete and finished installation. Resilient materials are as follows:

1. Solid Vinyl Tile
2. Slip Resistant Solid Vinyl Tile
3. Rubber Tile
4. Rubber Stair Treads
5. Resilient Base
6. Resilient Accessories

1.3 RELATED SECTIONS

A. Section 01400-Quality Control: Moisture Testing.

B. Section 03000- Concrete Underlayment.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who has successfully completed resilient flooring installations 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. Single-Source Responsibility for Resilient Tile: Obtain each type of resilient tile from a single source with resources to provide products of consistent quality in appearance and pbysical properties without delaying progress of the Work.

C. Coordination of Work: Coordinate layout and installation of resilient floor tile with other construction that penetrates walls or floors.

1.5 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. Provide 3 sets of samples.
   a. Full size 12" x 12" sample of each color resilient tile specified. Sample shall he clearly marked with manufacturer, style and color.
   h. 12" length sample of resilient base.
   c. 12" length sample of transition strips.
3. Submit maintenance data including cleaning methods, recommended cleaning solutions and stain removal methods.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver all resilient flooring and accessories 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. Store on a smooth floor. Stack no more than five (5) cartons high. Pallets shall not be double stacked. Room temperature must he maintained between 65-85 degrees F for 48 hours hefore, during and after installation. The ambient relative humidity should he hetween 40% and 60%.

B. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

C. Handle resilient tile and accessories carefully to avoid chipping edges or damaging units in any way.

1.7 PROJECT CONDITIONS

A. Space Enclosure: Do not install resilient tile and sheet goods and accessories until space is enclosed and HVAC system is operating. Maintain minimum 65 degrees F and maximum 85 degrees F air temperature at flooring installation area for 48 hours prior to, during and for 48 hours after installation.

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. Furnish quantity of full-size units equal to 5.0 percent of amount installed from same batch numbers as materials installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Vinyl Tile Flooring: Subject to compliance with requirements, provide the following:

1. SVT-1:
   a. Manufacturer: Johnsonite/Tarkett
   b. Style: Cortina Grande
   c. Type: Solid Vinyl Tile
   d. Size: 16" x 16" x 1/8"
   e. Static Load Limit: 800 psi
   f. Smoke Density: < 450
   g. Flammability: Class 1 > 0.45 CRF
   i. Slip Resistance: ADA Compliant.≥ 0.6 COF

2. SRT-1:
   a. Manufacturer: Johnsonite/Tarkett
   b. Style: Cortina Grande Slip Resistant Tile
   c. Type: Solid Vinyl Tile
   d. Size: 16" x 16" x 1/8"
   e. Static Load Limit: 800 psi
   g. Smoke Density: < 450
   b. Flammability: Class 1 > 0.45 CRF
   i. Slip Resistance: ADA Compliant.≥ 0.6 COF

B. Rubber Stair Treads and Tile: Subject to compliance with requirements, provide the following:

1. RST-1:
   a. Manufacturer: Johnsonite/Tarkett
   b. Type: Resilient Rubber Speckled Tile Flooring and Stair Treads
   c. Style: HMT, Hammered surface texture
   d. Thickness: .125"
   e. Tile Size: 24" x 24" x .125"
   f. Static Load Limit: ASTM F 970- Passes 250 psi
   g. Smoke Density: ASTM E 648/NFPA 253, Class 1
   h. Flammability: Class 1 > 0.45 CRF
   i. Slip Resistance: ASTM D: Meets or Exceeds a static coefficient of friction of 0.8

C. Rubber Base:

1. RB-1:
   a. Manufacturer: Johnsonite
   b. Type: Rubber Base with Toe
   c. Height: 4"
   d. Lengths: 8' long

2. RB-2:
   a. Manufacturer: Johnsonite
   b. Type: Rubber Base with Toe
   c. Height: 6"
   d. Lengths: 8' long

D. Accessories

1. RRS-1
   a. Manufacturer: Johnsonite
   b. Type: Wheeled Traffic Transition from 1/8" to 1/8"
   c. Model #: CTA-24-N

I. Adhesives:

1. SVT-1: Solid Vinyl Tile
   a. Tarkett # 800 Pressure Sensitive Adhesive
   b. Trowel Size: 1/32" x 1/16" x 1/32" U Notched Trowel

2. SRT-1: Slip Resistant Vinyl Tile
   a. Tarkett # 800 Pressure Sensitive Adhesive
   b. Trowel Size: 1/32" x 1/16" x 1/32" U Notched Trowel

3. RST-1: Rubber Stair Treads and Tile
   a. Johnsonite # 965, Flooring and Tread Adhesive
   b. Trowel Size on Porous Substrates: 1/16" x 1/16" x 1/16" Square Notched Trowel
   c. Trowel Size on Non-Porous Substrates: 1/16" x 1/16" x 1/16" V Notched Trowel

4. RB-1,2: Rubber Base Adhesive
   a. Type: #960 Solvent-free, Environmentally Safe Acrylic Cove Base Adhesive
   b. Trowel Size: 1/8" x 1/8" x 1/8" SQ Notch

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and sub floor to which floor tile and base attaches or abuts, with Installer present, for compliance with requirements specified in this and other sections that affect installation and ancborage of resilient flooring. Do not proceed with installation until unsatisfactory conditions have been corrected.

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 migbt interfere with adhesion of resilient products.

C. Proceed with installation only after unsatisfactory conditions bave been corrected.

3.2 PREPARATION- GENERAL

A. Remove all sub-floor ridges and bumps. Fill low spots, cracks, joints, holes and other defects with sub-floor filler.

B. Clean floor and apply trowel and float filler to leave smooth, flat, hard surface. Prohibit traffic until filler is cured.

C. Floors shall be flat with a maximum variation of 1/8 inch in 10 feet.

D. Prepare substrates according to manufacturer's written instructions to ensure adhesion of Resilient Tile Flooring.

E. Verify that substrates are dry and free of curing compounds, sealers and hardeners.

F. 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.

G. 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.

H. Concrete subfloors must be constructed as recommended by the American Concrete Institute's ACI 302.2 "Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials and prepared to receive resilient flooring according to ASTM F 710, "Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring" including the following:

1. Moisture Testing: All concrete subfloor must be tested for moisture, pH and proper adhesive bond.

2. Proceed with installation only after substrates pass testing.
3. Perform anhydrous calcium chloride test, ASTM F 1869, "Standard Test Metbod for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride" or ASTM F 2170, "Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs using in situ probes". Three tests must be conducted for areas up to 1,000 sq. ft. and one additional test sbould be conducted for eacb additional 1,000 sq. ft. of flooring.
4. Results must not exceed 5 lbs. Moisture Vapor Emission Rate per 1,000 sq. ft. in 24 hours when tested to ASTM F 1869 or exceed 80% when tested to ASTM F2170.
5. 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.
6. An adhesive bond test should be performed using the actual flooring material and adhesive to be installed. Tbe test areas should be a minimum of 36" x 36" and remain in place for at least 72 hours and then evaluated for bond strength to concrete.

I. Fill cracks, boles, 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.

J. Floor covering sball not be installed over expansion joints.

K. Do not install resilient products until they are same temperature as the space wbere they are to be installed.

L. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

M. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

3.3 INSTALLATION- SOLID VINYL TILE AND SLIP RESISTANT SOLID VINYL FLOORING (SVT-1, SRT-1)

A. Batch numbers should not be mixed during the installation.

B. Square the area and establish reference points on the substrate.

C. Apply the adhesive to the substrate. Follow directions on adhesive label for proper adhesive use.

D. Use establisbed reference points and install the flooring.

E. Lay tiles so that the graining follows the same direction. The printed numbers on The back may be used as reference. Do not quarter turn the tiles.

F. Tiles should be lightly butted together when placing the flooring into the adhesive.

G. Do not force tiles together creating a ledge condition at the seams and corners. Sliding tiles will force the adhesive out between the seams.

H. Periodically, lift the corner of an installed tile to ensure proper transfer of adhesive.

I. Roll floor in both directions with a 100 lb three-section roller. Use a hand roller in areas that cannot be reached with a large roller.

J. Inspect the floor surface and remove any adhesive on the surface.

3.4 INSTALLATION- RUBBER STAIR TREADS (RST-1)

A. Install with Johnsonite adhesive specified for the site conditions and follow adhesive label for proper use.

B. Stair treads, nosings and risers must be trimmed to fit and dry laid on each step prior to adhesive installation.

C. Since each step on a staircase varies slightly, each tread/riser/nosing to be scribed to ensure proper fit.

D. Measure the width of the step and place a pencil mark on the step's riser indicating the center of the step. Measure the length of the stair tread nosing and mark the center point at the back where the tread meets the riser.

E. Position the stair tread/nosing on the step with the right hand side fitted snugly to the stringer.

F. Utilizing a set of dividers, span the pointers across the two centerline marks. Increase the measurement by approximately a 1/16" to allow for expansion.

G. Move to the right hand side of the step. Place one pointer on the stringer and the other on the tread or nosing. Start at the back of the tread and pull the dividers forward. Keep the pointer firmly in contact with the stringer while exerting adequate downward force to scribe the tread/ nosing material.

H. Use a hooked linoleum type or utility knife to cut the material.

I. Reposition the tread/nosing to the left hand side of the step and follow the same procedure to fit the left side of the tread/nosing.

J. Fit the stair treads to depth.

K. Position the stair tread/ noising on the step. There should be approximately 1/16" uniform clearance around perimeter of the tread.

L. Fit the riser.

M. Set the trimmed stair tread and riser in place. Position the nose of the stair treads over the riser. Scribe a line on the riser, utilizing the edge of the stair tread nose as a guide and then trim the riser so that the top of the riser will abut the bottom of the stair tread nose when installed.

N. Trowel adhesive onto the tread and nosing portions of the step surface only using a 1/16" square notched trowel. Keep adhesive back ½" in hoth directions of the step edge to provide a bonding area for the #930 Epoxy Caulking Compound. Allow the #965 Adhesive to dry or gas-off for approximately 5-10 minutes and then install the product into the wet adhesive layer. Immediately after installation, roll the stair treads or nosings with J-type hand roller and roll a second time 45-60 minutes later.

O. Gun or knife an adequate amount of # 930 Two Part Epoxy Caulking Compound into the nose of the stair tread/nosing to completely fill the void between the internal angle of the stair tread and external edge of the stair step.

P. Position the stair tread/nosing into its proper position on the step, beginning at the nose and pushing back firmly and down as tightly as possihle.

Q. When installation is complete, firmly roll with a hand roller. Make certain that the nosing portion of the stair tread/nosing is fitted tightly and adhered to the step nosing.

R. Remove excess adhesive with a clean cloth dampened with mineral spirits.

3.5 INSTALLATION- RUBBER WALL BASE (RB-1,2)

A. General: Installation shall be as recommended by manufacturer.

B. All walls must be clean, smooth, flat and dry. The surface must be free of all dust, loose particles, solvents, paint, grease, oil, wax, and any other foreign material that could affect installation.

C. Fill all depression, cracks and other surface irregularities with a good quality patching compound.

D. Contamination on the substrate can cause damage to the wall base. Permanent, non-permanent markers, crayons, pens must not be used to write on the back of the wall base material or used the mark the substrate as they will bleed through.

E. Allow coiled wall base to lay flat for at least 24 hours prior to installation.

F. Apply adhesive to the ribbed surface (back) of the wall base with a 1/8" square notched trowel. The adhesive should cover 80% of the back surface. Leave ¼" uncovered space at the top of the wall base to prevent the adhesive from oozing on the wall above the base.

G. Position wall base on wall surface and roll with hand roller. Always roll back to starting point to prevent stretching of wall base.

H. Fit joints tight and vertical. Use as long lengths as is practicable. Miter internal corners. Use pre-formed outside corners.

I. Scribe to fit to doorframes and other obstructions.

3.6 CLEANING AND PROTECTION-GENERAL

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

B. Perform the following operations immediately after completing resilient product installation:
1. Remove adhesive and other blemishes from exposed surfaces.
2. Sweep and vacuum surfaces thoroughly.
3. Damp-mop surfaces to remove marks and soil.

C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D. No traffic, rolling loads or furniture placement for 72 hours after installation.

E. Cover resilient products until Substantial Completion.

F. Wait 72 hours after installation before performing initial cleaning.

3.7 POST INSTALLATION CLEANING AND PROTECTION OF SVT-1 AND SRT-1:

A. Thoroughly sweep or vacuum the flooring to remove all loose dirt and grit.

B. Prepare a cleaning solution using a recommended pH neutral cleaner. Apply the cleaning solution with a nylon or rayon mop. Let cleaning solution dwell for 5-15 minutes. Scrub the floor using a single disc rotary machine equipped with a green or blue pad. Do not use brown or black pads.

C. Remove the cleaning solution using a wet vacuum or a mop.

D. Rinse the floor thoroughly with clean water.

E. Apply two coats of a recommended floor finish according to label instructions.

F. Allow the floor finish to dry completely between coats.

END OF SECTION 09650

SECTION 09680 - CARPETING

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 DESCRIPTION OF WORK

A. The extent of carpet work is shown on Drawings/ Schedules. The work includes Modular Carpet Entryway System Carpet Tile, all accessories and adhesives as required for a finished installation.

1. Carpet Manufacturers, styles and colors, shall be as noted in Drawings/ Schedules as shown and specified.

B. Related Work Specified Elsewhere: Resilient Flooring.

1.3 QUALITY ASSURANCE:

A. Installer Qualifications: Engage an experienced Installer who has successfully completed carpeting installations 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 carpeting that is 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.

1. Flame Resistance: Pass Methamine PU Test, DOC-FF1-70.
2. Flooring Radiant Panel ASTM E-648-78: Critical Radiant Flux, greater than 0.45 watts per CM2.
3. Smoke Chamber ASTM E-662-83: Less than 450.

C. Coordination of Work: Coordinate layout and installation of carpeting with other construction.

1.4 SUBMITTALS

A. Manufacturer's Data:

For information only, submit 2 copies of manufacturer's technical information and installation instructions for all materials required, except bulk materials. Include certifications and other data as may be required to show compliance with these specifications. Transmit a copy of each instruction to the Installer.

B. Samples: Submit 3 sets of samples of same thickness and material for final unit of Work.

1. Modular Tile: Not less than 18" square as required.
2. Carpet Transition Strips: Not less than 12" long.
3. Maintenance Instructions, including recommended cleaning methods, cleaning solutions and stain removal methods.

C. Maintenance Stock:

1. After completion of work deliver replacement materials to the project site, as follows:
   a. For each type and color of carpet tile and roll goods, color and type, not less than 5% of total carpeted area.
2. Furnish replacement materials from same manufactured lot as material installed.

D. Shop Drawings: Submit 3 sets of shop drawings. Shop drawing must contain the following information:

1. Name of Job, general contractor, architect, installer.
2. Building address.
3. Scale
4. Drawing for each area to be carpeted.
5. Construction of sub floor for each area.
6. Quantities of carpet needed for each area.
7. Carpet pile direction of each area.
8. Name of manufacturer, style, backing system and color of carpet for each area.
9. Location and type of expansion joints, and edge moldings.

E. Maintenance Instructions, including recommended cleaning methods, cleaning solutions and stain removal methods.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING:

A. Deliver packaged materials and store in original containers with seals unbroken and labels intact until time of use, in accordance with manufacturer's directions. Packaging shall contain manufacturer's name, product color and pattern name, identification and other related information. Store in a fully enclosed space where

it will be protected against damage from moisture, direct sunlight, surface contamination and other causes.

B. Carpet shall be stored between 40 and 100 degrees Fahrenheit and shall Be conditioned to between 65 and 95 degrees Fahrenheit and the humidity between 10% and 65% for a minimum of 48 hours prior to the installation.

1.6 JOB CONDITIONS AND COORDINATION

A. Space Enclosure: Do not install carpeting until space is enclosed and weather proof, wet-work in space is completed and nominally dry, painting and finish work is complete and work above ceilings is complete, tested, and approved. Maintain room temperature at a minimum of 65 and a maximum of 95 degrees Fahrenheit for a minimum of 48 bours before, during and 72 hours after installation. The installation site must be acclimated with HVAC in operation.

1.7 WARRANTY

A. Provide Certified Copies of the manufacturer's product warranties.

B. Warranty sball be sole source responsibility of the manufacturer. Second Source warranties or warranties that involve parties other than the manufacturer are unacceptable.

C. Warranties are official documents and shall not be issued on job sheets.

PART 2 - PRODUCTS

2.1 MODULAR CARPET TILE AND ENTRYWAY SYSTEM:

A. System Overview: Modular Carpet Entryway System Tile (WOM)

1. Manufacturer: The Mohawk Group/ Lees
2. Collection: Tuff Stuff
3. Style: Step Up
4. Construction: Tufted Performance Tip Sbear
5. Size: 24" x 24"
6. Dye Method: Yarn Dyed
7. Gauge: 5/32
8. Tufted Weight: 38 oz/square yard
9. Face Yarn: 100% Nylon Fortis with Scraper Yarn
10. Primary Backing System: 100% EcoFlex ICT
11. Installation method: Monolithic
12. Flammability: ASTM-E 648 flooring radiant panel: Class 1; ASTM-. E-662 NBS smoke density: less than 450.

13. Soil/Stain Protection: Sentry Plus Stain Protection
14. Warranty: Lifetime Limited Modular Warranty, Lifetime Static

B. Adhesives: Full Spread Method.

1. WOM-1: Mohawk EnPress PSA, Pressure Sensitive Releasable Adhesive For Eco Flex ICT Tile. Spread rate to be 100-120 SY. Use 1/16" x 1/32" X 1/32" U Notch Trowel.

C. At the transition between carpet and other floor coverings, carpet edges must be protected and covered with appropriate molding. In transition areas, the edge of a hard surface flooring must be a minimum of 1/16" higher than carpeted flooring. Seam sealer must be applied to the edge of the carpet at the transition area.

D. Acceptable equals must be available in same color and similar pattern.

E. Acceptable equals must be available in same color and similar pattern, yarn type dye method, yarn weight and identical electrostatic dissipative qualities.

PART 3 - EXECUTION

3.1 INSPECTION:

A. Installer must examine the substrate and conditions under which carpet is to be installed and notify the Contractor in writing of any conditions detrimental to the proper and timely completion of work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.

3.2 PREPARATION, GENERAL:

A. Room temperature must be a minimum of 65 degrees Fahrenheit for 24 hours prior to installation. Floor temperature can vary 5-10 degrees below room temperature. Modules must be conditioned to room temperature for 24 hours prior to installation. Relative humidity must be between 12%-65% maximum for 24 hours prior to installation. These conditions must also be maintained for 48 hours after completion of installation.

B. Clean floor of dust, dirt, solvents, oil, grease, plaster, paint and other substances detrimental to proper performance of adhesive and carpet. Allow floors to dry thoroughly. Floor temperature shall be a minimum of 60 degrees Fahrenheit for proper adhesive performance.

C. Verify that floors are level, with a maximum variation of 1/8" in 10 feet, noncumulative. Use leveling compound where required. All boles and cracks to

be patched using a latex based Portland cement patching compound. Patched areas will need to be primed with Prime coat of approved Primer.

D. Ensure that concrete floors are free from scaling and irregularities and exhibit neutrality relative to acidity and alkalinity. Floor PH shall be between 5 and (and not exceed 9. When pH is between 9 and 12 and moisture is below 5 lbs or 80%, Prime Coat can be used to block pH. Sbould the pH be outside this range, do not proceed with the installation.

3.3 INSTALLATION:

A. General: Cbeck matching of carpeting to verify there is no variation in dye lots. It is important to install modular tile in the order that they were manufactured.

B. Measure the area to be carpeted to determine the best starting positions. Cbalk two lines that intersect these positions at right angles. Proper planning should avoid trimming perimeter tiles more than ½ their width (12" for 24" x 24" tiles).

C. Cut carpet where required in a manner to allow proper seam and pattern match. Ensure that cuts are straight, true and unfrayed. Never cut carpet over carpet as this can result in cutting of loops in lower carpet.

D. Ensure that seams are straight, not overlapped or peaked and free of gaps.

E. When installation is complete, roll entire job with a 75-100 lb roller.

F. Install transition strips wbere carpeting terminates at other flooring. Use full-length pieces only. Butt tight to vertical surfaces.

3.4 CLEANING AND PROTECTION

A. Remove any excess adhesive from floor, base, and wall surfaces without damage.

B. Thoroughly clean carpeting per manufacturer's written instructions prior to final acceptance by Owner.

C. Carpet sbould be protected from heavy traffic and construction dust with a non-staining building material paper. Never use plastic sbeeting as it will trap moisture inside and prevent proper curing of the adhesive.

END OF SECTION 09680

SECTION 09900 – PAINTING

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 hinding on the Contractor and or Subcontractor who performs this Work. Note also all Addenda.

1.2 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, ceiling paint and latex enamel trim paint.

B. Manufacturer's products and colors shall he as noted in Drawings/ Schedules as shown and specified.

C. Related Sections: The following sections contain requirements that relate to this section:

1. Section 04200 – Unit Masonry for painting of Unit Masonry.
2. Section 08100 – Standard Steel Doors and Frames for painting of Steel Doors and Frames.
3. Section 08200 – Flush Wood Doors for pre-finished Wood Doors.
4. Section 09255 – Gypsum Board Assemblies for painting of Gypsum Board Walls and Assemhlies.

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.
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 samples.

a. 8"x10" samples of each paint color.

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 finisbes.

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 spaee 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.

B. 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/ General Polymers
2. Benjamin Moore and Company
3. Pittsburgh Paints

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 fitting prior to preparing finishes for painting.

B. Correct minor defects and clean surfaces which may affect the work of this section.

C. Shellac and seal marks that may bleed through surface finisbes.

D. Gypsum Board Surfaces: Latex fill minor defects. Spot prime defects after repair.

E. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.

F. 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 trisodium phosphate. Rinse well and allow to dry.

G. 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.

H. 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.

I. Interior Wood Items (Painted): Wipe off dust and grit prior to priming. Seal knots, pitch streaks and sappy sections with sealer. Fill nail boles and cracks after primer has dried; sand between coats.

J. 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. Prime back surfaces of interior woodwork scheduled to receive stain or varnish with gloss varnish reduced to 24 percent with mineral spirits with primer paint.

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. Wood- Painted
   1. One coat enamel prime sealer
   2. Two coats Latex Semi-Gloss enamel

B. Concrete Block
   1. One coat block filler
   2. One coat primer sealer acrylic latex
   3. Two coats acrylic Latex, Eggshell enamel

C. Steel- Unprimed
   1. One coat metal primer
   2. Two coats Latex Semi-gloss enamel

D. Steel- Primed
   1. Touch-up with original primer
   2. Two coats Latex Semi-Gloss enamel.

E. Gypsum Board and Plaster to receive solid color paint
   1. One coat latex primer sealer
   2. Two coats Acrylic Latex, eggshell finish

END OF SECTION 09900

SECTION 10155 - TOILET COMPARTMENTS

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 hinding on the Contractor and or Suhcontractor who performs this Work. Note also all Addenda.

1.2 SUMMARY

A. This Section includes stock, manufactured toilet compartments.

B. Types of toilet partitions include:

1. Solid phenolic core.

C. Style of Toilet Compartment, include:

1. Floor mounted, overhead braced.

D. Toilet accessories, such as grab hars are specified in Section 10800 "Toilet Accessories".

1.3 SUBMITTALS

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

B. Product data for materials, fahrication, and installation including catalog cuts of anchors, hardware, fastenings, and accessories.

C. Shop drawings for fahrication and erection of toilet compartment assemhlies not fully described hy product drawings, templates, and instructions for installation of anchorage devices huilt into other work.

D. Samples of full range of colors for each type of unit required. Submit 6-inch-square samples of each color and finish on same suhstrate to be used in work, for color verification after selections have been made.

1.4 QUALITY ASSURANCE

A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible, to ensure proper fitting of work.

However, allow for adjustments where taking of field measurements hefore fabrication might delay work.

B. Coordination: Furnish inserts and anchorages which must be built into other work for installation of toilet compartments and related items. Coordinate delivery with other work to avoid delay.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide products by one of the following:

1. Solid Phenolic:

a. American Sanitary Partition Corp.
h. Bohrick Washroom Equip, Inc.
c. Flush-Metal Partition Corp.
d. Global Steel Products, Corp.
e. General Partitions Mfg. Corp.

2.2 MATERIALS

A. General: Provide materials which have been selected for surface flatness and smoothness. Exposed surfaces which exhihit pitting, seam marks, roller marks, stains, discolorations, telegraphing of core material, or other imperfections on finished units are not acceptahle.

B. Solid Phenolic: Provide ¾ inch thick solid phenolic doors and pilasters and ½ inch thick solid phenolic partitions and panels. Provide solid phenolic core with multiple resin-impregnated kraft, color, and clear Melamine surface sheets fused at high temperature and pressure. Edges shall he polished phenolic warranted for 10 years against delamination, corrosion or hreakage.

C. Hardware and Accessories: Heavy duty operating hardware and accessories of ASTM 162, Type 302/304 Stainless Steel, #4 satin finish.

D. Anchorages and Fasteners: Manufacturer's standard exposed fasteners of stainless steel, chromium-plated steel, or hrass, finished to match hardware, with theft-resistant-type heads and nuts. For concealed anchors, use stainless steel.

E. Fire resistance characteristics per ASTM E-84 Tests: flame spread of 0-25 max. smoke density 100 max.

2.3 FABRICATION

A. General: Furnish doors, fabricated for compartment system. Furnish units with cutouts, drilled holes, and internal reinforcement to receive hardware and accessories as indicated.

B. Door Dimensions: Unless otherwise indicated, furnish 24-inch-wide in-swinging doors for ordinary toilet stalls and 32-inch-wide (clear opening) out-swinging doors for stalls equipped for use by handicapped.

C. Hardware: Furnish hardware for each compartment to comply with ANSI A117.1 and U.S. ADA Guidelines for handicapped accessibility and as follows:

1. Hinges: Continuous hinge full beight of door. Type 304 satin finish stainless steel; extra beavy duty 16 gauge. Througb bolted to door and stile with 12 theft-resistant, one way screws fastened into threaded metal inserts.
2. Latch and Keeper: Door latch with shock resistant nylon track into 1 inch wide keeper formed from one piece 1/8 inch 11 gauge stainless steel. Keeper shall be through bolted to stile with theft resistant one-way screws fastened into threaded metal inserts. Vinyl coated door stops.
3. Coat Hook: Manufacturer's standard unit, combination hook and rubber-tipped bumper, sized to prevent door hitting mounted accessories.
4. Door Pull: Manufacturer's standard unit for out-swinging doors. Provide pulls on both faces of handicapped compartment doors.
5. Pilaster Shoes: ASTM A 167, Type 304 stainless steel not less than 4 inches high, finished to match hardware.
6. Overhead bracing: Continuous stainless steel at all sides and subdivisions.

2.4 FINISH

A. Color: One (1) of manufacturer's standard colors for each room indicated to receive toilet partitions. Color to be as selected by Architect from manufacturer's standard colors.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Comply with manufacturer's recommended procedures and installation sequence. Install compartment units rigid, straight, plumb, and level. Provide clearances of not more than 1/2 inch between pilasters and panels, and not more than 1 inch between panels and walls.

3.2 ADJUST AND CLEAN

A. Hardware Adjustment: Adjust and lubricate hardware for proper operation. Set hinges on in-swinging doors to hold open approximately 30 degrees from closed

position when unlatched. Set hinges on out-swinging doors (and entrance swing doors) to return to fully closed position.

B. Clean exposed surfaces of partition system components using materials and methods recommended by manufacturer, and provide protection as necessary to prevent damage during remainder of construction period.

END OF SECTION 10155

SECTION 10260 – CORNER GUARDS

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 DESCRIPTION OF WORK

A. This Section includes all materials and installation required for installation of protective corner guards and adhesives.

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 sbowing full range of variations expected. Provide 3 sets of samples.

   a. Full size 12" x 12" sample of each color specified. Sample shall be clearly marked with manufacturer, style and color.
   b. 12" length sample of each trim piece.

3. Submit maintenance data including cleaning methods, recommended cleaning solutions and stain removal methods.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who has successfully completed installations 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. Single-Source Responsihility for Corner Guards: Obtain each type of material from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.

C. Coordination of Work: Coordinate layout and installation of Protective Wall Panels with other construction.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to site in manufactuer's original, unopened containers and Packaging with labels clearing indicating manufacturer and material.

B. Store materials in clean, dry area protected from damage and in accordance with manufacturer's instructions.

C. Handling: Protect materials during handling and installation to prevent damage.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Vinyl Corner Guards:

1. CG:
   a. Manufacturer: Korogard
   b. Type: GS35, Stainless Steel Corner Guard ,Type 304
   c. Mounting: Surface Mounted
   d. Gauge: 16 Gauge
   e. Size: 2" x 2" x 48"
   f. Fire Rating: Class A
   g. Finish: Satin

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine backup surfaces to determine that corners are plumb and straight, surfaces are smooth, uniform, clean and free from foreign matter, nails countersunk, joints and cracks filled flush and smooth with the adjoining surface.

B. Repair defects prior to installation.

1. Level wall surfaces to panel manufacturer's requirements. Remove protrusions and fill indentations.

3.2 INSTALLATION

A. General: Follow all manufacturer's recommendations and guidelines for proper installation.

B. Install corner guards securely to wall using mastic construction adhesive.

C. Apply construction adhesive in a zig-zag pattern over the hack surface of each wing of the corner guard.

D. Position corner guard on the wall appropriately and apply pressure along entire height until a tight and secure fit is achieved.

E. Remove the protective plastic coating from the face of the corner guard.

E. Install materials accurately in location, alignment and elevation.

3.3 CLEANING AND PROTECTION

A. Wipe materials down using a damp cloth and mild soap or cleaner.

B. Do not use ahrasive cleaners.

END OF SECTION 10260

SECTION 10420 - LETTERS AND PLAQUES

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. Exterior Applied Building Letters and Numbers

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

1. Section 10426 "Panel Room Signs" for interior room identification signs.
2. Division 15 Section "Mechanical Identification" for labels, tags, and nameplates for mechanical equipment.
3. Division 16 Section "Electrical Identification" for lahels, tags, and nameplates for electrical equipment.
4. Division 16 Section "Emergency Lighting" for illuminated exit signs.

1.3 SUBMITTALS

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

B. Product Data: Include manufacturer's construction details relative to materials, dimensions of individual components, profiles, and finishes for each type of sign required.

C. Shop Drawings: Provide shop drawings for fahrication and erection of signs. Include plans, elevations, and large-scale sections of typical members and other components. Show anchors, grounds, reinforcement, accessories, layout, and installation details.

1. Provide message list for each sign required, including large-scale details of wording and layout of lettering.
2. For signs supported hy or anchored to permanent construction, provide setting drawings, templates, and directions for installation of anchor bolts and other anchors to be installed as a unit of Work in other Sections.

3. Furnish full-size rubbings for metal plaques.

D. Samples: Provide the following samples of each sign component for initial selection of color, pattern and surface texture as required and for verification of compliance with requirements indicated.

1. Samples for initial selection of color, pattern, and texture:

a. Aluminum: Samples of eacb finish type and color, not less than 4-inch squares of sbeet or plate, showing the full range of colors available.

1.4 QUALITY ASSURANCE

A. Code Compliance: Provide panel signs in conformance with the Uniform Federal Accessibility Standards, Section 4.30, ANSI A117.1, 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.

C. Design Criteria: The specifications indicate size, profiles, and dimensional requirements of signs and are based on the specific type and model indicated. Signs by other manufacturers may be considered provided that deviations in dimensions and profiles are minor and do not cbange the design concept as judged by the Architect. The burden of proof of equality is on the proposer.

1.5 PROJECT CONDITIONS

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

1.6 QUALITY ASSURANCE

A. Catalog Standards: Manufacturer's catalog numbers may be shown on drawings for convenience in identifying certain signage work. Unless modified by notation on drawings or otherwise specified, catalog description for indicated number constitutes requirements for each such sign.

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.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products of one of the following:

1. Exterior/Interior Building Letters and Numbers.

   a. Metal Arts.
   b. Gemini, Inc.
   c. Approved equal

2.2 MATERIALS

A. Fasteners: Use concealed fasteners fabricated from metals that are not corrosive to the sign material and mounting surface.

B. Anchors and Inserts: Use nonferrous metal or hot-dipped galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion resistance. Use toothed steel or lead expansion bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete or masonry work.

2.3 EXTERIOR BUILDING LETTERING AND NUMBERING

A. Furnish and install ten inch (10") letters to read **"TOWN OFFICE ANNEX"** at one (1) location and six inch (6") numbers where shown on drawings to read **"48"** at one (1) location. Letters and numbers shall be cast of aluminum with a bevel face. Faces are to have a satin finish. Sides are to be filed smooth with all tool marks removed. Fastening of letters, flush mounted. Supply templates for use in installation.

B. Color: Dark Bronze Anodized, Fine Satin Finish.

C. Style: Architectural, UPPER CASE ONLY.

D. Manufacturer: Gemini Incorporated, (800)-538-8377, or approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION

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

1. Install level, plumb, with cast sign surfaces free from distortion or other defects in appearance.

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.

END OF SECTION 10420

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 wbo 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. Sbow recorded measurements on final shop drawings. Coordinate fabrication scbedule with construction progress to avoid delay.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Provide 1/2" thick SPE acrylic of 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

Room and/or Door Location	Quantity	Text
DOOR 001	1	MEN'S LOCKER ROOM W/ PICTOGRAM W/ HANDICAP GRAPHIC
DOOR 006	1	MEN'S LOCKER ROOM W/ PICTOGRAM W/ HANDICAP GRAPHIC

END OF SECTION 10426

SECTION 10500 - WARDROBE LOCKERS

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. Vented duty wardrobe lockers and accessories as specified herein and indicated on the drawings at the following locations:

   a. **Men's Lockers #A257**
   b. **Supervisor's Lockers #A261**

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

1. Division 15 – "Mechanical" for air distribution system attached to lockers to provide positive airflow. Vented duty locker manufacturer to provide assistance on airflow.
2. Division 16 – "Electrical" for power distribution within vented duty wardrobe lockers

1.3 REFERENCES

A. Vented duty lockers shall comply with the following Standards:

1. ASTM-A366: Specifications for steel, carbon, cold-rolled sheet of commercial quality.
2. CGSB-1-GP-3000 Applied coating system
3. CGSB-1-GP-12-standard paint colors

1.4 PERFORMANCE REQUIREMENTS

A. Design Requirements: Total height of all units shall not be greater than elevations as indicated on the drawings.

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's literature and installation instructions complying with contract documents and Section 01300, Submittals.

B. Shop Drawings: To include assembly and installation details along with dimensioned plans and elevations sbowing locker layout (with quantities and accessories) in relationship to adjacent construction.

C. Samples: Provide sample color cards.

D. Installer Certificates: Signed by manufacturer certifying that installers comply with ISO certification, manufacturer's certifications, and installer certifications.

E. Reference List: Provide a list of ten installed systems of same size, scope and magnitude to be contacted by owner. Reference list must include system address, contact and phone number, number and type of lockers.

1.6 QUALITY ASSURANCE

A. Manufacturers Qualifications: Manufacturer must be ISO 9001:2008 certified and provide certification documentation.

B. Manufacturer must possess a minimum of ten (10) years' experience in the manufacture, installation, and servicing of welded metal lockers as specified herein.

C. Installer Qualifications: Installer must possess a minimum of two (2) years' experience installing equipment specified herein and with factory trained installers.

D. Accessibility: Conform to applicable ADA codes for accessible locker units.

1.7 PROJECT CONDITIONS

A. Field Measurements: Verify wardrobe locker locations by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1. Establisbed Dimensions: Where field measurements cannot be made without delaying the Work, establisb dimensions and proceed with fabricating units without field measurements. Coordinate construction to ensure actual dimensions correspond to established dimensions.

B. Delivery, Storage, & Handling: Comply with instructions and recommendations of manufacturer for special delivery, storage and bandling requirements.

C. Sequence & Scheduling: Sequence installation with other work to minimize possibility of damage and soiling during remainder of construction period.

D. Pre-installation Conference: Conduct pre-installation conference at Project site. Review methods and procedures related to units including, but not limited to, the following:

1. Inspect and discuss condition and levelness of flooring and other preparatory work performed under other contracts.
2. Review structural loading limitations.
3. In addition to the Contractor and the installer, arrange for attendance of the following:
   a. Other installers affected by the work of this section.
   b. The Owner's representative.
   c. The Architect.
   d. Manufacturer's representative.

1.8 WARRANTIES

A. Warranty: Submit a written warranty, by Contractor, Installer, and Manufacturer, agreeing to repair or replace units which fail in material or workmanship within the specified warranty period. This warranty shall be in addition to and not a limitation of other rights the Owner may have against the Contractor under Contract Documents.

B. Tbe entire installation will be warranted against defects in material and workmanship of moving parts for five (5) years from date of acceptance by the Owner. Provide a five (5) year warranty on the frame.

PART 2 – PRODUCTS

2.1 SYSTEM DESCRIPTION / BASIS OF DESIGN

A. Vented Duty Wardrobe locker with hinged doors and built in bench drawer

1. All welded, one-piece metal locker with hinged doors, wooden bench, and built-in bench drawer
2. Vented Metal Locker Size: 24" wide x 24" inches deep x 72" high.
3. Bencb drawer depth to be 36"

B. Basis of Design: Technical specifications and contract documents are based on Tactical Vented Wardrobe Locker manufactured by Groupe Lincora, 6265 Notre-Dame East, Montreal, Quebec, H1N2E9, (973)-984-9113.

C. Products by other manufacturers will be considered provided they comply with technical requirements and match the specified product in layout, configuration, construction, appearance, and finish in accordance with the design concept and intent.

2.2 FABRICATION

A. Top:
   1. Top to be a minimum of 16 gauge steel.
   2. Lateral and back flanges to be bent 90 degree downward – no less than ¾" and welded to the body.
   3. Front flange full widtb door strike with door bumper.

B. Bottom:
   1. A minimum of 16 gauge galvanized steel to resist corrosion.
   2. Lateral and back flanges bent 90 degrees downward.
   3. Front to bave four (4) bends to create full width door strike fitted with a door bumper.
   4. Bottom must be welded to the body.

C. Sides:
   1. Sides must be a minimum of 16 gauge.
   2. Rear ends bent 90 degrees inward and welded to the back panel
   3. Front ends with Three (3) bends to create a "U" shape front frame

D. Backs:
   1. Single sheet of 18 gauge steel welded to the body
   2. Back is to be assembled to the inside flanges of the sides
   3. Bottom edge is bent 90 degrees inward – no less than ¾"

E. Frames:
   1. Side frames to be 16 gauge steel strip bent three times at 90 degrees
   2. Corner joints between the top, bottom and side frames must be spot welded to create a rigid unit structure
   3. Corner gussets wbich obstruct access to the corners are unacceptable.

F. Bumpers:
   1. Two (2) ½" dia. polypropylene bumpers are riveted to the top and bottom door strikes.

G. Doors:
   1. Double Door construction for eacb locker unit.
   2. Construction of the doors is to consist of two (2) pans.
      a. Outer pan minimum of 14 gauge single sheet cold rolled steel with two (2) bends vertically on both sides and a single bend borizontally at the top and bottom
      b. Inner pan minimum of 22 gauge single sheet MIG welded to the outer pan to form the rigid 'box' door with the inside door panel ventilation the same as the outer pan although offset in position
   3. Door ventilation to consist of ¼" x 13/16" rectangular perforations
      a. 28 openings are made for 5.8in²

H. Shelves:

1. Minimum of 18 gauge steel
2. Back and sides to have 90 degree downward bends to be welded to the sides and back
3. Front side of the shelf is double flanged at 90 degrees ended by a 180 degree flattening crease
4. Shelves to have round perforations at the rear for air circulation

I. Hinges:
1. Continuous 16 gauge steel hinge full length of the door
2. Must be capable of opening 180 degrees
3. Must be securely fastened to the door by way of spot welds and riveted to the locker side frame

J. Internal Components:
1. Sbelves: Steel construction
   a. Two (2) full width and two (2) smaller shelves.
   b. One (1) small sbelf with valuables compartment with padlock lockable door
2. Coat bar with triangular space to allow for airflow.
3. Perforated boot tray.
4. Magnetic adjustable mirror.
5. Two (2) hooks -1/2" flat steel strip with round end – welded to side panels.
6. 2" holes for wire management
7. One (1) ½" flat steel strip with round end welded to interior door for duty belt storage.
8. Storage sleeve welded to inside door panel.
9. Body Armor Drying Rack: Perforated steel 3 inch deep.

K. Drawer Unit:
1. Drawer must automatically lock when the upper unit is closed. Pull handle inside locker to release drawer.
2. Width to match locker x 36 inches deep x 18-29/64 inches high.
3. 175 pound ball bearing drawer slides.

L. Bench:
1. 1-1/4" x 12" Varnished Maple hardwood attached to top of drawer unit at each locker.
2. Hardwood bench seat to meet at lockers without gaps. Install hardwood bencbes in longest lengths possible up to a maximum length of 12 feet upon request.

M. Locks and Latches:
1. Latching mechanism is a finger lift control type constructed of 12 gauge steel encased in a nylon cover.
2. Each handle shall be equipped with a friction nylon closing latch.
3. Spring activated grabbing system to allow the door to be closed even when in a locked position.

4. Locks: Combination padlocks with master key override; furnish one (1) padlock for each locker installation **and an additional** fifty (50) padlocks for Owner's attic stock. All Combination padlocks to be masterkeyed. Furnish three (3) masterkeys.
5. Drawer lock is a 7" wide aluminum handle located in the base of the main locker.
6. Three Point latching system
7. Double door – Hasp welded to door
8. Hasp to be welded at an angle to allow for easy padlock use and must be flush with front of door.
9. Handle to be steel powder coated flush fit with door.

N. Number Plates:
1. Number plates are to be black plastic with white engraved numbers and affixed with pop rivets.
2. Number doors as directed by Owner.

O. Accessories:
1. Continuous sloping tops, minimum 20 gauge steel, as indicated on the drawings.
2. Finished end panels without exposed fasteners for all end panels exposed to view following installations.
3. Filler panels to be supplied to close all gaps at all finisbed wall conditions following installations.

2.3 FINISHES

A. Steel: Baked Polyester Enamel:
1. Finishes in accordance with CGSB-1-GP-12 specifications. Average thickness (five (5) readings per surface) of paint dry coating is at least 1 mil. dry on all apparent surfaces It is not less than 0.6 mil. dry on all other surfaces. Paint dry coating thickness reading is in accordance with CGSB-1-GP-300 specifications.

2. Steel sheets and strips are sufficiently clean and flat to avoid any detrimental effect to the appearance and construction of the lockers. The surface is to be suitably prepared for application of the paint coating. The steel must be corrosion-treated hy means of phosphate processing.

B. Color: Selected from manufacturer's full color range of manufacturer's fourteen (14) standard colors.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine locker schedule for verification of type and quantity.

3.2 INSTALLATION

A. Follow manufacturer's instructions and approved Shop Drawings.

B. Set plumb, level, and aligned.

C. Connect lockers in a row to ensure square.

D. Use anchors appropriate to the constructed surfaces.

E. Install end panels, filler panels, and sloped tops as indicated on the drawings and for a complete installation.

3.3 ADJUSTING

A. Adjust latches and doors to ensure proper operation

3.4 CLEANING

A. Remove any shipping materials and completely wipe down all surfaces of the lockers.

3.5 DEMONSTRATION/TRAINING

A. Upon completion of the installation, provide to the Building Owner up to one (1) hour training session on proper use and care. Training shall be performed by manufacturer, or manufacturer's representative.

END OF SECTION 10500

SECTION 10800 - 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 furnishing toilet and bath accessory items as shown on the drawings and as specified herein.

B. Installation of toilet and bath accessories is specified in Section 06105, "Miscellaneous Carpentry".

C. Installation of wood blocking is specified in Section 06105, "Miscellaneous Carpentry".

D. Toilet compartments and related accessories are specified in Section 10155, "Toilet Compartments".

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. Scbedule indicating types, quantities, sizes, and installation locations (by room) for eacb toilet accessory item to be provided for project.

D. Setting drawings wbere 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 sbown 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 sball 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.
2. American Specialties, Inc.
3. Georgia-Pacific Professional
4. Sky Systems Co. Inc. (Hand Dryer)

2.2 MATERIALS, GENERAL

A. Stainless Steel: AISI Type 302/304, with polisbed No. 4 finish, 0.034-inch (22-gage) minimum thickness.

B. Brass: Leaded and unleaded, flat products, ASTM B 19; rods, sbapes, forgings, and flat products with finisbed edges, ASTM B 16; Castings, ASTM B 30.

C. Sbeet Steel: Cold-rolled, commercial quality ASTM A 366, 0.04-inch (20-gage) minimum. Surface preparation and metal pretreatment as required for applied finisb.

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.

2.5 GRAB BARS (G.B.)

A. Stainless Steel Type: Provide grab bars with wall thickness not less than 0.05 inch (18 gage) and as follows:

1. Mounting: Concealed, manufacturer's standard flanges and ancborages.
2. Clearance: 1-1/2-inch clearance between wall surface and inside face of bar.
3. Gripping Surfaces: Manufacturer's standard nonslip texture.
4. Heavy-Duty Size: Outside diameter of 1-1/2 incbes.
5. Subject to conformance with requirements, provide grab bar units manufactured by Bobrick Washroom Equipment, Inc.:

a. "Model B-6806x36", for rear wall installation
b. "Model B-6806x42", for side wall installation
c. "Model B-6806x18", for side wall installation
d. "Model B-4998", for swing-up grab bar

2.6 TOILET TISSUE DISPENSERS (T.P.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 mecbanism. Door has flat face with protruding tumbler lock. Theft resistant, beavy 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.

2.7 SOAP DISPENSERS (S.D.)

A. Lavatory Mounted:

1. Surface mounted soap dispenser for liquid and lotion soaps and detergents.
2. Capacity: 34 fluid ounces.
3. Piston, spout, and top cover: Type 304 stainless steel with brigbt polished finisb.
4. Body and sbank: High impact resistant plastic.
4. Subject to conformance with requirements, provide "Model B-8226", Bobrick.

2.8 MIRRORS (M.W.F.)

A. Full Height, Wall Mounted Mirrors:

1. Full width / height mirrors at Locker Rooms by Section 08800.

B. Wall Mounted Mirrors with Frames:

1. See drawings for sizes. One-piece, ½" x ½" x 3/8" channel frame. Type 430 stainless steel with bright polished finisb. Mitered corners. Frame screw points easy replacement of glass. No 1 quality, ¼" glass mirror, warranted against silver spoilage for fifteen (15) years. Galvanized steel back. Secured to concealed wall hanger with theft resistant mounting.
2. Subject to conformance with requirements, provide "Model B-165-2436", BOBRICK.

2.9 ROBE / TOWEL HOOKS (R.H.)

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

1. Subject to conformance with requirements, provide "Model B-2116", Bobrick.

2.10 SHOWER ROD, CURTAIN AND HOOKS

A. Shower rod, curtain, and hooks to be provided at shower areas within Locker / Toilet Rooms as indicated on the drawings.

1. Subject to conformance with requirements, provide "Model 204-1", BOBRICK, stainless steel shower curtain hooks.
2. Subject to conformance with requirements, provide "Model 204-2", BOBRICK, shower curtain of opaque white vinyl, required height to be coordinated with shower unit.
3. Subject to conformance with requirements, provide "Model B-207", BOBRICK, heavy duty shower curtain rod with concealed mounting, required height to be coordinated with shower unit.

2.11 RECESSED WALL RECEPTACLE

A. Satin-finish stainless steel. Seamless beveled flange. Removable, 12-gal. receptacle locks into cabinet. Hooks hold optional vinyl liner. Rough Wall Opening: 16" W, 29 1/4" H, 4" min. depth.

1. Subject to conformance with requirements, provide "Model B-3644", Bobrick.

2.12 ELECTRIC HAND DRYER

A. Sky Systems Model No. 3051.

1. Features:

Casing: Porcelain Enameled Coating
Material: Steel
Operation Power: 1600 W
Housing: Steel Cover, Porcelain Enamel Coating
High Brightness LED to Increase the Ease and Delight of Use
Operation Power : 1600 W (Adjustable)
Drying Time: Less than 10-15 seconds
Drip Proof: IP X1; Isolation: Class 1
Motor Type: Brush Type, Dual Ball Bearings
350-700W, 12000-18000 R.P.M. Adjustable
Warm Air Speed Output: 75-100 m/s , Adjustable
Heater Element: 450-900W, Adjustable
N.W.: 12.8 lbs; G.W.: 14.6 lbs
Unit Size: 8-5/64" x 11-19/64" x 7-3/32"

2. General Specifications:

Operating Voltage: 110-120 Vac, 50/60Hz, 1.3-1.6 KW.
Circuit Operation: Infrared Automatic, self adjusting
Sensor Range: 2" to 13", adjustable
Motor Thermal Protection: Auto Resetting Thermostat turns unit off at 221 degree F
Motor Overload Protection: Motor Assembly Designed with over current fuse, replaceable
Heater Thermal Protection- Auto Resetting Thermostat turns unit off at 185 degree F; Thermal cut-off 288 degree F

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. 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 10800

SECTION 11452 - RESIDENTIAL APPLIANCES

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 types of residential appliances:

1. Microwave Oven
2. Refrigerator
3. Garbage Disposal

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

1. Electrical services and connections for appliances are specified in Division 16.
2. Mechanical services and connections for appliances are specified in Division 15.

1.3 SUBMITTALS

A. General: Submit the following according to Conditions of the Contract and Division 1 Specification Sections.

B. Product data for each appliance type required indicating compliance with requirements, including installation instructions. Provide complete operating and maintenance instructions for each appliance.

C. Schedule: Submit scbedule of appliances, using the same room designations as shown on drawings.

1.4 QUALITY ASSURANCE

A. Energy Ratings: Provide residential appliances that carry labels indicating energy cost analysis (estimated annual operating costs) and efficiency information as required by Federal Trade Commission.

B. UL and NEMA Compliance: Provide electrical components required as part of residential appliances that are listed and labeled by UL and comply with applicable NEMA standards.

C. AHAM Standards: Provide appliances that conform to the following standards of the Association of Home Appliance Manufacturers:

1. Refrigerators/Freezers: Total volume and shelf area ratings certified according to ANSI/AHAM.

D. Single-Source Responsibility: Obtain appliances from a single supplier.

1. Provide products from the same manufacturer for each type of appliance required.
2. To the greatest extent possible, provide appliances by a single manufacturer for entire Project.

E. Design Criteria: The drawings indicate sizes, profiles, and dimensional requirements of residential appliances and are based on the specific types and models indicated. Appliances by other manufacturers may be considered, provided deviations in dimensions and profiles are minor and do not change the design concept as judged by the Architect. The burden of proof of equality is on the proposer.

1.5 DELIVERY AND STORAGE

A. Deliver appliances to the Project site in the manufacturer's undamaged protective packaging.

B. Delay delivery of appliances until utility rough-in is complete and construction in the spaces to receive appliances is substantially complete and ready for installation.

1.6 WARRANTIES

A. Warranty: Submit written warranties executed by the manufacturer of each appliance specified agreeing to repair or replace units or components that fail in materials or workmanship within the specified warranty period.

1. Microwave Oven: 1 - year limited warranty of defects in the magnetron tube.
2. Refrigerator and Refrigerator/Freezer: 1-year warranty on the sealed refrigeration system.

B. Warranties specified above 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 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide appliances by manufactured by the following:

1. General Electric Company, or equal
2 U-Line Corporation, or equal
3. Traulsen, or equal
4. GROEN Company, or equal

2.2 MICROWAVE OVENS - COUNTERTOP MODEL

A. Countertop model Microwave Oven: Provide 800 watts, 1.1 cu. ft. oven capacity.

1. Controls: Solid state electronic touch-type.
2. Turntable
3. Smart Control System with Interactive Display
4. Defrost: weight / time
5. 10 power levels
6. Timer on/off
7. Power cord with straight plug type

B. Subject to compliance with requirements, provide the following:

1. "Model PEM31SFSS" (or current model), for countertop installation, General Electric Company, or equal. Color to be stainless steel door and gray case.

2.3 REFRIGERATOR / FREEZERS

A. Top-Mount Refrigerator/Freezer: Provide freestanding, frost-free, two-door, Top-mount freezer model refrigerator/freezer on adjustable rollers, and reversible doors with door shelves.

1. Capacity: Provide the following minimum values, measured according to ANSI/AHAM HRF-1 and certified by AHAM:

a. Total volume: 18.0 cu. ft.
b. Refrigerator volume: 12.93 cu. ft.
c. Freezer volume: 5.09 cu. ft.
d. Energy Star Qualified
e. ADA compliant

B. Subject to compliance with requirements, provide the following:

1. "Model GTZ18ICESS" (or current model), General Electric Company, or

equal. Color to be stainless steel, gray cabinet.

2.4 FOODSERVICE DISPOSER

A. Foodservice disposer: Provide under sink ligbt duty foodservice disposer.

1. Product Features & Specifications:

a. Disposer mounting included with unit. Mounting fits standard 3½" – 4" sink opening. No welding required.
b. Standard wall switcb operates the disposer
c. Automatic reversing motor for longer life and trouble-free operation
d. Stainless steel grind chamber
e. Cast nickel chrome cutting element
f. 1-year full warranty from date of installation
g. 35 lb. shipping weigbt
h. 1/2 HP
i. Continuous-duty commercial motor
j. 1725 RPM
k. 5.8 amps
l. Single Phase

B. Subject to compliance with requirements, provide the following:

1. Emerson Electric Co., InSinKerator Foodservice, Model No. LC50-11.

2.5 FINISHES

A. General: Provide the manufacturer's standard porcelain enamel finisb. Appliance colors to be determined by the Arcbitect from manufacturer's standard finisbes.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Comply with manufacturer's instructions and recommendations.

B. Built-in Equipment: Securely anchor units to supporting cabinets or countertops with concealed fasteners. Verify that clearances are adequate for proper functioning and rough openings are completely concealed.

C. Utilities: Refer to Division 16 for electrical requirements.

3.2 ADJUST AND CLEAN

A. Testing: Test each item of residential equipment to verify proper operation. Make necessary adjustments.

B. Accessories: Verify that accessory items required have been furnished and installed.

C. Cleaning: Remove packing material from residential equipment items and leave units in clean condition, ready for operation.

3.3 SCHEDULE

A. Kitchen / Day Room 210: Two (2) Microwaves
One (1) Refrigerator

END OF SECTION 11452

SECTION 12300 - 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. Cabinet tops (countertops: plastic laminate and solid surface tops as indicated on the drawings).
3. Backsplashes, filler panels and scribe pieces for complete installation.
4. Plastic Laminate window sills as shown on drawings.

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

1. Section 06402 "Interior Architectural Woodwork" for exposed woodwork.
2. Furring, blocking, and other carpentry work that is not exposed to view is specified in Section 06105 "Miscellaneous Carpentry".

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 sbop 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, 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 scbedules 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.

PART 2 - PRODUCTS

2.1 HIGH PRESSURE DECORATIVE LAMINATE AND PVC EDGE BANDING MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide manufactured architectural casework similar in style and construction as:

1. "Architect's Choice", as manufactured hy Iaccarino and Son Architectural Millwork, Boylston, MA, (508)-869-2136, or approved equal.

2.2 PLASTIC LAMINATE

A. High pressure plastic laminate shall be used on all doors and drawer faces and shall meet all NEMA standards.

B. Colors to be selected from full range of Wilsonart or Formica laminates, or as scheduled on drawings.

2.3 COUNTER TOP (PLASTIC LAMINATE)

A. Horizontal grade plastic laminate on 45 pound particle board.

B. Melamine plastic laminate hacking.

C. Color to be as scheduled on the finish plans.

2.4 COUNTER TOP (SOLID SURFACE)

A. Provide solid surface countertops and edge treatment where indicated on drawings. Provide sink cutouts as required.

B. Solid surface material to be Dupont, Corian, or equal. Color to be as scheduled on the finish plans.

2.5 COUNTER TOP (RESIN TOPS)

A. Provide solid resin countertops and edge treatment where indicated on drawings. Provide sinks of same material as resin countertop where indicated on the drawings.

B. Epoxy resin to he 1 inch thick, molded from a modified epoxy resin. Exposed edges and corners are radiused. Curbed backsplashes are 4 inches high.

1. Color: Black.

2.6 MELAMINE LAMINATED PARTICLE BOARD

A. Thermofused impregnated decorative overlay bonded to 45 pound density industrial grade particle board.

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.

2.7 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:

1. PVC edge banding 3mm thick, in choice of colors.

2.8 HARDWARE

A. Hinges: One pair per door up to and including 42 inch height. One and one-balf pair over 42 incbes in beigbt.

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 - Brusbed chrome finisb

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 sbelf supports:

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

E. Cabinet Locks:

1. Cabinet locks for cabinets and drawers to be keyed tumbler locks. Provide masterkeying per room. Furnish two (2) keys per lock installation.

F. Counter Support Brackets:

1. Counter support brackets, surface mounted (unless noted otherwise), as manufactured by Rakks, Rangine Corporation, Millis, MA, (800)-826-6006, or equal. Provide for counter supports as indicated on the drawings (noted below) and to provide for unsupported counter width not to exceed 36". Provide with

powder coated finish and 5/8 incb rubber grommet. Color to be selected from manufacturer's standard colors.

a. Model # EH-1212-FL (Flush Mount for counter tops up to 18" deep)

b. Model # EH-1212 (for counter tops up to 18" deep)

c. Model # EH-1818 (for counter tops up to 24" deep)

d. Model # EH-1824 (for counter tops up to 30" deep)

2.9 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 furnisbed and installed by others.

B. Cabinet Tops and Bottoms

1. Wall and tall cabinets (and base cabinet bottoms) ¾" thick melamine laminated particle board. White on inside and outside surfaces.

2. Base Cabinets to have two stretchers across top of cabinet, ¾" thick x 3-3/4" 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 ¾" thick, laminated particle board. White melamine on inside surface and high pressure plastic laminate on outside surface.

2. Concealed Ends ¾" 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 1-1/4" on center.

D. Fixed and Adjustable Shelves

1. ¾" white melamine laminated particle board two sides. Front edge of shelves to be edge banded in PVC. 1" thick shelves for cabinets over 30" wide. 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 3" PVC edgebanding.

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 ¼" white melamine laminated particle board and is dadoed and glued into drawer sides, back and sub front.

H. Countertops

1. High pressure plastic laminate, .050 in thickness, bonded to ¾" thick particle board. Back to have melamine balancing sheet. Exposed edges shall match horizontal surface and shall be built up to a 1-1/2" thickness. Counter tops shall be square nosed with square edged back splash, butt joints.

2. Refer to drawings for locations of stainless steel countertops. Stainless steel countertops to include integral backsplash and rolled front edge.

3. Refer to drawings for locations of solid surface countertops.

I. Workmanship

1. All exterior vertical surfaces shall be finished with high pressure plastic laminate unless otherwise indicated.

2. Cabinet parts sball 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 sball 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 cbanges. Do not install casework in building until concrete, masonry and plaster 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.

3.3 CLEAN UP

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

3.4 GUARANTEE

A. Casework to be guaranteed for a period of three (3) years for manufacturing and workmanship defects.

END OF SECTION 12300

SECTION 12510 – WINDOW BLINDS

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

A. This Section includes sun control and room darkening roller shades installed inside of window returns.

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 color of aluminum slat and of same thickness and material indicated for final unit of Work.

   a. 6-inch-length samples of each color.
   b. Product data sheet.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who has successfully provided and installed aluminum window blind 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. Coordination of Work: Coordinate installation of aluminum blinds and end brackets with other construction.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver blinds to project site in manufacturer's 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. Handle window blind units carefully to avoid chipping edges or damaging units in any way.

1.6 PROJECT CONDITIONS

A. Space Enclosure: Do not install window blinds until all painting has been completed and all dust-generating activities have been completed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Type WB-1: Sun Control Single Roller type Window Shades: Subject to compliance with requirements, provide one of the following:

1. Draper Manual FlexShades or equal.

a. Bead Chain Clutch Operator: High carbon steel and molded fiberglass-reinforced polyester. Bi-directional for mounting at either end of roller. Control loop, is niekel plated brass bead chain.
b. Rollers: 1-1/2" Diameter with .80 wall in steel or extruded aluminum.
c. Mounting Brackets: 1018 Plated steel stamping. Mount inside window Jamb.
d. Endcaps: 1018 steel stamping,. Complete with adapter roller bracket.
e. Fascia: L Shaped cover of extruded aluminum, .060 wall. Snap-lock assembly to endcaps without exposed fasteners. Baked enamel finish.
f. Shade Cloth: Phifer SheerWeave
Style: SW2500
Fabric: 37% Fiberglass/63% Vinyl
Opacity: 1%
Standard Widths: 63" and 98"
Roll Length: 30 Lineal Yards
Fabric Thickness: .024 inch
Average Fabric Weight: 16.1 Ounces per square yard
Fire Retardant rating: NFPA 701-99 TM#1, California U.S. Title 19.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and structural framing to which window blinds attach, with Installer present, for compliance with requirements specified in this and other sections that affect installation and anchorage. Do not proceed with installation until unsatisfactory conditions bave been corrected.

3.2 PREPARATION

A. Verify field dimensions of windows prior to fabrication.

B. Coordinate blocking and structural support requirements of shades to ensure proper attachment and support.

C. Coordinate roller shade housing size, mounted depth and required edge tolerances with construction of window, wall and ceiling recesses.

3.3 INSTALLATION

A. General: Install window blinds and hardware in accordance with manufacturer's instructions and in locations as shown on drawings. Secure in place with concealed fasteners.

B. Install blinds so that they are centered on the window opening with no more than ½" clearance on either side. Blind length shall touch windowsill.

3.4 ADJUSTMENTS AND CLEANING

A. Clean exposed surfaces of dirt and finger marks, including head rails, fascia and fabric. Comply with manufacturer's instructions for cleaning.

B. Adjust blinds for smooth operation.

3.5 PROTECTION

A. Clean and protect roller window shades after installation from damage during construction. If damage occurs, remove and replace damaged components or entire unit as required to provide units in their original, undamaged condition.

END OF SECTION 12510

SECTION 15010 - GENERAL PROVISIONS

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 SCOPE

The work covered by this section includes the materials, methods, workmanship and general requirements which shall apply to the work covered by Sections 15050, 15250, 15300, 15500 following.

A. Contractor shall be responsible for all required cutting, patching, and concrete work required for their items of work .

1.3 SHOP DRAWINGS

A. Contractor shall submit for approval shop drawings of all equipment to be used in the installation in accordance with the General and Supplementary Conditions.

B. General Bulletins or catalogs will not be accepted as shop drawings unless the equipment on which approval is to be obtained is specifically marked, and all information pertaining to the item including dimensions where required for installation is included.

1.4 DRAWINGS AND COORDINATION

A. The drawings accompanying these specifications show the general layout and much of the detail. However, they do not show every fitting, valve, and offsets as required for pipe, duct, conduit, etc. and this Contractor is to furnish all fittings and offsets and other parts necessary to make this installation complete and left in good operating condition.

B. Drawings, in general, are based on the particular type and make of equipment named by the specifications. Contractor shall be responsible for any new drawings or additional material required for the proper installation of the accepted equipment where it differentiates from that shown on the drawings.

C. Ductwork, piping, conduits, and accessories the location and arrangement of which are affected by the design of equipment whicb must be approved shall not be installed until the equipment is approved and the whole assembly coordinated.

D. Contractor shall install work as closely as possible to layout sbown, but he shall make, without extra charge, any changes in the routing of piping, conduit, or ductwork as necessary to meet job conditions and clear equipment and services of other trades shown on other drawings. Locations of services are approximate and subject to modifications required by job conditions.

E. The right to make any reasonable changes in locations of piping, or conduit and equipment up to time of installation is reserved by the Owner and Architect without involving any additional expense to the Owner.

F. Methods of running lines and making connections shall be in accordance with best practice, and in all cases satisfactory to the Architect.

G. Elevations shown are approximate and are for Contractor's guidance. He must, however, take his own measurements and be responsible for proper pitch and clearances.

1.5 EXAMINATIONS OF SITE

A. Before submitting his bid, the Contractor shall visit the site with plans and specifications in band and shall become thoroughly familiar with all conditions under whicb his work will be installed he will be beld responsible for any assumption he may make in regard thereto.

1.6 COORDINATION OF TRADES

A. The Contractor shall become familiar with the work of all trades and shall coordinate the work in those areas wbere work of other trades are indicated. Contractor shall coordinate with the owner and architects office. Work installed, making it impossible to install work of other trades because of lack of coordination is subject to removal, if required, at no additional cost to the Owner, such cost being fully borne by the Contractor making the improper installation including the cost of any cutting, patching or relocation of work by another Contractor.

B. Bidders, during the period of figuring the job for submission of bid, shall secure a complete set of Plans and Specifications for the project so that be will have a clear and concise understanding about the work he has in relation with those trades.

1.7 METHODS AND PROCEDURES

A. The Contractor agrees to carry on the work in an orderly manner, and under the constant supervision of a competent foreman who shall be on the job at all times during the progress of the work.

B. Carefully examine all plans and specifications and check them against the conditions under which the work is to be done and the Contractor shall assume all responsibility thereof.

C. The Contractor is responsible for keeping himself advised of construction details that are available to him at the general contractor's office. He (she) shall plan and install his work in a manner adapted to the construction called for and satisfactory to the Architect.

D. The Contractor shall direct and supervise the progress of the work described and shall perform the work at the proper time so as not to unnecessarily delay any work being performed under another contract.

1.8 SUBSTITUTIONS

A. Whenever an item is described or indicated by a specific make, model, or figure number, it is understood that comparable articles of other manufacturers may be acceptable, but only provided they are equal in the opinion of the Architect and acceptable to Owner and Architect, and formal written approval thereof is obtained. Note: If 2 or more equal manufacturers are listed, any substitutions shall be limited to those names only.

1.9 RECORD DRAWINGS

A. The Contractor shall keep an accurate record of all changes in the layout from original plans. Refer to the General Conditions and Supplementary Conditions for more complete instructions.

B. In additions, shop drawings for any equipment, including wiring or piping diagrams, which is not finally installed in accordance with the original submittals, shall be corrected and resubmitted for approval in the same manner as required for original submissions.

1.10 CONSTRUCTION ERRORS

A. When any part of a system has been installed and which must be removed or relocated because of error by installing contractor in properly coordinating the work, such cost must be fully borne by the Contractor who made the error,

including any cutting and patching or rearrangement of work of another sub-contractor.

1.11 MANUFACTURERS' INSTRUCTIONS AND CODES

A. In general, all equipment and piping shall be installed in accordance with manufacturers' instructions and Local Codes baving jurisdiction. If they conflict with contract requirements, Contractor shall obtain written instructions from the Architect before proceedings with the installation.

B. Where the specifications exceed the manufacturers' or Codes minimum requirements Contractor shall install equipment or piping in accordance with the specifications.

1.12 MATERIALS

A. All equipment, materials, and workmanship, whether specifically described or shown, or whether implied is to be new of latest model, first-quality, and grade satisfactory to the Architect. The Architect shall bave the right to reject any part of the work in case equipment, materials, or workmanship is not of satisfactory quality, the Contractor shall replace same with acceptable work at his own expense.

B. No damaged equipment or material shall be repaired by contractor and used in the installation without first obtaining written approval from the Architect.

1.13 EQUIPMENT CLEARANCES

A. Deliver equipment knocked down, if necessary, for access to final location.

B. Install equipment with adequate clearances for maintenance and operation both of the equipment and of adjacent equipment.

1.14 ANCHOR BOLTS

A. Contractor shall furnish all anchor bolts as required for his equipment. Where installed in concrete or masonry work he shall submit drawings for and supervise their installation.

1.15 NAME PLATES

A. In general, all electrical, plumbing, heating accessories and controls shall be identified by name plates where their function is not apparent. Where such accessories also appear on wiring diagrams, etc. they shall be similarly identified.

B. Name plates shall be made of laminated plastic material not less than 1/8" x 1" x 2" with 1/4" high engraved lettering or field fabricated with a typewriter on contrasting aluminum tape.

C. Attach name plates with screws, bolts, adhesive, or rivets to a fixed part or on the wall above or below the item.

1.16 ACCESS DOORS

A. Mechanical Contractor shall furnish all ceiling and wall access doors where needed and required to allow access to valves, equipment, etc. Access doors shall be installed by the ceiling and wall trades. Arrange the work to keep the number of access doors to minimum. Where access doors are required, the Mechanical Contractor shall furnish same and shall be responsible for installation by the proper trade.

B. Access doors shall be of steel construction, Inland as manufactured by Milcor Division, Birmingham Ornamental Iron Co. or Philip Carey Mfg. Company with door and surface of proper type material and design to conform doors for any opening in fire-rated construction. Access doors shall not be less than 18" x 12" unless specifically approved so by Engineer.

1.17 INSTRUMENTATION

A. Where indicating or control equipment is installed in pressure lines they shall be designed for a working pressure of not less than 150% of the static pressure of the system, which ever is the higher.

B. Where such instruments have a range or scale the operating point setting shall be approximately midpoint. The range or scale of all instruments shall be kept to a minimum.

1.18 ELECTRICAL REQUIREMENTS

A. The existing electrical service to the building is 120/208 volt, 3 phase, 4 wire. The new upgrade to the electrical service is the same. All motors 1/2 hp and less shall be 120 volts, single phase, and all motors 1/2 hp and larger shall be 208 volts, 3 phase, unless otherwise shown on the drawings or called for in the specifications.

B. All electrical equipment and wiring shall conform to the Electrical Division requirements.

C. Except where starters and disconnect switches are supplied as part of "packaged" equipment, all motor controllers with thermal elements as well as disconnect switches, shall be furnished and installed under Division 16.

1.19 PIPING TESTS

A. All piping systems shall be tested as described below. Where necessary to suit progress of general construction, parts or sections of these systems shall be separately tested, with all required temporary connections and closure provided. Contractor shall apply a preliminary test in each case to satisfy himself that the work is satisfactory and shall then give the Architect 48 hours advance notice of the official test which must be witnessed and approved by the Architect or his designated representative.

B. The various systems shall be made tight under the following test conditions in the field, after installation:

1. Hot water heating water pipng at 125 psi for 2 hours.

2. Domestic hot and cold water at 150 psi for 2 hours.

3. Fuel oil and Propane Gas piping at 50 psi for 2 hours.

4. Storm, sanitary, waste and vent piping hydraulically to highest point of each system for 4 hours.

5. Refrigerant piping at 150% of actual working pressures or vacuums.

C. Contractor shall submit to the Architect, 2 typewritten reports of all tests specified or required. Reports shall indicate date of test, material tested, results of tests, and test witnesses.

1.20 LUBRICATION

A. All equipment shall be thoroughly lubricated just before Owner's acceptance. At least one device of each type required for conveniently adding lubrication shall be formally presented to Architect at site with written list of such submission. Such devices shall be as necessary for Owner to follow the lubricant instructions which Contractor has been required to submit.

1.21 PRELIMINARY OPERATION

A. All mechanical equipment furnished under the Mechanical Sections and subject to operation or adjustment must be operated and adjusted with

constant supervision during normal working hours by the Contractor, just prior to acceptance, for not less than 3 full days and as many more required to the satisfaction of the Architect, to obtain specified operations, including air and water balance.

1.22 CLEANING OF SYSTEMS AND EQUIPMENT

A. All piping systems and equipment, except refrigerant systems, shall be washed out until clean by circulation or flushing with clean city water with a suitable cleansing agent added for heating and/or cooling equipment and systems.

B. Before formal acceptance by Owner all mechanical equipment shall be thoroughly cleaned. Surfaces shall be wiped clean of oil, grease, stickers, tags, drippings, and dirt, and gauge glasses, thermometers, etc. cleaned off.

C. All throw-away filters shall be replaced and all cleanable filters shall be thoroughly cleaned just prior to equipment turnover to the Owner.

1.23 OPERATING INSTRUCTIONS

A. Two copies of maintenance, lubrication, and operating instructions of all equipment having moving parts shall be provided by the Contractor for Owner's use. This literature may be delivered with shop drawings or at time of delivery of equipment and shall include list of replacement parts. Such submission must be made formerly through the General Contractor to the Architect.

B. Each subcontractor must thoroughly instruct Owner's personnel as to proper operation of his system and each shall provide qualified personnel to give at least 6 hours undivided supervision therefore.

1.24 OWNER'S ACCEPTANCE TEST

A. After the various systems are complete as determined by the preliminary operating tests, the Contractor shall arrange for the Owner's final acceptance tests.

B. These tests shall be arranged so that if necessary only part of the entire installation shall be tested and accepted at each meeting.

C. If required because of Owner's occupancy, the Architect may direct the Contractor to have part of the system made ready for the Owner's acceptance test. If accepted, the Owner will assume ownership and provide operating personnel. If operable but not accepted, Owner will provide operating personnel without responsibility.

D. The Contractor shall have present at each acceptance test representatives of the several contractors whose work is directly or indirectly involved, with instruments as necessary to indicate that the system is functioning in accordance with the design and to include the following:

1. All equipment installed and operating in accordance with the specifications.

2. All systems are operating in accordance with the specifications.

3. All safety and temperature controls operating as specified.

4. All distribution systems properly adjusted for distribution to equipment as specified.

5. The various systems properly flushed and cleaned.

6. Ventilating systems properly balance for air distribution.

7. All motors installed with proper tbermal over load proteetion and not operating under overload conditions as determined by ammeter readings.

8. All record drawings, etc. as specified in various parts of the specifications, installed or ready for delivery to the Owner.

E. The date of the Owner's acceptance of the equipment shall be the start of the one year's guarantee period.

1.25 GUARANTEE

A. In addition to any supplemental guarantee obtained from any equipment manufacturer, contractor shall guarantee the prompt replacement of any faulty section of his installation (equipment and materials including labor) without cost to the Owner if indication thereof occurs within one year of acceptance (substantial completion date as established by the architect) of equipment by the Owner, except for failure caused by Owner's negligence or through physical abuse of the equipment.

1.26 DEBRIS REMOVAL

A. Each contractor shall, at all times, keep the premises free from the accumulation of waste materials and rubbish caused by his operations and shall remove the waste materials and rubbish from the job site on a periodic

basis. If any contractor does not conform to this requirement, the owner shall have this work done and deduct the cost thereof from funds due the contractor from the Owner. Coordinate dumpster arrangements with the owner.

1.27 CONTRACT STANDARDS

The following industry standards shall be considered as minimum requirements under this specification:

A. **State Building Code – Latest Amendment to the Connecticut Supplement**: All of the following are applicable, except as amended, altered or deleted by this Connecticut Supplement and are hereby adopted by reference as the State Building Code. The requirements of the Amendment to the State Building Code shall apply to all work for which a permit application was made.

- International Building Code
- International Existing Building Code
- International Plumbing Code
- International Mechanical Code,
- International Energy Conservation Code
- International Residential Code
- NFPA 70 National Electrical Code
- Amendment to the Connecticut Supplement
- Amendments to the International Building Code

B. **Connecticut Fire Safety Codes:**
NFPA 101 National Fire Safety Code
Amendments to the CT Fire Safety Code

C. **Handicap:**
ASME/ANSI A17.1 Safety Code for Elevators & Escalators
Addenda to ASME/ANSI A.17.1

D. **Connecticut Boiler Codes:**
CGS Chapter 540, Sections 29-232 through 29-244

END OF SECTION 15010

SECTION 15050 - BASIC MATERIALS & METHODS

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 SCOPE

The work covered by this section includes all labor, materials, equipment and accessories to complete piping systems for domestic hot and cold water, sanitary, waste and vent, and hot water heating piping. Refer to division 15300 for fire protection piping.

PART 2 - PRODUCTS

2.1 MATERIALS OF PIPING

A. All hot water heating piping shall be standard weight black steel Schedule 40 pipe with 125# pattern screwed fittings welded or victaulic at Contractor's option. Piping 2" and smaller may, at Contractor's option, be Type "M" copper tubing with solder fittings and lead free 50/50 solder or with "Pro-Press" Fittings.

B. All above ground soil, waste and vent piping shall be Schedule 40 PVC pipe and DWV fittings complying with the latest ASTM Spec. D1785. (Exception for PVC piping: All PVC piping passing through fire or smoke rated walls and floors, and roof vent stack, shall be changed to cast iron or copper pipe and shall be run through a cast iron or steel sleeve. All areas around piping shall be filled with approved fire caulking as detailed on the drawings.

C. All domestic cold and hot water piping mains and branch piping within the building shall be Type "L" hard drawn copper tubing with cast or wrought solder type fittings or Pro-Press fittings. Tubing shall be American made by Cbase, American, Bridgeport. Solder shall be of an approved lead free type.

D. All nipples shall be of the same material and strength of pipe, except that when 6" or less in length in steel piping they shall be extra heavy. Close nipples shall not be used.

2.2 JOINTS AND UNIONS

A. Unions shall be provided on both sides of all equipment.

B. Unions in screwed ferrous pipe shall be 300 lb. pattern malleable iron with ground joint and brass to iron seat, or 500# pattern steel with ground joint brass to brass seat.

C. Screwed pipe joints sball be made up with clean sharp threads and approved compound equal to J.S. Whithams "Tyte Unyte" or Hercules or Crane's Pipe Joint Cement used on male thread only. No wicking will be permitted in any joint. Ends of pipe must be reamed after cutting.

D. Sweat joints in copper tubing shall be made up with lead free hard solder having minimum melting print of 450 degree F. At contractor's option, above ground soldered copper fittings may be substituted with "Pro-Press" Fittings.

E. Joints in "Hubless" pipe shall be assembled using neoprene gaskets and stainless steel clamp and shield assemblies. Joints in PVC piping sball be solvent cemented as recommended by the manufacturer.

F. Graphite paste shall be used on thread of all cleanout plugs.

2.3 SLEEVES AND ESCUTCHEONS

A. Provide individual sleeves of steel or cast iron for the full thickness of all concrete and masonry wall and floors and all fire rated wall assemblies. Increase the sleeve sizes for insulated lines to allow full thickness of insulation.

B. Exterior Walls - Provide cast iron pipe sleeves and pack the space between pipe and sleeve with hemp and caulk watertight with lead, or linkseal.

C. Sleeves Shall be installed in all Fire Rated Walls - Fill the voids around pipes or insulation with a soft incombustible material having a UL1479 classification and conform to ASTM-814 and ASTM-E84. The fire caulk shall be equal to "Flame-safe " # FSP1100 fire stop putty. Putty shall be installed to a depth of 1 1/4" on both sides of wall sleeve. Refer to typical

detail on the drawings. Also refer to Division 07270 for additional information.

D. Escutcheons shall be Ritter Pattern & Casting Co. #3A Beaton & Cadwell or R & S Manufacturing Corp. Figure #602 or approved equal split cast brass chrome plated where in finished areas and similar cast iron painted elsewhere.

2.4 HANGERS AND SUPPORTS

A. Hangers for all piping sball be single rod, clevis type Bergen Paterson 100, Grinnell Figure #260 or F & S Mfg. Corp. Figure #86 or approval Equal.

B. Hangers for tubing shall be as above except shall have copper liner.

C. Hangers for covered piping shall be provided with protective saddles or where movement will be slight, insulating saddles may be used.

D. Anchors shall be clamp type carbon steel F & S Mfg. Corp. #91 or 93, Bergen Paterson #370 or Grinnell #261, or approved equal for risers and F & S Mfg. Co. #95 or 97 or approved equal for borizontal piping. Refer to Seismic Requirements.

E. Hanger spacing shall not exceed that specified by tbe manufacturer or BOCA Codes.

2.5 VALVES

A. All line valves shall be ball type up to 2" and butterfly type for 2-1/2" and larger sizes as specified herein.

B. Ball valves shall be equal to Conbraco "Apollo" of bronze construction Teflon seats, reinforced Teflon thrust-seal washer, blow-out proof stem, reinforced Teflon stuffing box ring and adjustable stem gland screw. Threaded valves shall be Series 70-100, solder type Series 70-200. Threaded valves shall be installed with an adjacent union. (Valves shall be full ported).

C. Check valves shall be hronze body equal to Nibco No. 413 up to 3", threaded or solder type with horizontal swing Y-pattern regrinding type with renewable discs and rated 125 psi steam and 200 psi non-shock W.O.G. Check valves above 3" sball be iron body bronze mounted equal to Nibco No. F-918 rated 125 psi steam and 200 psi W.O.G.

D. Combination Balancing/ positive shut off valves (circuit setters) shall be equal to Taco CS series complete with (2) P/T ports for flow measuring,

built-in ball valve, and Calibrated nameplate and setting chart, cast bronze construction,

E. Valves for special services shall be as noted elsewhere.

PART 3 - EXECUTION

3.1 SEISMIC REQUIREMENTS

A. Provide lateral bracing and/or supports for hot water heating, domestic water, sanitary, waste and vent, refrigerant, and gas piping as shown in the typical details on the drawings.

B. Provide similar bracing per typical details for suspended heating and ventilating units.

C. Pumps, tanks, pressure vessels, boilers, etc. shall be solidly secured in place to Boiler Room floor.

D. Seismic restraints sball not be required for the following installations:

1. All piping less than 2-1/2 inch inside diameter.

2. All rectangular air-handling ducts less than 6 square feet in cross-sectional area.

3. All round air-bandling ducts less than 28 inches in diameter.

4. All piping suspended by individual hangers 12 inches or less in length from the top of the pipe
to the bottom of the support for the hanger.

5. All ducts suspended by hangers 12 inches or less in length from the top of the duct to the bottom of the support for the banger.

3.2 PIPING INSTALLATION

A. Contractor is responsible for installing all piping in such a manner as to provide expansion without warping lines and dislocating or straining connected equipment. Provide offsets if required, and anchors of approved design wbere necessary for all horizontal and vertical piping. Piping shall be installed to clear all building construction and sleeves in order to avoid rubbing.

B. All pipes passing through masonry construction shall he provided with sleeves. All piping including covered pipes where exposed shall in addition be provided with escutcheons where passing through walls, floors and ceilings.

C. Hanger spacing shall not exceed that recommended hy the hanger manufacturers or the requirements of the Mechanical BOCA Code for each size of pipe and shall be less where necessary to avoid sagging of more than 1/8" of pockets or where piping will otherwise be improperly supported.

D. Adjust all hangers after lines are complete to take proper share of load, and locknuts shall be set tight.

E. Store all pipe and materials pending installation in clean areas, protected against becoming fouled and ferrous materials against weather damage. Each pipe length shall be up ended and rapped free of dirt, scale, etc. just prior to installation.

F. All water piping shall be drainahle and shall pitch just enough so it will drain to low points at which there shall be proved a nipple and 3/4" drain valve with separate hose bibh or valved connection to drain. Drain lines shall pitch 1/4" per foot.

G. During construction all ends of piping must he kept closed off with caps or plugs except while actually working on lines. Caps or plugs, temporary or permanent, must he of the same material as piping or equipment in which they are installed.

H. Both vertical, horizontal lines, and equipment connections must be run straight, and shall be securely hung with whatever hraces, guides, anchors, expansion loops, etc. needed to prevent vibration, distortion, or undue stress and strain.

I. All pipe ends shall be cut clean, reamed and left without hurrs inside.

J. Install all piping to be covered to allow for full covering without gouging, to clear other pipe, equipment, or huilding construction.

K. Except where specified or shown on drawings, no pipe shall be less than 3/4".

L. All equipment drains, overflows, reliefs, etc. shall be piped separately to open drains or sinks so that outlet may be ohserved.

M. Contractor shall check all furred ceiling elevations and details from the general plans and shall be responsible for installing his piping within the limits of the furring where so indicated on the drawings.

N. Valves in horizontal piping shall be installed with stem at or above the center line of the pipe.

O. All operating equipment in piping systems such as valves, checks, strainers, drains, etc. must be accessible for operation and service.

P. Provide unions or flanges and valves in all connections to all equipment.

END OF SECTION 15050

DIVISION 15 – MECHANICAL
SECTION 15250 - MECHANICAL INSULATION

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 SCOPE

A. The work covered by this section includes all labor, materials and accessories to complete the installation of insulation for all mechanical and plumbing systems and equipment as follows:

1. All hot water heating piping.

2. All domestic hot and cold water piping, including water supplies and exposed waste piping beneath handicapped lavatories & handicap sinks.

3. All exhaust plenums from roof fan down to 24" below roof line.

4. All new and existing disturbed air conditioning and heating supply ducts.

5. Fire stopping of all piping, conduit and duct penetrations in all Fire Rated walls. Also fire stopping for all penetrations of floor assemblies. Refer to Specifications Division 07270 for additional information.

PART 2 - PRODUCTS

2.1 MATERIALS OF INSULATION

A. The equipment, air ducts, and piping services listed hereinafter shall be covered by a recognized covering contractor with qualified craftsmen using new and undamaged materials as manufactured by Gustin Bacon, Ehret, Knauf, Johns Manville, Owen Corning, or Armstrong. Where a trade name is mentioned it indicates the quality that must be matched by all manufacturers. **NOTE: All insulation listed below shall have an**

approved flame and smoke rating of 25/50 and shall comply with the latest ASHRAE standard 90.1-1999 for energy efficiency.

B. All domestic water piping, and hot water heating piping shall be covered with fiberglass standard pipe insulation 5 lb. density (1" for pipe up to 3" and 1-1/2" 3.5" and larger with White ASJ jacket with factory applied self-sealing, pressure sensitive adhesive to adhesive longitudinal lap seal (SSL-11) or outward clinching staples on the longitudinal seams. Ends of pipe insulation shall be sealed off at valves, fittings and flanges, and at 21 feet intervals on continuous runs, with Benjamin Foster 30-35 adhesive. Exterior piping shall be insulated with 2" thick polyurethane foam insulation and covered water tight with an aluminum water tigbt vapor proof jacket.

C. Fitting, etc. sball be insulated as follows:

1. Where manufactured,, by Speedline or Hamfab, factory premolded fittings (of the same material and thickness as the pipe insulation) shall be used for all fittings, flanges and valves.

2. Where pre-molded insulation fittings are not manufactured, all fittings, flanges and valves (for service below 600 degrees F) shall be insulated with mitered segments of nominal 6 lb. density Fiberglass pipe covering. Hot service finish-concealed and exposed - embed a 20 x 20 weave white glass reinforcing cloth between tow 1/16-inch coats of Benjamin Foster 30-36. The glass cloth and second coat sball overlap adjacent covering by at least two-inches. Cold Service Finish -concealed and exposed same as above except use Benjamin Foster 30-35.

3. At contractor's option, Zeston type PVC covers may be used with an internal fiberglass wrap of same thickness as the pipe insulation. The fittings shall be vapor tight and shall be attached to tbe pipe insulation jacket to form a vapor and sweat proof barrier.

D. Concealed air conditioning and heating supply ducts, exhaust plenums, etc, shall be covered with 1-1/2" thick, R-5.1 3/4 lb. Density fiberglass blanket with a facing of reinforced foil draft laminate. Use OCF All Service Wrap or approved equal. The vapor barrier shall be legibly printed by the manufacturer to show flame spread smoke developed, nominal thickness and type of insulation. The duct wrap sball be applied over clean dry sbeet metal duct work that has been sealed airtight at all seams and joints. Duct wrap shall be installed to allow maximum fullness at corners (avoid excessive compression). Use manufacturer's suggested "stretcbout" information. Insulation shall be butted tightly at joints and vapor barrier

facing shall he overlapped a minimum of 2. All seams shall be stapled approximately 6" on center with outward clinching staples, then sealed with a foil vapor barrier tape. Where ducts are over 24" in width, the duct wrap shall be additionally secured to the bottom of the rectangular ducts with mechanical fasteners spaced on 18" centers (maximum), to prevent sagging of insulation. Seal penetrations so as to provide a vaportight system.

E. All insulating materials, including jackets, adhesive, sealers, waterproofing, etc. shall be fire retardant. Where canvas jackets are specified the entire surface shall he finished with a fire retardant sealer equal to Benjamin Foster "Sealfast" #30-36, Insul-Caustic I-C102, St. Clair Rubber Co., Z4IA or approved equal. Canvas jackets shall be left clean and prepared for finish painting.

F. Insulate water supply and waste underneath all regular and handicap lavatories with HANDI-LAV GUARD BY "TRUEBRO" (INSULATION PREMOLDED KITS) AS DISTRIBUTED BURKHOLDER ASSOC.

G. Acoustical duct lining- shall be minimum 1" thick "Fibre Free" Foam Cell type insulation that shall be resistant to moisture vapor flow, flow flame and smoke rating, and shall be equal to Nomaco K-Flex LS having the following performances:

1. Specification Compliance

ASTM C 534 Type 2 (Sheet)
ASTM D 1056-00-2C1
ASTM C 1534-02 (Duct Liner Specification)
New York City MEA 186-86-M Vol. IV
USDA Requirements

UL 94-5V Flammability Classification (Recognition No. R22380)
ASTM E 84 1" 25/50-tested according to UL 723 and NFPA 255
Complies with requirements of CAN/ULC S102-M88

NFPA No. 101 Class A Rating

Meets requirements of NFPA 90A Sec. 2.3.3 for Supplementary Material for Air Distribution Systems

Meets requirements of ASTM C 411 (Test Method for Hot Surface Performance of High Temperature Thermal Insulation)

Meets requirements of UL 181 sections 11.0 and 16.0 (Mold Growth/Air Erosion)

R8 Sheet meets R-Value requirements for the International Energy Code for Outdoor Ductwork

2. Physical Properties:

Temperature Range Sheets: -297°F to +220°F (ASTM C411)
Color: Black
Thermal Conductivity: 75°F 0.27 BTU-in/hr-ft2-°F
Water Vapor Permeability: 0.1 perm-in (ASTM E 96)
Flame Spread (up to l" wall): not greater than 25 (ASTM E 84)
Smoke Developed (up to 1"wall): not greater than 50(ASTM E 84)
Flexibility: Excellent
Water Absorption: .02 (ASTM C209)
Ozone Resistance: Good
Resistance to Oil & Greases: Good
Density: 3 lb/ft3 to 6 lb/ft3 (ASTM D 1622)
Resistance to U.V. & Weather: Good

Odor: Negligible
% Closed Cells: >90

3. Install duct lines as follows:

Provide acoustical duct lining in all supply ductwork for the first 10 linear feet from the supply fan outlet.

Provide acoustical duct lining in all return ductwork for the first 10 linear feet before the return fan inlet, and additionally the return air plenum to the unit.

H. Insulate all refrigerant liquid lines with ¾" thick "Armaflex" having a fully sealed and sweat proof jacket.

PART 3 - EXECUTION

3.1 INSTALLATION AND WORKMANSHIP

A. All work must be done in strict conformance with all local codes and ordinances, and all Local, State and Federal Regulations of authorities having jurisdiction.

B. It is the intent of this specification to obtain an efficient and sweatproof covering installed on all cold surfaces. The Contractor shall, therefore, be

responsible that all accessories and equipment in the systems specified to be covered have sufficient protection against such sweating.

C. Insulation shall be applied in conformance with manufacturer's recommendations. Sectional pipe covering must fit snugly with ends butted and all joints cemented. Fittings, flanges, and valves including valve body up to stuffing box shall be covered with molded fittings or fabricated sections of fiberglass insulation of same thickness as adjacent piping, as specified elsewhere in this Section.

3.2 SHOP DRAWINGS

A. Shop drawings shall be submitted for the following items:

1. Insulation (all types) including jackets.

2. Sealers, adhesives, cements, etc.

B. Contractor shall submit for approval with the shop drawings a complete specification of the various materials to be used on the various surfaces and their method of application before proceeding with the installation.

END OF SECTION 15250

SECTION 15300 - FIRE PROTECTION

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 sball be binding on the Contractor and or Subcontractor who performs this work. Note also all Addenda.

1.2 SCOPE

Tbe work covered by this section of the specifications sball include but is not limited to the following items:

A. The contractor shall be responsible for the coinplete design and installation of the rework of the fire sprinkler lines and new sprinkler beads within this area of the renovations. The design shall entail a designed, supervised hydraulically calculated wet pipe sprinkler system for light/medium hazard of this area where shown that shall conform the NFPA 13. The fire protection drawings show a suggested piping layout and sprinkler head locations for use in the design of this system. All sprinkler beads shall be concealed where installed in suspended ceilings. All heads shall be quick response and shall be rated for 135 degrees unless directed by the fire marshal.

B. Contractor shall review the owner's hydraulic calculations for the existing sprinkler system and redesign the new work accordingly, as well as determine the proper pipe sizes for the branch lines and the actual layout.

C. Submission of hydraulic calculations and shop drawing layouts to the local fire marshal's office and architect.

1.3 MATERIALS (GENERAL)

A. All equipment and materials used inside the building must be designed for not less than 175 p.s.i. cold water working pressure and be listed by Underwriter's Laboratory (U.L.) as approved for fire service.

1.4 DRAWINGS AND TEST

A. Provide complete installation drawings and obtain approval of the authority having jurisdiction in accordance with National Fire Protection Association requirements. Contractor shall submit shop drawings and hydraulic calculations for review by the local fire marshal and the architect's office.

B. Perform tests of materials and submit certificate indicating this test in accordance with National Fire Protection Association requirements. Pressure tests shall be in accordance with Article 15010 1.21.

1.5 SHOP DRAWINGS

A. Submit shop drawings of all equipment used in the installation of the fire protection systems, including sprinkler beads piping layout and bydraulic calculations. These shall be submitted with fire sprinkler engineer's seal stamped and signed.

PART 2 - PRODUCTS

2.1 PIPING MATERIALS

A. Fire lines shall be Schedule 40 black steel pipe ASTM A795 with screwed or victaulic fittings rated for fire service. At contractor's option schedule 10 black steel pipe may be used for all sizes wben used with rolled grooved victaulic fittings, (no threading of schedule 10 pipe will be permitted.

B. Fire protection piping shall be tested for leakage at 175 psi for 2 hours.

2.2 EQUIPMENT

A. Furnish and install as shown standard Underwriters UL approved and FM approved concealed pendant beads in all heated areas having a suspended ceilings. Sprinklers sball be quick response type and have solder links or chemical fuses rated for ordinary temperature unless otherwise noted on the drawings, and shall be standard pendant type 135 deg. Sprinklers shall be as manufactured by Star Sprinkler Inc. or approved equal. All heads and escutcbeons in finished areas shall have baked enamel white finisb. Provide spare sprinklers per NFPA Bulletin 13 and sprinkler wrencb, all in baked enamel finish steel cabinet located adjacent to the fire service entrance equipment.

PART 3 - EXECUTION

3.1 INSTALLATION

A. All materials, equipment, and installation shall conform to National Fire Protection Association Bulletin 13, for installation details and miscellaneous materials not indicated in the specifications.

B. Hanger locations and spacing shall conform to Pamphlet 13. Hangers shall be painted or galvanized. Provide Seismic Restraints as outlined in Division 15050 & 15240.

3.2 SHOP DRAWINGS SUBMITTALS

A. Submit shop drawings for the following items:

1. All sprinkler equipment and sprinkler beads.

2. Sprinkler piping drawings.

3. Hydraulic calculations

B. Shop drawings which do not comply with Subparagraph 15010 - 1.3 B will be rejected.

END OF SECTION 15300

SECTION 15500 – HEATING, VENTILATING & AIR CONDITIONING

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 SCOPE

Tbe work covered by this section includes all labor, material, equipment and accessories to complete the installation of the heating, ventilating and air conditioning systems specified hereinafter, where shown or noted on the Architectural or Structural Drawings.

PART 2 - EQUIPMENT

2.1 SPECIALTIES

A. Provide, at all high points in bot water heating system, manual-automatic air vents within the new convector enclosures.

B. Provide ball type guard valves in the supply and return for each beating element and provide in piping as sbown calibrated balance valves with provision for connecting a portable differential pressure meter. Meter connections shall have built-in check valves. Balance valves sball be Circuit Setters. Provide new two way convector contrul valves that shall be compatible with the existing energy management system controls.

2.2 SHEET METAL

A. All low pressure sbeet metal ducts except as otherwise called for shall be constructed of high grade galvanized steel sheets, Softite, Bethcon, Toncon, Armco, or approved equal. **Ducts, inclnding supply, exhaust and return shall be sealed with an approved sealant for compliance with ASHREA Standard 90.1-1999. NO EXCEPTIONS.**

B. Rectangular low pressure ductwork gauges of flat steel sheets shall be as follows:

Up to 12".....No. 26 U.S. Std. Gauge

13 to 30".....No. 24 U.S. Std. Gauge
31 to 54".....No. 22 U.S. Std. Gauge
Casings & Plenums.....No. 18 U.S. Std. Gauge

C. Round ducts with fittings and accessories, sball be machine-made spiral type welded, factory manufactured by United Sbeet Metal Company or approved equal using sheets of gauges not less than the following:

Round Ducts

Up to 14" diameter.....No. 26 U.S. Std. Gauge 15" to 26" diameter 24 U.S. Std. Gauge.

Round ductwork for Vehicle Exhaust high pressure system shall be as follows:

- Round ducts sball be fabricated of zinc coated steel of spiral lockseam construction. Minimum round duct sheet metal gauges for high pressure ductwork shall be as follows:

Duct Diameter	Gauge
Up through 14"	26
15" through 26"	24

- Fitting and couplings shall be of following minimum gauge:

Diameter	Gauge
3" through 26"	20

- All fittings are to have continuous welds along all seams. All divided flow fittings are to be manufactured as separate fittings, not as tap collars welded into spiral duct sections.

- All fittings and couplings shall be manufactured with double-lipped rubber gaskets, to provide SMACNA Class 3 leakage rating without the use of duct sealer or duct tape.

- All 90 degrees tees and 45 degrees laterals (wyes) up to and including 12" diameter tap size shall have radius entrance into tap, produced by machine or press forming. Entrance shall be free of weld buildup, burrs, or irregularities.

- Elbows in diameter 3" through 10" shall be two sections stamped elbows. All other elbows shall be gored constructions with all seams continuous welded. Elbows shall be fabricated to centerline radius of 1.5 times cross section diameter. All elbows, not die-stamped, shall be fabricated according to following schedule:

Elbow Angle	Number of Gores
Less than 35 degrees	2
36 degrees through 71 degrees	3
Over 71 degrees	5

D. Duct sizes shown on the drawings shall be strictly followed and no change in shape or dimensions shall be made by the Contractor without first obtaining approval from the Engineer.

E. On low pressure ducts the radii of the throat of all duct elbows shall be at least 1/2 the width of the duct. Where building conditions do not allow for this radius, duct turns as manufactured by Barber Colman, Tuttle and Bailey, or Duro-Dyne or approved equal shall be used.

F. Low pressure duct construction, joining of seams, joining of sections and bracing shall be as recommended by the latest ASHRAE guide. All joints, seams, etc, shall be sealed air tight with approved duct sealant, installed per the manufacturers directions.

G. Sheet metal screws 3/4 " #10 may be used to attach angles to low pressure ductwork and to secure seams, spaced not over 12" and not less than 2 per side of 12" or more, except where specified otherwise. Button punching shall not be used except for pre-erection attachment of fittings.

H. Ducts from 1 to 4 sq. ft. in area shall he hung with black 1" x 1/8" strap iron bent 1" under bottom of the duct and fastened to the duct with sheet metal screws, using not less than 2 screws per side but on not greater than 6" centers. On ducts 1 sq. ft. in area or below, sheet metal straps of 16 gauge may be used, fastened as above provided the free height is not greater than 13". Place hangers not more than 8 ft. centers or as required so ductwork can support the weight of a man at any point. Round and flat oval ducts shall be supported from, floor shall have an approved frame braced with angles and have floor plates under legs.

I. Flexible ducts where shown shall be Wiremold Type WG, (insulated) minimum 4' length, maximum 14' length in any single run. Flex duct shall be installed using plastic straps, backed up with a minimum of two (2) sheet metal screws.

J. All connections between grilles and ducts must be properly caulked and made airtight.

K. Duct systems shall have sufficient volume dampers to control and adjust the total volume of the system, the volume in each branch, and volume at each grille. Splitter dampers shall not be used.

L. No transition shall be made with offsets of more than 45 degree angle. No changes in shape or dimensions shall be made that will restrict the flow. Use bell mouth type take offs for all round take off ducts.

M. It is the intent of the specifications to secure a tight and quiet duct system. Contractor shall provide additional bracing where necessary to prevent vibration and pulsation of panels and to thoroughly seal and caulk all joints with duct sealant Ductwork shall be free of sharp edges.

2.3 REGISTERS AND DIFFUSERS

A. Ceiling supply diffusers shall be Krueger PLQ-2424 Series with patterns as shown, or approved equal by Price, or Titus. Provide OBD or equal volume damper for each diffuser. The PLQ/5PLQ architectural ceiling diffuser provides the building designer with the desired appearance and superior performance of a uniform radial discharge air pattern. A 360° horizontal pattern delivers even air throughout the space. The 24" x 24" PLQ/5PLQ has a square faceplate made of one-piece, nonfolded material with rounded corners, giving the diffuser a clean appearance that is unobtrusive to ceiling systems. (Round faceplate available with model PLQR.) The single faceplate gives the diffuser reduced pressure drops and a quiet sound profile and is held in place by hooks that lock into the backpan. The one-piece, stamped backpan provides smooth, consistent corners, exacting dimensions, and performance tolerances. The removable faceplate offers easy duct and damper access.

B. Ceiling exhaust registers shall be Series 580/585 with fixed 45 degree bars on .66" centers and plaster frame. Transfer grilles shall be as above except without dampers type 580/585.

C. Provide volume dampers as shown on the plans at each take off connection.

2.4 EXHAUST FAN

A. Furnish and install a new replacement roof exhaust fan where shown direct driven as manufactured by Cook, Acme, or Greenheck complete with suitable speed control to ohtain proper air volume. Units shall have capacities as listed and 120 volt, 60 Hertz, single phase motors. Install with a self acting backdraft damper that shall be chatterproof. Fans shall have true centrifugal wheels. Refer to the drawing schedule for fan size and performance.

2.5 FINTUBE RADIATION &CONVECTORS

A. Radiation and Convectors shall be Rittling or approved equal by Trane or Vulcan. Heating elements shall be copper tube with non-ferrous fins as scheduled. Provide enclosures complete with full backplates, hangers, dampers, end caps, access doors, etc. Enclosures shall present a smooth, flat appearance. Capacities shall be used on 170°F average water temperature and a flow rate of 500 lbs./hour. Types of radiation as specified on drawings.

B. All radiation and convectors shall be installed to conform with the manufacturer's published instructions.

2.6 TEMPERATURE CONTROLS

A. Provide and install the following temperature controls for the building's equipment that shall consist of relocation of the existing VAV reheat thermostats and wiring, etc; new 2 way heating control valves for the new convectors and radiation circuits, and tie in of the equipment to the existing energy management system including all programming, valves, and misc equipment required. The existing fan control shall be connected to the new replacement roof exhaust fan operation. All new temperature control work and parts shall be supplied by the owner's present EMS vendor as well as all associated programming , etc. The contractor shall hire this vendor and carry all costs associated with the project in their bid.

- New Convectors shall be installed with new 2 way control valves with electronic motor heads to match the EMS system. They shall be tied together for a single control point and be interconnected with the existing EMS sensor that controls the local VAV rebeat box.

- The new radiation shall have new control valves and be controlled by new room sensors as shown and also interconnected to the local VAV reheat box control, it is the intent that the rooms have individual control froro one and other.

- The existing VAV reheat room sensor controllers shall be relocated to the new locations shown and reconnected to the EMS system.

PART 3 - EXECUTION

3.1 INSTALLATION, ADJUSTMENTS AND GUARANTEE:

A. All room sensors shall be mounted 5'-0" off floor except where noted. **All thermostats shall have tamperproof adjustments.** All thermostats shall be capable of being adjusted for 55°F down for heating and 85° F up for

cooling. All combination heating/cooling thermostats shall have a minimum dead band of 4 degrees between cooling and heating set points.

B. Provide laminated plastic name plate as elsewhere specified on all relays, thermostats, etc. indicating their numbers and service except where service is obvious. Provide 1" brass valve tags on all valves, etc. indicating their number. Plates to be provided shall be indicated in wiring diagram.

C. After completion of the installation the temperature control contractor shall calibrate, regulate, and test and adjust all thermostats, valves, damper motors, relays, central panel devices and other equipment in his contract.

D. Contractor shall furnish at completion full control instructions to Owner's personnel, and sball provide framed and glassed control diagram together with 3 bound copies of complete control manuals covering operating and full description of the individual components. Tbese shall be submitted to the Architect.

E. The complete installation shall be guaranteed to be free from defects in workmanship and materials under normal use and service for a period of one (1) year from date of acceptance by the Owner. If within this period, any defects or malfunctions appear, the equipment shall be repaired, replaced, or corrected at no additional cost +to the Owner.

3.2 BALANCING

A. Tbe Mecbanical Contractor is to provide the services of and independent agent for air and water balancing wbo shall be "Wing Air Balance Co., "Air Balance Service Co." or "James E. Brennan Co." All other Balancing Companies must be pre- approved. This agent's function is to adjust the entire ventilating, beating and cooling systems to give the volumes indicated for each grille and heating effect from each unit. The capacity adjustment of the fresh air and the return of the system sball be included in the adjustment.

B. Contractor shall adjust water flow through heating elements and coils by adjustment of each piping circuit for proper flow and then each element for proper heating effect. Each balancing valve is to be marked at its final setting and Contractor shall submit a schedule listing the results of these adjustments.

C. After the air handling systems are completed and before adjusting, Contractor shall in the presence of the Architect, disconnect all fire links from fire dampers and operate damper from full open to full closed position to be sure that they are free to operate in case of fire.

D. Contractor shall submit a schedule to the Architect indicating the capacity obtained from each grille and each unit, pump capacities, chiller flow rates. In no case shall this capacity vary more than 10% of the specified volume. Schedule shall include motor ampere draw, fan rpm and static pressure, etc., to provide a complete record of the performance of the system.

E. Adjustment schedules must be submitted before Owner's final acceptance test.

3.3 SHOP DRAWINGS

A. Submit only required shop drawings as required per section 15010 paragraph 1.08 for the following items:

- Roof exhaust fan and accessories
- Registers and diffusers
- Flex ductwork, etc.
- Radiation and convectors including color charts
- Temperature controls.

B. Submittals must comply with the requirements of Paragraph 15010 - 1.3 B.

END OF SECTION 15500

SECTION 16010 - GENERAL PROVISIONS

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 wbo performs this work. Note also all Addenda.

1.2 SCOPE

The work covered by this section includes the materials, labor, methods, workmanship and general requirements which shall apply to the work covered by the other Sections of this Division which follow. The project consists of renovations to the existing spaces as shown and specified hereinafter.

1.3 DRAWINGS AND COORDINATION

A. Drawings accompanying these specification show the general layout and much of the details, however, they do not show every fitting, offset, conduit, etc. and the Contractor is to furnisb all fittings and offsets and other parts necessary to make this installation complete and left in good operating condition.

B. Drawings are based, in general, on the particular type and make of equipment named by the specifications, and therefore, wiring diagrams, etc. of various systems are not final subject to receipt of shop drawings of the system.

C. Conduits and accessories, the location and arrangement of whicb must be approved, sball not be installed until the equipment is approved, and the entire assembly coordinated.

D. Contractor shall install work as closely as possible to layout shown, but he shall make, without extra charge, any changes in the routing of conduit as necessary to meet job conditions and clear equipment and services of other trades shown on other drawings. Locations of services are approximate and subject to modifications required by conditions.

E. The right to make any reasonable changes in locations of conduit and equipment up to time of installation is reserved by the Architect or Engineer without involving any additional expense to the Owner.

F. Methods of running conduit and making connections shall be in accordance with best practices, and in all cases satisfactory to the owner, Architect or Engineer.

G. Elevations shown are approximate and are for the Contractor's guidance. He must, however take his own measurements and be responsible for proper pitcb and clearances.

1.4 EXAMINATION OF SITE

A. Before submitting his bid, the Contractor shall visit the site with plans and specifications in hand and shall become thoroughly familiar with all conditions under which his work will be installed, since he will be beld responsible for any assumption he may make in regard thereto, particularly wbere fitting new work to existing construction.

1.5 COORDINATION OF TRADES

A. Tbe Contractor shall become familiar with the work of all trades and shall coordinate the work in those areas where work of other trades are indicated. Work installed, making it impossible to install work of other trades because of lack of coordination is subject to removal, if required, at no additional cost to the Owner, sucb cost being fully borne by the Contractor making the improper installation including the cost of any cutting, patching or relocation of work by another Contractor. Coordinate installation under the supervision of the GC. Coordinate all work with the other trades.

B. Bidders, during the period of figuring the job for submission of bid, shall secure a complete set of Plans and Specifications for the project so that be will have a clear and concise understanding about the work be has in relation with those trades.

1.6 METHODS AND PROCEDURES

A. The Contractor agrees to carry on the work in an orderly manner, and under the constant supervision of a competent foreman who shall be on the job at all times during the progress of the work.

B. Carefully examine all plans and specifications and check them against the conditions under which the work is to be done and the Contractor shall assume all responsibility thereof.

C. The Contractor is responsible for keeping himself advised of construction details which are available to him at the GC's office. He shall plan and

install his work in a manner adapted to the construction called for and satisfactory to the owner & the Architect.

D. The Contractor shall direct and supervise the progress of the work described and shall perform the work at the proper time so as not to unnecessarily delay any work being performed under another contract.

1.7 SUBSTITUTIONS

A. Whenever an item is described or indicated by a specific make, model or figure number, it is understood that comparable articles of other manufacturers may be acceptable, but only provided they are equal in the opinion of the Architect and acceptable to Owner, and formal written approval thereof is obtained. If specifications lists no equal or equal manufacturers, all substitutions shall be limited to those names only.

1.8 SHOP DRAWINGS

A. Contractor shall submit for approval shop drawings of all equipment to be used in the installation in accordance with the General and Supplementary Conditions.

B. General bulletins or catalogs will not be accepted as shop drawings unless the equipment on which approval is to be obtained is specifically marked, and all information pertaining to the item including dimensions where required for installation is included.

1.9 RECORD DRAWINGS

A. Contractor is to keep an accurate record of any changes in locations, and conduit runs from those shown on the plans. Refer to the General Conditions for more complete instructions.

B. In addition, shop drawings for any equipment, including wiring or piping diagrams, which is not finally installed in accordance with the original submittals, shall be corrected and resubmitted for approval in the same manner as required for original submissions.

C. Contractor shall red line (2) clean sets of prints of all changes to the project at the end of the completed work and turn these sets over to the owner for final record.

1.10 CONTRACT STANDARDS

The following industry standards shall be considered as minimum requirements under this specification:

A. **State Building Code – Latest Amendment to the Connecticut Supplement**: All of the following are applicable, except as amended, altered or deleted by this Connecticut Supplement and are hereby adopted by reference as the State Building Code. The requirements of the Amendment to the State Building Code shall apply to all work for whicb a permit application was made.

- International Building Code
- International Existing Building Code
- International Plumbing Code
- International Mechanical Code,
- International Energy Conservation Code
- International Residential Code
- NFPA 70 National Electrical Code
- Amendment to the Connecticut Supplement
- Amendments to the International Building Code

B. **Connecticut Fire Safety Codes:**
NFPA 101 National Fire Safety Code
Amendments to the CT Fire Safety Code

C. **Handicap:**
ASME/ANSI A17.1 Safety Code for Elevators & Escalators
Addenda to ASME/ANSI A.17.1

1.11 MATERIALS

A. All equipment, materials, and workmanship, whether specifically described or shown, or wbether implied, is to be new of latest model, first-quality, and grade satisfactory to the Architect. The Architect shall have the right to reject any part of the work in case equipment, material, or workmanship is not of satisfactory quality and the Contractor shall replace same with acceptable work at his own expense.

B. No damaged equipment or material shall be replaced by the Contractor and used in the installation without first obtaining written approval from the Architect.

1.12 MANUFACTURER'S INSTRUCTIONS AND CODES

A. In general, all equipment and conduit shall be installed in accordance with manufacturer's instructions and Local Codes having jurisdiction. If they

conflict with contract requirements, Contractor shall obtain written instructions from the Architect before proceeding with the installation.

B. Where the specifications exceed the manufacturer's or Code's minimum requirements, Contractor shall install equipment or conduit in accordance with the specifications.

1.13 NAME PLATES

A. Identify all electrical accessories, boxes, switches and controls with name plates where their function is not apparent. Where such accessories also appear on wiring diagrams, etc., they shall be similarly identified.

B. Name plates sball be made of laminated plastic material not less than 1/8" X 1" X 2" with 1/4" high engraved lettering or field fabricated with a typewriter on contrasting aluminum tape.

C. Attach name plates with screws, bolts, adhesive, or rivets to a fixed part or on the wall above or below the item.

D. Submit list of name plates with complete designation for approval before installation.

1.14 SEISMIC REQUIREMENTS

A. Provide lateral bracing and/or support for all electrical conduits as shown in the typical details on the drawings

B. All electrical equipment shall be securely fastened to floors or walls (to partition studs where used.)

C. All lighting fixtures weighing in excess of 6 lbs. shall be seismically braced and independently hung from building structure. See also Section 16500 and details on drawings.

D. Refer to the latest Codes regarding additional requirements.

E. Seismic restraints shall not be required for the following installations:

1. All electrical conduit less than 2-1/2-inch inside diameter, where hung more than 12" from structure.

2. All electrical conduit secured directly to structure.

1.15 PULL BOXES

A. Provide pull boxes and cable ducts for the pulling, nesting, or concealment of wires or cables where shown and also where required and not shown.

B. Boxes and covers shall be hot dipped galvanized and built of code gauge steel with angle iron supports and braces. Insulated racks shall be provided where required. Access shall be by means of removable screw covers.

1.16 SUPPORTS

A. Provide supports and braces where required for the proper installation of all panels, boxes, switches, and control equipment, conduits, raceways, cables, as well as all other equipment installed and connected in accordance with these specifications and accompanying drawings.

B. Furnish free standing or floor supports where required for equipment not mounted on walls. Do not mount electrical equipment on other equipment without approval of the Architect.

C. Where exposed conduit runs are necessary, the conduit shall be supported by individual hangers or malleable iron two-hole pipe straps, or where multiple runs are installed and they shall be supported to multiple hangers at not more than 8 ft. spacing on centers to prevent sagging.

D. In no instance shall conduit be installed on hangers for plumbing, hating, or any other piping nor have any physical contact with same except where the system is grounded on the street side of the water meter.

E. Support cabinets, pull boxes, and outlet boxes independently of the conduit. Where exposed conduit or cable runs are found to be necessary the Contractor shall notify the Architect at once as to the reason for running them exposed.

F. Use Ackerman-Johnson, Steel City, Unistrut, or approved equal inserts for small work and expansion shields for larger work. No wooden plugs will be allowed.

1.17 EXPANSION FITTINGS

A. Provide O.Z. Electric Company, Type "EX", Crouse Hinds or Appleton Type "TJ" or approved equal expansion fittings in all conduit runs crossing building expansion joints or wherever else required to compensate for movement.

1.18 GROUNDING

A. Standards set forth by the N.E.C. relative to protective grounding and bonding of all equipment and services, shall be followed together with the rules and regulations of the Local Utility Company.

B. Contractor shall be responsible for complete and proper grounding and bonding of all parts of the conduit system. Also connection to the Domestic and fire water service piping and the building steel structure. He shall demonstrate its efficiency if required by Architect by means of application of a 120 volt, 15 amp. load applied through any part of conduit system as directed.

C. All grounding and bonding material shall be of copper or brass construction using Burndy, O.Z., T & B or approved equal grounding fittings where grounds are connected to service pipe, etc.

D. Properly bond flexible conduit connections to motors with copper at both ends to avoid breaking of continuity of grounding due to vibration.

1.19 TESTS

A. At the time of final inspection and test, all wiring, and connections throughout the building must be completed, devices and equipment properly operating, all lighting fixtures installed, power and lighting circuits and control wiring clearly identified with approved tags ready for acceptance. Each system must test free from short circuits and from grounds, and have insulation resistance in accordance with the N.E.C. Complete tests of all systems shall be made in the presence of the Architect or his Representative.

1.20 PAINTING

A. General painting including exposed equipment is specified in Division 9.

B. As part of the electrical work, all steel or iron hangers, conduits, equipment, etc. not otherwise provided with a protective paint or galvanized coating shall be coated with black asphaltum, zinc wall chases, above furred ceilings, or anywhere subject to rusting or corrosion.

C. All equipment which is to receive finish painting shall be prime coated at the factory.

1.21 INSTALLATION REQUIREMENTS

A. Secure all apparatus and materials supported on masonry with expansion bolts or equal materials.

B. The location of outlets and appliances shown on plans are approximate. This electrical contractor will be responsible for the proper locations in order to make them fit with Architectural details and the work of other trades, and shall refer to such details, and confer with the Architect and other Contractors before installing his work.

C. Before installing switch outlets, Contractor shall in every instance refer to the Architectural plans and details and confer with the General Contractor for proper locations with reference to door swings, paneling, closets, etc.

D. All electrical equipment sucb as junction and pull boxes, panelboards, switches, controls, and such other apparatus requiring maintenance and operation shall be made easily accessible.

E. All feeders in pull boxes and cabinets and branch circuits in outlets and pull boxes having more than one circuit shall have fiber tag attached, designating the name or number of the circuit.

F. Install and properly connect the proper number of wires to make the lighting, power, and auxiliary systems wiring complete ready for satisfactory service.

G. Before ordering any material or doing any work the Contractor shall verify all conditions and measurements existing, and shall be responsible for the correctness of same, particularly fitting new work to existing constructioti. No extra charge nor compensation will be allowed on account of differences between actual dimensions and measurements indicated on the drawings, the Architect for consideration and decision before proceeding with the work.

1.22 OPERATING INSTRUCTIONS

A. Two (2) copies of maintenance, lubrication, and operating instructions for all equipment having moving parts shall be provided by the Contractor for Owner's use. This literature may be delivered with shop drawings or at time of delivery of equipment and shall include list of replacement parts. Such submission must be made formally through the Owner and architect to the Architect.

B. Each Subcontractor must thoroughly instruct Owner's personnel as to proper operation of his system and each shall provide qualified personnel to give at least (2) 4 hour sessions of undivided supervision therefore.

1.23 GUARANTEE

A. In addition to any supplemental guarantees obtained from any equipment manufacturer, the Contractor shall guarantee the prompt replacement of any faulty section of his installation without cost to the Owner if indication thereof occurs within one (1) year of acceptance of equipment by the Owner.

1.24 TEMPORARY FACILITIES

A. Electrical:

1. Electrical contractor to provide and maintain services for construction purposes with branch wiring and distribution boxes located so as power tools can be used by use of extension cords not exceeding 100 feet in length. All temporary service boxes to be protected by G.F.C.I. per OSHA Standards 3007. Figure at least one 20 amp, single phase power outlet per 750 square feet. of floor area and a minimum of 2 per floor.

2. Electrical contractor to provide and maintain temporary lighting for construction purposes consisting of pigtail sockets with a 100 watt lamp for every room. There shall be at least one lamp outlet in eacb room.

3. Remove temporary wiring as permanent lighting is connected and available for use. Maintain all wiring and lighting and make necessary routing repairs.

1.25 DEBRIS REMOVAL

A. Each contractor shall at all times keep the premises free from the accumulation of waste materials and rubbisb caused by his operations and shall remove the waste materials and rubbish from the job site on a periodic basis to the on site dumpster supplied by the general contractor. If any contractor does not conform to this requirement the owner shall have this work done and deduct the cost thereof from funds due the contractor from the Owner.

END OF SECTION 16010

SECTION 16050 - BASIC MATERIALS & METHODS

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 SCOPE

The work covered by this Section includes all labor, materials, equipment and accessories to complete the installation of the electrical power and lighting systems specified hereinafter and/or shown on the drawings, including but not limited to the following major items:

A. Furnishing and installation of lighting fixtures as shown and scheduled, including all lamps.

B. Branch lighting and receptacle wiring, outlets, wiring devices with connections complete.

C. New panelboard, feeders, switchgear added circuit breaker, etc.

D. All cabinets, conduit fittings, outlet boxes, hangers, supports, fuses and such other items required and incidental for a complete installation.

E. Communications systems including extensions to the existing systems that shall include but not be limited to: security access system; existing telephone jacks and wiring, fire alarm system devices, speaker system, cable TV , etc.

F. Telephone, Cable TV and Data raceways and cabling , including jacks and wall plates.

G. New devices including receptacles, switching, motion sensing wall and ceiling sensor light switching controls, disconnects and manual motor starters, and all other line and low voltage wiring .

H. Call for Aid alarm and wiring.

PART 2 - PRODUCTS

2.1 NEW CIRCUIT BREAKER IN EXISTING PANELBOARDS

A. Circuit breakers shall be of 1, 2 or 3 pole bolted construction as required and shall be rated 250 V.A.C. respectively as required with trip element calibrated (15 to 200 amps) in capacities as indicated on plans.

B. Breakers shall have a quick make and quick break toggle mechanism inverse time limit characteristics and shall be trip free on overload or short circuit. Automatic release shall be secured through the medium of a thermal magnetic trip element engaged in the releasing catch of the mechanism. Automatic tripping shall be indicated by the handle automatically assuming a position between the manual "OFF" and "ON" position.

C. Individual trip units shall be calibrated and scaled to eliminate tampering or unauthorized changes in lighting calibration. Breakers shall be interchangeable and capable of being operated in any position as well as being removable from the front of the panelboard without disturbing adjacent units.

D. Furnish a card index holder on inside of door, with type written index clearly indicating room, location or individual equipment each circuit controls.

2.2 NEW POWER PANELBOARD

A. Contractor shall furnish and install where shown on plans, new power branch panelboards.

B. The panelboard shall be as manufactured by General Electric Company, Square D, or ITE.

C. Circuit breakers shall be of 1, 2 or 3 pole bolted construction as required and shall be rated 250 V.A.C. respectively as required with trip element calibrated (15 to 200 amps) in capacities as indicated on plans.

D. Breakers shall have a quick make and quick break toggle mechanism inverse time limit characteristics and shall be trip free on overload or short circuit. Automatic release shall be secured through the medium of a thermal magnetic trip element engaged in the releasing catch of the mechanism. Automatic tripping shall be indicated by the handle automatically assuming a position between the manual "OFF" and "ON" position.

E. Individual trip units shall be calibrated and scaled to eliminate tampering or unauthorized changes in lighting calibration. Breakers shall be

interchangeable and capable of being operated in any position as well as being removable from the front of the panelboard without disturbing adjacent units.

F. Boxes shall be made of code gauge sheet steel and the edges shall be turned in a sufficient distance to properly support the trim. Boxes shall be provided with wiring gutters at top, bottom and sides.

G. Front shall be of code gauge full finisb steel. Trim shall be attacbed to box by means of adjustable trip clamps provided in sufficient quantities so that trim will be rigid.

H. The door shall be fastened in trim with concealed hinges and provided with flush type combination catch and lock. All locks to be arranged for same master key. Panelboard shall be provided with removable barriers.

I. Panelboard will be of the flush type as required and shall be set plumb and symmetrical with surrounding objects.

J. Furnisb a card index bolder on inside of door, with type written index clearly indicating room, location or individual equipment each circuit controls.

2.3 OUTLET BOXES

A. At every switcb, outlet, data/telephone, telepbone, fire alarm device, or junction point of conduit, except as bereinafter noted, install a hot dipped galvanized box and cover suitable for the outlet it is to serve. Future boxes shall have blank cover plates. Boxes shall be sized to accommodate; - (1) structural conditions, (2) size and number of raceways and conductors entering, and (3) device or fixture for which required.

B. Outlet boxes in bung ceilings shall be of the bar support type with fixture stud or, where fixture stud is not required to support the fixture, standard boxes adequately secured to the ceiling construction.

C. Provide suitable blank covers for all outlet boxes used as junction boxes or outlets not used.

D. Provide outlet boxes in finished walls with plaster covers of proper depth so that outer edge is flush with finished surface. Covers to have lugs turning in.

E. In masonry walls, outlet boxes for telephones, switches, receptacles, etc., shall be 4" square or larger as required.

F. Ceiling outlet boxes where conduit is concealed shall be not less than 4" in diameter x 1-1/2" deep with plaster covers. Outlet boxes where conduit is exposed shall be screw jointed, not less than 6" in diameter to provide a seat for fixture canopy.

G. Outlet boxes for switches and receptacles wbere run exposed shall be threaded bub type condulet FS or FD round corner covers as required.

H. Outlet boxes for bracket fixtures where conduit is exposed shall be screw jointed, not less than 6" in diameter to provide seat for fixture canopy.

I. Boxes shall be Appleton, General Electric, National Electric Products, Knigbt Electric Co. or approved equal in masonry construction, and in furred ceilings with two 1/8" X 3/8" bars of sufficient length to reach cetling super structure and attach thereto with galvanized wire.

2.4 CONDUIT

A. All low voltage wiring where shown, specified or required by code shall be run in conduit. (It is the intent of this specification to allow low voltage wiring to be run without conduit only above suspended accessible ceilings only). All line voltage wiring shall be run in conduit or as specified hereinafter or as noted on the drawings, in other raceways.

1. Conduit run in dry locations above ceilings or in dry walls, shall be EMT with standard fittings. For short runs (fixture whips, etc.) or where installation of EMT is determined by the Architect, to be impractical Greenfield may be used.

2. Type MC cable may be used in place of EMT for circuits of 60 amps or less only in dry locations where cable will be accessible for rerouting above suspended ceilings and in stud walls. This shall include exterior & interior walls where run thru metal studs wbere adjacent to accessible ceilings. Romex type cabling shall not be allowed.

3. All conduit runs of PVC, EMT or Greenfield shall have a separate green ground wire installed.

4. No aluminum conduit will be permitted.

5. Conduits run through Fire or Smoke Rated Walls & floors. Fill the voids around conduit with a soft incombustible material having a UL1479 classification equal to "Flame-safe " # FSP1100 fire stop

putty. Putty shall be installed to a depth of 1 1/4" on both sides of wall.

6. **All wiring shall be "Plenum Rated".**

B. Minimum size of conduit shall be 3/4" with larger sizes as required by the N.E.C. or as called for on plans.

C. Joints shall be made tight with standard couplings, and corners turned with elbows or long radius bends in pipe or by means of pipe hickey without damage to conduit.

D. All threaded joints in conduit runs in or under floor slabs shall be made watertight by red leading with the lead applied to the make thread only. A conductive lubricant, T & B Kopr/shield or equal, shall be applied over the red lead. This also applies to steel conduits run underground.

E. All conduit fittings where used shall be the threaded type and shall be Crouse-Hinds, Appleton, General Electric or equal.

F. Running threads will not be permitted but conduit unions such as "Erickson" conduit couplings made by Thomas & Betts, General Electric, Appleton, or equal will be permitted.

G. In general, conduits are to be run concealed. Where run exposed they shall be placed parallel to walls with conduit fittings, neatly spaced and securely supported. All exposed runs in finisbed spaces shall be done in painted EMT conduit. Wiremold raceways are not required on this project but care sbould be taken to install a neat clean looking exposed and painted conduit system as discreatly as possible..

H. Exposed single conduits shall be bung with Bergen-Paterson or equal #100 clevis hangers using beam clamps or similar supports.

I. Exposed conduit for feeders wben grouped together shall be fastened with "U" bolts to angle irons which in turn are supported from structural members with beam clamps or similar supports.

J. Ream all conduits, remove all burrs, and clean conduit for the proper introduction of wire. All conduit ends shall be capped and plugged with standard conduit accessories as soon as conduit bas been permanently installed in place.

K. All conduit shall be capped with metal cap until the Contractor is ready to pull wires. When he is ready to pull wires the caps shall be removed and

mandrel or swab is to be pulled through all conduit in order that any foreign particles may be removed.

L. All conduit of 1-1/4" and larger shall have insulating bushings in panel or pull boxes.

M. All conduit will be subject to continuity tests either before concealing or before wires are pulled in.

N. All rigid conduit shall have double locknut and bushing at each pressed steel box or cabinet.

O. Provide 18" of "Sealtite" flexible conduit at all motors or frames so that motor noises and hum will not be transferred to other parts of the building. Connections to insertion type control equipment shall be of sufficient length to allow removal for servicing.

P. Furnish and install junction or pull boxes in conduit runs as shown on drawings and also where not shown but as required by the N.E.C. Boxes shall be sized in accordance with the N.E.C. based on the number and sizes of the conduits, number and sizes of the wiring, etc.

2.5 WIRE AND CABLE

A. All wire used inside the building shall be Type THHN and or as noted on the drawings. All wiring shall be solid or stranded conductor copper for #10 AWG and smaller and stranded copper for #8 AWG and larger. Fixtures shall be wired with Type TFN fixture wire. No aluminum or copper clad aluminum conductors will be allowed. Use type THWN at service entrance and all wet locations.

B. Control wire for 120 volt service shall not be smaller than #14 and shall be copper. Control wire for 24 volt service shall not be smaller than #16. For general wiring, no wire shall be less than #12 unless otherwise noted or specified.

C. All wiring shall have the neutral conductor in white color. Grounded conductor shall be green in color. All ungrounded conductors shall be code colored wire. Wire run in trapped conduit or where moisture is apt to accumulate shall be Type THWN.

D. Wire shall be as manufactured by National Electric Products, General Electric, Anaconda, or approved equal.

2.6 WIRING DEVICES

A. The following itemized list, is given for the purpose of conveying to the Contractor the quality and rating of wiring devices to be installed under the Contract. Any or all devices may be as manufactured by LEVITON, or approved equal to Bryant Electric Co., Arrow Hart & Hegeman, Harvey Hubbell. A complete itemized list of all devices must be submitted for approval before installation.

1. Convenience Outlets:

   a. Duplex Grounded Receptacles Spec grade- 15 amp, 125 volt, #5262-color per architect in white or ivory.

   b. Duplex GFI Grounded Receptacle Spec grade - 15 amp., 125 volt, #6598-I-GFI , in white or ivory per architect.

2. Wall Switches Spec Grade (flush toggle switches, bakelite base, 20 amp., 120/277 volt): Color- White or Ivory as selected by the architect.

   a. Single Pole - #1201-I.

   b. Single Pole - #1201-I.

   c. Three-way - #1203-I.

   d. Four-way - #1204-I.

3. Ceiling mounted Infrared / Motion Sensors-Detectors

   Consisting of wall sensors, and ceiling censors , sized by the manufacturer for proper coverage to control the lighting in the areas where shown , they shall be 360 degree sensing and shall be mounted in the ceiling tiles where shown. They shall be reated for the intended lighting loads of each circuit and be provided with all required accessories, etc.

   a. Hubbell Building Automation, or Pre-Approved Equal. For pre-approval, provide all the information listed under section 1.04A and 1.04D a minimum of ten (10) working days prior to initial bid date.

   b. The listing of any manufacturer as "acceptable" does not imply automatic approval. It is the sole responsibility of the

electrical contractor to ensure that any price quotations received and submittals made are for sensors, which meet or exceed the specifications included herein.

c. Products: All products sball be Hubbell Building Automation product numbers:
1. Wall Switch Sensors: LHMT, LHUS, LHIR, and IWS.
2. Ceiling and Wall Sensors: OMNIDT, OMNIUS, OMNIIR, OMNIDIA, CUI5002000P, C5002000P, C8001500P, PIR10, LODT, LOIR and LODIA
3. Power and Slave Packs: UVPP, UVPPM, MP120A, MP230A, MP277A, MP347A, MPSA and RRU.

d. Installation:

1. It shall be the contractor's responsibility to locate and aim sensory in the correct location required for a complete and proper volumetric coverage within the range of coverage(s) of controlled areas per the manufacturer's recommendations. Rooms sball have (90) to one hundred (100) percent coverage to completely cover the controlled area to accommodate all occupancy habits of single or multiple occupants at any location within the room(s). The locations and quantities of sensors shown on the drawings are diagrammatic and indicate only the rooms which are to be provided with sensors. The contractor sball provide additional sensors if required to properly and completely cover the respective room.

2. It is the contractor's responsibility to arrange a pre-installation meeting with the manufacturer's factory authorized representative, at the owner's facility, to verify placement of sensors and installation criteria.

3. Proper judgment must be exercised in executing the installation so as to ensure the best possible installation in the available space and to overcome local difficulties due to space limitation or interference of structural components. The contractor shall also provide at

e. Factory Commissioning

1. Upon completion of the installation, the system shall be completely commissioned by the manufacturer's factory authorized technician who will verify all adjustments and sensor placement to

ensure a trouble-free occupancy-hased lighting control system. This service is provided at an additional cost.

2. The electrical contractor shall provide both the manufacturer and the electrical engineer with ten working days written notice of the scheduled commissioning date. Upon completion of the system fine-tuning the factory authorized technician shall provide the proper training to the owner's personnel in the adjustment and maintenance of the sensors.

3. Wall Plates:

a. All receptacle and switch plates shall be brushed stainless steel for receptacles, switches, etc., single or gang plates as required.

B. Motor Protection

1. Disconnect Switches shall he General Electric Type TH or approved equal hy Square D.

2. Motor starters shall have TYPE 2 protection. Electrical contractor shall be required to provide all magnetic motor starters with on/auto/off switch for all hvac equipment where required. Coordinate types required with temperature control contractor.

2.7 FIRE CAULKING

A. Floor or Wall Assemhly – Light weight or normal-weight (100 – 150 pcr) concrete. Except as noted in tahle under Item 4, minimum thickness of solid concrete floor or wall assemhly is 4 ½ inches. Floor may also be constructed of any minimum 6" thick UL Classified hollow-core Precast Concrete Units. When floor is constructed of hollow-core precast concrete units, packing material (Item 3) and caulk fill material (Item 4) to be installed symmetrically on both sides of floor, flush with floor surface. Wall assemhly may also be constructed of any UL Classified Concrete Blocks.

B. Through Penetrants – One metallic pipe, conduit or tubing to be isntalled either concentrically or eccentrically within the firestop sytem. Maximum annular space between pipe, conduit or tuhing and edge of through opening or sleeve is dependent on the parameters shown in Item 4. Minimum annular space between pipe or conduit and edge of through opening is zero inches

(point contact). Pipe conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

1. Conduit – Nom 6-inch diameter (or smaller) rigid steel conduit.

2. Conduit – Nom 4-inch diameter (or smaller) steel electrical metallic tubing.

C. Packing Material – Polyethylene backer rod or nom 1-inch thickness of tightly packed mineral wool batt or glass fiber insulation firmly packed into opening asa permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of caulk fill material (Item 4).

D. Fill, Void or Cavity Material – Caulk – Applied to fill the annular space flush with top surface of floor. In wall assemblies, required caulk thickness to be installed symmetriclaly on both sides of wall, flush with wall surface. At point contact location between penetrant and sleeve or between penetrant and concrete, a minimum ¼ inch diameter bead of caulk shall be appliedat top surface of floor and at both surfaces of wall. The hourly F Ratings and the minimum required caulk thicknesses are dependent upon a number of parameters, as shown in the following table:

Minimum Floor Or Wall F Thickness, Inches Rating, Hour	Nom Conduit Diameter, Inches		Max Annular Space, Inches	Minimum Caulk Thickness, Inches
2 ½	½ - 12	1 3/8	½	2
2 ½	½ - 12	3 ¼	1	2
4 ½	½ - 6	1 3/8	¼(a)	2
4 ½	½ - 12	1 ¼	½	3
4 ½	½ - 20	2	1	3
4 ½	½ - 20	2	1	3
4 ½	½ - 12	3 1/4	1	3
4 ½	22 – 30	2	2	3
5 ½	½ - 6	1 3/8	1(b)	4

a. Minimum 2 inch thickness of mineral wool batt insulation required in annular space.

b. Minimum 1 inch thickness of mineral wool batt insulation required in annular space on both sides of floor or wall assembly. Minimum 1

inch thickness of caulk to be installed flush with each surface of floor or wall assembly.

PART 3 - EXECUTION

3.1 WIRING FEATURES

A. The proper number of wires shall be installed and properly connected in order to make the lighting and power systems wiring complete, ready for satisfactory service.

B. Connect all wires in outlet boxes, leaving only those ends, at least 6" long, which will be connected to fixture wires.

C. All feeders in pull boxes and cabinets and branch circuits in outlets and pull boxes baving more than one circuit shall have a fiber tag attached, designating the name or number of the circuit.

D. Receptacles shall be wired with 6" pigtails, no loop allowed.

E. Feeding of outlets through local switches will not be permitted unless otherwise indicated on the drawings.

F. Splices of wires are to be eliminated wherever possible and where necessary are only to be made in readily accessible pull and outlet boxes.

G. Taps and splices in wire #6 and larger shall have brass or copper mechanical connectors applied after wire has been cleaned, then made tight and fully insulated as referred to in other paragraphs.

H. "Y-ER-EAS" may be used as a lubricant to facilitate the pulling of wires.

3.2 MOTOR AND CONTROL CIRCUIT WIRING

A. Contractor shall furnish and install at each motor a heavy-duty industrial type enclosed safety switcb having quick make and quick break contacts. The disconnecting switch shall open all ungrounded conductors simultaneously and shall have a rating equal to or in excess of the motor control.

B. Unless otherwise noted, all magnetic and non-magnetic motor starting devices complete with thermal protection, including both local and remote control stations shall be furnisbed and installed by the electrical contractor. Coordinate required sizes & types with mechanical contractor and temperature control contractor.

C. Particular care must be given to locate control equipment for maximum accessibility and to isolate it from mechanical injury or deterioration from dripping water, vapors, etc.

D. All control equipment shall be mounted with operating levers or push buttons at a heigbt of approximately 4' above the floor unless otherwise noted on drawings.

E. In general, unless otherwise noted, all motors 1/3 hp and less shall be designed for 120 volt, single-phase duty. Motors 1/2 hp and over shall be for 208 volts, three pbase.

F. Starters for 120 volt, single pbase motors shall be manual type with one thermal element equal to G.E. #CR-72. Starters for 208 volt, three phase motors shall be magnetic type with three thermal elements equal to G.E. #CR-306. Coordinate this work with the temperature control contractor.

3.3 SHOP DRAWINGS

A. Submit required shop drawings for the following item:

1. Motion sensors.

2. Wiring Devices.

3. Disconnect Switches and Starters.

B. Shop drawings that do not comply with Sub-paragrapb 16010 1.9 **B**. will be rejected.

END OF SECTION 16050

SECTION 16500 - ELECTRICAL LIGHTING FIXTURES

PART 1 - GENERAL

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 SCOPE

The work covered by this Section includes all labor, materials, equipment and accessories to complete the installation of the lighting systems and equipment as specified hereinafter and/or shown on the drawings. Also temporary construction lighting as specified in Section 16010.

PART 2 - PRODUCTS

2.1 LIGHTING FIXTURES

A. The contractor shall furnish and install all lighting fixtures as called for on the schedule. The fixtures listed in the Fixture Schedules on the drawings are intended to show the type and quality of fixtures required. Where alternate manufactures are listed, substitutions shall be limited to those names only.

B. The Contractor shall furnish and install all lamps for fixtures. Type of lamps shall be as specified on the schedule. Fluorescent lamps shall be type T-8, 3500K. Lamps shall be equal to GE, Philips or approved equal.

C. Fluorescent ballasts shall be Class "P" Premium automatic resetting thermally protected , HPF-CBM-ETL-UL approved. Ballasts shall be of the electronic types noted in the lighting fixture schedule. The electronic ballasts used shall be of the approved type allowed by the United Illuminating Company. Tbe ballasts sball not produce unwanted harmonics that may effect the buildings sensitive electronic equipment. Ballasts shall be rated for no more than 10% THD. All ballasts shall be rated for low temperature operation.

D. All burrs, fins, and sharp edges must be removed from fixture parts before they are assembled. Canopies, holders, etc. shall be spun or drawn in one piece unless otherwise specifically approved. Aluminum sheet of less than #10 gauge when placed in contact with brick, plaster, gypsum, concrete, or

similar masonry construction, shall be back painted before installation with aluminum or bituminous paint.

E. The finish of fixtures shall be the manufacturer's standard finish except as otherwise noted on the fixture schedule. Color selections shall be by the architect.

F. Sockets and receptacles for fixtures using enclosing glassware shall be of porcelain or non-inflammable molded compound.

G. Fixture wire shall be in strict compliance with the latest requirements of the National Board of Fire Underwriters. The carrying capacity of the wire shall meet the latest requirements of the National Electrical Code. No fixture wiring shall be smaller than #16 gauge. Wiring shall be protected with tape or tubing at all points where abrasion is liable to occur. All wiring shall bave a continuous identifying marker, readily distinguishing it from the other conductor, the marked conductor to be connected to the screw side of the socket or lamp receptacle.

H. No splice or tap shall be located within any stem. Wiring shall be continuous from splice in outlet box of the building wiring system to lampholder.

I. Solderless connectors, Scotchlok or approved equal, may be used in making connection in the wiring within the fixtures or in connecting the fixture wiring to circuit wiring.

J. All lighting fixtures shall be supported independent of ceiling on or in which they are installed. Refer to Seismic Requirements, Section 16010.

K. This Contactor shall furnish and install all supplementary steel or other supports required for any fixtures.

L. At time of final inspection all fixtures and equipment must be complete with lamps and required glassware or reflectors, which must be clean and free from defects. Any fixtures, reflectors, or glassware broken prior to the time of final inspection must be replace without cost to the Owner.

M. The contractor shall turn over to the owner 5% spare lamps of all types supplied or at least 6 lamps per lamp type (which ever is less).

N. All T-8 lamps listed above shall be equal to "G.E." #F32781 spx 35 rated @3500 k . Also all T-5 and T-5HO lamps wbere applicable shall be rated 3500 k.

O. All fluorescent ballasts shall be electronic type and all ballasts shall be compatible with listed lamp type specified. Ballasts shall be as manufactured by Motorola or approved equal by Advanced. Ballasts shall carry a minimum 3-year parts and replacement labor costs warranty from breakdown or defects. Electronic ballasts shall be of the type approved by Connecticut Light and Power Company for their energy conscious construction program. Ballasts shall be rated for no more than 10% THD.

PART 3 - EXECUTION

3.1 SHOP DRAWINGS

A. Submit required shop drawings for the following items:

1. Lighting Fixtures.
2. Fluorescent Lamps and Ballasts.

B. Shop drawings which do not comply with Subparagraph 16010 1.9 B will be rejected.

END OF SECTION 16500

SECTION 16700 - COMMUNICATIONS

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 SCOPE

Tbe work covered by this Section includes all labor, equipment, materials and accessories necessary to complete the Communications Systems and wiring provisions for the installation of the various communication systems as specified hereinafter and/or as shown on the drawings.

- Extensions to the Cable TV wiring and terminations plus slack cable at service end- run RG-6 coax cable home run to cable tv backboard with slack cable from all sbown TV jacks. Also provide wall jack outlets and cover plates.
- Wiring and installation for all Data and Tele cabling as noted and detailed on the drawings including slack cable at the home runs and wall jacks with plates.
- Wiring and installation of all extensions to the security access system that includes relocation of two stations to the new doorways and extension of the wiring as required. The contractor shall carry the cost of using the town's local fire alarm vendor for this work.
- Call for aid system and wiring.
- Extensions to the existing general speaker system that shall include new ceiling speakers to match the existing used in the building and wiring to the existing circuits as required. It recommended that the contractor use the town's existing vendor for all of this work and carry costs in their bid.
- Extensions to the fire alarm system including ceiling smoke detectors and A/V devices. The contractor may use any existing detectors and A/ devices found in the demolition spaces for the new locations and provide the difference of new ones that sball fully matcb the existing system. The contractor shall carry the cost of using the town's local fire alarm vendor for this work.

PART 2 - PRODUCTS

2.1 INTERNAL TELE, - WIRING PROVISIONS

A. "TELE" and "DATA" wiring provisions including providing the CAT-6 (or match the existing cables presently used) cabling runs, with slack cables and jacks at the walls as identified on drawings with tele and data symbol shall be furnished and installed under this division.

The electrical contractor shall furnish and install in each room where shown and as detailed 2"x 4" galvanized steel junction boxes for telephone outlets; Provide a 1" EMT metal conduit from box to the 1st floor suspended ceiling space for installation of cabling by owner's tele and data vendors.

Electrical contractor shall coordinate locations with respect to receptacles, etc. so that they are adjacent to each other and at the same elevation, etc.

2.2 CABLE TV WIRING PROVISIONS AND ADDITONS

A. TV wiring provisions including coaxial RG-6 home run and terminations as required here or as identified on drawings with telephone symbol shall be furnished and installed under this division.

The electrical contractor shall furnish and install in each room where shown and as detailed 2"x 4" galvanized steel junction hoxes for TV outlets; Provide a ¾" ENT flexihle conduit from box to suspended ceiling space on the first floor for installation of cabling hy the electrical contractor. Also provide home run RG-6 coaxial cahle to the service backboard as noted and detailed on the drawings along with terminating the outlet box end.

2.3 CALL FOR AID SYSTEMS

A. Furnish and install Handicap Call for Aid systems in the Handicap Toilet Rooms as detailed on the drawings. Provide Emergency switches, power supply, audible visual units in junction boxes as necessary. Refer to riser diagram on drawings for additional information.

2.4 FIRE ALARM ADDITIONS

A. This section of the specification includes the furnishing, installation, connection and testing of the new added fire alarm devices and controls to be matched up and be fully compatihle with the existing fire alarm system. Provide all required hackboxes, conduits, added power supplies, relay modules, fan shut down controls and relays, etc. Carry all costs

associated with hiring the owner's fire alarm vendor for any work that is needed.

B. The fire alarm system additions shall comply with requirements of NFPA Standard 72 for Protected Premises Signaling Systems except as modified and supplemented by this specification. The system additions shall be electrically supervised and monitor the integrity of all conductors.

C. The FACP and peripheral devices shall be manufactured 100% by a single U.S. manufacturer (or division thereof).

D. The system and its components shall be Underwriters Laboratories, Inc. listed under the appropriate UL testing standard as listed herein for fire alarm applications and shall be in compliance with the UL listing.

E. BASIC SYSTEM FUNCTIONAL OPERATION

When a fire alarm condition is detected and reported by one of the system initiating devices, the following functions shall immediately occur:

1. NOTE; CONTRACTOR SHALL CONFIRM UPON ACTIVATION OF ANY FIRE ALARM ACTIVATION DEVICE THAT, ALL NEW AND EXISTING AUDIO/VISUAL DEVICES SHALL ALARM THROUGHOUT THE BUILDING. . IN ADDITION, THE EXH FAN AND AIR AIR HANDLER FOR THE GARAGE AREAS SHALL SHUT DOWN.

2. Also, the following shall occur:

   a. The system alarm on the FACP shall flash.

   b. A local piezo electric signal in the control panel sball sound.

   c. The annunciation display on the FACP shall indicate all information associated with the fire alarm condition, including the type of alarm point and its zone of location within the protected premises.

   d. General alarm shall notify the building by the use of the horn strobes.

F. Provide the services of a factory trained and authorized technician to perform all system software modifications, upgrades or changes.

G. Notification Devices (Horn/Strobes are to meet requirements of both paragraphs A and B.) Notifier Series

1. All units shall operate on 12 or 24 volts, DC or with field selectable taps from 15, 15/75, 30, 75, and 110 candela.

   Horns shall produce a nominal sound output of 84 dBA at 10 feet (3m).

2. Units shall bave Low and High Volume settings for the born device. Provide low volume settings for the strobe only units in the toilet rooms.

3. Each unit will be red with the word FIRE embossed within the device.

H. Detectors shall be intelligent (analog), and shall connect with two wires to the fire alarm control panel signaling line circuits.

2. Smoke and thermal detectors shall provide dual alarm and power/polling LEDs. Both LEDs shall flash under normal conditions, indicating that the detector is operational and in regular communication with the control panel, and both LEDs sball be placed into steady illumination by the control panel, indicating that an alarm condition has been detected. If required, the LED flash sball have the ability to be removed from the system program.

3. Smoke detector sensitivity shall be set in the fire alarm control panel and shall be adjustable in the field through the field programming of the system. Sensitivity may be automatically adjusted by the panel on a time-of-day basis.

4. The detectors shall be ceiling-mount and shall include a separate twist-lock base with tamper proof feature. Base shall include a sounder base with a built-in (local) sounder rated at 85 DBA minimum, if required, a relay base and an isolator base designed for Style 7 applications.

5. The detectors shall provide a test means wbereby they will simulate an alarm condition and report that condition to the control panel. Such a test may be initiated at the detector itself (by

activating a magnetic switch) or initiated remotely on command from tbe control panel.

6. The detectors shall use the photoelectric (light-scattering) principal to measure smoke density and shall, on command from the control panel, send data to the panel representing the analog level of smoke density.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Installation of the system specified above shall be in accordance with the NEC, local and state codes, as shown on the drawings, and as recommended by the major equipment manufacturer.

B. All conduit, junction boxes, conduit supports and hangers shall he concealed in finished areas and may be exposed in unfinisbed areas.

C. All system devices, controls, panels, etc. shall be flush mounted when located in finished areas and may be surface mounted when located in unfinished areas.

3.2 TESTING

The service of a competent technician sball be provided to technically supervise and participate during all of the adjustments and tests for each of the system.

1. Before energizing the cables and wires, check for correct connections and test for short circuits, ground faults, continuity, and insulation.

3.3 FINAL INSPECTION

A. At the final inspection, the contractor shall demonstrate that the system functions properly in every respect.

3.4 INSTRUCTION

A. Instruction shall be provided as required for operating the system. Hands-on demonstrations of the operation of all system components and the entire system including program changes and functions shall be provided.

B. The contractor and/or the systems manufacturer's representatives shall provide a typewritten "Sequence of Operation" to the owner.

3.5 SHOP DRAWINGS

A. Submit required shop drawings for the following items;

1. Additions to the Fire Alarm System.
2. Additions to the ceiling speaker system.

B. Shop drawings which do not comply with Subparagraph 16010 1.9 B will be rejected.

END OF SECTION 16700