Project Manual For:

Kennebec Valley Community College
Fairfield, Maine

Radiology Lab Renovations

ISSUED FOR BIDDING

LBA Project #: 25-011-00

5 September 2025

LAVALLEE | BRENSINGER ARCHITECTS
Boston | Manchester | Portland
www.LBPA.com

SECTION 00 01 03
PROJECT DIRECTORY

OWNER

Kennebec Valley Community College
92 Western Ave, Fairfield, Maine 04937
Telephone: 207-453-5076; Email: bpushor@mainecc.edu
Contact: Brianne Pushor

ARCHITECT

Lavallee Brensinger Architects (LBA)
305 Commercial Street, Portland, Maine 04101
Telephone: 207-558-7200; Email: michael.pednault@lbpa.com
Contact: Mike Pednault

STRUCTURAL ENGINEERS

Foley Buhl Roberts & Associates
254 Commercial Street, Portland, Maine 04101
Telephone: 207-200-2500; Email: dmartin@fbra.com
Contact: David Martin

FIRE PROTECTION, PLUMBING, MECHANICAL, ELECTRICAL ENGINEERS

Bennett Engineering, Inc.
7 Bennett Road, Freeport, Maine 04032
Telephone: 207-865-9475; Email: will@bennettengineering.net
Contact: Will Bennett

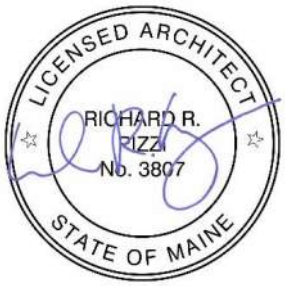
END OF SECTION

SECTION 00 01 07

SEALS PAGE

ARCHITECT

Lavallee Brensinger Architects (LBA)

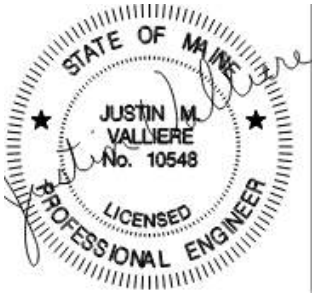


STRUCTURAL ENGINEERS

Foley Buhl Roberts & Associates

FIRE PROTECTION, PLUMBING, MECHANICAL, ELECTRICAL ENGINEERS

Bennett Engineering, Inc.



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00 11 13
Notice to Contractors

KVCC Energized Radiology Lab BGS project number 3786

Interior renovations to convert an existing conference room and office into a fully functional radiology lab, equipped with the necessary infrastructure and safety measures to support radiological imaging and diagnostic educational processes

The contract shall designate the Substantial Completion Date on or before *30 June 2026*, and the Contract Final Completion Date on or before *31 July 2026*.

1. Bids shall be submitted in sealed envelopes plainly marked "**Bid for *KVCC Energized Radiology Lab***" and addressed to:

   Brianne Pushor
   Dean of Special Projects & Facilities
   Kennebec Valley Community College
   92 Western Avenue
   Fairfield, Maine 04937

   The envelope shall contain a completed Contractor Bid Form (section 00 41 13), provided in the Bid Documents, and include bid security when required. The bids shall be received no later than **2:00:00 p.m.** on ***19 March 2026 in King Hall room 114.***

   Bid submissions will be opened and read aloud at *the address shown above* at the time and date noted above.

   Any bid submitted after the noted time will not be considered a valid bid and will remain unopened. Any bid submitted by any other means will not be considered a valid bid. The Owner reserves the right to accept or reject any or all bids as may best serve the interest of the Owner.

2. Questions and comments on the *bid opening process* shall be addressed to: Division of Planning, Design & Construction, Bureau of General Services, 77 State House Station, Augusta, Maine 04333-0077, BGS.Architect@Maine.gov.

3. Questions and comments regarding the *project* design specifications or drawings shall be directed in writing to the Consultant during the bid period prior to the question and comment deadline of 5:00 p.m. on *13 March 2026*.

   LaVallee Bresinger Architects
   Michael Pednault
   michael.pednault@lbpa.com

4. ☒ Bid security is required on this project.
   The Bidder shall include a satisfactory Bid Bond (section 00 43 13) or a certified or cashier's check for 5% of the bid amount with the completed bid form submitted to the Owner. The Bid Bond form is available on the BGS website.
   or
   ☐ Bid security is not required on this project.

5. ☒ Performance and Payment Bonds are required on this project.
   If noted above as required, or if any combination of Base Bid and Alternate Bids amounts selected in the award of the contract exceeds $125,000.00, the selected Contractor shall furnish a 100% contract Performance Bond (section 00 61 13.13) and a 100% contract Payment Bond (section 00 61 13.16) in the contract amount to cover the execution of the Work. Bond forms are available on the BGS website.
   or
   ☐ Performance and Payment Bonds are not required on this project.

6. Filed Sub-bids *are not required* on this project.

7. ☐ Pre-qualified General Contractors are utilized on this project.
   N/A
   or
   ☒ Pre-qualified General Contractors are not utilized on this project.

8. ☒ An on-site pre-bid conference (☒ *mandatory* or ☐ *optional*) will be conducted for this project.
   The pre-bid conference is intended for General Contractors. Subcontractors and suppliers are welcome to attend. Contractors who arrive late or leave early for a mandatory meeting may be prohibited from participating in this meeting and bidding.

   10 March 2026
   Kennebec Valley Community College
   92 Western Avenue
   Fairfield, Maine 04937
   King Hall room 114

   or
   ☐ An on-site pre-bid conference will not be conducted for this project.

9. Bid Documents - full sets only - will be available on or about *26 February 2026* and may be obtained *at no cost electronically* from:

   LaVallee Bresinger Architects
   Michael Pednault
   michael.pednault@lbpa.com

10. Bid Documents may be examined at:

    AGC Maine
    188 Whitten Road, Augusta, ME 04330
    207-622-4741

00 21 13
Instructions to Bidders

1. Bidder Requirements

1.1 A bidder is a Contractor which is evidently qualified, or has been specifically pre-qualified by the Bureau of General Services, to bid on the proposed project described in the Bid Documents.

1.2 Contractors and Subcontractors bidding on projects that utilize Filed Sub-bids shall follow the requirements outlined in these Bid Documents for such projects. See Section 00 22 13 for additional information.

1.3 Contractors and Subcontractors are not eligible to bid on the project when their access to project design documents prior to the bid period distribution of documents creates an unfair bidding advantage. Prohibited access includes consultation with the Owner or with design professionals engaged by the Owner regarding cost estimating, constructability review, or project scheduling. This prohibition to bid applies to open, competitive bidding or pre-qualified contractor bidding or Filed Sub-bidding. The Bureau may require additional information to determine if the activities of a Contractor constitute an unfair bidding advantage.

1.4 Each bidder is responsible for becoming thoroughly familiar with the Bid Documents prior to submitting a bid. The failure of a bidder to review evident site conditions, to attend available pre-bid conferences, or to receive, examine, or act on addenda to the Bid Documents shall not relieve that bidder from any obligation with respect to their bid or the execution of the work as a Contractor.

1.5 Prior to the award of the contract, General Contractor bidders or Filed Sub-bidders may be required to provide documented evidence to the Owner or the Bureau showing compliance with the provisions of this section, their business experience, financial capability, or performance on previous projects.

1.6 The selected General Contractor bidder will be required to provide proof of insurance before a contract can be executed.

1.7 Contracts developed from this bid shall not be assigned, sublet or transferred without the written consent of the Owner.

1.8 By submitting a bid the Contractor attests that it has not been declared ineligible to bid on State of Maine projects. The Director of the Bureau of General Services may disallow award of this contract to any Contractor if there is evidence that the Contractor or any of its Subcontractors, through their own fault, have been terminated, suspended for cause, debarred from bidding, agreed to refrain from bidding as part of a settlement, have defaulted on a contract, or had a contract completed by another party.

1.9 The Contractor attests that it is not presently indicted for or otherwise criminally or civilly charged by a Federal, State or local government entity with commission of any of the following offenses and has not within a three-year period preceding this bid been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction, or contract under a public transaction, violation of Federal or State anti-trust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

1.10 The Contractor shall not make any award or permit any award (subgrant or contract) at any tier to any party which is debarred or suspended or is otherwise excluded from or ineligible for participation in Federal assistance programs or State of Maine projects.

2. Authority of Owner

2.1 The Owner reserves the right to accept or reject any or all bids as may best serve the interest of the Owner.

2.2 Subject to the Owner's stated right to accept or reject any or all bids, the Contractor shall be selected on the basis of the lowest dollar value of an acceptable Base Bid, or any combination of Base Bid plus Alternate Bids, as well as other limited cost modifications the Owner determines may best serve the interests of the Owner. An acceptable bid is a duly submitted bid from a responsive and responsible bidder.

2.3 The Owner reserves the right to require Bid Bonds or Performance and Payment Bonds for any project of any contract value.

3. Submitting Bids and Bid Requirements

3.1 Each bid shall be submitted on the forms provided in the Bid Documents.

3.2 Each bid shall be valid for a period of thirty calendar days following the Project bid closing date and time. The bid expiration date may be extended in unusual circumstances by mutual consent of the Bidder and the Owner. The bid amount shall not be modified due to the bid expiration date extension.

3.3 Any provision contained in a bid which shows cost escalation, or any modification of schedule or other requirements shall not be accepted. Such a provision causes the bid to be invalid, or, at the discretion of the Owner and BGS, that element of the bid submission may be disregarded for the purpose of awarding the contract without that provision.

3.4 Bidders shall include a Bid Bond or other approved bid security with the bid form submitted to the Owner when the bid form indicates such bid security is required. The bond value shall be 5% of the bid amount. The form of bond is shown in section 00 43 13.

3.5 Bidders recognize that inclusion of contract bonds and the cost of those bonds is dependent on the awarded contract dollar value. Therefore, a Base Bid, or any combination of Base Bid plus Alternate Bids, as well as other limited cost modifications, resulting in a contract award shall include the cost of Performance and Payment Bonds in the submitted bid amount when the construction contract value is over $125,000.00. Similarly, the cost of Performance and Payment Bonds is excluded in the submitted bid amount when the construction contract value is $125,000.00 or less unless bonds are specifically required by the Bid Documents. When required for the project, the selected Contractor shall provide these bonds before a contract can be executed, pursuant to 14 M.R.S.A., Section 871, Public Works Contractors' Surety Bond Law of 1971, subsection 3. The form of bonds is shown in section 00 61 13.13 and 00 61 13.16.

3.6 Bidders may modify bids in writing, by the same means as the original bid submission, prior to the bid closing time. Such written amendments shall not disclose the amount of the initial bid. If so disclosed, the entire bid is considered invalid.

3.7 Bidders implicitly acknowledge all Addenda issued when they submit the bid form. By usual practice the Consultant shall not issue Addenda less than 72 hours prior to the bid closing time, to allow ample time for bidders to incorporate the information. However, some information, such as extending the bid due date and time, may be issued with shorter notice. Addenda shall be issued to all companies who are registered holders of Bid Documents.

3.8 A bid may be withdrawn without penalty if a written request by the bidder is presented to the Owner prior to the bid closing time. Such written withdrawal requests are subject to verification as required by the Bureau.

A bid may be withdrawn without penalty after the bid closing time if, in the determination of the Bureau, evidence provided by the Contractor shows an apparent unintended error such as a miscalculation, or an erroneous number on estimating documents, was the cause of an inaccurate bid. The Bureau may allow withdrawal in consideration of the bid bond or, without utilizing a bid bond, if the Bureau considers documented evidence provided by the Contractor shows factual errors had been made on the bid form.

3.9 In the event State of Maine Offices unexpectedly close on the published date of a public bid opening in the location of that bid opening, prior to the time of the scheduled deadline, the new deadline for the public bid opening will be the following business day at the originally scheduled hour of the day, at the original location. Official closings are posted on the State of Maine government website.

3.10 The Owner may require, in a Notice of Intent to Award letter to the apparent low bidder, a Schedule of Values, Project Schedule, and List of Subcontractors and Suppliers as both a demonstration of capability of the Bidder and as a condition of award.

3.11 Projects which require a State of Maine wage determination will include that schedule as part of the Bid Documents. See section 00 73 46, if such rates are required.

3.12 Projects which require compliance with the Davis-Bacon Act are subject to the regulations contained the Code for Federal Regulations and the federal wage determination which is made a part of the Bid Documents. See section 00 73 46, if such rates are required.

3.13 The Owner is exempt from the payment of Maine State sales and use taxes as provided in 36 M.R.S. §1760 (1). The Contractor and Subcontractors shall not include taxes on exempt items in the construction contract.

SECTION 00 21 13.01
INSTRUCTIONS TO BIDDERS

INVITATION

1.01 BID SUBMISSION

A. See State of Maine Division 0 – all Sections

1.02 CONTRACT TIME

A. Perform the Work within the time stated in Section 01 00 00 - General Requirements and State of Maine Division 0 – all Sections.

2.01 BIDDER'S REPRESENTATION

A. The submission of a Bid will be construed as conclusive evidence that the Bidder has made all examinations and inspections necessary for a complete and proper assessment of the Work required, and that the Bidder has included in his Bid a sum sufficient to cover the cost of all items necessary to perform the Work as set forth in the Contract Documents. No allowance will be made to a Bidder because of lack of such examination, inspection or knowledge.

B. The submission of a Bid will be construed as certification that the Bidder has included in his Bid a sum sufficient to cover the cost of all items necessary to perform the Work as set forth in the Contract Documents, and has reviewed the scope of work within each filed and non-filed sub-contractor's bids, and carried costs necessary to complete the work whether within the filed sub bidder's scope or not.

B. Each Bidder by making his Bid represents that he has assessed the conditions of the current construction marketplace, and verified that an adequate, experienced workforce is available to suitably man the Work of this Project and complete it in a timely fashion.

C. Each Bidder shall have made himself familiar with all Federal, State and Local laws, ordinances and regulations which in any manner affect those engaged in or upon the Work, or in any way affect those engaged or employed in the Work of the materials or equipment used in or upon the Work, or in any way affect the conduct of the Work.

2.02 EXAMINATION

A. Each Bidder shall examine the Bidding Documents carefully in both Color Digital Format and Print.

B. Bidders are encouraged to direct any questions which may arise to the Architect, in order to provide necessary clarifications prior to the commencement of the Work.

Lavallee Brensinger Architects
Attention: Michael Pednault, Maine RA
305 Commercial Street
Portland, Maine 04101
Phone: (207) 558 7200
E-mail: michael.pednault@lbpa.com

C. Bid Documents may be examined at the locations indicated in section 00 11 13 – Notice to Contractors:

1. Upon receipt of Bid Documents verify that documents are complete. Notify Architect should the documents be incomplete.
2. Immediately notify Architect upon finding ambiguity, discrepancies or omissions in the Bid Documents, or the site and local conditions. Should Bidders fail to notify the Architect of discrepancies or contradictions in the Bidding Documents, they shall be assumed to have Bid the better quality, more expensive, and greater quantity alternative.

2.03 INQUIRIES & ADDENDA

A. Requests for interpretation or correction of any ambiguity, inconsistency or error, which a Bidder may discover therein, shall be submitted to the Architect in writing / via email.

B. Any interpretation or correction will be issued in writing as an Addendum by the Architect. No Bidder shall rely upon any interpretation or correction given by any other method.

C. Addenda may be issued during the bidding period. All Addenda become part of the Contract Documents. Include resultant costs in the Bid Amount.

D. Verbal answers are not binding on any party.

E. Clarifications requested by Bidders must be in writing / via email no later than 5:00pm, March 13, 2026. The reply, if deemed necessary by the Architect, will be in the form of an Addendum, a copy of which will be distributed electronically via email.

2.04 SUBSTITUTIONS

A. Each Bidder represents that his Bid is based upon the materials and equipment described in the Bidding Documents. Where the language "or approved equal" is used in the Bidding Documents, it is intended to require that all such materials and equipment shall be submitted as required by these Instructions to Bidders and approved by the Architect prior to the receipt of Bids. See Section 01 60 00 - Product Requirements, for additional information and the required Contractor's Substitution Request form.

B. In requesting approval of deviations or substitutions, a Bidder shall provide evidence leading to a reasonable certainty that the proposed substitution or deviation will provide a quality of result at least equal to that otherwise attainable. If, in the opinion of the Architect, the evidence presented does not provide a sufficient basis for such certainty, the Architect may reject such substitution or deviation without further investigation or choose not to issue an addendum allowing the requested deviation or substitution. If no addendum is issued allowing a substitution, the substitution request shall be considered denied.

C. In requesting approval of substitutions, a Bidder represents that he will provide the same warranty for the substitution that he would for that specified.

D. When a request to substitute a product is made, the Architect may, or may not, approve the substitution and will issue an Addendum if approved.

END OF SECTION

00 22 13
Instructions to Filed Sub-bidders

1. Filed Sub-bidder Requirements

1.1 A Filed Sub-bidder is a Subcontractor, and in some cases a General Contractor electing to bid in a Subcontractor capacity, which is evidently qualified to bid on a defined portion of the proposed project.

1.2 Each Filed Sub-bidder is responsible for all necessary familiarity with all relevant portions of the Bid Documents. Failure of the Filed Sub-bidder to acknowledge Addenda, for example, may result in disqualification of the Filed Sub-bid.

1.3 A Filed Sub-bidder may need to meet certain qualifications as a prerequisite to bidding.

1.4 By submitting a bid the Filed Sub-bidder attests that they have not been declared ineligible to bid on State of Maine projects. The Director of the Bureau of General Services may disallow award of this contract to any Filed Sub-bidder if there is evidence that they, through their own fault, have been terminated, suspended for cause, debarred from bidding, agreed to refrain from bidding as part of a settlement, or has defaulted on a contract or had a contract completed by another party.

1.5 The Filed Sub-bidder attests that it is not presently indicted for or otherwise criminally or civilly charged by a Federal, State or local government entity with commission of any of the following offenses and has not within a three-year period preceding this bid been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction, or contract under a public transaction, violation of Federal or State anti-trust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

1.6 The Filed Sub-bidder shall not make any award or permit any award (subgrant or contract) at any tier to any party which is debarred or suspended or is otherwise excluded from or ineligible for participation in Federal assistance programs or State of Maine projects.

2. Description of the Bid Depository

2.1 The Maine Construction Bid Depository (Bid Depository) is operated and managed by the Associated General Contractors of Maine (AGC Maine). The Bid Depository is located at the office of the Associated General Contractors of Maine, 188 Whitten Road, Augusta, Maine 04430, telephone 207-622-4741.

2.2 The Bid Depository is a system that maintains a high quality of bidding practices by documenting the receipt of Subcontractor sealed bid envelopes at a particular place, date and time prior to the submission of General Contractor bids to an Owner for a particular project. The bid envelopes are logged in and safeguarded, unopened, then distributed to the appropriate General Contractors and the Owner.

2.3 Filed sub-bids from major Subcontractors allow the General Contractor an ample period of time to compile bids in a complete and accurate manner prior to the Contractor bid closing date. The intent of this system is to protect the best interests of Owners, General Contractors, Subcontractors, Architects and Engineers.

3. The Maine Construction Bid Depository Advisory Committee

3.1 The Maine Construction Bid Depository Advisory Committee (Advisory Committee) is maintained to provide Owners advice and counsel concerning the administration of the bid depository filed bid system.

3.2 The Advisory Committee consists of two Architects, two Engineers, two Subcontractors and two General Contractors selected by the AGC Maine Building Committee, in consultation with the Maine chapters of the American Institute of Architects (AIA), American Council of Engineering Companies (ACEC), and Associated Builders and Contractors (ABC). Additionally, two at-large members are selected by the Advisory Committee.

3.3 Meetings of the Advisory Committee shall be called as necessary by AGC Maine, acting as secretariat, or by a quorum of the committee membership. A quorum consists of any three members of the committee.

3.4 If an aggrieved party believes the Bid Depository procedures were violated, they may request an opinion from the Advisory Committee. Formal complaints concerning the administration of the filed bid system must be submitted in writing to the Owner, with a copy of the complaint submitted to the Architect. Upon receipt of the complaint, the Owner should seek advice and counsel from the Bid Depository Advisory Committee before responding to the complaint.

4. Owner's Use of the Bid Depository

4.1 The Owner shall determine if the Filed Sub-bid process will be employed in the project.

4.2 The Owner shall determine which sections will be designated for each distinct Filed Sub-bid.

4.3 The fee for the use of the Bid Depository is paid by the Owner.

5. Submitting Filed Sub-bids

5.1 Each bid should be placed in official envelopes provided by the Bid Depository and on official forms obtained from the Bid Depository or Architect.

5.2 Three types of official envelopes should be used.

a) A sealed large *white* envelope containing the following small pink and green envelopes, and a bid bond, separate from the pink and green envelopes;

b) A sealed *pink* envelope addressed to each General Contractor to whom the Filed Sub-bidder intends to bid, containing a complete bid form;

c) A sealed *green* envelope addressed to the Bid Depository containing a copy of each bid, and a listing of any General Contractors intentionally omitted by the Subcontractor.

5.3 Each Filed Sub-bid shall include only those sections or combined sections required by the Bid Documents, including all Addenda issued from the Architect's office more than 72 hours prior to Filed Sub-bid closing time.

5.4 Filed Sub-bids that do not comply in materials, forms or content may be rejected by the Bid Depository or the Owner.

5.5 Filed Sub-bids may be delivered or mailed to the Bid Depository. Filed Sub-bidders assume the risk of delivery by any method.

5.6 Filed Sub-bidders may bid any amount to any General Contractor.

5.7 Filed Sub-bidders may bid to any or all General Contractors.

5.8 General Contractors may select any valid Filed Sub-bid, regardless of relative cost.

5.9 General Contractors may use their own forces or a subsidiary company for one or more complete trade sections. The General Contractor is required to submit the Filed Sub-bid as any Filed Sub-bidder would, according to the instruction of this section regarding the Bid Depository, even if bidding only to their own company. Such a bid shall include a statement of the General Contractor's qualifications to perform the work (such as names, relevant certifications and licenses, experience and references of key personnel, and a list of equipment, as appropriate), inserted in the *green* envelope. The Owner shall determine the validity of those stated qualifications and may require further documentation.

5.10 General Contractors intending to use their own forces or a subsidiary company shall notify the Bid Depository. The General Contractor is also advised to notify Subcontractors of their intent to submit Filed Sub-bids to clarify the expectations concerning the General Contractor receiving Filed Sub-bids.

5.11 Filed Sub-bids may be modified by bidders prior to the Filed Sub-bid closing time. Such written amendments shall not disclose the amount of the initial Filed Sub-bid. If so disclosed, the entire Filed Sub-bid will be declared void.

5.12 Filed Sub-bidders acknowledge all Addenda issued in a timely manner as a consequence of submitting the bid form. The Architect shall not issue Addenda affecting Filed Sub-bid trades less than 72 hours prior to the Filed Sub-bid closing time. Addenda will be issued to all companies who are registered holders of Bid Documents.

5.13 Filed Sub-bidders shall include a Bid Bond with each bid form submitted to a General Contractor. The bond value shall be 5% of the bid amount. The form of bond is shown in section 00 43 16.

5.14 Filed Sub-bidders shall include the cost of Performance and Payment Bonds in the bid amount. If selected by a selected General Contractor, the Filed Sub-bidder shall provide these bonds before a contract will be executed. The form of bonds are shown in section 00 61 13.23 and 00 61 13.26.

5.15 In the event a Filed Sub-bidder has failed to bid to a General Contractor as intended, the Filed Sub-bidder shall take the following actions:

a) Notify the Bid Depository in writing, not later than 24 hours prior to the closing date for General Contractors, in this manner: *"<name of Filed Sub-bidder> now intends to, but previously did not bid to <name of subject General Contractor> on the <name of project>. Please consider our bid addressed to <name of another General Contractor> as if it were also submitted to <name of subject General Contractor>."*
b) Notify the subject General Contractor of the situation, in writing.

5.16 Filed Sub-bids may be withdrawn without penalty if documented in writing by bidders prior to the Filed Sub-bid closing time. Such written withdrawals are subject to whatever verification is required by the Bid Depository. After the Filed Sub-bid closing time, no such request will be considered until after the General Contractor closing time.

6. Receiving Filed Sub-bids

6.1 The Bid Depository will provide a receipt, when requested, for each large white envelope submitted.

6.2 The Bid Depository date-and-time-stamps each large white envelope, and collects all such envelopes for the project.

6.3 Filed Sub-bids received by the Bid Depository after the designated closing date and time shall be date-and-time-stamped and returned, unopened.

6.4 The large *white* envelopes containing Filed Sub-bids are opened in the presence of any interested party immediately after the closing time by an official representative of the Bid Depository. The Bid Depository creates a log of all submissions, noting bid bonds, if required, and prepares distribution of Filed Sub-bids to General Contractors and Owners.

6.5 The *pink* envelopes are picked up by the General Contractor. The Bid Depository may require the General Contractor to sign acknowledgement of receipt of the envelopes. The Bid Depository may mail envelopes to the General Contractor upon request, at the risk and expense of the General Contractor.

6.6 In a similar fashion to the above, the *green* envelopes are transmitted to the Owner. Bonds, if required, are also transmitted to the Owner.

7. General Contractor Bids Containing Filed Sub-bids

7.1 Each bidding General Contractor shall submit a bid form containing the information received from Filed Sub-bidders. If a GC bid contains a dollar amount different from that filed by a Filed Sub-bidder, the bid amount filed shall be substituted for the amount submitted by the General Contractor. The General Contractor bid shall be corrected prior to the selection of a General Contractor.

7.2 In the event the Owner determines that a General Contractor bid includes an invalid Filed Sub-bid, the Owner may substitute a valid apparent low dollar amount Filed Sub-bid submitted to that

General Contractor. Any action such as this would not be done until after the General Contractor bid closing.

7.3 The Owner may request substitution of a Filed Sub-bidder that has submitted a lower bid to the General Contractor than the Filed Sub-bidder designated by the General Contractor on their bid form. This, or other circumstances where the Owner requests a change in Filed Sub-bidder, is subject to the agreement of General Contractor and Filed Sub-bidder.

00 43 13
Contractor Bid Bond

Bond No.: **insert bond number**

We, the undersigned, ***insert company name of Contractor***, ***select type of entity*** of ***insert name of municipality*** in the State of ***insert name of state*** as principal, and ***insert name of surety*** as Surety, are hereby held and firmly bound unto ***select title of obligee*** in the penal sum of ***five percent of the bid amount***, for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns, signed this ***insert date, i.e.: 8th*** day of ***select month***, ***select year***, which is the same date as that of the first specified bid due date, or subsequent bid due date revised by addendum.

The condition of the above obligation is such that whereas the principal has submitted to the Owner, or State of Maine, to a certain bid, attached hereto and hereby made a part hereof, to enter into a contract in writing, for the construction of ***insert name of project as designated in the contract documents***

Now therefore:

If said bid shall be rejected, or, in the alternate,

If said bid shall be accepted and the principal shall execute and deliver a contract in the form of contract attached hereto, properly completed in accordance with said bid, and shall furnish a bond for the faithful performance of said contract, and for the payment of all persons performing labor or furnishing material in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said bid, then this obligation shall be void.

Otherwise, the same shall remain in force and effect- it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received hereby stipulates and agrees that the obligation of said Surety and its bonds shall be in no way impaired or affected by any extension of the time within which the Obligee may accept such bid and said Surety does hereby waive notice of any such extension.

[Fillable bond forms may be downloaded from the Bureau of General Services website.]

00 43 13
Contractor Bid Bond

In witness whereof, the principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set above.

Signed and sealed this ***insert date, i.e.: 8th*** day of ***select month***, ***select year***, which is the same date as that of the first specified bid due date, or subsequent bid due date revised by addendum.

Contractor

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

Surety

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

If Contractor is a partnership, all partners shall execute the bond. A power of attorney document indicating that it still is in full force and effect shall be provided by the person executing this bond.

[Fillable bond forms may be downloaded from the Bureau of General Services website.]

00 43 16
Subcontractor Bid Bond

Bond No.: **insert bond number**

We, the undersigned, ***insert company name of Subcontractor***, ***select type of entity*** of ***insert name of municipality*** in the State of ***insert name of state*** as principal, and ***insert name of surety*** as Surety, are hereby held and firmly bound unto ***select title of obligee*** in the penal sum of ***five percent of the bid amount***, for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns, signed this ***insert date, i.e.: 8th*** day of ***select month***, ***select year***, which is the same date as that of the first specified Subcontractor bid due date, or subsequent bid due date revised by addendum.

The condition of the above obligation is such that whereas the principal has submitted to the Owner, or State of Maine, to a certain Subcontractor bid, attached hereto and hereby made a part hereof, to enter into a subcontract in writing with any Contractor listed in said Subcontractor bid, provided the designated Contractor has entered into a written agreement with the Owner, for the construction of ***insert name of project as designated in the contract documents***.

Now therefore:

If said Subcontractor bid shall be rejected, or, in the alternate,

If said Subcontractor bid shall be accepted and the principal shall execute and deliver a subcontract to the Contractor designated by the Owner in the form of subcontract attached hereto, properly completed in accordance with said Subcontractor bid, and shall furnish a bond for the faithful performance of said subcontract, and for the payment of all persons performing labor or furnishing material in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Subcontractor bid, then this obligation shall be void.

Otherwise, the same shall remain in force and effect- it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received hereby stipulates and agrees that the obligation of said Surety and its bonds shall be in no way impaired or affected by any extension of the time within which the Obligee may accept such Subcontractor bid and said Surety does hereby waive notice of any such extension.

[Fillable bond forms may be downloaded from the Bureau of General Services website.]

00 43 16
Subcontractor Bid Bond

In witness whereof, the principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set above.

Signed and sealed this ***insert date, i.e.: 8th*** day of ***select month***, ***select year***, which is the first specified Subcontractor bid due date, or subsequent bid due date revised by addendum.

Subcontractor

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

Surety

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

If Subcontractor is a partnership, all partners shall execute the bond. A power of attorney document indicating that it still is in full force and effect shall be provided by the person executing this bond.

[Fillable bond forms may be downloaded from the Bureau of General Services website.]

AdvantageME CT# _____

State of Maine
CONSTRUCTION CONTRACT

Large Construction Project

This form is used when the Contract value is $50,000 or greater.
The Project Manual, Specifications and Drawings, and any Addenda are considered part of this Contract.

Agreement entered into by and between the ***contracting entity name*** hereinafter called the ***Owner*** and ***Contractor company name*** hereinafter called the ***Contractor***.

BGS Project No.: ***number assigned by BGS*** Other Project No.: _____

For the following Project: ***title of project as shown on bid documents*** at ***facility or campus name***, ***municipality***, Maine.

The Specifications and the Drawings have been prepared by ***Consultant firm name***, acting as Professional-of-Record and named in the documents as the Consultant Architect or Engineer.

The *Owner* and *Contractor* agree as follows:

ARTICLE 1 COMPENSATION AND PAYMENTS

1.1 The Owner shall pay the Contractor to furnish all labor, equipment, materials and incidentals necessary for the construction of the Work described in the Specifications and shown on the Drawings the Contract Amount as shown below.

Base Bid	*$0.00*
Alternate Bid number and name or "no Alternates"	*$0.00*
Alternate Bid number and name or "no Alternates"	*$0.00*
Alternate Bid number and name or "no Alternates"	*$0.00*
Alternate Bid number and name or "no Alternates"	*$0.00*
Alternate Bid number and name or "no Alternates"	*$0.00*
Total Contract Amount	***$0.00***

1.2 The Contractor's requisition shall contain sufficient detail and supporting information for the Owner to evaluate and support the payment requested.

1.2.1 Payments are due and payable twenty-five working days from the date of receipt of a Contractor requisition which is approved by the Owner.

1.2.2 Provisions for late payments are governed by 5 M.R.S. Chapter 144, *Payment of Invoices Received from Business Concerns*, and interest shall be calculated at 1% per month.

ARTICLE 2 COMMENCEMENT AND COMPLETION DATES

2.1 The Work of this Contract shall commence no sooner than the date this document is executed by the approval authority, or a subsequent date designated in the contract documents.

2.2 The Substantial Completion Date shall be _____.

2.3 The Work of this Contract shall be completed on or before the Contract Final Completion Date of _____.

2.4 The Contract Expiration Date shall be _____. (This date is the Owner's deadline for internal management of contract accounts. The Contract Expiration Date does not directly relate to any contract obligation of the Contractor.)

ARTICLE 3 INELIGIBLE BIDDER

3.1 By signing this contract the Contractor attests that it has not been declared ineligible to bid on State of Maine projects. The Bureau of General Services may disallow award of this contract to any Contractor if there is evidence that the Contractor or any of its Subcontractors, through their own fault, have been terminated, suspended for cause, debarred from bidding, agreed to refrain from bidding as part of a settlement, have defaulted on a contract, or had a contract completed by another party.

3.2 By signing this contract the Contractor attests that it is not presently indicted for or otherwise criminally or civilly charged by a Federal, State or local government entity with commission of any of the following offenses and has not within a three-year period preceding this bid been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction, or contract under a public transaction, violation of Federal or State anti-trust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

3.3 The Contractor shall not make any award or permit any award (subgrant or contract) at any tier to any party which is debarred or suspended or is otherwise excluded from or ineligible for participation in Federal assistance programs or State of Maine projects.

ARTICLE 4 CONTRACTOR'S RESPONSIBILITIES

4.1 On this project, the Contractor ***shall*** furnish the Owner the appropriate contract bonds in the amount of 100% of the Contract Sum. Contract bonds are mandated if the Contract Sum exceeds $125,000, or if bonds are specifically required by the Contract Documents.

4.2 The Contractor shall comply with all laws, codes and regulations applicable to the Work.

4.3 The Contractor shall acquire all permits and third-party approvals applicable to the Work not specifically identified as provided by the Owner. Costs for Contractor-provided permits and third-party approvals shall be included in the Contract Sum identified in Section 1.1 above.

4.4 The Contractor shall remain an independent agent for the duration of this Contract, shall not become an employee of the State of Maine, and shall assure that no State employee will be compensated by, or otherwise benefit from, this Contract.

4.5 The Contractor shall be responsible for any design cost, construction cost, or other cost incurred on the Project to the extent caused by the negligent acts, errors or omissions of the Contractor or their Subcontractors in the performance of Work under this Contract.

ARTICLE 5 OWNER'S RESPONSIBILITIES

5.1 The Owner shall provide full information about the objectives, schedule, constraints and existing conditions of the project. The Owner has established a budget with reasonable contingencies that meets the project requirements.

5.2 By signing this contract, the Owner attests that all State of Maine procurement requirements for this contract have been met, including the solicitation of competitive bids.

ARTICLE 6 INSTRUMENTS OF SERVICE

6.1 The Contractor's use of the drawings, specifications and other documents known as the Consultant's Instruments of Service is limited to the execution of the Contractor's scope of work of this project unless the Contractor receives the written consent of the Owner and Consultant for use elsewhere.

ARTICLE 7 MISCELLANEOUS PROVISIONS

7.1 This Contract shall be governed by the laws of the State of Maine.

7.2 The Owner and Contractor, respectively, bind themselves, their partners, successors, assigns and legal representatives to this Contract. Neither party to this Contract shall assign the Contract as a whole without written consent of the other party, which consent the Owner may withhold without cause.

7.3 Notwithstanding any other provision of this Agreement, if the Owner does not receive sufficient funds to fund this Agreement or funds are de-appropriated, or if the Owner does not receive legal authority from the Maine State Legislature or Maine Courts to expend funds intended for this Agreement, then the Owner is not obligated to make payment under this Agreement; provided, however, the Owner shall be obligated to pay for services satisfactorily performed prior to any such non-appropriation in accordance with the termination provisions of this Agreement. The Owner shall timely notify the Contractor of any non-appropriation and the effective date of the non-appropriation.

ARTICLE 8 CONTRACT DOCUMENTS

8.1 The Project Manual, Specifications and Drawings, and any Addenda, together with this agreement, form the contract. Each element is as fully a part of the Contract as if hereto attached or herein repeated.

8.2 Specifications: ***indicate date of issuance of project manual***

8.3 Drawings: ***note here or attach each sheet number and title***

8.4 Addenda: ***note each addenda number and date, or "none"***

BGS Project No.: _____

The Contract is effective as of the date executed by the approval authority.

OWNER	**CONTRACTOR**
Signature *Date* *name and title* *name of contracting entity* *address* *telephone* *email address*	*Signature* *Date* *name and title* *name of contractor company* *address* *telephone* *email address* *Vendor Number*

Indicate the names of the review and approval individuals appropriate to the approval authority.

select proper approval authority	
Reviewed by:	**Approved by:**
Signature *Date* *insert name*	*Signature* *Date* *Robert Gurney, P.E.*
Project Manager/ Contract Administrator	*Chief Engineer, Bureau of General Services*

00 52 16
Subcontract Agreement

State of Maine
CONSTRUCTION SUBCONTRACT

Agreement entered into by and between the ***Contractor company name*** hereinafter called the *Contractor,* and ***Subcontractor company name*** hereinafter called the *Subcontractor.*

The *Contractor* and the *Subcontractor* agree as follows:

ARTICLE 1 COMPENSATION AND PAYMENTS

1.1 The Contractor shall pay the Subcontractor to perform the subcontract Work described in the Specifications and shown on the Drawings and defined by attachments to this subcontract the Contract Sum of ***$0.00***.

ARTICLE 2 TIME OF COMPLETION

2.1 The Work of this Contract shall be completed according to the established construction schedule, on or before the Contract Final Completion Date of ***31 December 2024***.

ARTICLE 3 INELIGIBLE BIDDER

3.1 By signing this subcontract the Subcontractor attests that it has not been declared ineligible to bid on State of Maine projects. The Bureau of General Services may disallow award of this contract to any Subcontractor if there is evidence that the Subcontractor, through their own fault, have been terminated, suspended for cause, debarred from bidding, agreed to refrain from bidding as part of a settlement, have defaulted on a contract, or had a contract completed by another party.

3.2 By signing this contract the Subcontractor attests that it is not presently indicted for or otherwise criminally or civilly charged by a Federal, State or local government entity with commission of any of the following offenses and has not within a three-year period preceding this bid been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction, or contract under a public transaction, violation of Federal or State anti-trust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

3.3 The Subcontractor shall not make any award or permit any award (subgrant or contract) at any tier to any party which is debarred or suspended or is otherwise excluded from or ineligible for participation in Federal assistance programs or State of Maine projects.

ARTICLE 4 SUBCONTRACTOR'S RESPONSIBILITIES

4.1 The *Subcontractor* shall furnish all of the materials and perform all the Work described in the Specifications and shown on the Drawings for the project entitled: ***title of project shown on documents*** prepared by ***Architect - Engineer firm name***, for the specification sections here described: ***list all sections- for this subcontract only- by number and name***.

4.2 *Not used.*

4.3 The Subcontractor shall comply with all laws, codes and regulations applicable to the Work.

4.4 *Not used*.

4.5 The Subcontractor shall remain an independent agent for the duration of this subcontract, shall not become an employee of the State of Maine, and shall assure that no State employee will be compensated by, or otherwise benefit from, this subcontract.

ARTICLE 5 CONTRACTOR'S RESPONSIBILITIES

5.1 The Contractor shall share all relevant available information about the objectives, schedule, constraints and existing conditions of the project.

ARTICLE 6 INSTRUMENTS OF SERVICE

6.1 The Subcontractor's use of the Drawings, Specifications and other documents known as the Consultant's Instruments of Service is limited to the execution of the Subcontractor's scope of work of this project unless the Subcontractor receives the written consent of the Owner and Consultant for use elsewhere.

ARTICLE 7 MISCELLANEOUS PROVISIONS

7.1 This Contract shall be governed by the laws of the State of Maine.

7.2 The Contractor and Subcontractor, respectively, bind themselves, their partners, successors, assigns and legal representatives to this Contract. Neither party to this Contract shall assign the Contract as a whole without written consent of the other party, which consent the Contractor may withhold without cause.

7.3 Subcontract bonds are required for projects utilizing Filed Sub-bids. The Subcontractor shall furnish the Contractor the appropriate subcontract bonds in the amount of 100% of the contract amount.

7.4 The Contractor shall make payments on account of the subcontract as provided therein as follows: each month 95% of the value, based on contract prices of labor and materials incorporated in the Work and of materials suitably stored at the site thereof up to the first day of that month, as certified by the Architect or Engineer.

7.5 Final payment shall be due 60 days after completion and acceptance of the Work, provided the Subcontractor has submitted evidence satisfactory to the Contractor and the Owner that all payrolls, material bills and other indebtedness connected with the Work has been paid.

7.6 Other provisions. ***There are no other provisions.***

ARTICLE 8 CONTRACT DOCUMENTS

8.1 The Project Manual, Specifications and Drawings, and any Addenda, together with this agreement, form the contract. Each element is as fully a part of the Contract as if hereto attached or herein repeated.

8.2 Specifications: ***indicate date of issuance of project manual***

8.3 Drawings: ***note each sheet number and title***

8.4 Addenda: ***note each addenda number and date, or "none"***

The Agreement is effective as of the date last executed by the parties.

CONTRACTOR	**SUBCONTRACTOR**
(Signature) *(Date)*	*(Signature)* *(Date)*
name and title	*name and title*
name of contracting entity	*name of contractor company*

00 61 13.13
Contractor Performance Bond

Bond No.: **insert bond number**

We, the undersigned, ***insert company name of Contractor***, ***select type of entity*** of ***insert name of municipality*** in the State of ***insert name of state*** as principal, and ***insert name of surety*** as Surety, are hereby held and firmly bound unto ***select title of obligee*** in the penal sum of the Contract Price $ ***insert the Contract Price in numbers*** for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

The condition of the above obligation is such that if the principal shall promptly and faithfully perform the contract entered into this ***insert date, i.e.: 8th*** day of ***select month***, ***select year***, which is the same date as that of the notice of intent to award letter, or in the absence of such a letter, not later than the date the Owner signs the construction contract, for the construction of ***insert name of project as designated in the contract documents***, then this obligation shall be null and void.

Otherwise, the same shall remain in force and effect- it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received hereby stipulates and agrees that the obligation of said Surety and its bonds shall be in no way impaired or affected by any extension of the time which the Obligee may accept during the performance of the contract and said Surety does hereby waive notice of any such extension.

[Fillable bond forms may be downloaded from the Bureau of General Services website.]

00 61 13.13
Contractor Performance Bond

In witness whereof, the principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set above.

Signed and sealed this ***insert date, i.e.: 8th*** day of ***select month***, ***select year***, which is the same date as that of the notice of intent to award letter, or in the absence of such a letter, not later than the date the Owner signs the construction contract.

Contractor

_____

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

Surety

_____

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

If Contractor is a partnership, all partners shall execute the bond. A power of attorney document indicating that it still is in full force and effect shall be provided by the person executing this bond.

00 61 13.16
Contractor Payment Bond

Bond No.: **insert bond number**

We, the undersigned, ***insert company name of Contractor***, ***select type of entity*** of ***insert name of municipality*** in the State of ***insert name of state*** as principal, and ***insert name of surety*** as Surety, are hereby held and firmly bound unto ***select title of obligee*** in the penal sum of the Contract Price $ ***insert the Contract Price in numbers*** for the use and benefit of claimants, defined as an entity having a contract with the principal or with a subcontractor of the principal for labor, materials, or both labor and materials, used or reasonably required for use in the performance of the contract, for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

The condition of the above obligation is such that if the principal shall promptly satisfy all claims and demands incurred for all labor and materials, used or required by the principal in connection with the work described in the contract entered into this ***insert date, i.e.: 8th*** day of ***select month***, ***select year***, which is the same date as that of the notice of intent to award letter, or in the absence of such a letter, not later than the date the Owner signs the construction contract, for the construction of ***insert name of project as designated in the contract documents***, and shall fully reimburse the obligee for all outlay and expense with said obligee may incur in making good any default of said principal, then this obligation shall be null and void.

Otherwise, the same shall remain in force and effect- it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received hereby stipulates and agrees that the obligation of said Surety and its bonds shall be in no way impaired or affected by any extension of the time which the Obligee may accept during the performance of the contract and said Surety does hereby waive notice of any such extension.

[Fillable bond forms may be downloaded from the Bureau of General Services website.]

00 61 13.16
Contractor Payment Bond

In witness whereof, the principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set above.

Signed and sealed this ***insert date, i.e.: 8th*** day of ***select month***, ***select year***, which is the same date as that of the notice of intent to award letter, or in the absence of such a letter, not later than the date the Owner signs the construction contract.

Contractor

_____

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

Surety

_____

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

If Contractor is a partnership, all partners shall execute the bond. A power of attorney document indicating that it still is in full force and effect shall be provided by the person executing this bond.

[Fillable bond forms may be downloaded from the Bureau of General Services website.]

00 61 13.23
Subcontractor Performance Bond

Bond No.: **insert bond number**

We, the undersigned, ***insert company name of Subcontractor***, ***select type of entity*** of ***insert name of municipality*** in the State of ***insert name of state*** as principal, and ***insert name of surety*** as Surety, are hereby held and firmly bound unto ***insert company name of Contractor*** in the penal sum of the Contract Price $ ***insert the Contract Price in numbers*** for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

The condition of the above obligation is such that if the principal shall promptly and faithfully perform the contract entered into this ***insert date, i.e.: 8th*** day of ***select month***, ***select year***, which is the same date as that of the notice of intent to award letter, or in the absence of such a letter, not later than the date the Owner signs the construction contract, for the construction of ***insert name of project as designated in the contract documents***, then this obligation shall be null and void.

Otherwise, the same shall remain in force and effect- it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received hereby stipulates and agrees that the obligation of said Surety and its bonds shall be in no way impaired or affected by any extension of the time which the Obligee or Contractor may accept during the performance of the contract and said Surety does hereby waive notice of any such extension.

[Fillable bond forms may be downloaded from the Bureau of General Services website.]

00 61 13.23
Subcontractor Performance Bond

In witness whereof, the principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set above.

Signed and sealed this ***insert date, i.e.: 8th*** day of ***select month***, ***select year***, which is the same date as that of the notice of intent to award letter, or in the absence of such a letter, not later than the date the Owner signs the construction contract.

Subcontractor

_____

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

Surety

_____

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

If Subcontractor is a partnership, all partners shall execute the bond. A power of attorney document indicating that it still is in full force and effect shall be provided by the person executing this bond.

[Fillable bond forms may be downloaded from the Bureau of General Services website.]

00 61 13.26
Subcontractor Payment Bond

Bond No.: **insert bond number**

We, the undersigned, ***insert company name of Subcontractor***, ***select type of entity*** of ***insert name of municipality*** in the State of ***insert name of state*** as principal, and ***insert name of surety*** as Surety, are hereby held and firmly bound unto ***insert company name of Contractor*** as obligee, in the penal sum of the Contract Price $ ***insert the Contract Price in numbers*** for the use and benefit of claimants, defined as an entity having a contract with the principal or with a subcontractor of the principal for labor, materials, or both labor and materials, used or reasonably required for use in the performance of the contract, for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

The condition of the above obligation is such that if the principal shall promptly satisfy all claims and demands incurred for all labor and materials, used or required by the principal in connection with the work described in the contract entered into this ***insert day, i.e.: 8th*** day of ***select month***, ***select year***, which is the same date as that of the notice of intent to award letter, or in the absence of such a letter, not later than the date the Owner signs the construction contract, for the construction of ***insert name of project as designated in the contract documents***, and shall fully reimburse the obligee for all outlay and expense with said obligee may incur in making good any default of said principal, then this obligation shall be null and void.

Otherwise, the same shall remain in force and effect- it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received hereby stipulates and agrees that the obligation of said Surety and its bonds shall be in no way impaired or affected by any extension of the time which the Obligee or Contractor may accept during the performance of the contract and said Surety does hereby waive notice of any such extension.

[Fillable bond forms may be downloaded from the Bureau of General Services website.]

00 61 13.26
Subcontractor Payment Bond

In witness whereof, the principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set above.

Signed and sealed this ***insert day, i.e.: 8th*** day of ***select month***, ***select year***, which is the same date as that of the notice of intent to award letter, or in the absence of such a letter, not later than the date the Owner signs the construction contract.

Subcontractor

_____

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

Surety

_____

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

If Subcontractor is a partnership, all partners shall execute the bond. A power of attorney document indicating that it still is in full force and effect shall be provided by the person executing this bond.

[Fillable bond forms may be downloaded from the Bureau of General Services website.]

00 71 00
Definitions

1. Definitions

1.1 *Addendum*: A document issued by the Consultant that amends the Bid Documents. Addenda shall not be issued less than seventy-two hours prior to the specified bid opening time.

1.2 *Allowance*: A specified dollar amount for a particular scope of work or service included in the Work that is identified in the Bid Documents and included in each Bidder's Bid. The Contractor shall document expenditures for an Allowance during the Project. Any unused balance shall be credited to the Owner. The Contractor is responsible for notifying the Owner of anticipated expenses greater than the specified amount and the Owner is responsible for those additional expenses.

1.3 *Alternate Bid*: The Contractor's written offer of a specified dollar amount, submitted on the Bid Form, for the performance of a particular scope of work described in the Bid Documents. The Owner determines the low bidder based on the sum of the base Bid and any combination of Alternate Bids that the Owner selects.

1.4 *Architect*: A Consultant acting as, or supporting, the Professional-of-Record who is responsible for the design of the Project. Equivalent to "Consultant" in State of Maine contract forms.

1.5 *Architectural Supplemental Instruction (ASI)*: A written instruction from the Architect for the purpose of clarification of the Contract Documents. An ASI does not alter the Contract Price or Contract Time. ASIs may be responses to RFIs and shall be issued by the Architect in a timely manner to avoid any negative impact on the Schedule of the Work.

1.6 *Bid*: The Contractor's written offer of a specified dollar amount or amounts, submitted on a form included in the Bid Documents, for the performance of the Work. A Bid may include bonds or other requirements. A base Bid is separate and distinct from Alternate Bids, being the only cost component necessary for the award of the contract, and representing the minimum amount of Work that is essential for the functioning of the Project.

1.7 *Bid Bond*: The security designated in the Bid Documents, furnished by Bidders as a guaranty of good faith to enter into a contract with the Owner, should a contract be awarded to that Bidder.

1.8 *Bidder*: Any business entity, individual or corporation that submits a bid for the performance of the work described in the Bid Documents, acting directly or through a duly authorized representative. See also *Responsive and Responsible Bidder*.

1.9 *Bid Documents*: The drawings, procurement and contracting requirements, general requirements, and the written specifications -including all addenda, that a bidder is required to reference in the submission of a bid.

1.10 *Bureau*: The State of Maine Bureau of General Services, or BGS, in the Department of Administrative and Financial Services.

1.11 *Calendar days*: Consecutive days, as occurring on a calendar, taking into account each day of the week, month, year, and any religious, national or local holidays. Calendar days are used for changes in Contract Time.

1.12 *Certificate of Substantial Completion*: A document developed by the Consultant that describes the final status of the Work and establishes the date that the Owner may use the facility for its intended purpose. The Certificate of Substantial Completion may also include a provisional list of items - a "punch list" - remaining to be completed by the Contractor. The Certificate of Substantial Completion identifies the date from which the project warranty period commences.

1.13 *Certificate of Occupancy*: A document developed by a local jurisdiction such as the Code Enforcement Officer that grants permission to the Owner to occupy a building.

1.14 *Change Order (CO)*: A document that modifies the contract and establishes the basis of a specific adjustment to the Contract Price or the Contract Time, or both. Change Orders may address correction of omissions, errors, and document discrepancies, or additional requirements. Change Orders should include all labor, materials and incidentals required to complete the work described. A Change Order is not valid until signed by the Contractor, Owner and Consultant and approved by the Bureau.

1.15 *Change Order Proposal (COP) (see also Proposal)*: Contract change proposed by the Contractor regarding the contract amount, requirements, or time. The Contractor implements the work of a COP after it is accepted by all parties. Accepted COPs are incorporated into the contract by Change Order.

1.16 *Clerk of the Works*: The authorized representative of the Consultant on the job site. Clerk of the Works is sometimes called the Architect's representative.

1.17 *Construction Change Directive (CCD)*: A written order prepared by the Consultant and signed by the Owner and Consultant, directing a change in the Work prior to final agreement with the Contractor on adjustment, if any, in the Contract Price or Contract Time, or both.

1.18 *Contract*: A written agreement between the Owner and the successful bidder which obligates the Contractor to perform the work specified in the Contract Documents and obligates the Owner to compensate the Contractor at the mutually accepted sum, rates or prices.

1.19 *Contract Bonds (also known as Payment and Performance Bonds)*: The approved forms of security, furnished by the Contractor and their surety, which guarantee the faithful performance of all the terms of the contract and the payment of all bills for labor, materials and equipment by the Contractor.

1.20 *Contract Documents*: The drawings and written specifications (including all addenda), Standard General Conditions, and the contract (including all Change Orders subsequently incorporated in the documents).

1.21 *Contract Expiration Date*: Date determined by the Owner as a deadline for internal management of contract accounts. This allows time after the Contract Final Completion Date for processing the final Requisition for Payment. The Contract Expiration Date does not directly relate to any contract obligation of the Contractor.

1.22 *Contract Final Completion Date*: Point of time when the Work is fully completed in compliance with the Contract Documents, as certified by the Consultant. Final payment to the Contractor is due upon Final Completion of the Project.

1.23 *Contract Price*: The dollar amount of the construction contract, also called *Contract Sum*.

1.24 *Contract Time*: The designated duration of time to execute the Work of the contract, with a specific date for completion.

1.25 *Contractor*: Also called the "General Contractor" or "GC" the individual or entity undertaking the execution of the general contract work under the terms of the contract with the Owner, acting directly or through a duly authorized representative. The Contractor is responsible for the means, methods and materials utilized in the execution and completion of the Work.

1.26 *Consultant*: The Architect or Engineer acting as Professional-of-Record for the Project. The Consultant is responsible for the design of the Project.

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

1.28 *Engineer*: A Consultant acting as, or supporting, the Professional-of-Record who is responsible for the design of the Project. Equivalent to “Consultant” in State of Maine contract forms.

1.29 *Filed Sub-bid*: The designated major Subcontractor's (or, in some cases, Contractor’s) written offer of a specified dollar amount or amounts, submitted on a form included in the Bid Documents, for the performance of a particular portion of the Work. A Filed Sub-bid may include bonds or other requirements.

1.30 *General Requirements*: The on-site overhead expense items the Contractor provides for the Project, typically including, but not limited to, building permits, construction supervision, Contract Bonds, insurance, field office, temporary utilities, rubbish removal, and site fencing. Overhead expenses of the Contractor's general operation are not included. Sometimes referred to as the Contractor's General Conditions.

1.31 *Owner*: The State agency which is represented by duly authorized individuals. The Owner is responsible for defining the scope of the Project and compensation to the Consultant and Contractor.

1.32 *Owner’s Representative*: The individual or entity contracted by the Owner to be an advisor and information conduit regarding the Project.

1.33 *Overhead*: General and administrative expenses of the Contractor’s principal and branch offices, including payroll costs and other compensation of Contractor employees, deductibles paid on any insurance policy, charges against the Contractor for delinquent payments, and costs related to the correction of defective work, and the Contractor’s capital expenses, including interest on capital used for the work.

1.34 *Performance and Payment Bonds (also known as Contract Bonds)*: The approved forms of security, furnished by the Contractor and their surety, which guarantee the faithful performance of all the terms of the contract and the payment of all bills for labor, materials and equipment by the Contractor.

1.35 *Post-Bid Addendum*: Document issued by the Consultant that defines a potential Change Order prior to signing of the construction contract. The Post-Bid Addendum allows the Owner to negotiate

contract changes with the Bidder submitting the lowest valid bid, only if the negotiated changes to the Bid Documents result in no change or no increase in the bid price.

A Post-Bid Addendum may also be issued after a competitive construction Bid opening to those Bidders who submitted a Bid initially, for the purpose of rebidding the Project work without re-advertising.

1.36 *Project*: The construction project proposed by the Owner to be constructed according to the Contract Documents. The Project, a public improvement, may be tied logistically to other public improvements and other activities conducted by the Owner or other contractors.

1.37 *Proposal (see also Change Order Proposal)*: The Contractor's written offer submitted to the Owner for consideration containing a specified dollar amount or rate, for a specific scope of work, and including a schedule impact, if any. A proposal shall include all costs for overhead and profit. The Contractor implements the work of a Proposal after it is accepted by all parties. Accepted Proposals are incorporated into the contract by Change Order.

1.38 *Proposal Request (PR)*: An Owner's written request to the Contractor for a Change Order Proposal.

1.39 *Punch List*: A document that identifies the items of work remaining to be done by the Contractor at the Close Out of a Project. The Punch List is created as a result of a final inspection of the work only after the Contractor attests that all of the Work is in its complete and permanent status.

1.40 *Request For Information (RFI)*: A Contractor's written request to the Consultant for clarification, definition or description of the Work. RFIs shall be presented by the Contractor in a timely manner to avoid any negative impact on the Schedule of the Work.

1.41 *Request For Proposal (RFP)*: An Owner's written request to the Contractor for a Change Order Proposal.

1.42 *Requisition for Payment*: The document in which the Contractor certifies that the Work described is, to the best of the Contractor's knowledge, information and belief, complete and that all previous payments have been paid by the Contractor to Subcontractors and suppliers, and that the current requested payment is now due. See *Schedule of Values.*

1.43 *Responsive and Responsible Bidder*: A bidder who complies, when submitting a bid on a given project, with the following *responsive* standards, as required by the Bid Documents:
- submits specific qualifications to bid the project, if required;
- attends mandatory pre-bid conferences, if required;
- submits a bid prior to the close of the bid period;
- submits a complete bid form;
- submits a bid without indications of intent contrary to the stated requirements;
- submits other materials and information, such as bid security, as required;

and, meets the following minimums regarding these *responsible* standards:
- sustains a satisfactory record of project performance;
- maintains a permanent place of business in a known physical location;
- possesses the financial means for short- and long-term operations;
- possesses the appropriate technical experience and capabilities;
- employs adequate personnel and subcontractor resources;

maintains the equipment needed to perform the work;
complies with the proposed implementation schedule;
complies with the insurance and bonding requirements;
provides post-construction warranty coverage;
and other criteria which can be considered relevant to the contract.

1.44 *Retainage*: The amount, calculated at five percent (5%) of the contract value or a scheduled value, that the Owner shall withhold from the Contractor until the work or portion of work is declared substantially complete or otherwise accepted by the Owner. The Owner may, if requested, reduce the amount withheld if the Owner deems it desirable and prudent to do so. (See Title 5 M.R.S.A., Section 1746.)

1.45 *Sample*: A physical example provided by the Contractor which illustrates materials, equipment or workmanship and establishes standards by which the Work will be judged.

1.46 *Schedule of the Work*: The document prepared by the Contractor and approved by the Owner that specifies the dates on which the Contractor plans to begin and complete various parts of the Work, including dates on which information and approvals are required from the Owner.

1.47 *Schedule of Values*: The document prepared by the Contractor and approved by the Owner before the commencement of the Work that specifies the dollar values of discrete portions of the Work equal in sum to the contract amount. The Schedule of Values is used to document progress payments of the Work in regular (usually monthly) requisitions for payment. See *Requisition for Payment*.

1.48 *Shop Drawings*: The drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

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

1.50 *Subcontractor*: An individual or entity undertaking the execution of any part of the Work by virtue of a written agreement with the Contractor or any other Subcontractor. Also, an individual or entity retained by the Contractor or any other Subcontractor as an independent contractor to provide the labor, materials, equipment or services necessary to complete a specific portion of the Work.

1.51 *Substantial Completion Date*: Point of time when the Work or a designated portion of the Work is sufficiently complete in compliance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended purpose without unscheduled disruption. Substantial Completion is documented by the date of the Certificate of Substantial Completion signed by the Owner and the Contractor.

1.52 *Superintendent*: The representative of the Contractor on the job site, authorized by the Contractor to receive and fulfill instructions from the Consultant.

1.53 *Surety*: The individual or entity that is legally bound with the Contractor and Subcontractor to insure the faithful performance of the contract and for the payment of the bills for labor, materials and equipment by the Contractor and Subcontractors.

1.54 *Work*: The construction and services, whether completed or partially completed, including all labor, materials, equipment and services provided or to be provided by the Contractor and Subcontractors to fulfill the requirements of the Project as described in the Contract Documents.

SECTION 00 72 00
GENERAL CONDITIONS

GENERAL

1.01 FORM OF GENERAL CONDITIONS APPLICABLE TO THIS CONTRACT

A. State of Maine General Conditions, section 00 72 13, revised April 27, 2021.

1.02 GENERAL REQUIREMENTS AND ADMINISTRATIVE REQUIREMENTS APPLICABLE TO THIS CONTRACT

A. Refer to Division 1 all sections for further information.

END OF DOCUMENT

00 72 13
General Conditions

Table of Contents of this General Conditions Section

1. Preconstruction Conference

1.1 The Contractor shall, upon acceptance of a contract and prior to commencing work, schedule a preconstruction conference with the Owner and Consultant. The purpose of this conference is as follows.

1.1.1 Introduce all parties who have a significant role in the Project, including:
Owner (State agency or other contracting entity)
Owner's Representative
Consultant (Architect or Engineer)
Subconsultants
Clerk-of-the-works
Contractor (GC)
Superintendent
Subcontractors
Other State agencies
Construction testing company
Commissioning agent
Special Inspections agent
Bureau of General Services (BGS);

1.1.2 Review the responsibilities of each party;

1.1.3 Review any previously-identified special provisions of the Project;

1.1.4 Review the Schedule of the Work calendar submitted by the Contractor to be approved by the Owner and Consultant;

1.1.5 Review the Schedule of Values form submitted by the Contractor to be approved by the Owner and Consultant;

1.1.6 Establish routines for Shop Drawing approval, contract changes, requisitions, et cetera;

1.1.7 discuss jobsite issues;

1.1.8 Discuss Project close-out procedures;

1.1.9 Provide an opportunity for clarification of Contract Documents before work begins; and

1.1.10 Schedule regular meetings at appropriate intervals for the review of the progress of the Work.

2. Intent and Correlation of Contract Documents

2.1 The intent of the Contract Documents is to describe the complete Project. The Contract Documents consist of various components; each component complements the others. What is shown as a requirement by any one component shall be inferred as a requirement on all corresponding components.

2.2 The Contractor shall furnish all labor, equipment and materials, tools, transportation, insurance, services, supplies, operations and methods necessary for, and reasonably incidental to, the construction and completion of the Project. Any work that deviates from the Contract Documents which appears to be required by the exigencies of construction or by inconsistencies in the Contract Documents, will be determined by the Consultant and authorized in writing by the Consultant, Owner and the Bureau prior to execution. The Contractor shall be responsible for requesting clarifying information where the intent of the Contract Documents is uncertain.

2.3 The Contractor shall not utilize any apparent error or omission in the Contract Documents to the disadvantage of the Owner. The Contractor shall promptly notify the Consultant in writing of such errors or omissions. The Consultant shall make any corrections or clarifications necessary in such a situation to document the true intent of the Contract Documents.

3. Additional Drawings and Specifications

3.1 Upon the written request of the Contractor, the Owner shall provide, at no expense to the Contractor, up to five sets of printed Drawings and Specifications for the execution of the Work.

3.2 The Consultant shall promptly furnish to the Contractor revised Drawings and Specifications, for the area of the documents where those revisions apply, when corrections or clarifications are made by the Consultant. All such information shall be consistent with, and reasonably inferred from, the Contract Documents. The Contractor shall do no work without the proper Drawings and Specifications.

4. Ownership of Contract Documents

4.1 The designs represented on the Contract Documents are the property of the Consultant. The Drawings and Specifications shall not be used on other work without consent of the Consultant.

5. Permits, Laws, and Regulations

5.1 The Owner is responsible for obtaining any zoning approvals or other similar local project approvals necessary to complete the Work, unless otherwise specified in the Contract Documents.

5.2 The Owner is responsible for obtaining Maine Department of Environmental Protection, Maine Department of Transportation, or other similar state government project approvals necessary to complete the Work, unless otherwise indicated in the Contract Documents.

5.3 The Owner is responsible for obtaining any federal agency project approvals necessary to complete the Work, unless otherwise indicated in the Contract Documents.

5.4 The Owner is responsible for obtaining all easements for permanent structures or permanent changes in existing facilities.

5.5 The Contractor is responsible for obtaining and paying for all permits and licenses necessary for the implementation of the Work. The Contractor shall notify the Owner of any delays, variance or restrictions that may result from the issuing of permits and licenses.

5.6 The Contractor shall comply with all ordinances, laws, rules and regulations and make all required notices bearing on the implementation of the Work. In the event the Contractor observes disagreement between the Drawings and Specifications and any ordinances, laws, rules and regulations, the Contractor shall promptly notify the Consultant in writing. Any necessary changes shall be made as provided in the contract for changes in the work. The Contractor shall not perform any work knowing it to be contrary to such ordinances, laws, rules and regulations.

5.7 The Contractor shall comply with local, state and federal regulations regarding construction safety and all other aspects of the Work.

5.8 The Contractor shall comply with the Maine Code of Fair Practices and Affirmative Action, 5 M.R.S. §784 (2).

6. Taxes

6.1 The Owner is exempt from the payment of Maine State sales and use taxes as provided in 36 M.R.S. §1760 (1). The Contractor and Subcontractors shall not include taxes on exempt items in the construction contract.

6.2 Section 1760 further provides in subsection 61 that sales to a construction contractor or its subcontractor of tangible personal property that is to be physically incorporated in, and become a permanent part of, real property for sale to or owned by the Owner, are exempt from Maine State sales and use taxes. Tangible personal property is defined in 36 M.R.S. §1752 (17).

6.3 The Contractor may contact Maine Revenue Services, 24 State House Station, Augusta, Maine 04333 for guidance on tax exempt regulations authorized by 36 M.R.S. §1760 and detailed in Rule 302 (18-125 CMR 302).

7. Labor and Wages

7.1 The Contractor shall conform to the labor laws of the State of Maine, and all other laws, ordinances, and legal requirements affecting the work in Maine.

7.2 The Consultant shall include a wage determination document prepared by the Maine Department of Labor in the Contract Documents for state-funded contracts in excess of $50,000. The document shows the minimum wages required to be paid to each category of labor employed on the project.

7.3 On projects requiring a Maine wage determination, the Contractor shall submit monthly payroll records to the Owner ("the contracting agency") showing the name and occupation of all workers and all independent contractors employed on the project. The monthly submission must also include the Contractor's company name, the title of the project, hours worked, hourly rate or other method of remuneration, and the actual wages or other compensation paid to each person.

7.4 The Contractor shall not reveal, in the payroll records submitted to the Owner, personal information regarding workers and independent contractors, other than the information described above. Such information shall not include Social Security number, employee identification number, or employee address or phone number, for example.

7.5 The Contractor shall conform to Maine statute (39-A M.R.S. §105-A (6)) by providing to the Workers' Compensation Board a list of all subcontractors and independent contractors on the job site and a record of the entity to whom that subcontractor or independent contractor is directly contracted and by whom that subcontractor or independent contractor is insured for workers' compensation purposes.

7.6 The Contractor shall enforce strict discipline and good order among their employees at all times, and shall not employ any person unfit or unskilled to do the work assigned to them.

7.7 The Contractor shall promptly pay all employees when their compensation is due, shall promptly pay all others who have billed and are due for materials, supplies and services used in the Work, and shall promptly pay all others who have billed and are due for insurance, workers compensation coverage, federal and state unemployment compensation, and Social Security

charges pertaining to this Project. Before final payments are made, the Contractor shall furnish to the Owner affidavits that all such payments described above have been made.

7.8 The Contractor may contact the Maine Department of Labor, 54 State House Station, Augusta, Maine 04333 for guidance on labor issues.

7.9 The Contractor may contact the Maine Workers' Compensation Board, 27 State House Station, Augusta, Maine 04333 for guidance on workers' compensation issues.

8. Indemnification

8.1 The Contractor shall indemnify and hold harmless the Owner and its officers and employees from and against any and all damages, liabilities, and costs, including reasonable attorney's fees, and defense costs, for any and all injuries to persons or property, including claims for violation of intellectual property rights, to the extent caused by the negligent acts or omissions of the Contractor, its employees, agents, officers or subcontractors in the performance of work under this Agreement. The Contractor shall not be liable for claims to the extent caused by the negligent acts or omissions of the Owner or for actions taken in reasonable reliance on written instructions of the Owner.

8.2 The Contractor shall notify the Owner promptly of all claims arising out of the performance of work under this Agreement by the Contractor, its employees or agents, officers or subcontractors.

8.3 This indemnity provision shall survive the termination of the Agreement, completion of the project or the expiration of the term of the Agreement.

9. Insurance Requirements

9.1 The Contractor shall provide, with each original of the signed Contract, an insurance certificate or certificates acceptable to the Owner and BGS. The Contractor shall submit insurance certificates to the Owner and BGS at the commencement of this Contract and at policy renewal or revision dates. The certificates shall identify the project name and BGS project number, and shall name the Owner as certificate holder and as additional insured for general liability and automobile liability coverages. The submitted forms shall contain a provision that coverage afforded under the insurance policies will not be canceled or materially changed unless at least ten days prior written notice by registered letter has been given to the Owner and BGS.

9.2 The Owner does not warrant or represent that the insurance required herein constitutes an insurance portfolio which adequately addresses all risks faced by the Contractor or its Subcontractors. The Contractor is responsible for the existence, extent and adequacy of insurance prior to commencement of work. The Contractor shall not allow any Subcontractor to commence work until all similar insurance required of the Subcontractor has been confirmed by the Contractor.

9.3 The Contractor shall procure and maintain primary insurance for the duration of the Project and, if written on a Claims-Made basis, shall also procure and maintain Extended Reporting Period (ERP) insurance for the period of time that any claims could be brought. The Contractor shall ensure that all Subcontractors they engage or employ will procure and maintain similar insurance

in form and amount acceptable to the Owner and BGS. At a minimum, the insurance shall be of the types and limits set forth herein protecting the Contractor from claims which may result from the Contractor's execution of the Work, whether such execution be by the Contractor or by those employed by the Contractor or by those for whose acts they may be liable. All required insurance coverages shall be placed with carriers authorized to conduct business in the State of Maine by the Maine Bureau of Insurance.

9.3.1 The Contractor shall have Workers' Compensation insurance for all employees on the Project site in accordance with the requirements of the Workers' Compensation law of the State of Maine. Minimum acceptable limits for Employer's Liability are:

Bodily Injury by Accident	$500,000
Bodily Injury by Disease	$500,000 Each Employee
Bodily Injury by Disease	$500,000 Policy Limit

9.3.2 The Contractor shall have Commercial General Liability insurance providing coverage for bodily injury and property damage liability for all hazards of the Project including premise and operations, products and completed operations, contractual, and personal injury liabilities. The policy shall include collapse and underground coverage as well as explosion coverage if explosion hazards exist. Aggregate limits shall apply on a location or project basis. Minimum acceptable limits are:

General aggregate limit	$2,000,000
Products and completed operations aggregate	$1,000,000
Each occurrence limit	$1,000,000
Personal injury aggregate	$1,000,000

9.3.3 The Contractor shall have Automobile Liability insurance against claims for bodily injury, death or property damage resulting from the maintenance, ownership or use of all owned, non-owned and hired automobiles, trucks and trailers. Minimum acceptable limit is:

Any one accident or loss	$500,000

9.3.4 For the portion of a project which is new construction, the Contractor shall procure and maintain Builder's Risk insurance naming the Owner, Contractor, and any Subcontractor as insureds as their interest may appear. Covered causes of loss form shall be all Risks of Direct Physical Loss, endorsed to include flood, earthquake, transit and sprinkler leakage where sprinkler coverage is applicable. Unless specifically authorized in writing by the Owner, the limit of insurance shall not be less than the initial contract amount, for the portion of the project which is new construction, and coverage shall apply during the entire contract period and until the work is accepted by the Owner.

9.3.5 The Contractor shall have Owner's Protective Liability insurance for contract values $50,000 and above, naming the Owner as the Named Insured. Minimum acceptable limits are:

General aggregate limit	$2,000,000
Each occurrence limit	$1,000,000

10. Contract Bonds

10.1 When noted as required in the Bid Documents, the Contractor shall provide to the Owner a Performance Bond and a Payment Bond, or "contract bonds", upon execution of the contract. Each bond value shall be for the full amount of the contract and issued by a surety company authorized to do business in the State of Maine as approved by the Owner. The bonds shall be

executed on the forms furnished in the Bid Documents. The bonds shall allow for any subsequent additions or deductions of the contract.

10.2 The contract bonds shall continue in effect for one year after final acceptance of the contract to protect the Owner's interest in connection with the one year guarantee of workmanship and materials and to assure settlement of claims for the payment of all bills for labor, materials and equipment by the Contractor.

11. Patents and Royalties

11.1 The Contractor shall, for all time, secure for the Owner the free and undisputed right to the use of any patented articles or methods used in the Work. The expense of defending any suits for infringement or alleged infringement of such patents shall be borne by the Contractor. Awards made regarding patent suits shall be paid by the Contractor. The Contractor shall hold the Owner harmless regarding patent suits that may arise due to installations made by the Contractor, and to any awards made as a result of such suits.

11.2 Any royalty payments related to the work done by the Contractor for the Project shall be borne by the Contractor. The Contractor shall hold the Owner harmless regarding any royalty payments that may arise due to installations made by the Contractor.

12. Surveys, Layout of Work

12.1 The Owner shall furnish all property surveys unless otherwise specified.

12.2 The Contractor is responsible for correctly staking out the Work on the site. The Contractor shall employ a competent surveyor to position all construction on the site. The surveyor shall run the axis lines, establish correct datum points and check each line and point on the site to insure their accuracy. All such lines and points shall be carefully preserved throughout the construction.

12.3 The Contractor shall lay out all work from dimensions given on the Drawings. The Contractor shall take measurements and verify dimensions of any existing work that affects the Work or to which the Work is to be fitted. The Contractor is solely responsible for the accuracy of all measurements. The Contractor shall verify all grades, lines, levels, elevations and dimensions shown on the Drawings and report any errors or inconsistencies to the Consultant prior to commencing work.

13. Record of Documents

13.1 The Contractor shall maintain one complete set of Contract Documents on the jobsite, in good order and current status, for access by the Owner and Consultant.

13.2 The Contractor shall maintain, continuously updated, complete records of Requests for Information, Architectural Supplemental Instructions (or equivalent), Information Bulletins, supplemental sketches, Change Order Proposals, Change Orders, Shop Drawings, testing reports, et cetera, for access by the Owner and Consultant.

14. Allowances

14.1 The Contract Price shall include all allowances described in the Contract Documents. The Contractor shall include all overhead and profit necessary to implement each allowance in their Contract Price.

14.2 The Contractor shall not be required to employ parties for allowance work against whom the Contractor has a reasonable objection. In such a case, the Contractor shall notify the Owner in writing of their position and shall propose an alternative party to complete the work of the allowance.

15. Shop Drawings

15.1 The Contractor shall administer Shop Drawings prepared by the Contractor, Subcontractors, suppliers or others to conform to the approved Schedule of the Work. The Contractor shall verify all field measurements, check and authorize all Shop Drawings and schedules required by the Work. The Contractor is the responsible party and contact for the Contractor's work as well as that of Subcontractors, suppliers or others who provide Shop Drawings.

15.2 The Consultant shall review and acknowledge Shop Drawings, with reasonable promptness, for general conformity with the design concept of the project and compliance with the information provided in the Contract Documents.

15.3 The Contractor shall provide monthly updated logs containing: requests for information, information bulletins, supplemental instructions, supplemental sketches, change order proposals, change orders, submittals, testing and deficiencies.

15.4 The Contractor shall make any corrections required by the Consultant, and shall submit a quantity of corrected copies as may be needed. The acceptance of Shop Drawings or schedules by the Consultant shall not relieve the Contractor from responsibility for deviations from Drawings and Specifications, unless the Contractor has called such deviations to the attention of the Consultant at the time of submission and secured the Consultant’s written approval. The acceptance of Shop Drawings or schedules by the Consultant does not relieve the Contractor from responsibility for errors in Shop Drawings or schedules.

16. Samples

16.1 The Contractor shall furnish for approval, with reasonable promptness, all samples as directed by the Consultant. The Consultant shall review and approve such samples, with reasonable promptness, for general conformity with the design concept of the project and compliance with the information provided in the Contract Documents. The subsequent work shall be in accord with the approved samples.

17. Substitutions

17.1 The Contractor shall furnish items and materials described in the Contract Documents. If the item or material specified describes a proprietary product, or uses the name of a manufacturer, the term “or approved equal” shall be implied, if it is not included in the text. The specific item or material specified establishes a minimum standard for the general design, level of quality, type, function, durability, efficiency, reliability, compatibility, warranty coverage, installation factors

and required maintenance. The Drawing or written Specification shall not be construed to exclude other manufacturers products of comparable design, quality, and efficiency.

17.2 The Contractor may submit detailed information about a proposed substitution to the Consultant for consideration. Particular models of items and particular materials which the Contractor asserts to be equal to the items and materials identified in the Contract Documents shall be allowed only with written approval by the Consultant. The request for substitution shall include a cost comparison and a reason or reasons for the substitution.

17.3 The Consultant may request additional information about the proposed substitution. The approval or rejection of a proposed substitution may be based on timeliness of the request, source of the information, the considerations of minimum standards described above, or other considerations. The Consultant should briefly state the rationale for the decision. The decision shall be considered final.

17.4 The duration of a substitution review process can not be the basis for a claim for delay in the Schedule of the Work.

18. Assignment of Contract

18.1 The Contractor shall not assign or sublet the contract as a whole without the written consent of the Owner. The Contractor shall not assign any money due to the Contractor without the written consent of the Owner.

19. Separate Contracts

19.1 The Owner reserves the right to create other contracts in connection with this Project using similar General Conditions. The Contractor shall allow the Owner's other contractors reasonable opportunity for the delivery and storage of materials and the execution of their work. The Contractor shall coordinate and properly connect the Work of all contractors.

19.2 The Contractor shall promptly report to the Consultant and Owner any apparent deficiencies in work of the Owner's other contractors that impacts the proper execution or results of the Contractor. The Contractor’s failure to observe or report any deficiencies constitutes an acceptance of the Owner's other contractors work as suitable for the interface of the Contractor’s work, except for latent deficiencies in the Owner's other contractors work.

19.3 Similarly, the Contractor shall promptly report to the Consultant and Owner any apparent deficiencies in their own work that would impact the proper execution or results of the Owner's other contractors.

19.4 The Contractor shall report to the Consultant and Owner any conflicts or claims for damages with the Owner's other contractors and settle such conflicts or claims for damages by mutual agreement or arbitration, if necessary, at no expense to the Owner.

19.5 In the event the Owner's other contractors sue the Owner regarding any damage alleged to have been caused by the Contractor, the Owner shall notify the Contractor, who shall defend such proceedings at the Contractor's expense. The Contractor shall pay or satisfy any judgment that may arise against the Owner, and pay all other costs incurred.

20. Subcontracts

20.1 The Contractor shall not subcontract any part of this contract without the written permission of the Owner.

20.2 The Contractor shall submit a complete list of named Subcontractors and material suppliers to the Consultant and Owner for approval by the Owner prior to commencing work. The Subcontractors named shall be reputable companies of recognized standing with a record of satisfactory work.

20.3 The Contractor shall not employ any Subcontractor or use any material until they have been approved, or where there is reason to believe the resulting work will not comply with the Contract Documents.

20.4 The Contractor, not the Owner, is as fully responsible for the acts and omissions of Subcontractors and of persons employed by them, as the Contractor is for the acts and omissions of persons directly or indirectly employed by the Contractor.

20.5 Neither the Contract Documents nor any Contractor-Subcontractor contract shall indicate, infer or create any direct contractual relationship between any Subcontractor and the Owner.

21. Contractor-Subcontractor Relationship

21.1 The Contractor shall be bound to the Subcontractor by all the obligations in the Contract Documents that bind the Contractor to the Owner.

21.2 The Contractor shall pay the Subcontractor, in proportion to the dollar value of the work completed and requisitioned by the Subcontractor, the approved dollar amount allowed to the Contractor no more than seven days after receipt of payment from the Owner.

21.3 The Contractor shall pay the Subcontractor accordingly if the Contract Documents or the subcontract provide for earlier or larger payments than described in the provision above.

21.4 The Contractor shall pay the Subcontractor for completed and requisitioned subcontract work, less retainage, no more than seven days after receipt of payment from the Owner for the Contractor's approved Requisition for Payment, even if the Consultant fails to certify a portion of the Requisition for Payment for a cause not the fault of the Subcontractor.

21.5 The Contractor shall not make a claim for liquidated damages or penalty for delay in any amount in excess of amounts that are specified by the subcontract.

21.6 The Contractor shall not make a claim for services rendered or materials furnished by the Subcontractor unless written notice is given by the Contractor to the Subcontractor within ten calendar days of the day in which the claim originated.

21.7 The Contractor shall give the Subcontractor an opportunity to present and to submit evidence in any progress conference or disputes involving subcontract work.

21.8 The Contractor shall pay the Subcontractor a just share of any fire insurance payment received by the Contractor.

21.9 The Subcontractor shall be bound to the Contractor by the terms of the Contract Documents and assumes toward the Contractor all the obligations and responsibilities that the Contractor, by those documents, assumes toward the Owner.

21.10 The Subcontractor shall submit applications for payment to the Contractor in such reasonable time as to enable the Contractor to apply for payment as specified.

21.11 The Subcontractor shall make any claims for extra cost, extensions of time or damages, to the Contractor in the manner provided in these General Conditions for like claims by the Contractor to the Owner, except that the time for the Subcontractor to make claims for extra cost is seven calendar days after the receipt of Consultant's instructions.

22. Supervision of the Work

22.1 During all stages of the Work the Contractor shall have a competent superintendent, with any necessary assistant superintendents, overseeing the project. The superintendent shall not be reassigned without the consent of the Owner unless a superintendent ceases to be employed by the Contractor due to unsatisfactory performance.

22.2 The superintendent represents the Contractor on the jobsite. Directives given by the Consultant or Owner to the superintendent shall be as binding as if given directly to the Contractor's main office. All important directives shall be confirmed in writing to the Contractor. The Consultant and Owner are not responsible for the acts or omissions of the superintendent or assistant superintendents.

22.3 The Contractor shall provide supervision of the Work equal to the industry's highest standard of care. The superintendent shall carefully study and compare all Contract Documents and promptly report any error, inconsistency or omission discovered to the Consultant. The Contractor may not necessarily be held liable for damages resulting directly from any error, inconsistency or omission in the Contract Documents or other instructions by the Consultant that was not revealed by the superintendent in a timely way.

23. Observation of the Work

23.1 The Contractor shall allow the Owner, the Consultant and the Bureau continuous access to the site for the purpose of observation of the progress of the work. All necessary safeguards and accommodations for such observations shall be provided by the Contractor.

23.2 The Contractor shall coordinate all required testing, approval or demonstration of the Work. The Contractor shall give sufficient notice to the appropriate parties of readiness for testing, inspection or examination.

23.3 The Contractor shall schedule inspections and obtain all required certificates of inspection for inspections by a party other than the Consultant.

23.4 The Consultant shall make all scheduled observations promptly, prior to the work being concealed or buried by the Contractor. If approval of the Work is required of the Consultant, the Contractor shall notify the Consultant of the construction schedule in this regard. Work concealed or buried prior to the Consultant's approval may need to be uncovered at the Contractor's expense.

23.5 The Consultant may order reexamination of questioned work, and, if so ordered, the work must be uncovered by the Contractor. If the work is found to conform to the Contract Documents, the Owner shall pay the expense of the reexamination and remedial work. If the work is found to not conform to the Contract Documents, the Contractor shall pay the expense, unless the defect in the work was caused by the Owner's Contractor, whose responsibility the reexamination expense becomes.

23.6 The Bureau shall periodically observe the Work during the course of construction and make recommendations to the Contractor or Consultant as necessary. Such recommendations shall be considered and implemented through the usual means for changes to the Work.

24. Consultant's Status

24.1 The Consultant represents the Owner during the construction period, and observes the work in progress on behalf of the Owner. The Consultant has authority to act on behalf of the Owner only to the extent expressly provided by the Contract Documents or otherwise demonstrated to the Contractor. The Consultant has authority to stop the work whenever such an action is necessary, in the Consultant's reasonable opinion, to ensure the proper execution of the contract.

24.2 The Consultant is the interpreter of the conditions of the contract and the judge of its performance. The Consultant shall favor neither the Owner nor the Contractor, but shall use the Consultant's powers under the contract to enforce faithful performance by both parties.

24.3 In the event of the termination of the Consultant's employment on the project prior to completion of the work, the Owner shall appoint a capable and reputable replacement. The status of the new Consultant relative to this contract shall be that of the former Consultant.

25. Management of the Premises

25.1 The Contractor shall place equipment and materials, and conduct activities on the premises in a manner that does not unreasonably hinder site circulation, environmental stability, or any long term effect. Likewise, the Consultant's directions shall not cause the use of premises to be impeded for the Contractor or Owner.

25.2 The Contractor shall not use the premises for any purpose other than that which is directly related to the scope of work. The Owner shall not use the premises for any purpose incompatible with the proposed work simultaneous to the work of the Contractor.

25.3 The Contractor shall enforce the Consultant's instructions regarding information posted on the premises such as signage and advertisements, as well as activities conducted on the premises such as fires, and smoking.

25.4 The Owner may occupy any part of the Project that is completed with the written consent of the Contractor, and without prejudice to any of the rights of the Owner or Contractor. Such use or occupancy shall not, in and of itself, be construed as a final acceptance of any work or materials.

26. Safety and Security of the Premises

26.1 The Contractor shall designate, and make known to the Consultant and the Owner, a safety officer whose duty is the prevention of accidents on the site.

26.2 The Contractor shall continuously maintain security on the premises and protect from unreasonable occasion of injury all people authorized to be on the job site. The Contractor shall also effectively protect the property and adjacent properties from damage or loss.

26.3 The Contractor shall take all necessary precautions to ensure the safety of workers and others on and adjacent to the site, abiding by applicable local, state and federal safety regulations. The Contractor shall erect and continuously maintain safeguards for the protection of workers and others, and shall post signs and other warnings regarding hazards associated with the construction process, such as protruding fasteners, moving equipment, trenches and holes, scaffolding, window, door or stair openings, and falling materials.

26.4 The Contractor shall restore the premises to conditions that existed prior to the start of the project at areas not intended to be altered according to the Contract Documents.

26.5 The Contractor shall protect existing utilities and exercise care working in the vicinity of utilities shown in the Drawings and Specifications or otherwise located by the Contractor.

26.6 The Contractor shall protect from damage existing trees and other significant plantings and landscape features of the site which will remain a permanent part of the site. If necessary or indicated in the Contract Documents, tree trunks shall be boxed and barriers erected to prevent damage to tree branches or roots.

26.7 The Contractor shall repair or replace damage to the Work caused by the Contractor's or Subcontractor's forces, including that which is reasonably protected, at the expense of the responsible party.

26.8 The Contractor shall not load, or allow to be loaded, any part of the Project with a force which imperils personal or structural safety. The Consultant may consult with the Contractor on such means and methods of construction, however, the ultimate responsibility lies with the Contractor.

26.9 The Contractor shall not jeopardize any work in place with subsequent construction activities such as blasting, drilling, excavating, cutting, patching or altering work. The Consultant must approve altering any structural components of the project. The Contractor shall supervise all construction activities carried out by others on site to ensure that the work is neatly done and in a manner that will not endanger the structure or the component parts.

26.10 The Contractor may act with their sole discretion in emergency situations that potentially effect health, life or serious damage to the premises or adjacent properties, to prevent such potential loss or injury. The Contractor may negotiate with the Owner for compensation for expenses due to such emergency work.

26.11 The Contractor and Subcontractors shall have no responsibility for the identification, discovery, presence, handling, removal or disposal of, or exposure of persons to, hazardous materials in any form at the project site. The Contractor shall avoid disruption of any hazardous materials or toxic substances at the project site and promptly notify the Owner in writing on the occasion of such a discovery.

26.12 The Contractor shall keep the premises free of any unsafe accumulation of waste materials caused by the work. The Contractor shall regularly keep the spaces "broom clean". See the Close-out of the Work provisions of this section regarding cleaning at the completion of the project.

27. Changes in the Work

27.1 The Contractor shall not proceed with extra work without an approved Change Order or Construction Change Directive. A Change Order which has been properly signed by all parties shall become a part of the contract.

27.2 A Change Order is the usual document for directing changes in the Work. In certain circumstances, however, the Owner may utilize a Construction Change Directive to direct the Contractor to perform changes in the Work that are generally consistent with the scope of the project. The Owner shall use a Construction Change Directive only when the normal process for approving changes to the Work has failed to the detriment of the Project, or when agreement on the terms of a Change Order cannot be met, or when an urgent situation requires, in the Owner's judgment, prompt action by the Contractor.

27.3 The Consultant shall prepare the Construction Change Directive representing a complete scope of work, with proposed Contract Price and Contract Time revisions, if any, clearly stated.

27.4 The Contractor shall promptly carry out a Construction Change Directive which has been signed by the Owner and the Consultant. Work thus completed by the Contractor constitutes the basis for a Change Order. Changes in the Contract Price and Contract Time shall be as defined in the Construction Change Directive unless subsequently negotiated with some other terms.

27.5 The method of determining the dollar value of extra work shall be by:
- .1 an estimate of the Contractor accepted by Owner as a lump sum, or
- .2 unit prices named in the contract or subsequently agreed upon, or
- .3 cost plus a designated percentage, or
- .4 cost plus a fixed fee.

27.6 The Contractor shall determine the dollar value of the extra work for both the lump sum and cost plus designated percentage methods so as not to exceed the following rates. The rates include all overhead and profit expenses.
- .1 Contractor - for any work performed by the Contractor's own forces, up to 20% of the cost;
- .2 Subcontractor - for work performed by Subcontractor's own forces, up to 20% of the cost;
- .3 Contractor - for work performed by Contractor's Subcontractor, up to 10% of the amount due the Subcontractor.

27.7 The Contractor shall keep and provide records as needed or directed for the cost plus designated percentage method. The Consultant shall review and certify the appropriate amount which

includes the Contractor's overhead and profit. The Owner shall make payments based on the Consultant's certificate.

27.8 Cost reflected in Change Orders shall be limited to the following: cost of materials, cost of delivery, cost of labor (including Social Security, pension, Workers' Compensation insurance, and unemployment insurance), and cost of rental of power tools and equipment. Labor cost may include a pro-ratio share of a foreman's time only in the case of an extension of contract time granted due to the Change Order.

27.9 Overhead reflected in Change Orders shall be limited to the following: bond premium, supervision, wages of clerks, time keepers, and watchmen, small tools, incidental expenses, general office expenses, and all other overhead expenses directly related to the Change Order.

27.10 The Contractor shall provide credit to the Owner for labor, materials, equipment and other costs but not overhead and profit expenses for those Change Order items that result in a net value of credit to the contract.

27.11 The Owner may change the scope of work of the Project without invalidating the contract. The Owner shall notify the Contractor of a change of the scope of work for the Owner's Contractors, which may affect the work of this Contractor, without invalidating the contract. Change Orders for extension of the time caused by such changes shall be developed at the time of directing the change in scope of work.

27.12 The Consultant may order minor changes in the Work, not involving extra cost, which is consistent with the intent of the design or project.

27.13 The Contractor shall immediately give written notification to the Consultant of latent conditions discovered at the site which materially differ from those represented in the Drawings or Specifications, and which may eventually result in a change in the scope of work. The Contractor shall suspend work until receiving direction from the Consultant. The Consultant shall promptly investigate the conditions and respond to the Contractor's notice with direction that avoids any unnecessary delay of the Work. The Consultant shall determine if the discovered conditions warrant a Change Order.

27.14 The Contractor shall, within ten calendar days of receipt of the information, give written notification to the Consultant if the Contractor claims that instructions by the Consultant will constitute extra cost not accounted for by Change Order or otherwise under the contract. The Consultant shall promptly respond to the Contractor's notice with direction that avoids any unnecessary delay of the Work. The Consultant shall determine if the Contractor's claim warrants a Change Order.

28. Correction of the Work

28.1 The Contractor shall promptly remove from the premises all work the Consultant declares is non-conforming to the contract. The Contractor shall replace the work properly at no expense to the Owner. The Contractor is also responsible for the expenses of others whose work was damaged or destroyed by such remedial work.

28.2 The Owner may elect to remove non-conforming work if it is not removed by the Contractor within a reasonable time, that time defined in a written notice from the Consultant. The Owner may elect to store removed non-conforming work not removed by the Contractor at the Contractor's expense. The Owner may, with ten days written notice, dispose of materials which the Contractor does not remove. The Owner may sell the materials and apply the net proceeds, after deducting all expenses, to the costs that should have been borne by the Contractor.

28.3 The Contractor shall remedy any defects due to faulty materials or workmanship and pay for any related damage to other work which appears within a period of one year from the date of substantial completion, and in accord with the terms of any guarantees provided in the contract. The Owner shall promptly give notice of observed defects to the Contractor and Consultant. The Consultant shall determine the status of all claimed defects. The Contractor shall perform all remedial work without unjustifiable delay in either the initial response or the corrective action.

28.4 The Consultant may authorize, after a reasonable notification to the Contractor, an equitable deduction from the contract amount in lieu of the Contractor correcting non-conforming or defective work.

29. Owner's Right to do Work

29.1 The Owner may, using other contractors, correct deficiencies attributable to the Contractor, or complete unfinished work. Such action shall take place only after giving the Contractor three days written notice, and provided the Consultant approves of the proposed course of action as an appropriate remedy. The Owner may then deduct the cost of the remedial work from the amount due the Contractor.

29.2 The Owner may act with their sole discretion when the Contractor is unable to take action in emergency situations that potentially effect health, life or serious damage to the premises or adjacent properties, to prevent such potential loss or injury. The Owner shall inform the Contractor of the emergency work performed, particularly where it may affect the work of the Contractor.

30. Termination of Contract and Stop Work Action

30.1 The Owner may, owing to a certificate of the Consultant indicating that sufficient cause exists to justify such action, without prejudice to any other right or remedy and after giving the Contractor and the Contractor’s surety seven days written notice, terminate the employment of the Contractor. At that time the Owner may take possession of the premises and of all materials,

tools and appliances on the premises and finish the work by whatever method the Owner may deem expedient. Cause for such action by the Owner includes:

.1 the contractor is adjudged bankrupt, or makes a general assignment for the benefit of its creditors, or

.2 a receiver is appointed due to the Contractor's insolvency, or

.3 the Contractor persistently or repeatedly refuses or fails to provide enough properly skilled workers or proper materials, or

.4 the Contractor fails to make prompt payment to Subcontractors or suppliers of materials or labor, or

.5 the Contractor persistently disregards laws, ordinances or the instructions of the Consultant, or is otherwise found guilty of a substantial violation of a provision of the Contract Documents.

30.2 The Contractor is not entitled, as a consequence of the termination of the employment of the Contractor as described above, to receive any further payment until the Work is finished. If the unpaid balance of the contract amount exceeds the expense of finishing the Work, including compensation for additional architectural, managerial and administrative services, such balance shall be paid to the Contractor. If the expense of finishing the Work exceeds the unpaid balance, the Contractor shall pay the difference to the Owner. The Consultant shall certify the expense incurred by the Contractor's default. This obligation for payment shall continue to exist after termination of the contract.

30.3 The Contractor may, if the Work is stopped by order of any court or other public authority for a period of thirty consecutive days, and through no act or fault of the Contractor or of anyone employed by the Contractor, with seven days written notice to the Owner and the Consultant, terminate this contract. The Contractor may then recover from the Owner payment for all work executed, any proven loss and reasonable profit and damage.

30.4 The Contractor may, if the Consultant fails to issue a certificate for payment within seven days after the Contractor's formal request for payment, through no fault of the Contractor, or if the Owner fails to pay to the Contractor within 30 days after submission of any sum certified by the Consultant, with seven days written notice to the Owner and the Consultant, stop the Work or terminate this Contract.

31. Delays and Extension of Time

31.1 The completion date of the contract shall be extended if the work is delayed by changes ordered in the work which have approved time extensions, or by an act or neglect of the Owner, the Consultant, or the Owner's Contractor, or by strikes, lockouts, fire, flooding, unusual delay in transportation, unavoidable casualties, or by other causes beyond the Contractor's control. The Consultant shall determine the status of all claimed causes.

31.2 The contract shall not be extended for delay occurring more than seven calendar days before the Contractor's claim made in writing to the Consultant. In case of a continuing cause of delay, only one claim is necessary.

31.3 The contract shall not be extended due to failure of the Consultant to furnish drawings if no schedule or agreement is made between the Contractor and the Consultant indicating the dates

which drawings shall be furnished and fourteen calendar days has passed after said date for such drawings.

31.4 This article does not exclude the recovery of damages for delay by either party under other provisions in the Contract Document.

32. Payments to the Contractor

32.1 As noted under *Preconstruction Conference* in this section, the Contractor shall submit a Schedule of Values form, before the first application for payment, for approval by the Owner and Consultant. The Consultant may direct the Contractor to provide evidence that supports the correctness of the form. The approved Schedule of Values shall be used as a basis for payments.

32.2 The Contractor shall submit an application for each payment ("Requisition for Payment") on a form approved by the Owner and Consultant. The Consultant may require receipts or other documents showing the Contractor's payments for materials and labor, including payments to Subcontractors.

32.3 The Contractor shall submit Requisitions for Payment as the work progresses not more frequently than once each month, unless the Owner approves a more frequent interval due to unusual circumstances. The Requisition for Payment is based on the proportionate quantities of the various classes of work completed or incorporated in the Work, in agreement with the actual progress of the Work and the dollar value indicated in the Schedule of Values.

32.4 The Consultant shall verify and certify each Requisition for Payment which appears to be complete and correct prior to payment being made by the Owner. The Consultant may certify an appropriate amount for materials not incorporated in the Work which have been delivered and suitably stored at the site. The Contractor shall submit bills of sale, insurance certificates, or other such documents that will adequately protect the Owner's interests prior to payments being certified.

32.5 In the event any materials delivered but not yet incorporated in the Work have been included in a certified Requisition for Payment with payment made, and said materials thereafter are damaged, deteriorated or destroyed, or for any reason whatsoever become unsuitable or unavailable for use in the Work, the full amount previously allowed shall be deducted from subsequent payments unless the Contractor satisfactorily replaces said material.

32.6 The Contractor may request certification of an appropriate dollar amount for materials not incorporated in the Work which have been delivered and suitably stored away from the site. The Contractor shall submit bills of sale, insurance certificates, right-of-entry documents or other such documents that will adequately protect the Owner's interests. The Consultant shall determine if the Contractor's documentation for the materials is complete and specifically designated for the Project. The Owner may allow certification of such payments.

32.7 Subcontractors may request, and shall receive from the Consultant, copies of approved Requisitions for Payment showing the amounts certified in the Schedule of Values.

32.8 Certified Requisitions for Payment, payments made to the Contractor, or partial or entire occupancy of the project by the Owner shall not constitute an acceptance of any work that does

not conform to the Contract Documents. The making and acceptance of the final payment constitutes a waiver of all claims by the Owner, other than those arising from unsettled liens, from faulty work or materials appearing within one year from final payment or from requirements of the Drawings and Specifications, and of all claims by the Contractor, except those previously made and still unsettled.

33. Payments Withheld

33.1 The Owner shall retain five percent of each payment due the Contractor as part security for the fulfillment of the contract by the Contractor. The Owner may make payment of a portion of this "retainage" to the Contractor temporarily or permanently during the progress of the Work. The Owner may thereafter withhold further payments until the full amount of the five percent is reestablished. The Contractor may deposit with the Maine State Treasurer certain securities in place of retainage amounts due according to Maine Statute (5 M.R.S. §1746).

33.2 The Consultant may withhold or nullify the whole or a portion of any Requisitions for Payment submitted by the Contractor in the amount that may be necessary, in his reasonable opinion, to protect the Owner from loss due to any of the following:

.1 defective work not remedied;
.2 claims filed or reasonable evidence indicating probable filing of claims;
.3 failure to make payments properly to Subcontractors or suppliers;
.4 a reasonable doubt that the contract can be completed for the balance then unpaid;
.5 liability for damage to another contractor.

The Owner shall make payment to the Contractor, in the amount withheld, when the above circumstances are removed.

34. Liens

34.1 The Contractor shall deliver to the Owner a complete release of all liens arising out of this contract before the final payment or any part of the retainage payment is released. The Contractor shall provide with the release of liens an affidavit asserting each release includes all labor and materials for which a lien could be filed. Alternately, the Contractor, in the event any Subcontractor or supplier refuses to furnish a release of lien in full, may furnish a bond satisfactory to the Owner, to indemnify the Owner against any lien.

34.2 In the event any lien remains unsatisfied after all payments to the Contractor are made by the Owner, the Contractor shall refund to the Owner all money that the latter may be compelled to pay in discharging such lien, including all cost and reasonable attorney's fees.

35. Workmanship

35.1 The Contractor shall provide materials, equipment, and installed work equal to or better than the quality specified in the Contract Documents and approved in submittal and sample. The installation methods shall be of the highest standards, and the best obtainable from the respective trades. The Consultant's decision on the quality of work shall be final.

35.2 The Contractor shall know local labor conditions for skilled and unskilled labor in order to apply the labor appropriately to the Work. All labor shall be performed by individuals well skilled in their respective trades.

35.3 The Contractor shall perform all cutting, fitting, patching and placing of work in such a manner to allow subsequent work to fit properly, whether that be by the Contractor, the Owner's Contractors or others. The Owner and Consultant may advise the Contractor regarding such subsequent work. Notwithstanding the notification or knowledge of such subsequent work, the Contractor may be directed to comply with this standard of compatible construction by the Consultant at the Contractor's expense.

35.4 The Contractor shall request clarification or revision of any design work by the Consultant, prior to commencing that work, in a circumstance where the Contractor believes the work cannot feasibly be completed at the highest quality, or as indicated in the Contract Documents. The Consultant shall respond to such requests in a timely way, providing clarifying information, a feasible revision, or instruction allowing a reduced quality of work. The Contractor shall follow the direction of the Consultant regarding the required request for information.

35.5 The Contractor shall guarantee the Work against any defects in workmanship and materials for a period of one year commencing with the date of the Certificate of Substantial Completion, unless specified otherwise for specific elements of the project. The Work may also be subdivided in mutually agreed upon components, each defined by a separate Certificate of Substantial Completion.

36. Close-out of the Work

36.1 The Contractor shall remove from the premises all waste materials caused by the work. The Contractor shall make the spaces “broom clean” unless a more thorough cleaning is specified. The Contractor shall clean all windows and glass immediately prior to the final inspection, unless otherwise directed.

36.2 The Owner may conduct the cleaning of the premises where the Contractor, duly notified by the Consultant, fails to adequately complete the task. The expense of this cleaning may be deducted from the sum due to the Contractor.

36.3 The Contractor shall participate in all final inspections and acknowledge the documentation of unsatisfactory work, customarily called the "punch list", to be corrected by the Contractor. The Consultant shall document the successful completion of the Work in a dated Certificate of Substantial Completion, to be signed by Owner, Consultant, and Contractor.

36.4 The Contractor shall not call for final inspection of any portion of the Work that is not completely and permanently installed. The Contractor may be found liable for the expenses of individuals called to final inspection meetings prematurely.

36.5 The Contractor and all major Subcontractors shall participate in the end-of-warranty-period conference, typically scheduled close to one year after the Substantial Completion date.

37. Date of Completion and Liquidated Damages

37.1 The Contractor may make a written request to the Owner for an extension or reduction of time, if necessary. The request shall include the reasons the Contractor believes justifies the proposed completion date. The Owner may grant the revision of the contract completion date if the Work was delayed due to conditions beyond the control and the responsibility of the Contractor. The Contractor shall not conduct unauthorized accelerated work or file delay claims to recover alleged damages for unauthorized early completion.

37.2 The Contractor shall vigorously pursue the completion of the Work and notify the Owner of any factors that have, may, or will affect the approved Schedule of the Work. The Contractor may be found responsible for expenses of the Owner or Consultant if the Contractor fails to make notification of project delays.

37.3 The Project is planned to be done in an orderly fashion which allows for an iterative submittal review process, construction administration including minor changes in the Work and some bad weather. The Contractor shall not file delay claims to recover alleged damages on work the Consultant determines has followed the expected rate of progress.

37.4 The Consultant shall prepare the Certificate of Substantial Completion which, when signed by the Owner and the Contractor, documents the date of Substantial Completion of the Work or a designated portion of the Work. The Owner shall not consider the issuance of a Certificate of Occupancy by an outside authority a prerequisite for Substantial Completion if the Certificate of Occupancy cannot be obtained due to factors beyond the Contractor's control.

37.5 Liquidated Damages may be deducted from the sum due to the Contractor for each calendar day that the Work remains uncompleted after the completion date specified in the Contract or an approved amended completion date. The dollar amount per day shall be calculated using the Schedule of Liquidated Damages table shown below.

If the original contract amount is:	The per day Liquidated Damages shall be:
Less than $100,000	$250
$100,000 to less than $2,000,000	$750
$2,000,000 to less than $10,000,000	$1,500
$10,000,000 and greater	$1,500 plus $250 for each $2,000,000 over $10,000,000

38. Dispute Resolution

38.1 Mediation

38.1.1 A dispute between the parties which arises under this Contract which cannot be resolved through informal negotiation, shall be submitted to a neutral mediator jointly selected by the parties.

38.1.2 Either party may file suit before or during mediation if the party, in good faith, deems it to be necessary to avoid losing the right to sue due to a statute of limitations. If suit is filed before good faith mediation efforts are completed, the party filing suit shall agree to stay all proceedings in the lawsuit pending completion of the mediation process, provided such stay is without prejudice.

38.1.3 In any mediation between the Owner and the Consultant, the Owner has the right to consolidate related claims between Owner and Contractor.

38.2 Arbitration

38.2.1 If the dispute is not resolved through mediation, the dispute shall be settled by arbitration. The arbitration shall be conducted before a panel of three arbitrators. Each party shall select one arbitrator; the third arbitrator shall be appointed by the arbitrators selected by the parties. The arbitration shall be conducted in accordance with the Maine Uniform Arbitration Act (MUAA), except as otherwise provided in this section.

38.2.2 The decision of the arbitrators shall be final and binding upon all parties. The decision may be entered in court as provided in the MUAA.

38.2.3 The costs of the arbitration, including the arbitrators' fees shall be borne equally by the parties to the arbitration, unless the arbitrator orders otherwise.

38.2.4 In any arbitration between the Owner and the Consultant, the Owner has the right to consolidate related claims between Owner and Contractor.

00 73 46
Wage Determination Schedule

PART 1- GENERAL

1.1 Related Documents

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

1.2 Summary

A. This Section includes the wage determination requirements for Contractors as issued by the State of Maine Department of Labor Bureau of Labor Standards or the United States Department of Labor.

1.3 Requirements

A. Conform to the wage determination schedule for this project which is shown on the following page.

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION (not used)

00 73 46
Wage Determination Schedule

THIS DOCUMENT MUST BE CLEARLY POSTED AT ALL CONSTRUCTION SITES FUNDED IN PART WITH STATE FUNDS

State of Maine
Department of Labor
Bureau of Labor Standards
Augusta, Maine 04333-0045
Telephone (207) 623-7906

Wage Determination - In accordance with 26 MRS §1301 et. seq., this is a determination by the Bureau of Labor Standards, of the fair minimum wage rate to be paid to laborers and workers employed on the below titled project.

2025 Fair Minimum Wage Rates – Building 2 Cumberland County (other than 1 or 2 family homes)

Occupational Title	Minimum Wage	Minimum Benefit	Total
Brickmasons And Blockmasons	$38.00	$3.75	$41.75
Bulldozer Operator	$34.90	$2.24	$37.14
Carpenter	$32.59	$12.16	$44.75
Cement Masons And Concrete Finisher	$26.00	$1.67	$27.67
Construction And Maintenance Painters	$27.00	$1.39	$28.39
Construction Laborer	$24.00	$2.15	$26.15
Crane And Tower Operators	$40.00	$12.41	$52.41
Crushing Grinding And Polishing Machine Operators	$27.50	$5.64	$33.14
Earth Drillers - Except Oil And Gas	$23.30	$0.99	$24.29
Electrical Power - Line Installer And Repairers	$43.26	$16.55	$59.81
Electricians	$34.62	$20.39	$55.01
Elevator Installers And Repairers	$71.21	$43.75	$114.96
Loading Machine And Dragline Operators	$27.50	$6.43	$33.93
Excavator Operator	$32.00	$4.29	$36.29
Fence Erectors	$26.00	$2.63	$28.63
Flaggers	$20.50	$0.40	$20.90
Floor Layers - Except Carpet/Wood/Hard Tiles	$25.75	$3.73	$29.48
Glaziers	$46.26	$22.61	$68.87
Grader/Scraper Operator	$31.00	$6.86	$37.86
Hazardous Materials Removal Workers	$20.00	$0.94	$20.94
Heating And Air Conditioning And Refrigeration Mechanics And Installers	$35.00	$5.62	$40.62
Heavy And Tractor - Trailer Truck Drivers	$25.25	$3.96	$29.21
Highway Maintenance Workers	$22.85	$4.79	$27.64
Industrial Machinery Mechanics	$30.00	$4.60	$34.60
Industrial Truck And Tractor Operators	$26.17	$3.49	$29.66
Insulation Worker - Mechanical	$24.00	$4.63	$28.63
Ironworker - Ornamental	$31.37	$25.82	$57.19
Light Truck Or Delivery Services Drivers	$27.86	$1.95	$29.81
Millwrights	$31.45	$15.17	$46.62
Mobile Heavy Equipment Mechanics - Except Engines	$30.00	$5.67	$35.67
Operating Engineers And Other Equipment Operators	$28.50	$3.54	$32.04
Paving Surfacing And Tamping Equipment Operators	$28.60	$12.03	$40.63
Pile-Driver Operators	$36.00	$2.87	$38.87
Pipe/Steam/Sprinkler Fitter	$33.50	$8.22	$41.72
Pipelayers	$27.48	$4.72	$32.20
Plumbers	$31.97	$5.92	$37.89
Pump Operators - Except Wellhead Pumpers	$56.03	$34.76	$90.79
Radio Cellular And Tower Equipment Installers	$30.00	$4.85	$34.85
Reinforcing Iron And Rebar Workers	$56.69	$2.27	$58.96
Riggers	$30.50	$8.25	$38.75
Roofers	$29.00	$0.00	$29.00
Sheet Metal Workers	$28.38	$5.82	$34.20
Structural Iron And Steel Workers	$32.02	$24.67	$56.69
Tapers	$29.00	$2.02	$31.02
Telecommunications Equipment Installers And Repairers - Except Line Installers	$33.44	$9.75	$43.19
Telecommunications Line Installers And Repairers	$40.99	$20.56	$61.55

Welders are classified as the trade to which welding is incidental (e.g. welding structural steel is Structural Iron and Steel Worker)

Apprentices – The minimum wage rates for registered apprentices are the rates recognized in the sponsorship agreement for registered apprentices working in the pertinent classification.

For any other specific trade on this project not listed above, contact the Bureau of Labor Standards for further clarification.

Title 26 §1310 requires that a clearly legible statement of all fair minimum wage and benefits rates to be paid the several classes of laborers, workers and mechanics employed on the construction on the public work must be kept posted in a prominent and easily accessible place at the site by each contractor and subcontractor subject to sections 1304 to 1313.

Appeal – Any person affected by the determination of these rates may appeal to the Commissioner of Labor by filing a written notice with the Commissioner stating the specific grounds of the objection within ten (10) days from the filing of these rates.

A true copy

Attest: Scott R. Cotnoir
Scott R. Cotnoir
Wage & Hour Director
Bureau of Labor Standards

Expiration Date: 12-31-2025

End of Section 00 73 46

SECTION 01 00 00
GENERAL REQUIREMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

A. The General Conditions, Supplementary General Requirements and Special Conditions of this Contract shall apply to each and every contract and contractor or other person or persons supplying labor, material, equipment and/or services entering into this Project and/or on the premises directly or indirectly.

B. Work Included in This Contract:
   1. Providing all labor, materials, equipment, and services, etc., as required to properly complete all Work identified in, implied by or otherwise required by the Contract Documents.

C. Work Excluded from This Contract:
   1. Providing equipment noted as “Not in Contract” (N.I.C.) or “By Owner,” (B.O.) or “By Third Party Vendor”. The Contractor shall, however, provide services and coordination related to items not in the Contract as otherwise required or implied by the Contract Documents.

D. The Architect and their consulting engineer’s scope of services and responsibilities excludes work related to asbestos, petroleum and petroleum by products, polychlorinated biphenyl and other toxic or hazardous substances. Therefore, the Architect shall have no responsibility for any consequences resulting from the investigation, discovery, detection, identification, presence, leakage, discharge, release, use, handling, disposal, encapsulation, abatement, treatment, or removal of, or exposure of a person or persons to hazardous materials, pollutants, contaminants, or disease transmitting organisms, pre-existing or otherwise deposited in any form at the project, indoors or outdoors, at any time before, during or after construction, including but not limited to PFAS, volatile organic compounds, petroleum products, bacteria, molds, fungus, asbestos or asbestos products, lead, radon, electro-magnetic frequency radiation or other radiation.

1.02 GENERAL RESPONSIBILITIES OF THE GENERAL CONTRACTOR

A. Regulations: The Contractor shall fully comply with all governing Local, State and Federal Laws, Codes, Rules, Regulations and Ordinances, including but not limited to The Americans with Disabilities Act, Equal Employment Opportunity and Affirmative Action provisions, and Occupational Safety and Health Administration provisions.
   1. **NOTE:**
      Per EPA regulations, beginning April 2010, contractors performing renovation, repair, and painting in residential, childcare and school projects that disturb lead paint (assumed to be any building construction prior to 1978) shall be certified and shall follow specific work practices that include notification of occupants and sealing off the work area. The rule does not apply to minor maintenance or repair activities where less than six square feet of lead-based paint is disturbed in a room or where less than 20 square feet of lead-based paint is disturbed on the exterior.
   2. The Contractor shall be responsible for compliance with all applicable Local, State, and Federal environmental regulations, including but not limited to the National Emission Standard for Hazardous Air Pollutants, as enforced by the United States Environmental Protection Agency. It shall be the Contractor's responsibility to provide all inspections and notifications related thereto

B. Permits: The Contractor shall obtain all applicable permits and arrange for necessary inspections and approvals from the authorities having jurisdiction. The owner will pay for permits directly to the permit agency; this relates to all building related permitting for the project that requires a fee. Should any changes be necessary in the Contract Documents to secure such approvals, the Contractor shall promptly notify the Architect.

1. For the Owner's records, submit copies of permits, licenses, inspection reports, certifications, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing on the Work.
2. The Owner, through the Designer, shall obtain permit approvals from the State Fire Marshal's Office.
4. The contractor shall be responsible for obtaining permits and arrange for necessary inspections and approvals related to the imaging equipment, including but not limited to the applicable State Departments.

C. Coordination: The Contractor shall be fully responsible for coordinating all construction activities to assure efficient and orderly installation of each part of the Work. In general coordination duties shall include but not be limited to verifying dimensions and existing field conditions, coordinating construction operations, establishing on-site lines of authority and communication, monitoring schedules and progress, monitoring quality, maintaining records and reports and in general assuring the proper administration of the Work.
   1. Since the Construction Documents are complementary, before starting each portion of the Work, the Contractor shall carefully study and compare the various Drawings and other Construction Documents relative to that portion of the Work, as well as the information furnished by the Owner, shall take field measurements of any existing conditions related to that portion of the Work and shall observe and document any conditions at the site affecting it. Before starting the Work, and at frequent intervals during the progress thereof, the Contractor shall carefully study and compare the Construction Documents with each other and with the information furnished by the Owner and shall at once report to the Architect any error, inconsistency or omission the Contractor may discover. If the Contractor proceeds with the Work without such notice to the Architect, having discovered such errors, inconsistencies or omissions, or if by reasonable study of the Construction Documents the Contractor should have discovered such, the Contractor shall bear all costs arising therefrom.
   2. 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.
   3. Where installation of a component or system involves installation of component parts by multiple subcontractors, the Contractor shall inventory, store, and distribute parts to appropriate installers.
   4. Where structural, electrical, or mechanical components such as columns, ductwork, sprinkler piping, or raceways are installed in finished spaces, the intent is for room finish to enclose such components unless indicated otherwise. Coordinate between the trades and with the Architect.
   5. Where inspections or approval of a substrate or component to be concealed by another is required, coordinate construction activities and notification of Architect or inspecting party. Do not conceal substrates or components until it has been inspected and is satisfactory.
   6. Where availability of space is limited, coordinate installation of different components to assure maximum accessibility for maintenance, service, and repair.
   7. Make adequate provision to accommodate items scheduled for later installation.
   8. Coordinate completion and clean-up of Work in preparation of Substantial Completion.
   9. After Owner occupancy, coordinate access to site for correction of defective or incomplete Work to minimize disruptions to Owner's activities.

D. Supervision – Construction Superintendent: The Contractor shall place and maintain a competent, construction Superintendent/Foreman with at least 10 years of experience in charge of the Work on the job site at all times while work is in progress, including overtime operations by the Contractor's forces or by subcontractors. No changes in this position shall be made without the Owner's prior approval. The Owner shall have the right to review the qualifications of the proposed Superintendent/Foreman and ask for a replacement if in his opinion the person does not meet the qualifications that the project will demand. The same superintendent who was in charge during the general progress of the Work shall oversee the completion of all punch list items.

1. The Contractor shall be responsible for the strict enforcement of the following requirements:
    a. All persons working on the Project site shall be required to conduct themselves in a courteous and professional manner. The use of profane language shall be strictly prohibited.
    b. Smoking, alcoholic beverages, vaping, and impairment supplements shall be strictly prohibited on the Project site, or within sight of the Project site.
    c. The use of radios, entertainment media, etc. shall be strictly prohibited.
    d. Contact with Owner's personnel and visitors shall be prohibited. The Contractor's site supervisor shall be the only individual to contact the Owner's designated school official (Owners Representative or Clerk of the Works). The Contractor's site supervisor shall communicate with school officials to the extent necessary for the safe and proper execution of the Work only; and not for requests to make changes, approve costs, or discuss alternative installations.
    e. Contractor's forces shall not trespass on neighboring property or interact with neighbors.
    f. All construction personnel shall be issued identification badges or hard hat stickers indicating the company they work for, by the Contractor, which shall be conspicuously displayed at all times while on the construction site.

E. On-Site Documents: The Contractor shall provide in a visible and accessible location in the on-site office:
    1. Complete, currently updated set of Specifications and Drawings, Change Orders, reviewed Shop Drawings, and other reviewed documents and samples to be incorporated into the Work.
    2. Permits and notifications required by laws and regulations.
    3. Standards, manuals, installation instructions, or reports required by individual Specification sections.
    4. Product MSDS Sheets.
    5. List of Owner, Owner's Representative, Architect, Architect's Consultants, Contractor's project manager, superintendent, assistant superintendent, subcontractors, building inspector, police, ambulance and fire departments; include telephone numbers and other relevant contact information.

F. Accommodation and Cooperation with the Owner: The Contractor shall cooperate with the Owner to the greatest extent possible. Disruptions and inconveniences to the activities of neighboring and existing facilities to remain in operation during construction shall be minimized and shall be subject to the prior approval of the Owner. The Contractor's cooperative efforts shall include, but shall not necessarily be limited to:
    1. Maintaining fire access and all other safety standards acceptable to governing authorities.
    2. Storing on-site materials at locations acceptable to the Owner and governing authorities.
    3. Controlling construction staging, parking, and traffic and limiting it to areas acceptable to the Owner and governing authorities.
    4. Providing access for and cooperating with other contractors to be employed by the Owner.
    5. Providing access for and cooperating with equipment and furnishing suppliers/installers (including the Owner's own forces) to be employed by the Owner.

G. Vandalism: The Contractor shall take all reasonable precautions necessary to prevent loss or damage caused by vandalism, theft, burglary, pilferage, or unexplained damage and disappearance of property of the Owner, whether or not forming part of the Work, located within those areas of the Project to which the Contractor has access.

H. Existing Materials and Equipment: See Section 01 60 00 - Product Requirements.

I. Shipping and Storage of Materials: See Section 01 60 00 - Product Requirements.

J. Owner Furnished Equipment: See Section 01 60 00 - Product Requirements.

K. Guarantee: The Contractor shall guarantee the entire Work to be free from defective or improper work or materials and shall make good any damage due to such work or site-related

materials for a term of **One Year** from the date of the satisfactory completion and acceptance of the final phase of the Work. See Section 01 78 10 - Warranties.

L. The Contractor and all subcontractors shall refer to all of the Contract Documents, including those not specifically showing the Work of their specialized trades, and shall perform all work reasonably inferable from them as being necessary to produce the intended results.

1. The Contractor shall give the Architect timely notice of any additional drawings, specifications or instructions required to define the Work in greater detail or to permit the proper progress of the Work. Any design errors or omissions noted by the Contractor during his view of documents shall be promptly reported to the Architect.

   The Contractor shall not proceed with any work not clearly and consistently defined in detail in the Contract Documents, but shall request additional Drawings, Specifications, or Instructions from the Architect. If the Contractor proceeds with such work without obtaining further drawings or instructions, he shall assume full responsibility for the results thereof, and if such work is discovered to be incorrect he shall correct it at his own expense.

2. Should the Contract Documents disagree in themselves or with each other, the Contractor shall provide the better quality or greater quantity of work and/or materials, unless specifically otherwise directed by written Addendum to the Contract.

3. The Contractor shall be responsible for determining that materials furnished for the Work meet all requirements of the Contract Documents. The Architect may require the Contractor to produce reasonable evidence that a material meets such requirements, such as certified reports of past tests by qualified testing laboratories, reports of studies by qualified experts, or other evidence which, in the opinion of the Architect, would lead to a reasonable certainty that any material used, or proposed to be used, in the Work meets the requirements of the Contract Documents. All such data shall be furnished at the Contractor's expense. This provision shall not require the Contractor to pay for periodic testing of different batches of the same material, unless such testing is specifically required by the Contract Documents to be performed at the Contractor's expense.

1.03 MEASUREMENT AND PAYMENT

A. Schedule of Values: Submit a preliminary sample of the Schedule of Values for review and comment regarding format and content to the Architect at the earliest feasible date, but in no case later than fourteen (14) days prior to submittal of the first Application for Payment. The Schedule of Values shall clearly identify the cost of the Work by trade and site-related construction activities, plus all General Site Conditions and accepted Alternates.
   1. Separate Schedules of Values shall be prepared for each phase of the Work.
   2. The cost of the Work for separate trades and activities shall be further broken down by major systems, components, labor, materials, sub-subcontracts or other appropriate means in sufficient detail to facilitate continued evaluation of project progress.
   3. The format and general content of such schedule shall be acceptable to the Owner and Architect. See the General Condition Requirements.
      a. Round amount off to the nearest whole dollar; the total shall equal the Contract Sum.
      b. No later than seven (7) days prior to submittal of the first Application for Payment, the Contractor shall submit to the Architect and Owner the fully completed Schedule of Values; in a form acceptable to the Owner and Architect.

B. Payment Requisition: The Contractor shall submit to the Architect three original copies of “Application for Payment”, on AIA Document G702 and G703, or a form acceptable to the State, including an itemized statement showing the original Contract Amount, the value of the Work to date, the amount previously approved, the amount presently requested and the balance remaining. Each copy shall be fully executed and properly signed and sealed.
   1. Application for Payment entries shall match the Schedule of Values. Include amounts of Change Orders issued prior to the last day of the construction period covered by the application.
   2. Each Application for Payment shall be consistent with previous applications and payments as certified by the Architect and paid for by the Owner.

3. Progress payment dates shall be as established elsewhere in the Agreement. The Contractor shall submit a draft of the Application for Payment to the Architect no less than seven (7) days in advance of the due date to allow for preliminary review and adjustments.
4. The Contractor shall clearly differentiate between items stored on-site and items stored off-site. For off-site stored materials, provide invoices, list of materials, insurance certificate, right of entry, transfer of title, and other documents as may be required by the Architect and Owner. The Owner is under no obligation to pay for materials stored off site.
5. Provide any other documents as may be required by the Architect to verify work completed and payment invoiced.
6. Each Application for Payment shall be accompanied by a transmittal listing all attachments.
7. Initial Application for Payment: The following administrative actions and submittals shall precede or coincide with the submittal of the first Application for Payment:
    a. List of subcontractors, principal suppliers, and fabricators.
    b. Schedule of Values broken down into sums no greater than Five Hundred Thousand Dollars ($500,000.00)
    c. No line item in the schedule of values shall be “miscellaneous”, as all items shall be clearly identified for billing against a percentage complete.
    d. List of Contractor’s staff assignments.
    e. Copies of any permits, authorizations, and licenses from governing authorities.
    f. Certificates of insurance.
    g. Data needed to acquire Owner’s insurance (if any).
    h. Initial Progress Report.
    i. Performance and Payment Bonds.
8. Application for Payment at Substantial Completion: Submit an Application for Payment following issuance of the Certificate of Substantial Completion. The application shall reflect requirements of the General Conditions of the Contract. The following administrative actions and submittals shall precede or coincide with the submittal of this Application for Payment:
    a. Occupancy permits, as applicable.
    b. Warranties and maintenance agreements.
    c. Testing / adjusting / balancing reports.
    d. Maintenance instructions.
    e. Start-up performance reports.
    f. Change-over information related to Owner’s occupancy, use operation and maintenance.
    g. Final cleaning.
    h. Application for reduction of retainage, and consent of surety.
    j. Advice on shifting insurance coverage.
    j. List of incomplete Work, recognized as exception to the Architect’s Certificate of Substantial Completion, if any.
9. Final Application for Payment: This application shall reflect any Certificates of Substantial Completion issued previously for Owner occupancy of designated portions of the Work. See Article regarding Final Payment of the Agreement and General Conditions of the Contract. The following administrative actions and submittals shall precede or coincide with the submittal of the final Application for Payment:
    a. All items required by “Payments & Completion” of the General Conditions.
    b. Completion of Project close-out requirements.
    c. Completion of items specified for completion after Substantial Completion.
    d. Assurance that unsettled claims will be settled.
    e. Transmittal of required Project construction records, including Record Drawings to the Owner.
    f. Proof that taxes, fees and similar obligations have been paid.
    g. Removal of temporary facilities and services.

h. Removal of surplus materials, rubbish, and similar elements.

10. In addition to all other procedures required by the Owner for the protection of his interests, the Contractor, in submitting an Application for Payment, certifies that he has visited all locations of materials and equipment stored off-site and verified the types and quantities of materials and equipment stored as well as the suitability and security of the storage facilities.

C. Waivers of Mechanics Lien: With each Application for Payment, submit waivers of mechanics lien for every entity who is lawfully entitled to file a lien arising out the Contract and related to the Work covered by the Payment. See General Conditions of the Contract.
   1. The Contractor shall promptly execute a partial waiver of mechanics lien for the period of construction covered by each application. Executed waivers shall be submitted to the Architect with the submittal of the next Application for Payment by the Contractor. With each Application for Payment, submit partial waiver of mechanics liens from subcontractors, or sub-subcontractors and suppliers for the construction period covered by the previous application.
   2. When an application shows completion of an item, submit final or full waivers when retainage is released.
   3. The Owner reserves the right to designate which entities involved in the Work must submit waivers. It shall be recognized that all trades shall require waivers, and major equipment suppliers.
   4. Submit the final Application for Payment with or preceded by final waivers from every entity involved with the performance of the Work covered by the application who could lawfully be entitled to a lien. The total amount of each entity's final waiver of lien shall equal the Contact Sum for that entity including all additions and reductions thereto.
   5. Submit waiver of liens on the following forms, and executed in a manner, acceptable to the Owner:
      a. Partial waiver of liens: Form provided by the Contractor and acceptable to the Architect and Owner.
      b. Final waiver of liens: AIA G706A Contractor's Affidavit of Payment of Release of Liens or another form acceptable to the Architect and Owner.

D. Schedule Update: Along with each payment requisition, the Contractor shall submit digital construction photographs and an updated progress schedule showing actual start dates for activities and any adjusted completion dates. Each such monthly update shall summarize the progress of the Work and shall identify:
   1. Areas of the building expected to be worked on during the next month.
   2. Special conditions or circumstances that may affect the safe use of the building or site.
   3. Any necessary measures to achieve the phased completion dates, as applicable to the status of the project.

1.04 MODIFICATION PROCEDURES

A. Minor Changes to the Work: Supplemental Instructions, authorizing minor changes in the Work, not involving an adjustment to the Contract Sum or Contract Time, may be issued by the Architect.

B. Owner Initiated Change Order Proposal Requests: The Architect shall issue Proposal Requests that describe proposed changes in the Work that may require adjustment to the Contract Sum. The Architect will provide supplemental sketches or revised Drawings and Specifications as necessary.
   1. Proposal requests are for information only. Do not consider them an instruction either to stop work in progress, or to execute the proposed change.
   2. Unless otherwise indicated in the proposal request, within seven (7) working days of receipt of the proposal request, the Contractor shall submit to the Architect and Owner for review, an estimate of cost necessary to execute the proposed change. Include an itemization of quantities, unit costs, etc. Include all related charges and a statement indicating if the proposed change will have on the Contract Time; and if so, with information on how the change affects the scheduled critical path.

C. Contractor Initiated Change Order Requests: The Contractor may request changes when latent or other unforeseen conditions require modifications to the Contract, by submitting a request for a change to the Architect.
   1. Provide a complete description of the proposed change. Indicate the reason for the change and the effect of the change on the Work, the Contract Sum and the Contract Time. Include an itemization of quantities, unit costs, etc. and include all related charges. Comply with requirements for “Substitutions”.

D. Construction Change Directive: Construction Change Directives, containing descriptions of changes in the Work and designating methods to be followed to determine changes in the Contract Sum or Contract Time may be issued by the Architect.
   1. Unless otherwise directed, maintain detailed records of time and materials related to the Work required by the Construction Change Directive. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.
   2. When a Construction Change Directive is issued using an agreed upon price or fixed price the Contractor shall proceed to expeditiously complete the work, whether the Contractor agrees with the price or not.

E. Change Order Procedures: Upon the Owner’s approval of a Change Order Proposal or Request, the Architect will issue a Change Order for signatures of the Owner, the State, and Contractor, in triplicate.

1.05 SUBSTITUTIONS

A. Substitutions are changes, modifications or deviations in those products, materials, equipment, and methods of construction required by the Contract Documents proposed by the Contractor after the receipt of Bids. Substitutions for the convenience of the Contractor or subcontractors, or materials suppliers will only be considered if submitted prior to the receipt of Bids, in strict conformance with the Instructions to Bidders. The following shall not be considered substitutions:
   1. Changes, modifications, or deviations requested by Bidders during the bidding period and accepted in writing prior to the receipt of Bids shall be considered as included in the Contact Documents and are not subject to the requirements of this Section.
   2. Revisions to Contract Documents requested by the Owner or Architect.
   3. Specified options of products or materials included in the Contract Documents.
   4. The Contractor’s compliance with governing regulations and orders issued by governing authorities, subject to the Architect’s prior written notice and approval.

B. Substitution Requests: See Section 01 60 00 - Product Requirements, for substitution request procedures.

1.06 ELECTRONIC MEDIA

A. Electronic Media: See Section 01 00 30 - Electronic Media, for information regarding obtaining the Contract Documents electronically and their limited use for purposes of project coordination and Contractor’s use in the preparation of Record Drawings.

1.07 QUALITY CONTROL

A. General: The Owner shall employ an independent testing agency for the purpose of testing and inspecting portions of the Work in progress. The Contractor and his various subcontractors shall be responsible for specific testing and inspections as identified in individual specification sections. See Section 01 40 00 - Quality Requirements

B. The Contractor shall maintain at the site for the Owner one record copy of the Drawings, Specifications, Addenda, order and marked currently to record changes and selections made during construction, and in addition, reviewed Shop Drawings, Product Data, Samples and similar required submittals. These shall be available to the Architect and, along with reproducible copies as identified elsewhere in the Contract Documents, shall be delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

1.09 TIME FOR COMPLETION

A. Time is of the essence of the Contract, and the Work to be performed under the Contract shall be commenced on or about **TBD** and shall be Substantially Complete and in receipt of an Occupancy Permit on or before **TBD**.

B. It is expressly understood and agreed, by and between the Contractor and the Owner, that the time for completion of the Work described herein is reasonable for the completion of same, taking into consideration the climatic and industrial conditions prevailing in this locality.

END OF SECTION

SECTION 01 00 10

SUPPLEMENTARY GENERAL REQUIREMENTS

THE SUPPLEMENTARY GENERAL REQUIREMENTS CONTAIN CLARIFICATIONS TO THE GENERAL REQUIREMENTS.

Reference Clarifications:

All references to the “Contractor” or the “Building Contractor” or the “General Contractor for the Building” throughout the Specifications shall refer to the “General Contractor”.

References to the Bureau of General Services within these Specifications shall mean The Department of Education Office of School Facilities, who is the designated representative of the Bureau of General Services under this Agreement.

References to the Clerk of the Works shall mean the authorized on-site representative of the Owner.

The term "custom" when referring to a material, color, finish design, pattern, or configuration shall be understood to mean as selected or determined by the Architect and shall in no way be limited to any of the published offerings of the supplier or manufacturer.

The word "provide" shall mean, "furnish and install," including connections to services if required, unless specified otherwise. This includes work completed in place, fully tested, operational, and accepted by the Owner.

Project Schedule Clarifications:

“Include CPM milestones for major portions of the work leading to each required phase completion date. The initially submitted and accepted Critical Path shall not change during the project. Time is of the essence and any request for a time extension due to action by the Owner or changes shall require demonstration that such action has impacted the Critical Path.”

“Reference is made to the Instructions to Bidders requiring the submission of all bid questions during the bid period.”

Coordination:

“Include CPM milestones for major portions of the work leading to each required phase completion date. The initially submitted and accepted Critical Path shall not change during the project. Time is of the essence and any request for a time extension due to action by the Owner or changes shall require demonstration that such action has impacted the Critical Path.”

Shop Drawing Process Clarifications:

“The Designer’s approval is based on the Contractor’s submission for the designer’s review for implementing the work as intended by the design documents. The Contractor is required to approve the shop drawings for conformance to the specified and detailed materials, systems, and products for purchase and installation prior to submission to the Designer.”

“By approving and submitting Shop Drawings, Product Data, Samples and similar materials, the Contractor represents to the Owner and Architect that the Contractor has determined and verified materials, dimensions, quantities, field dimensions, relations to existing work,

coordination with work to be installed later, coordination with information on previously reviewed Shop Drawings, Product Data, or Samples and verification of compliance with all of the requirements of the Contract Documents. The completeness and accuracy of all such information is the responsibility of the Contractor. In reviewing Shop Drawings, Product Data, and Samples, the Designer and Owner shall be entitled to rely upon the Contractor's representation that such information is complete, accurate and correct."

"The Contractor shall perform no portion of the Work requiring submittal and review of Shop Drawings, Product Data, Samples or similar materials until the respective submittal has been reviewed by the Architect. Such work shall be in accordance with reviewed submittals.

Shop Drawings, Product Data and Samples submitted to the Architect without the Contractor's signed stamp of approval thereon will be returned without action.

The Contractor shall also, upon delivery of submittals, provide written notice of any deviation in the Shop Drawings, Product Data or Samples from the requirements of the Contract Documents."

"The Contractor's provide a submittal schedule. The submittal schedule shall be tied to the Critical Path and major milestones to allow appropriate time for proper preparation, review, and subsequent ordering and installations. No payment shall be due the Contractor prior to the CPM and submittal schedules having been accepted by the Owner and Designer."

"No claim for delay shall be allowed on account of failure of the Architect to furnish instructions or to return Shop Drawings, Product Data, Samples, or similar materials until two (2) weeks after receipt by the Designer by registered or certified mail of a written demand for such instructions, drawings, or samples, and not then unless such claim be reasonable and in accordance with submission dates included in the submittal schedule. No claim for delay will be reviewed without evidence that demonstrates reason for delay has been caused by the Owner and has impacted the accepted Critical Path activities."

"The Contractor shall provide all calculations and certificates of compliance and performance as identified throughout the Contract Documents. He shall be responsible for their preparation and submission and the Owner and Architect shall be entitled to rely upon the completeness and accuracy of all such calculations and certifications. Failure to submit such calculations and certificates prior to Substantial Completion shall be considered representation of full compliance, as if they had been fully executed and provided for the Owner and Architect's records."

"The Contractor shall be allowed one (1) submission, plus two (2) revisions to obtain the Designer's review and acceptance of Shop Drawings, Product Data, Samples or similar materials. Incorrect, incomplete or otherwise unacceptable submissions, that require additional submittals shall be reviewed by the Designer subject to back-charges to the Contractor for the cost of the Designer's related services."

"It is the intent of this Contract that the use of asbestos containing materials and/or other hazardous materials be prohibited. Prior to Substantial Completion, the Contractor shall submit written certification that no asbestos and/or other hazardous substances have been incorporated into the Work."

"In failing to provide such certification, the Contractor shall assume full responsibility related thereto, and shall be responsible for all injury and/or damages, and shall provide all necessary replacement or corrective work at no additional cost to the Owner."

Drawing and Specification Clarifications:

"All manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, adjusted, and conditioned in accordance with the manufacturers' written or printed directions and instructions, unless specifically otherwise indicated in the Contract Documents"

"Where no explicit quality or standards for materials or workmanship are established for work, such work is to be of good quality for the intended use and consistent with the quality of the surrounding work and of the construction of the Project"

"All indications or notations which apply to one of a number of similar situations, materials or processes shall be deemed to apply to all such situations, materials or processes wherever they appear in the Work, except where a contrary result is clearly indicated by the Contract Documents."

"For convenience, the Specifications have been arranged in Sections, but such separation shall not be considered as the limits of the Work required of any separate trade. The terms and conditions of such limitations shall be exclusively between the Contractor and his subcontractors. Requirements contained in any Section shall be required as if contained in all Sections and the Contractor shall, prior to awarding subcontracts, assure himself that the entire Work as a whole has been coordinated among the subcontracts."

"The Drawings are generally made to scale, but all working dimensions shall be taken from the figured dimensions or by actual measurements at the job; in no case by scaling. Study and compare all the Drawings and verify all figures before laying out or constructing work. The Contractor shall be responsible for errors in his work that might have been avoided thereby. Whether or not an error is believed to exist, deviation from the Drawings and the dimensions given thereon shall be made only after approval in writing from the Architect."

"The Architect shall not be considered the arbiter of the work between trades assigned by the Contractor. The Contractor shall ensure properly trained tradesmen install the work in accordance with the contract documents and Contractor-Sub-contractor Agreements."

"Where codes, standards, requirements and publications of public and private bodies are referred to in the Contract Documents, such references shall be understood to be to the latest revision prior to the date of receiving Bids, except where otherwise indicated. These standards are not furnished to Bidders for the reason that the Bidders are assumed to be familiar with their requirements. The Architect will furnish, upon written request, information for obtaining copies of the standards referred to."

"Surveys, test borings, test pits, or other soil test information when included with the Contract Documents or otherwise made accessible to the Contractor, were obtained by the Owner for use by the Architect in design. The Owner and Architect, do not represent such information to be complete, accurate or approximate indications of actual site or subsurface conditions."

Project Site and Acceptance Clarification:

"Written acceptance of the Project shall be in the form of the executed Substantial Completion Form."

"The Project Site is considered a school property; meaning no use of alcohol, tobacco, or illegal substances are allowed on the site."

"The Owner will retain the services of a licensed hygienist consultant to attend to any HAZMAT items questioned or reported by the Contractor, and if found to be HAZMAT, will remediate and render it harmless. Upon request from the Contractor, the Owner's consultant will test and recommend appropriate action if found to be classified as HAZMAT. The Owner's hygienist consultant will then arrange for the removal of any materials found to be HAZMAT. The Contractor shall coordinate and schedule the work around the removal of such materials. The Designer's scope and responsibilities exclude all work associated with the review, inspection, or other activities associated with materials classified as HAZMAT."

Site Supervisor Clarification:

"The Site Supervisor shall carefully study and compare all drawings, specifications and other instructions and shall at once report to the Designer any error, inconsistency or omission which he may discover, but he shall not be liable to the Owner for any damage resulting from any errors or deficiencies in the contract documents or other instructions by the Designer; unless such errors in his work that might have been avoided by careful study and comparison."

Uncorrected Work Clarification:

"If the Owner decides to accept any uncorrected or non-conforming work, the Owner's and Designer's determination of an equitable deduction shall be final. If the Contractor disagrees with the Owner's and Designer's determination, the Contractor will correct the work to comply with the Contract Documents, or accept the determined equitable deduction."

Application for Payment Clarification:

"The Construction Cost Breakdown shall include breakdowns within each specification section to reflect material, labor, submittal, shop drawing, and phased portions of the work in amounts no greater than $500,000.00."

"Each monthly Requisition for Payment shall be accompanied by an updated progress schedule and previous months payment release of liens from the Contractor, sub-contractors, and suppliers."

"Upon Substantial Completion of the entire Work, the five percent (5%) retainage shall be reduced to one hundred and fifty percent (150%) of the value of all incomplete Work and unsettled claims, as determined by the Architect. No retainage shall be released until Substantial completion is achieved. Values for incomplete work shall also include Close Out Documents including but not limited to record documents."

"Final payment, constituting the entire unpaid balance of the Contract Sum, shall be paid by the Owner to the Contractor thirty (30) days after Substantial Completion of the Work unless otherwise stipulated in the Certificate of Substantial Completion, provided the Work has been completed, the Contract fully performed, and a final Certificate for Payment has been issued. Final payment will be made to the Contractor only after final review and acceptance of all the Work by the Owner, and the Contractor has furnished satisfactory release of liens or claims for liens by the Contractor, subcontractors, laborers, and the material suppliers. Warrantees shall commence upon the issuance of Substantial Completion."

Layout of the Work Clarification:

"The engineer / surveyor shall be licensed in the State of Maine."

END OF SUPPLEMENTARY GENERAL CONDITIONS

SECTION 01 00 30
ELECTRONIC MEDIA

PART 1 - GENERAL

1.01 DESCRIPTION

A. The provisions of this Section apply to each and every contract and contractor or other person or persons supplying labor, material, equipment and/or services entering into this Project and/or on the premises directly or indirectly.

B. Following the receipt of a written request by the Contractor, signed Electronic Data Transfer and Non-Disclosure Agreement, and if applicable, payment in full from the Contractor, the Architect will make available an electronic data version of the Project, for the limited purposes described in this Agreement. It shall be the Contractor's responsibility to make electronic files available to subcontractors in accordance with the Electronic Data Transfer and Non-Disclosure Agreement.

ELECTRONIC DATA TRANSFER AND NON-DISCLOSURE AGREEMENT

The Agreement is entered into and agreed by, between and among Lavallee Brensinger Professional Association (LBA), and _____ (Recipient) and is made in reference to the KVCC Radiology Lab. It is understood and agreed that it may become desirable for LBA to make certain Instruments of Service in electronic machine-readable format, hereinafter referred to as "Electronic Data" available to other parties related to the Project. It is also understood that such information is proprietary to LBA and that LBA intends to limit its distribution and use. It is the intent of the Agreement to govern all circumstances under which Electronic Data is made available by LBA.

In consideration of the request of _____ (Recipient) to LBA to deliver to Recipient or otherwise enable the Recipient to access certain Electronic Data for use on the Project, the parties mutually agree as follows:

1. Electronic Data includes Building Information Models (BIM). Building Information Models shall be provided as Revit (.rvt) files.

2. The means by which the Electronic Data is transferred may include, but are not limited to, electronic mail and File Transfer Protocol sites, transmitted between the parties in this Agreement. Recipient acknowledges that Electronic Data transferred in any manner or translated from the system and format used by LBA to an alternate system or format is subject to errors that may affect the accuracy and reliability of the data and that the data may be altered, whether inadvertently or otherwise. Accordingly, LBA makes no warranty, express or implied, as to the correctness, accuracy, and/or completeness of the information transferred. Although LBA may issue information throughout the development of the Project, LBA does not represent that the information provided includes all revisions to-date, nor shall LBA assume any responsibility for providing updated information as the Project proceeds.

3. LBA reserves the right to retain hard copy originals in addition to electronic copies of the Electronic Data transferred, which originals shall be referred to and shall govern in the event of any inconsistency with the transferred data. Should the recipient discover errors or conflicts in any transferred files, he shall promptly notify LBA.

4. As consideration to LBA for the transfer of the Electronic Data, Recipient agrees that the use of Electronic Data shall be entirely at his/her own risk, and that LBA shall not be liable for, and Recipient hereby waives all claims and agrees to indemnify and hold LBA

harmless from all liabilities, claims, losses, damages or expenses (including attorneys' fees) arising out of, or connected with: (1) the transfer of Electronic Data by any means; or (2) the use, modification or misuse of the Electronic Data by parties other than LBA; or (3) the limited life expectancy and decline of accuracy or readability of the Electronic Data due to storage; or (4) translation and data errors; or (5) any use of the Electronic Data by any third parties receiving the data from other parties to this Agreement; or (6) the incompatibility of software or hardware used by LBA and the other parties to this Agreement.

5. **The Electronic Data provided by LBA under the terms of this Agreement is the proprietary information of LBA, containing designs, details, model elements and other information developed by LBA. LBA is willing to supply such information only if the Recipient enters into this Non-Disclosure Agreement and agrees to strictly enforce its terms and conditions. All Electronic Data is to be treated as confidential and is not to be disclosed to or shared with any third parties, not expressly allowed herein, without LBA's express, written consent.**

6. Recipient agrees to maintain and protect any and all proprietary information of LBA and to exercise great care in the preservation of its confidentiality. The Recipient will disclose the proprietary information only to its own employees, and then only to the extent required for the design and construction of this Project. The Recipient shall be responsible for any unauthorized use or disclosure of LBA's proprietary information by anyone to whom it may disclose such information.

7. The Recipient agrees that any and all Electronic Data shall remain the property of LBA. Neither the execution of this Agreement, nor the transfer of Electronic Data shall constitute a conveyance or transfer to the Recipient of any right, interest, or license in the proprietary materials. The Recipient shall not reproduce any proprietary information without the express written authorization of LBA.

8. Electronic Data are provided as a convenience to the Recipient for informational purposes only in connection with the Recipient's performance of its responsibilities and obligations relating to the Project. The Electronic Data do not replace or supplement the paper copies of the Drawings and Specifications which are and remain, the Contract Documents for the Project.

9. **Electronic Data shall only be used for purposes allowable by this Agreement. It is understood and agreed that, without the separate express written permission of LBA to do so, the Electronic Data are not to be used for any purpose whatsoever, by anyone (any contractor or any of its subcontractors of any tier or any materials supplier or vendor) other than the Recipient. It shall be the responsibility of the Recipient to notify LBA of any and all third parties with whom the Recipient wishes to share LBA's Electronic Data, to identify the intended uses of the information, and to obtain LBA's prior written authorization to share LBA's information.**

10. All transmittal of Electronic Data whether by e-mail, Internet, or any other methods shall require that the file name, size, date and time be recorded along with the date and time of transmission (if by electronic means) and the identity of the sender and recipient.

11. The Recipient further agrees to indemnify and save harmless LBA and its sub-consultant and each of their partners, officers, shareholders, directors and employees from any and all claims, judgments, suits, liabilities, damages, costs or expenses (including reasonable defense and attorneys' fees) arising as the result of either:

a) Recipient's failure to comply with any of the requirements of the Electronic Data Transfer Agreement; or

b) a defect, error or omission in the Electronic Data or the information contained therein, which defect error or omission was not contained in the Contact Documents as defined in paragraph 3 or where the use of such Contact Documents would have prevented the claim, judgment, suit, liability, damage, cost or expense.

12. This agreement shall be interpreted under the laws of the State of Maine. The Recipient hereby agrees that the breach of this Agreement by the Recipient will cause LBA considerable harm, and LBA shall be entitled to recover damages, as well as all expenses and costs incurred by LBA arising out of or related to such breach, including, without limitation, reasonable attorney's fees and costs.

13. In general, the protocols for the distribution of Electronic Data shall be as follows:

a. LBA may make certain Electronic Data available to (Owner or Contractor) free of charge, providing that:
   1) Such files can be issued in the format currently used by LBA, without modification.
   2) The Recipient delivers to LBA a fully executed copy of this Agreement and, among other requirements, agrees not to share LBA's Electronic Data with any third parties without LBA's prior written authorization.
b. In the event the Recipient wishes to share LBA's Electronic Data with a third party, each individual third party shall then deliver, through the Recipient, a fully executed copy of this Agreement.
c. In the event that it is necessary for the Architect to convert files from its currently used format to an alternative format, LBA – if they choose to do so - shall be compensated for such conversion at the rate of $200.00 per file, payable in advance.

The parties have executed this Agreement as of the dates stated below:

RECIPIENT _____
(Company)

By: _____ Date: _____

Title: _____

END OF SECTION

SECTION 01 30 00
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General administrative requirements.
B. Web-based project software service.
C. Electronic document submittal service.
D. Preconstruction meeting.
E. Site mobilization meeting.
F. Job meetings.
G. Requests for Information.
H. Construction reports.
I. Construction Progress Schedule.
J. Materials Schedule.
K. Submittal Schedule.
L. Progress photographs.
M. Coordination Drawings.
N. Shop Drawings.
O. Approval Drawings.
P. Product Data, Certifications, Delegated-Design Submittals
Q. Submittals for review, information, and project closeout.
R. Requests for Interpretation (RFI) procedures.
S. Submittal procedures.
T. Architect's Review

1.02 RELATED REQUIREMENTS

A. Section 01 00 00 - General Requirements.
B. Section 01 60 00 - Product Requirements: General product requirements.
C. Section 01 78 10 - Warranties.
D. Section 01 78 00 - Project Close-out: Project record documents; operation and maintenance data; warranties and bonds.

1.03 PROJECT COORDINATION

A. Project coordination shall be the responsibility of the General Contractor.
B. Allocate mobilization areas of site for field offices and sheds, for delivery access, traffic, and parking facilities, and coordinate with the Site Contractor.
C. During construction, coordinate the use of site and facilities.
D. Create procedures consistent with the Contract Documents for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
E. Provide temporary utilities and construction facilities.

F. Coordinate field engineering and layout work..

G. Make the following types of submittals to Architect:
   1. Requests for Interpretation.
   2. Requests for substitution.
   3. Shop drawings, product data, and samples.
   4. Test and inspection reports.
   5. Design data.
   6. Manufacturer's instructions and field reports.
   7. Applications for payment and change order requests.
   8. Progress schedules.
   9. Coordination drawings.
   10. Correction Punch List and Final Correction Punch List for Substantial Completion.
   11. Closeout submittals.

1.04 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.
   1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
   2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
   3. Make adequate provisions to accommodate items scheduled for later installation.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
   1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
   1. Preparation of Contractor's construction schedule.
   2. Preparation of the schedule of values.
   3. Installation and removal of temporary facilities and controls.
   4. Delivery and processing of submittals.
   5. Progress meetings.
   6. Preinstallation conferences.
   7. Project closeout activities.
   8. Startup and adjustment of systems.

PART 2 PRODUCTS - NOT USED

PART 3 - NOT USED

PART 4 EXECUTION

3.01 WEB-BASED PROJECT SOFTWARE SERVICE

A. Web-Based Project Software Service is required: Provide, administer, and use web-based project software to host and manage project communication and documentation.
   1. Include, at minimum, the following features:
      a. Project directory, including Owner, Contractor, subcontractors, Architect, Architect's consultants, and other entities involved in the project. Include names of contact persons and contact information for each entity.

b. Access control for each entity and for each workflow process to determine each entity's digital rights to create, modify, view, and print documents.
c. Workflow planning, allowing customization of workflow for each project entity.
d. Creation, logging, tracking, and notification for project communications.
e. Tracking of project communication statuses in real time, including timestamped response log.
f. Procedures for viewing PDFs or similar file formats, allowing markups by each entity. Provide security features to lock markups against changes once submitted.
g. Processing and tracking of payment applications.
h. Processing and tracking of contract modifications.
i. Creation and distribution of meeting minutes.
j. Document management for drawings, specifications, and coordination drawings, including revision control.
k. Management of construction progress photographs.
l. Mobile device compatibility.
m. Creation of data analytics reports.
n. Creation and export of editable logs for software functions. Provide Owner, Architect, and Architect's consultants with rights and ability to download logs when requested.

2. Provide up to 20 user licenses for use by Owner, Architect, Architect's consultants, and other entities involved in the project.
3. Comply with the software service's current published licensing agreements.
4. Training: Provide one-hour, web-based training session for users of software service. Further training is the responsibility of the user.
   a. Representatives of Owner are scheduled and included in this training.
5. Project Closeout: Architect determines when to terminate the software service for the project and is responsible for obtaining archive copies of files for Owner.
6. Cost: The cost of the service is to be paid by Contractor; include the cost of the service in the Contract Sum.
7. Project Closeout: Architect will determine when to terminate the service for the Project. The Contractor is responsible for obtaining archive copies of files for Owner and Architect.
8. Set up submittals so that the Architect and Engineers have the option to select “No Exceptions Taken”, “Revise and Resubmit Record Copy”, “Revise and Resubmit for Further Review” or “Rejected” or “See Comments, Resubmission Not Required”
9.

3.02 SUBCONTRACT LIST

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
   1. Name, address, and telephone number of entity performing subcontract or supplying products.
   2. Number and title of related Specification Section(s) covered by subcontract.
   3. Drawing number and detail references, as appropriate, covered by subcontract.

3.03 PRECONSTRUCTION CONFERENCE

A. The Contractor shall conduct an Authority Having Jurisdiction (AHJ) informational meeting at the Project site or other convenient location after the Notice to Proceed and prior to commencement of construction activities. The Owner, Architect, Owner’s Representative, Contractor, and his Site Supervisor shall each be represented at the meeting. The agenda is to review the construction logistics and provide a forum to review the AHJ process and concerns. The Town planner, code enforcement officer, fire department, police department, and other agencies will be present. The Contractor shall record the minutes of this meeting. The minutes shall be distributed promptly to the Owner and Architect.

B. Project Coordinator will schedule a Pre-Construction meeting after Notice of Award.

C. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

D. Agenda:
   1. Introductions of attendees and their Project duties.
   2. Execution of Owner-Contractor Agreement.
   3. Submission of executed bonds and insurance certificates.
   4. Distribution of Contract Documents.
   5. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
   6. Designation of personnel representing the parties to Contractor, Owner, State, and Architect.
   7. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
   8. Scheduling / Phasing
   9. Critical work sequencing and long-lead items.
   10. Designation of key personnel and their duties.
   11. Procedures for processing field decisions and Change Orders.
   12. Procedures for RFIs.
   13. Procedures for testing and inspecting.
   14. Procedures for processing Applications for Payment.
   15. Distribution of the Contract Documents.
   16. Submittal procedures.
   17. Preparation of record documents.
   18. Use of the premises and existing buildings.
   19. Work restrictions.
   20. Working hours.
   21. Owner's requirements.
   22. Responsibility for temporary facilities and controls.
   23. Temporary utilities provided by Owner.
   24. Survey and building layout.
   25. Security and housekeeping procedures.
   26. Scope and procedures for testing and inspections. Review of Statement of Special Inspections and Testing Agency duties.
   27. Requirements for start-up of equipment.
   28. Inspection and acceptance of equipment put into service during construction period.
   29. Procedures for moisture and mold control.
   30. Procedures for disruptions and shutdowns.
   31. Construction waste management and recycling.
   32. Parking availability.
   33. Office, work, and storage areas.
   34. Equipment/material deliveries and priorities.
   35. First aid.
   36. Security.
   37. Progress cleaning.

E. Contractor shall record minutes and distribute copies within two days after meeting to participants, digitally to Architect, Owner, participants, and those affected by decisions made.

3.04 JOB MEETINGS

A. The Contractor shall conduct regular job meetings twice per month, at such time as is mutually acceptable to the Owner, Architect, and Contractor. Coordinate with the Site Contractor (engaged under previous Bid) to allow them to attend the General Contractor's Job Meetings. The Contractor shall make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

B. Attendance Required:
   1. Contractor.
   2. Owner
   3. Clerk
   4. Architect & Consulting Engineers
   5. Contractor's superintendent.
   6. Major subcontractors.

C. Agenda:
   1. Review minutes of previous meetings.
   2. Review of work progress.
   3. Field observations, problems, and decisions.
   4. Identification of problems that impede, or will impede, planned progress.
   5. Review of submittals schedule and status of submittals.
   6. Maintenance of progress schedule.
   7. Corrective measures to regain projected schedules.
   8. Planned progress during succeeding work period.
   9. Maintenance of quality and work standards.
   10. Review of testing and inspection reports.
   11. Effect of proposed changes on progress schedule and coordination.
   12. Other business relating to work.

D. Contractor shall record minutes and distribute copies within two days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

E. The Contractor shall conduct an Authority Having Jurisdiction (AHJ) informational meeting at the Project site or other convenient location after the Notice to Proceed and prior to commencement of construction activities. The Owner, Architect, Owner's Representative, Contractor, and his Site Supervisor shall each be represented at the meeting. The agenda is to review the construction logistics and provide a forum to review the AHJ process and concerns. The Town planner, code enforcement officer, fire department, police department, and other agencies will be present. The Contractor shall record the minutes of this meeting. The minutes shall be distributed promptly to the Owner and Architect.

F. Pre-Installation Meetings: The Contractor shall conduct pre-installation meetings before each major construction activity that requires coordination is begun. Attendees may include the Contractor, Site Supervisor, Owner's Representative, Architect, Installers, Manufacturer's representatives, and fabricators. Refer to individual Specification Sections for required pre-installation meetings. Review progress of other construction activities and preparation for the particular activity under consideration.

G. Coordination Meetings: The Contractor shall conduct coordination meetings at regularly scheduled times convenient to all parties. All major subcontractors shall be represented and other trades or subcontractors as required for coordination, planning and scheduling construction activities. The Contractor shall bring any significant issues to the next Job Meeting.

3.05 CONSTRUCTION REPORTS

A. The Contractor's superintendent shall maintain an on-site daily construction log, recording the following information concerning events at the site and allow access to the Owner and Architect for review.
   1. List of subcontractors at the site.
   2. Approximate count of personnel at the site.
   3. Visitors at the site.
   4. High and low temperatures, general weather conditions.
   5. Accidents and unusual events.
   6. Meetings held at the site.
   7. Communications received or conveyed by the superintendent.
   8. Stoppages, delays, shortage, losses.
   9. Meter readings and similar recordings.
   10. Emergency procedures.
   11. Orders and requests of governing authorities.
   12. Testing agency observations and tests.
   13. Change orders received and implemented.
   14. Services connected, disconnected.
   15. Significant deliveries.
   16. Equipment or system tests and start-ups.
   17. Partial completions, occupancies.
   18. Substantial Completions authorized.

3.06 REQUESTS FOR INFORMATION

A. Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified. All RFIs shall be submitted to the Architect through the Contractor.

B. Content of the RFI shall include the Project name and number, date, name of Contractor, RFI number, assigned sequentially, RFI subject, Specification Section number and paragraph number, as applicable, Drawing and detail number as applicable, field dimensions and conditions as applicable, Contractor's suggested resolution and any impact on time or cost, Contractor's signature. Attach any sketches, descriptions, photos or other information relevant to fully describe items needing interpretation.

C. RFI form shall be soft-ware generated including the above information and acceptable to the Architect.

D. Architect's Action: Architect will review each RFI, determine action required and respond. Allow 6 working days for Architect's response to each RFI. Architect's action may include a request for additional information. If the Contractor believes the RFI response warrants a change in Contract Time or the Contract Sum, notify the Architect in writing within 10 days of receipt of the RFI response.

E. RFI Log: Prepare, maintain and submit an RFI log organized by RFI number. Submit log weekly. Include date RFI was submitted and date of Architect's response.

F. On receipt of Architect's action, update RFI log and distribute response to affected parties. Notify Architect within 7 days if Contractor disagrees with response.

3.07 CONSTRUCTION PROGRESS SCHEDULE

A. See Section 01 32 00 for construction progress documentation requirements.

B. Within 14 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of work, with a general outline for remainder of work.

C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review. All significant construction activities shall be represented. Time duration

shall be in weekly increments. If work is planned in phases, provide scheduling for each phase. Schedules shall be coordinated with Owner's on-going occupancy, as applicable.

D. Time Frame: Schedule shall extend from date established for the Notice to Proceed to the date of Final Completion. Contract completion date shall not be changed unless specifically authorized by Change Order.

E. Activities: Define activities so no activity is longer than 20 days, unless allowed by the Architect. Include procurement process activities for long lead items and major items. Include review and submittal time. Include not less than 30 days for start-up and testing. Include key milestones for commissioning activities such as documentation, time and duration of testing. Indicate date of Substantial Completion and allow time for Architect's activities necessary for certification of Substantial Completion. Include time indicated in Form of Agreement for completion of punchlist items and final completion. If not indicated, include not more than 60 days.

F. Include constraints and work restriction indicated in the Contractor Documents and show how the sequence of Work is affected, including phasing, work under multiple contracts, work by Owner, coordinating with existing construction, uninterruptible services, premises use restrictions, and other work restrictions.

G. Include important stages of construction and milestones including, but not limited to, Notice to Proceed, Completion of each phase, if applicable, Substantial Completion and Final Completion.

H. Gantt-Chart Schedule: Submit a comprehensive fully developed horizontal Gantt-chart type Contractor's Critical Path Method Construction Schedule within 21 days of date established for the Notice of Award. Base schedule on the Preliminary Construction Schedule and whatever updating and feedback was received since the start of the Project. Identify the critical path items within the schedule.

I. Submit updated schedule with each Application for Payment.

3.08 CONTRACTOR'S SCHEDULE OF MATERIALS

A. Within twenty-one (21) days after date established for the Commencement of the Work, prepare and submit to the Architect a projected schedule for materials delivery, clearly identifying all products with long lead times or which are likely to cause delay due to unavailability, extended delivery dates or any other reason. Once approved, long lead times shall be pre-ordered in a timely manner as not to delay the progress of the Work. The Contractor shall assume full responsibility for delays attributed to unavailability, insufficient time for delivery and/or installation of materials or performance of the Work, unless he has conformed with these instructions.

3.09 CONTRACTOR'S SUBMITTAL SCHEDULE

A. Within ten (10) days after development and acceptance of the Contractor's Construction Schedule, prepare and submit to the Architect a complete schedule of submittals. Coordinate schedule with subcontractors and provide adequate time for review, processing and the possibility of non-acceptance and resubmission. No extension of Contract Time will be authorized because of failure to transmit submittals to the Architect sufficiently in advance of ordering materials or performance of the Work to permit processing. Update schedule as necessary.

3.10 PROGRESS PHOTOGRAPHS

A. Submit a minimum of 20 digital photographs with each application for payment, taken not more than 7 days prior to submission of Application For Payment.
   1. Identify project name, date, description of view and key plan of location if needed.

B. Maintain one set of all photographs at Project site for reference; same copies as submitted, identified as such.

C. Select locations to provide diversified overall views of the Work, from positions that are expected to remain accessible throughout the progress of the Work. When so directed by the Architect, change locations to new locations inside or outside the building.

D. Provide auxiliary lighting as required to produce clear, well lit photographs without obscuring shadows. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion

E. Provide photographs of site and construction throughout progress of work produced by an experienced photographer, acceptable to Architect.

F. In addition to periodic, recurring views, take photographs of each of the following events:
   1. Completion of site clearing.
   2. Excavations in progress.
   3. Foundations in progress and upon completion.
   4. Structural framing in progress and upon completion.
   5. Enclosure of building, upon completion.

G. Digital Photographs: color, minimum resolution of 1280 by 960 ("1 megapixel"), in JPG format; provide files unaltered by photo editing software.
   1. Delivery Medium: On-line file share hosted by the Contractor (using the web based project software)
   2. File Naming: Include project identification, date and time of view, and view identification.

3.11 SHOP DRAWINGS

A. Shop Drawings: Shop drawings include fabrication and installation drawings, coordination drawings, setting diagrams, schedules, patterns, templates, and similar drawings specially prepared for the Work by the Contractor, subcontractors, manufacturers, fabricators, suppliers or distributors to illustrate some portion of the Work.
   1. Shop drawings shall show the design, dimensions, connections, and other details necessary to ensure the accurate interpretation of the Contract Documents and shall show adjoining Work in such detail as required to provide for proper connection to same. Where adjoining Work requires shop drawings, they shall be submitted concurrently for a coordinated review.
   2. Submit information specifically prepared for this Project, drawn to accurate scale. Do not reproduce Construction Documents or copy standard information as the basis for shop drawings. Standard information prepared without specific reference to the Project is not considered a shop drawing. Clearly and specifically indicate deviations from the Contract Documents.
   3. In addition to the above, include the following information:
      a. Dimensions and notation of dimensions established by field measurements.
      b. Identification of products and materials included.
      c. Compliance with specified standards.
      d. Notation of coordination requirements and specific procedures.
      e. Utility connections for equipment.
      f. Identification of any change, variance or non-conformance with requirements of Contract Documents. Indicate with a "cloud" and provide detailed notation including reason for each change. Include completed "Contractor's Substitution Request" (See Section 01 60 00).
      g. Indication on the shop drawings by the Contractor that he has reviewed, coordinated (checked for dimension, quantity, relationship with work of all trades involved and is in accordance with the Contract requirements), and approved the Shop Drawing for submittal to the Architect.
   4. By approving and submitting Shop Drawings, Product Data, Samples and similar materials, the Contractor represents to the Owner and Architect that the Contractor has determined and verified materials, dimensions, quantities, field dimensions, relations to existing work, coordination with work to be installed later, coordination with information on

previously reviewed Shop Drawings, Product Data, or Samples and verification of compliance with all of the requirements of the Contract Documents. The completeness and accuracy of all such information is the responsibility of the Contractor. In reviewing Shop Drawings, Product Data, and Samples, the Architect and Owner shall be entitled to rely upon the Contractor's representation that such information is complete, accurate and correct

5. The Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's review of Shop Drawings, Product Data, Samples, or similar materials unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and the Architect has given written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in the Shop Drawings, Product Data, Samples, or similar materials by the Architect's review thereof.
6. The Contractor shall be allowed one (1) submission, plus one (1) revision to obtain the Architect's review and acceptance of Shop Drawings, Product Data, Samples or similar materials. Incorrect, incomplete or otherwise unacceptable submissions, that require additional submittals shall be reviewed by the Architect subject to back-charges to the Contractor for the cost of the Architect's related services.
7. Electronic Media: See Section 01 00 30 - Electronic Media, for information regarding obtaining electronic documents and their limited use for purposes of project coordination and the Contractor's use in the preparation of submittals.
    a. Unless express written permission of the Architect is granted, electronic documents provided by the Architect and his consultants, shall not be used by the Contractor, or any of his subcontractors of any tier or any materials supplier or vendor as a shop drawing or any other type of submittal or as the basis for preparing such shop drawing or submittal, with the sole exception to this prohibition being that electronic documents may be used as backgrounds upon which to prepare shop drawings or other submittals.

3.12 COORDINATION DRAWINGS

A. Coordination Drawings are a special type of shop drawing prepared by various trades to show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or to function as intended.
    1. The Contractor shall arrange coordination meetings and require attendance of each (major) subcontractor in order to establish priorities for systems installation, to establish systems installation sequences, to determine and resolve potential conflicts, and to ensure that each trade has coordinated its work with the others and will honor commitments to other disciplines.
    2. Where potential conflicts cannot be resolved without input from, or review by, the Architect, the Contractor shall request said input/review, in writing, and provide all sketches, details, part plans, etc. necessary to convey fully the essence of the situation and/or potential conflict. The Contractor and all appropriate subcontractors shall make themselves available to meet with the Architect as required to resolve the issue(s) in question.
    3. Coordination Drawings shall be required for all building structure, ductwork, lighting, electrical, and piping systems (including but not limited to Plumbing, Heating, Drainage, Sprinklers, Ventilation, Gymnasium Equipment, Conduits, Communications cabling, Lighting, and associated hangers or supports).
    4. Coordination Drawings shall be drafted in a CAD based 3D software.
    5. Coordination of the installation of building structure, ductwork, lighting, electrical, and piping systems is the responsibility of the general contractor and the sub-contractors. Relocation of ducts, sprinklers, and piping to allow for easier installation of various systems, simpler configurations than depicted upon the drawings, or construction sequencing shall not be deemed a reason for a Change Order. Such modifications by

one trade shall not negatively impact another trade. If modifications made for these reasons cause added costs by another trade, the contractor requesting the modifications shall bear the added costs.

6. Coordination Drawings shall assume that the ceiling heights listed are to be maintained and cannot assume that lower ceiling heights will be allowed without express written permission from the Architect. Reducing ceiling heights will not allowed for easier installation of various systems, simpler configurations than depicted upon the drawings, or construction sequencing.
7. Installation of ductwork, lighting, electrical, and piping systems (including but not limited to Plumbing, Heating, Drainage, Sprinklers, Ventilation, Conduits, Communications cabling, Lighting, and associated hangers or supports) shall not progress until Coordination Drawings are complete. Payments for work in place may be withheld until Coordination Drawings are complete, verifying that the work may remain in place without issue.
8. It shall be the responsibility of each Filed Sub Bidder or Sub Contractor to provide CAD based 3D drawings of their trades (for items listed) for use in the Coordination drawings. The General Contractor shall combine each drawing into a single CAD based 3D drawing for coordination purposes as described herein.

3.13 REQUESTS FOR INTERPRETATION (RFI)

A. Definition: A request seeking one of the following:
   1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
   2. A resolution to an issue which has arisen due to field conditions and affects design intent.

B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.

C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
   1. Prepare a separate RFI for each specific item.
      a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
      b. Do not forward requests which solely require internal coordination between subcontractors.
   2. Prepare in a format and with content acceptable to Owner.
      a. Use AIA G716 - Request for Information .
   3. Prepare using software provided by the Electronic Document Submittal Service.

D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
   1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
   2. Unacceptable Uses for RFIs: Do not use RFIs to request the following::
      a. Approval of submittals (use procedures specified elsewhere in this section).
      b. Approval of substitutions (see Section - 01 60 00 - Product Requirements)
      c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
      d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
   3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.

4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.
    a. The Owner reserves the right to assess the Contractor for the costs (on time-and-materials basis) incurred by the Architect, and any of its consultants, due to processing of such RFIs.

E. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
1. Official Project name and number, and any additional required identifiers established in Contract Documents.
2. Owner's, Architect's, and Contractor's names.
3. Discrete and consecutive RFI number, and descriptive subject/title.
4. Issue date, and requested reply date.
5. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
6. Annotations: Field dimensions and/or description of conditions which have engendered the request.
7. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.

F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.

G. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.
1. Indicate current status of every RFI. Update log promptly and on a regular basis.
2. Note dates of when each request is made, and when a response is received.
3. Highlight items requiring priority or expedited response.
4. Highlight items for which a timely response has not been received to date.
5. Identify and include improper or frivolous RFIs.

H. Review Time: Architect will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.
1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.

I. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
3. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
4. Notify Architect within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

5. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."
    a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within ten (10) days of receipt of the RFI response.

3.14 SUBMITTAL SCHEDULE

A. Submit to Architect for review a schedule for submittals in tabular format.
    1. Submit at the same time as the preliminary schedule
    2. Coordinate with Contractor's construction schedule and schedule of values.
    3. Format schedule to allow tracking of status of submittals throughout duration of construction.
    4. Arrange information to include scheduled date for initial submittal, specification number and title, submittal category (for review or for information), description of item of work covered, and role and name of subcontractor.
    5. Account for time required for preparation, review, manufacturing, fabrication and delivery when establishing submittal delivery and review deadline dates.
        a. For assemblies, equipment, systems comprised of multiple components and/or requiring detailed coordination with other work, allow for additional time to make corrections or revisions to initial submittals, and time for their review.

3.15 APPROVAL DRAWINGS

A. Whenever the Contractor or subcontractor is required to submit Shop Drawings and/or Product Data to the Authority Having Jurisdiction for review and approval of a particular component or system prior to starting on-site work, the Contractor shall submit to the Architect an electronic PDF file of the approved documents including the Authority Having Jurisdiction's stamp and approving signature. Submit as "For Information Only".

3.16 RECORD DRAWINGS

A. Record Drawings: See Section 01 78 00 - Project Close-out.

3.17 PRODUCT DATA

A. Compile Product Data into a single submittal for each element of construction or complete system. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, materials test reports, color charts, roughing-in diagrams, templates, and wiring diagrams. Mark each copy to show applicable choices and options.
    1. Identify any change, variance, or non-conformance with requirements of Contract Documents with a "cloud" and provide detailed notation including reason for each change. Provide a completed "Contractor's Substitution Request" (see Section 01 60 00).
    2. Include the following information, as applicable:
        a. Manufacturer's catalog cuts.
        b. Manufacturer's product specifications.
        c. Standard color charts.
        d. Statement of compliance with specified referenced standards.
        e. Testing by recognized testing agency.
        f. Application of testing agency labels and seals.
        g. Notation of coordination requirements.
        h. Availability and delivery time information.
    3. For equipment, include the following in addition to the above, as applicable:
        a. Wiring diagrams showing factory-installed wiring.
        b. Printed performance curves.
        c. Operational range diagrams.
        d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

3.18 CERTIFICATIONS

A. Certifications from manufacturers and/or installers required in individual Specification Sections shall be submitted with Product Data.
   1. In accordance with Supplementary General Conditions, prior to Substantial Completion, the Contractor shall submit a written certificate that no asbestos and/or other hazardous substances **including but not limited to mercury, lead based paint, and lead based primer** have been incorporated into the Work of this Project. **[Addendum #4]**
   2. Contractor's Asbestos/Hazardous Material Certification with the following language:
      a. I, _____ the undersigned representing (company), do hereby certify that the products furnished and/or fabricated and/or installed by my firm under contract with _____ at the _____ Project located in _____, do not contain asbestos and /or other hazardous materials **including but not limited to mercury, lead based paint, and lead based primer. [Addendum #4]**
      b. Provide signature, title and date.
      c. The form of certificate shall be submitted to the Architect for review prior to use.

3.19 DELEGATED-DESIGN SUBMITTALS

A. Where professional engineering services or certifications by a professional engineer are specifically required to be provided by the Contractor, provide products and systems complying with specific performance and design criteria indicated.
   1. If criteria indicated are not sufficient to perform services or certifications required, submit a written request for additional information to the Architect.
   2. In addition to Shop Drawings, Product Data, and other required submittals, submit a certification, signed and sealed by the responsible professional engineer, licensed in the State of the Project, for each product and system specifically assigned to the Contractor to be engineered or certified by a professional engineer, indicating that the products and systems are in compliance with performance and design criteria indicated. Include a list of codes, loads, and other factors used in performing these services.

3.20 SUBMITTALS FOR REVIEW

A. When the following are specified in individual Sections, submit for review:
   1. Product data.
   2. Shop drawings.
   3. Samples for selection.
   4. Samples for verification.

B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.

C. Samples will be reviewed for aesthetic, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 78 00 - Project Close-out.

E. The Contractor shall perform no portion of the Work requiring submittal and review of Shop Drawings, Product Data, Samples or similar materials until the respective submittal has been reviewed by the Architect. Such work shall be in accordance with reviewed submittals.

F. Shop Drawings, Product Data and Samples submitted to the Architect without the Contractor's signed stamp of approval thereon will be returned without action.

G. The Contractor shall also, upon delivery of submittals, provide written notice of any deviation in the Shop Drawings, Product Data or Samples from the requirements of the Contract Documents

H. The Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's review of Shop Drawings, Product Data, Samples, or similar materials unless the Contractor has specifically informed the Architect in writing of such

deviation at the time of submittal and the Architect has given written approval to the specific deviation. The Contractor shall not be relieved of responsibility for errors or omissions in the Shop Drawings, Product Data, Samples, or similar materials by the Architect's review thereof.

3.21 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual Sections, submit for information:
   1. Design data.
   2. Certificates.
   3. Test reports.
   4. Inspection reports.
   5. Manufacturer's instructions.
   6. Manufacturer's field reports.
   7. Other types indicated.

B. Submit for Architect's knowledge as contract administrator. No action will be taken.

3.22 SUBMITTALS FOR PROJECT CLOSEOUT

A. Submit Correction Punch List for Substantial Completion.

B. Submit Final Correction Punch List for Substantial Completion.

C. When the following are specified in individual Sections, submit them at project closeout:
   1. Project record documents.
   2. Operation and maintenance data.
   3. Warranties.
   4. Bonds.
   5. Other types as indicated.

D. Submit for Owner's benefit during and after project completion.

3.23 NUMBER OF COPIES OF SUBMITTALS

A. Documents for Review: Submittals to the Architect shall be electronic files in PDF format, unlocked, markable and reproducible; an electronically-marked up file will be returned. Create PDFs at native size and right-side up. Illegible files will be returned.

B. Samples: Confirm with the Architect the number of samples required for each submittal; one of which will be retained by Architect.
   1. After review, produce duplicates.
   2. Retained samples will not be returned to Contractor unless specifically so stated.

3.24 SAMPLES

A. Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

B. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.

C. Identification: Attach label on unexposed side of Samples that includes the following:
   1. Generic description of Sample.
   2. Product name and name of manufacturer.
   3. Sample source.
   4. Number and title of applicable Specification Section.

D. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.

E. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

1. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
2. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

F. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
1. Number of Samples: Submit one (1) full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

G. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
1. Number of Samples: Submit three (3) sets of Samples. Architect will retain two (2) Sample sets; remainder will be returned.
a. If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three (3) sets of paired units that show approximate limits of variations.

3.25 SHOP DRAWINGS

A. Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on Engineer’s digital data drawing files is otherwise permitted.

B. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
1. Identification of products.
2. Schedules.
3. Compliance with specified standards.
4. Notation of coordination requirements.
5. Notation of dimensions established by field measurement.
6. Relationship and attachment to adjoining construction clearly indicated.
7. Seal and signature of professional engineer if specified.

C. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm), but no larger than 30 by 42 inches (750 by 1067 mm).

D. Submit Shop Drawings in the following format:
1. PDF electronic file.

3.26 SUBMITTAL PROCEDURES

A. General Requirements:
1. Use a separate transmittal for each item.
2. Use a single transmittal for related items.
3. Submit separate packages of submittals for review and submittals for information, when included in the same specification section.
4. Transmit using approved form.
a. Use form generated by Electronic Document Submittal Service software.
5. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.
6. Name file with submittal number or other unique identifier, including revision identifier.

a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).

7. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
8. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
   a. Submittals from sources other than the Contractor, or without Contractor's stamp will not be acknowledged, reviewed, or returned.
9. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner, containing the following information:
   a. Project name.
   b. Date.
   c. Name and address of Engineer.
   d. Name of Construction Manager.
   e. Name of Contractor.
   f. Name of firm or entity that prepared submittal.
   g. Names of subcontractor, manufacturer, and supplier.
   h. Category and type of submittal.
   i. Submittal purpose and description.
   j. Specification Section number and title.
   k. Specification paragraph number or drawing designation and generic name for each of multiple items.
   l. Drawing number and detail references, as appropriate.
   m. Location(s) where product is to be installed, as appropriate.
   n. Related physical samples submitted directly.
   o. Indication of full or partial submittal.
   p. Transmittal number, numbered consecutively.
   q. Submittal and transmittal distribution record.
   r. Other necessary identification.
   s. Remarks.
10. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.
11. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
12. Schedule submittals to expedite the Project, and coordinate submission of related items.
    a. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
    b. For sequential reviews involving Architect's consultants, Owner, or another affected party, allow an additional 7 days.
    c. For sequential reviews involving approval from authorities having jurisdiction (AHJ), in addition to Architect's approval, allow an additional 30 days.
    d. Resubmittal Review: Allow fifteen (15) days for review of each resubmittal.
13. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
14. Options: Identify options requiring selection by Architect.

15. Deviations: Identify deviations from the Contract Documents on submittals.
16. Provide space for Contractor and Architect review stamps.
17. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
    a. Note date and content of previous submittal.
    b. Note date and content of revision in label or title block and clearly indicate extent of revision.
    c. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
    d. When revised for resubmission, identify all changes made since previous submission
18. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
19. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architects' action stamp.
20. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.
21. Submittals not requested will not be recognized or processed.
22. Submittals not requested will be recognized, and will be returned "Not Reviewed",

B. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
    1. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
    2. Provide a notarized statement on original paper copy certificates and certifications where indicated.

C. Product Data Procedures:
    1. Submit only information required by individual specification sections.
    2. Collect required information into a single submittal.
    3. Submit concurrently with related shop drawing submittal.
    4. Do not submit (Material) Safety Data Sheets for materials or products.
    5. Submit sustainable design reporting submittals under separate cover.

D. Shop Drawing Procedures:
    1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
    2. Do not reproduce Contract Documents to create shop drawings.
    3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.

E. Samples Procedures:
    1. Transmit related items together as single package.
    2. Identify each item to allow review for applicability in relation to shop drawings showing installation locations.
    3. Include with transmittal high-resolution image files of samples to facilitate electronic review and approval. Provide separate submittal page for each item image.

F. Transmit each submittal with an approved form.

G. Submittal form shall include identification information: Project name, Contractor, Subcontractor or supplier; product name, pertinent drawing and detail number, and specification section number, submittal category, date, and total number of pages in the submittal.

H. Contractor's Action and Certification: The Contractor shall review each submittal, check for compliance with the Contract Documents, note corrections, note field dimension, and complete a review stamp with the following information:
    1. Contractor stamp, signed or initialed certifying that the submittal conforms to requirements of the Contract Documents in accordance with all spec sections.; or, Submittal deviates

from requirements of the Contract Documents, with deviations clearly noted and marked with Contractor's initials; or, Contractor's substitution requested.

I. Deliver submittals to Architect [by electronic PDF only]. Submittals may only be sent directly to the Architect's consultants by special arrangement with the Architect. Subcontractors shall not directly send submittals to the Architect.
   1. Concurrently, deliver a copy of all submittals to the Owner's representative in the format required by the Owner.

J. Submittals of poor legibility may be returned without action.

K. Submittals not including a completed Contractor's Certification as described in this section will be returned without action.

L. Submittals certified as in conformance by the Contractor and found to deviate from requirements of the Contract Documents will be returned without action.

M. The Contractor may require sub-contractors to submit similar certification, however this shall not in any way relieve the Contractor of responsibility for review and certification of all submittals.

N. All notations made on submittals by the Contractor, sub-contractors, suppliers, or fabricators shall be made in bold line type and initialed by person making the notations. Clearly indicate specified items with a "cloud" or arrows. Cross out all extraneous information not intended as part of the submission. Do NOT use highlighter or colored markings, only arrows, circles, text and the like that can be copied in black and white shall be allowed.

O. Provide a detailed notation of all deviations from the Contract Document requirements including minor variations and limitations, and the reason for each deviation. Include a Contractor's Substitution Request.

P. Contractor's Substitution Request: All requests for substitutions shall be submitted on the form included at the end of Section 01 60 00 - Product Requirements.

Q. Schedule submittals to expedite the Project, and coordinate submission of related items.

R. For each submittal for review, allow 15 business days excluding delivery time to and from the Contractor.

S. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.

T. Provide space for Contractor and Architect review stamps.

U. When revised for resubmission, identify all changes made since previous submission.

V. Submittals not requested will not be recognized or processed and will be removed from submission prior to review response.

W. Do not order materials or proceed with the Work requiring submission and review of Product Data, Shop Drawings, Samples or similar submittals prior to receiving acceptance of the submittal from the Architect.

X. The Contractor shall not use or take submittals on-site without the Architect's or the Architect's consultant's Submittal Stamp indicating acceptance. Submittals without this stamp or with a stamp indicating non-acceptance shall not be used in connection with construction.

3.27 ADDITIONAL SUBMITTAL PROCEDURES

A. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 01 40 00 "Quality Requirements."

B. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 01 78 00 " Project Closeout."

C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of engineers and owners, and other information specified.

D. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

E. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

F. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

G. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

H. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

I. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

J. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

K. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.

L. Schedule of Tests and Inspections: Comply with requirements specified in Section 01 40 00 "Quality Requirements."

M. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

N. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

O. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

P. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

3.28 CONTRACTOR'S CERTIFICATION

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Project Closeout and Maintenance Material Submittals: See requirements in Section 01 78 00 for Closeout Procedures

C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.29 ARCHITECT'S REVIEW

A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Architect will review each submittal and mark to indicate action taken.
   1. In general, the Architect will strive to complete his review of submittals and return them to the Contractor in 15 business days. Additional time may be required if large volumes of submittals are simultaneously delivered to the Architect for review.
   2. The Architect will not review submittals of colors and finishes until submittals for all such related materials are complete and delivered for collective review. This same requirement may be extended to other components and systems as deemed appropriate by the Architect.
   3. The Architect's review shall, among other limitations, not include the calculation, coordination, or verification of dimensions or quantities, which shall be the sole responsibility of the Contractor.
   4. Action Stamp: The Architect will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows to indicate the action taken:
      a. Final Unrestricted Release: Where submittals are marked "No Exceptions Taken", that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents.
      b. Final-but-Restricted Release: Where submittals are marked "Note Markings" or "Comments Attached" or "Revise and Resubmit Record Copy" or “Resubmittal not Required”, that part of the Work covered by the submittal may proceed provided it complies with markings / comments and requirements of the Contract Documents.
      c. Returned for Resubmittal: Where submittals are marked "Revise and Resubmit for Further Review", 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 as necessary to obtain a different action mark.
      d. Rejected: When the submittal is marked "Rejected", do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Do not resubmit that product.

B. Review of Submittals and Shop Drawings indicating or implying a different product than the specified product shall not be deemed an acceptable substitution request, unless the Contractor has specifically requested it and the Architect or Engineer clearly indicate acceptance (notes specifically accepting a substituted product) as part of the submittal review.

C. Other Action: Where a submittal is primarily for record purposes, the submittal will not be returned. Where a submittal cannot be reviewed due to lack of Contractor review or illegibility, for example, the submittal will be returned marked "Returned No Action".

END OF SECTION

SECTION 01 40 00
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. References and standards.

B. Quality assurance submittals.

C. Samples, Mock-ups and Sample Field Installations.

D. Control of installation.

E. Tolerances.

F. Testing and inspection services.

G. Manufacturers' field services.

1.02 RELATED REQUIREMENTS

A. Document 00 72 00 - General Conditions

B. Section 01 00 00 - General Requirements.

C. Section 01 30 00 - Administrative Requirements: Submittal procedures.

D. Section 01 60 00 - Product Requirements: Requirements for material and product quality.

1.03 REFERENCE STANDARDS

A. ASTM C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants; 2008 (Reapproved 2023).

B. ASTM C1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation; 2017.

C. ASTM E329 - Standard Specification for Agencies Engaged Construction Inspection and/or Testing; 2021.

D. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing; 2021.

E. IAS AC89 – Accreditation Criteria for Testing Laboratories; 2021.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Contractor's Testing Agency Qualifications:
   1. Prior to start of Work, submit agency name, address, and telephone number, and names of full-time registered Engineer and responsible officer.

C. Contractor's Test Reports: After each test/inspection, promptly submit one copy of reports to Architect, Engineer, Building Official and to Owner. Information required on Test Reports shall be as identified herein for the Owner's Testing Agency.
   1. Include:
      a. Date issued.
      b. Project title and number.
      c. Name of inspector.
      d. Date and time of sampling or inspection.
      e. Identification of product and specifications section.
      f. Location in the Project.
      g. Type of test/inspection.
      h. Date of test/inspection.
      i. Results of test/inspection.
      j. Conformance with Contract Documents.
      k. When requested by Architect, provide interpretation of results.

C. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
   1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
   2. Certificates may be recent or previous test results on material or product but must be acceptable to Architect.

D. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

E. Manufacturer's Field Reports: Submit reports within 10 days of observation to Architect and Owner for their information.

F. Erection Drawings: Submit drawings to the Architect and Owner for their information.
   1. Submit for information for the sole and limited purpose of generally assessing conformance with the design intent expressed in the Contract Documents.
   2. Data indicating inappropriate or unacceptable Work may be subject to action by Architect or Owner.

1.05 REFERENCES AND STANDARDS

A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.

C. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.

1.06 TESTING AND INSPECTION AGENCIES

A. Quality control services include inspections, 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.

B. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve the Contractor of responsibility for compliance with Contract Document requirements.

C. 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.

D. Inspections, tests and related actions specified are not intended to limit the Contractor's quality control procedures that facilitate compliance with Contract Document requirements.

E. Requirements for the Contractor to provide quality control services as directed by the Architect, Owner, or authorities having jurisdiction are not limited by the provisions of this Section.

F. The Owner will employ and pay for services of an independent testing and inspection agency(s) to perform certain other specified testing and inspection. See paragraph TESTING AND INSPECTIONS.

G. Contractor shall employ and pay for services of an independent testing agency to perform other specified testing and inspection. See paragraph TESTING AND INSPECTIONS.

H. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

I. Testing and Inspection Agencies Quality Assurance:

1. Testing agency: Comply with requirements of ASTM E 329, ASTM E 543, ASTM C 1021, ASTM C 1077, ASTM C 1093, and ASTM D 3740.
2. Inspection agency: Comply with requirements of ASTM D3740 and ASTM E329.
3. Laboratory: Authorized to operate in the State in which the Project is located.
4. Laboratory Staff: Maintain a full-time registered Engineer on staff to review services.
5. Testing Equipment: Calibrated at reasonable intervals either by NIST or using an NIST established Measurement Assurance Program, under a laboratory measurement quality assurance program.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply with manufacturers' instructions, including each step-in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Have Work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on Shop Drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 SAMPLES, MOCK-UPS AND SAMPLE FIELD INSTALLATIONS

A. Before installing portions of the Work where mock-ups are required, construct mock-ups in location and size indicated for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work. The purpose of mock-up is to demonstrate the proposed range of aesthetic effects and workmanship.

B. See drawing A9.3 for a mock-up to be constructed prior to beginning exterior envelope construction and prior to purchasing materials that have color selections to be made. Some materials may require additional mock-ups not included in this drawing – see specifications.

1. Review the mock-up in stages with the Architect and the Exterior Building Envelop Commissioning Agent. At a minimum, the mock up should be reviewed at periods that allow for review of installation of the vapor barrier, flashings, window, parapet, insulation, and masonry.
2. In addition to the mock-up shown on A9.3, the Contractor shall review flashings and insulation installation at structural relieving angles as shown on detail D7/A3.10. Schedule the Architect and the Exterior Building Envelop Commissioning Agent to review this condition in the field at the time of installation of the first location of this condition, giving time for the review before installing other areas of similar conditions.

B. Accepted mock-ups establish the standard of quality the Architect will use to judge the Work.

C. Provide supervisory personnel who will oversee mock-up construction. Provide workers that will be employed during the construction of the Project, including the onsite supervisor of each trade.

D. Tests shall be performed under provisions identified in this Section and identified in the respective product Specification Sections.

E. Assemble and erect specified items at full scale, with specified attachment and anchorage devices, flashings, seals, and finishes.

F. Obtain Architect's approval of mock-ups before starting work, fabrication, or construction.
   1. Architect will issue written comments within seven (7) working days of initial review and each subsequent follow up review of each mock-up.

G. The purpose of mock-ups and sample field installations shall be to clearly establish standards of quality for the Work prior to proceeding with the Work itself. They shall be constructed in sizes, locations and quantities as directed by the Architect.

H. All samples, mock-ups and sample field installations accepted by Architect shall be preserved until the Work itself has been completed and accepted by the Architect. The alteration, destruction or removal of mock-ups and sample installations shall not commence without the Architect's prior authorization.

I. The Contractor and/or his subcontractors shall construct or prepare all samples, mock-ups and sample field installations as required in individual Specification Sections or as directed by the Architect.

J. Sample field installations are full sized, fully fabricated, cured, and finished built in-place assemblies that maybe permanent if acceptable to the Architect.

K. Samples shall be clearly marked with the manufacturer's name, generic description of the sample and compliance with required standards. 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.

L. All costs related to providing, maintaining and removing required samples, mock-ups and sample field installations shall be paid by the Contractor.

3.03 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

3.04 TESTING AND INSPECTION

A. See individual Specification Sections for testing and inspections required.

B. Testing Agency Duties and Responsibilities:
   1. Test samples of mixes submitted by Contractor.
   2. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
   3. Perform specified sampling and testing of products in accordance with specified standards.
   4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
   5. Promptly notify (within 24 hours) Owner, Architect and Contractor of observed irregularities or non-conformance of Work or products during performance of its services.
   6. Perform additional tests and inspections required by Architect.
   7. Verify samples submitted by Contractor comply with the referenced standards and the approved contract documents.
   8. Attend preconstruction meetings and progress meetings, as requested.
   9. Submit written reports of all tests, inspections or other services to the AHJ, Architect, Structural Engineer of Record, Owner and Contractor. Reports indicating compliant inspections shall be submitted within three (3) days. Reports shall include:
      a. Date of issue.
      b. Project name and number.
      c. Name, address, and telephone number of testing agency.

d. Dates and locations of samples and tests or inspections.
e. Names of individuals making tests or inspections.
f. Designation of the Work and test method.
g. Identification of product and Specification Section.
h. Complete inspection or test data.
i. Test results and interpretations of test results.
j. Ambient conditions at time of sample taking, testing, or inspection.
k. Comments or professional opinion regarding whether inspected or tested Work complies with the Contract Documents.
l. Recommendations for re-testing.
m. Name and signature of laboratory inspector.

8. The Testing Agency shall maintain a complete deficiency list of all items not corrected and shall re-test and/or re-inspect as required after each deficiency has been corrected. All such re-testing and re-inspection shall be at the Contractor's expense. The Testing Agency shall submit a final signed report, stating whether or not all corrections have been made and the Work tested and inspected conforms to the Contract Documents.
9. Limits on Testing/Inspection Agency Authority:
   a. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
   b. Agency may not approve or accept any portion of the Work.
   c. Agency may not assume any duties of Contractor.
   d. Agency has no authority to stop the Work.

C. Owner Duties and Responsibilities:
1. The Owner will provide observations, inspections, tests and similar quality control services specified to be performed by independent agencies, except where they are specifically indicated as the Contractor's responsibility or are provided by another identified entity. The costs for Owner provided testing and inspection services shall be paid for by the Owner.
2. The Owner will employ directly an independent agency, testing laboratory, or other qualified firm to perform other testing that are the Owner's responsibility. See individual Specification Sections and Schedule of Specials Inspections for the scope of such inspections and tests.
3. Such other specified testing as indicated in individual Specification Sections, including but not limited to:
   a. Division 9: Concrete slab moisture, humidity and Ph testing.

D. Contractor's Testing and Inspections:
1. The Contractor shall provide inspections, tests and similar quality control services, specified in individual Specification Sections, except where they are specifically indicated to be the Owner's responsibility, or are provided by another identified entity. Costs for these services shall be included in the Contract Sum.
2. The Contractor shall employ and pay an independent testing agency to perform quality control services, including but not limited to inspections, sampling and tests required for determining the suitability of materials prior to delivery to the site and other services as specified in the Specification Sections.
   a. Where the Owner has engaged a testing agency or other entity for testing and inspection of a part of the Work and the Contractor is also required to engage an entity for the same or related element, the Contractor shall not employ the entity engaged by the Owner, unless otherwise agreed in writing with the Owner.
3. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
4. Cooperate with laboratory personnel and provide access to the Work and to manufacturers' facilities.
5. Provide incidental labor and facilities:
   a. To provide access to Work to be tested/inspected.

b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
c. To facilitate tests/inspections.
d. To provide storage and curing of test samples.

6. Scheduling: Notify Testing Agency, Special Inspector, Owner's Representative and, Architect sufficiently in advance of operations to allow for the proper assignment of personnel and scheduling of testing and inspections.
7. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
8. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

E. Re-testing:
1. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by the Architect.
2. Re-testing required because of non-conformance to specified requirements shall be paid for by Contractor.
3. The Contractor is responsible for re-testing where results of required inspections, tests or similar services prove unsatisfactory and do not indicate compliance with the Contract Document requirements, regardless of whether or not the original test was the Contractor's responsibility. Cost of re-testing construction revised or replaced by the Contractor is the Contractor's responsibility.
4. For each test which prove unsatisfactory and do not indicate compliance with the Contract Document requirements, the contractor shall pay for (3) new tests at (3) locations as determined to by the Architect and the Commissioning Agent. Corrections made to an area which was retested in order to pass shall be made to all areas of similar construction at the cost of the contactor.

3.05 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.

B. Report in writing, observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.06 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not conforming to specified requirements.

B. If, in the opinion of Architect, it is not practical to remove and replace the Work, Architect will direct an appropriate remedy or adjust payment.

END OF SECTION

SECTION 01 45 33
CODE-REQUIRED SPECIAL INSPECTIONS AND PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Code-required special inspections.

B. Submittals.

1.02 RELATED REQUIREMENTS

A. Section 01 40 00 - Quality Requirements: General requirements for testing and inspections and project testing and inspections other than Special Inspections.

1.03 DEFINITIONS

A. Code or Building Code: 2015 Edition of the International Building Code, Chapter 17 - Structural Tests and Inspections.

B. Authority Having Jurisdiction (AHJ): Agency or individuals officially empowered to enforce the building, fire and life safety code requirements of the permitting jurisdiction in which the Project is located.

C. Special Inspections:
   1. Special inspections are inspections and testing of materials, installation, fabrication, erection or placement of components and connections mandated by the building code and AHJ that also require special expertise to ensure compliance with the approved contract documents and the referenced standards.
   2. Special inspections are separate from and independent of tests and inspections conducted by Owner or Contractor for the purposes of quality assurance and contract administration.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Special Inspectors Qualifications: Prior to the start of work, proposed Special Inspectors shall submit their qualifications to the AHJ for review and acceptance.

C. Testing & Inspections Agency Qualifications: Prior to the start of work, the Testing & Inspections Agency shall submit the following to the AHJ, Architect, Structural Engineer of Record, Owner and Contractor:
   1. Agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
   2. Copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
   3. Documentation that Testing Agency is accredited by IAS according to IAS AC89.

D. Special Inspection Reports: After each special inspection, all Special Inspectors and Testing Agencies shall promptly submit copies of their report to Architect, Structural Engineer of Record, Owner, Contractor, and AHJ at intervals identified on the Statement of Special Inspections.
   1. Include:
      a. Date issued.
      b. Project title and number.
      c. Name of Special Inspector.
      d. Date and time of special inspection.
      e. ICC, AWS and ACI certification #s.
      f. Identification of product and Specifications Section.
      g. Location in the Project.
      h. Type of test or special inspection.

i. Date of test or special inspection.
j. Results of test or special inspection. Failing inspections and tests, as well as retests shall be clearly identified.
k. Compliance with Contract Documents.

2. Final Special Inspection Report: Each Special Inspector shall submit a Final Report upon the conclusion of each special inspection regime. Document special inspections and correction of failed testing and inspections, corrective action and successful re-tests in a final report to be submitted to the AHJ, Architect, Structural Engineer of Record, Contractor and Owner.
3. As required by the Building Code, the Architect as Registered Design Professional in Responsible Charge shall assemble all Final Reports submitted by the Special Inspectors, determine that all required test and inspection reports have been submitted, and submit a Project Final Report Summary to the AHJ, Owner and Contractor.

E. Fabricator Special Inspection Reports: After each special inspection of fabricated items at the Fabricator's facility, Special Inspector shall promptly submit copies of report to Architect, Structural Engineer of Record, Contractor, Owner and AHJ.
1. Include:
a. Date issued.
b. Project title and number.
c. Name of Special Inspector.
d. Date and time of special inspection.
e. Identification of fabricated item and specification section.
f. Location in the Project.
g. Results of special inspection.
h. Verification of fabrication and quality control procedures.
i. Compliance with Contract Documents.
j. Compliance with referenced standard(s).

F. Test Reports: After each test or inspection, promptly submit copies of report to Architect, Structural Engineer of Record, Contractor, Owner and AHJ.
1. Include:
a. Date issued.
b. Project title and number.
c. Name of inspector.
d. Date and time of sampling or inspection.
e. Identification of product and specifications section.
f. Location in the Project.
g. Type of test or inspection.
h. Date of test or inspection.
i. Results of test or inspection.
j. Compliance with Contract Documents.

1.05 TESTING AND INSPECTION AGENCIES

A. The Owner shall employ services of an independent testing and inspection agency and/or agencies to perform inspections and tests associated with Special Inspections required by the building code.
1. The Owner will employ services of an independent testing agency to perform certain other testing and inspections that are not Special Inspections as identified in Section 01 40 00.
2. The Contractor shall employ services of an independent testing agency(s) to perform certain other testing and inspections that are not Special Inspections as identified in Section 01 40 00.

B. Employment of agency(s) in no way relieves the Contractor of the obligation to perform the Work in accordance with requirements of the Contract Documents.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 SCHEDULE OF SPECIAL INSPECTIONS, GENERAL

A. Frequency of Special Inspections: Special Inspections are indicated as continuous, periodic, or aperiodic.
   1. Continuous Special Inspection: Approved individual of the Special Inspection agency shall be present in the area where the work is being performed and observe the work at all times the work is in progress.
   2. Periodic Special Inspection: Approved individual of the Special Inspection agency shall be present in the area where work is being performed and observe the work part-time or intermittently and at the completion of the work.
   3. Aperiodic Special Inspection: Approved individual of the Special Inspection agency shall be present in the area where work is being performed and observe the work irregularly scheduled as required or as needed.

3.02 TESTING AGENCY AND INSPECTORS DUTIES AND RESPONSIBILITIES

A. See Section 01 40 00 – Quality Requirements, for general duties and responsibilities of the testing agency and inspectors.

3.03 CONTRACTOR DUTIES AND RESPONSIBILITIES

A. See Section 01 40 00 – Quality Requirements, for the duties and responsibilities of the Contractor.

3.04 STATEMENT OF SPECIAL INSPECTIONS

A. See the appended Statement of Special Inspections following this Section, for the scope of building code and AHJ required testing and inspections for this Project.

END OF SECTION

SECTION 01 50 00
TEMPORARY FACILITIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary utilities.

B. Temporary telecommunications services.

C. Temporary sanitary facilities.

D. Temporary Controls: Barriers, enclosures, and fencing.

E. Security requirements.

F. Vehicular access and parking.

G. Waste removal facilities and services.

H. Project identification sign.

I. Field offices.

1.02 RELATED REQUIREMENTS

A. Section 01 00 00 - General Requirements.

B. Section 01 40 00 - Quality Requirements.

1.03 QUALITY ASSURANCE

A. Comply with NFPA 241 Building Construction and Demolition Operations, ANSI A10 Safety Requirements for Construction and Demolition, AGC and ASC industry recommendations, and other applicable standards.
   1. Temporary electrical service shall comply with NECA Temporary Electrical Facilities, NEMA, UL and NFPA 70 National Electric Code.

B. At the earliest time, when acceptable to the Owner, change over room use of temporary service to use of the permanent service.

C. Operate temporary service and facilities in a safe and efficient manner, taking necessary fire prevention measures.

1.04 TEMPORARY UTILITIES

A. Provide and pay for all drainage and stormwater, electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes for the scope of work defined by this bid package throughout all phases of construction.

B. Use trigger-operated nozzles for water hoses, to avoid waste of water.

1.05 TELEPHONE SERVICES

A. Provide, maintain, and pay for telephone service to any field office used by the General Contractor at time of Project mobilization through substantial completion. See section 1.14 below related to the Owner’s provided field office.

B. Telecommunications services shall include:
   1. Personal computer dedicated to project telecommunications, with necessary software and laser printer.
   2. Telephone Land Lines: One line, minimum; one handset per line.
   3. Internet Connections: Minimum of one; DSL modem or faster.
   4. Email: Account/address reserved for project use.

1.06 SECURITY

A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft until Substantial Completion.

B. Coordinate with Owner's security personnel.

1.11 VEHICULAR ACCESS AND PARKING

A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.

B. Coordinate access and haul routes with governing authorities and Owner.

C. Provide and maintain access to fire hydrants, free of obstructions.

D. Designated existing on-site roads may be used for construction traffic.

1.12 WASTE REMOVAL

A. See Section 01 74 19 - Waste Management, for additional requirements.

B. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

C. The General Contractor shall provide waste removal for the scope of work shown on these documents throughout all phases of construction.

D. Provide containers with lids. Remove trash from site periodically.

E. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

F. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.13 FIELD OFFICES

A. Temporary offices, if provided, and shall be removed when no longer required. The Contractor shall pay all costs in connection with the construction, servicing, maintenance, and removal of temporary offices.

B. Project meetings will take place in a designated room provided by the Owner. The General Contractor shall provide necessary equipment including audio and video equipment and digital screens to allow online/remote meeting access for the regular Construction Meetings. Online/remote meeting access shall be provided by the Contractor via Zoom, Teams, or similar platform.

1.15 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.

B. Clean and repair damage caused by installation or use of temporary work.

PART 2 PRODUCTS

2.01 PRODUCTS

A. Tarpaulins: Waterproof, fire-resistant, UL labeled, with flame spread rating of 15 or less.

B. Water: Potable water.

PART 3 EXECUTION

3.01 GENERAL

A. Review locations of temporary facilities, equipment, and storage with the Architect, and Owner, for the Owner's approval.

B. Use qualified personnel for the installation of temporary facilities. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.02 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Temporary Fire Protection: Until fire protection needs are supplied by permanent facilities, the Contractor shall provide and maintain in good operating condition temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses, and as recommended by representatives of the fire insurance company carrying insurance on the Work or by governing fire or building authorities. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations".
   1. Flammable products shall be properly stored in containers acceptable to fire officials.
   2. The area within the site limits shall be kept orderly and clean, and all combustible rubbish shall be promptly removed from the site.
   3. Fire extinguishers shall be located where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stair well.
   4. Maintain unobstructed access to fire extinguishers, temporary fire protection facilities, stairways, and other access routes for fighting fires.
   5. Smoking shall be strictly prohibited on the construction site.
   6. Provide supervision of welding operations, soldering operations, combustion type temporary heating units, and similar sources of fire ignition.

B. Barricades, Warning Signs and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed provide lighting, including flashing red or amber lights.

C. Environmental Protection: Provide protection, operate temporary facilities and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted, or that other undesirable effects might result. Minimize the use of tools and equipment that product excessive noise and restrict their use to hours that will minimize complaints from persons near the site.

D. Temporary Enclosures: Provide temporary enclosure for protection of construction in progress and completed, from exposure, foul weather, other construction operations, and similar activities.
   1. All cavities of masonry construction and masonry construction containing uncured mortar shall be covered during rainy conditions and at the end of a day's work.
   2. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilation and material drying or curing requirements to avoid dangerous conditions and effects. This protection shall provide adequate working areas during winter months, consistent with the approved construction schedule to permit the continuous progress of all work necessary to maintain an orderly and efficient sequence of construction operations.
   3. Install tarpaulins securely, with non-combustible wood framing and other materials. Close openings 25 sq. feet or less with plywood or similar materials.
   4. Close openings through floor or roof decks and horizontal surfaces with load-bearing temporary construction. Where temporary wood or plywood is used and exceeds 100 sq feet in area, use fire-retardant treated framing and plywood.

E. Protective Covering of the Work: The Contractor shall protect all finished surfaces, including the jambs and soffits of all openings used as passageways or through which materials are handled, against any possible damage resulting from the conduct of work by all trades.
   1. All finished surfaces, including factory-finished and job-finished items, shall be clean and not marred upon delivery of the building to the Owner. The Contractor shall, without extra compensation, refinish all spaces where such surfaces prove to have been inadequately protected and are damaged.
   2. Tight wood sheathing shall be laid under any materials that are stored on or moved over finished surfaces. Reinforced non-staining kraft building paper and plywood or planking

shall be laid over all types of finished floor surfaces in traffic areas before moving any material over these finished areas. Wheelbarrows, if used over such areas, shall have rubber-tired wheels.

3. Roof surfaces shall not be subjected to unnecessary traffic nor shall they be used for storage of material. Wherever such activity must take place in order to carry out the Work of the Contract, adequate protection shall be provided.
4. Prohibit traffic on grass and landscaped areas.

3.03 TERMINATION AND REMOVAL

A. Remove temporary facilities when the need has ended, or when replaced by authorized use of permanent facilities.

B. Materials and facilities that constitute temporary facilities are the property of the Contractor.

END OF SECTION

SECTION 01 57 21
INDOOR AIR QUALITY CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Construction procedures to promote adequate indoor air quality after construction.

B. Building flush-out after construction and before occupancy.

1.02 PROJECT GOALS

A. Dust and Airborne Particulates: Prevent deposition of dust and other particulates in HVAC ducts and equipment.
   1. Contractor shall bear the cost of cleaning required due to failure to protect ducts and equipment from construction dust.

B. Airborne Contaminants: Procedures and products have been specified to minimize indoor air pollutants.
   1. Furnish products meeting the specifications.
   2. Avoid construction practices that could result in contamination of installed products leading to indoor air pollution.

1.03 RELATED REQUIREMENTS

A. Section 01 40 00 - Quality Requirements

B. Section 01 91 13 – General Commissioning Requirements

C. Division 23 – Refer to Drawings

1.04 REFERENCE STANDARDS

A. ANSI/RESNET/ICC 380 - Standard for Testing Airtightness of Building, Dwelling Unit, and Sleeping Unit Enclosures; Airtightness of Heating and Cooling Air Distribution Systems; and Airflow of Mechanical Ventilation Systems; 2019.

B. ASHRAE Std 52.2 - Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size; 2017, with Addendum (2022).

C. ASHRAE Std 129 - Measuring Air-Change Effectiveness; 1997 (Reaffirmed 2002).

D. ASTM D5149 - Standard Test Method for Ozone in the Atmosphere: Continuous Measurement by Ethylene Chemiluminescence; 2002 (Reapproved 2016).

E. ASTM D5197 - Standard Test Method for Determination of Formaldehyde and Other Carbonyl Compounds in Air (Active Sampler Methodology); 2021.

F. ASTM E779 - Standard Test Method for Determining Air Leakage Rate by Fan Pressurization; 2019.

G. ASTM E1186 - Standard Practices for Air Leakage Site Detection in Building Envelopes and Air Barrier Systems; 2017.

H. ASTM E1827 - Standard Test Methods for Determining Airtightness of Buildings Using an Orifice Blower Door; 2022.

I. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.2; 2017.

J. EPA 600/4-90/010 - Compendium of Methods for the Determination of Air Pollutants in Indoor Air; 1990.

K. EPA 625/R-96/010b - Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air; 1999, with Addendum (2000).

L. SMACNA (OCC) - IAQ Guidelines for Occupied Buildings Under Construction; 2007.

1.05 DEFINITIONS

A. Adsorptive Materials: Gypsum board, acoustical ceiling tile and panels, carpet and carpet tile, fabrics, fibrous insulation, and other similar products.

B. Contaminants: Gases, vapors, regulated pollutants, airborne mold and mildew, and the like, as specified.

C. Particulates: Dust, dirt, and other airborne solid matter.

D. Wet Work: Concrete, plaster, coatings, and other products that emit water vapor or volatile organic compounds during installation, drying, or curing.

1.06 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Indoor Air Quality Management Plan: Describe in detail measures to be taken to promote adequate indoor air quality upon completion; use SMACNA (OCC) as a guide.
   1. Submit not less than 60 days before enclosure of building.
   2. Identify potential sources of odor and dust.
   3. Identify construction activities likely to produce odor or dust.
   4. Identify areas of project potentially affected, especially occupied areas.
   5. Evaluate potential problems by severity and describe methods of control.
   6. Describe construction ventilation to be provided, including type and duration of ventilation, use of permanent HVAC systems, types of filters and schedule for replacement of filters.
   7. Describe cleaning and dust control procedures.

C. Interior Finishes Installation Schedule: Identify each interior finish that either generates odors, moisture, or vapors or is susceptible to adsorption of odors and vapors, and indicate air handling zone, sequence of application, and curing times.

PART 2 PRODUCTS

2.01 MATERIALS

A. Low VOC Materials: See other sections for specific requirements for materials with low VOC content.

B. Auxiliary Air Filters: MERV of 8, minimum, when tested in accordance with ASHRAE 52.2.

PART 3 EXECUTION

3.01 CONSTRUCTION PROCEDURES

A. Prevent the absorption of moisture and humidity by adsorptive materials by:
   1. Sequencing the delivery of such materials so that they are not present in the building until wet work is completed and dry.
   2. Delivery and storage of such materials in fully sealed moisture-impermeable packaging.
   3. Provide sufficient ventilation for drying within reasonable time frame.

B. Begin construction ventilation when building is substantially enclosed.

C. If extremely dusty or dirty work must be conducted inside the building, shut down HVAC systems for the duration; remove dust and dirt completely before restarting systems.

D. HVAC equipment and ductwork may NOT be used for ventilation during construction:
   1. Provide temporary ventilation equivalent to 1.5 air changes per hour, minimum.
   2. Exhaust directly to outside.
   3. HVAC ductwork shall be kept clean, free of dust during storage, handling and installation. Seal HVAC air inlets and outlets immediately after duct installation with tape and plastic sheeting. All seams in ductwork shall be sealed.

E. All inspection and filter replacement shall occur with the HVAC equipment turned off.

F. Do not store construction materials or waste in mechanical or electrical rooms.

G. Prior to use of return air ductwork without intake filters clean up and remove dust and debris generated by construction activities.
   1. Inspect duct intakes, return air grilles, and terminal units for dust.
   2. Clean plenum spaces, including top sides of lay-in ceilings, outsides of ducts, tops of pipes and conduit.
   3. Clean tops of doors and frames.
   4. Clean mechanical and electrical rooms, including tops of pipes, ducts, and conduit, equipment, and supports.
   5. Clean return plenums of air handling units.
   6. Remove intake filters last, after cleaning is complete.

H. Do not perform dusty or dirty work after starting use of return air ducts without intake filters.

I. Use other relevant recommendations of SMACNA (OCC) for avoiding unnecessary contamination due to construction procedures.

3.02 BUILDING FLUSH-OUT

A. Perform building flush-out before substantial completion.

B. Do not start flush-out until:
   1. All construction is complete.
   2. HVAC systems have been tested, adjusted, and balanced for proper operation.
   3. Cleaning of inside of HVAC ductwork, specified elsewhere, has been completed.
   4. Inspection of inside of return air ducts and terminal units confirms that cleaning is not necessary.
   5. New HVAC filtration media have been installed.

C. Building Flush-Out: Operate all ventilation systems at normal flow rates with 100 percent outside air until a total air volume of 14,000 cubic feet per square foot of floor area has been supplied.
   1. Obtain Owner's concurrence that construction is complete enough before beginning flush-out.
   2. Maintain interior temperature of at least 60 degrees F and interior relative humidity no higher than 60 percent.
   3. If additional construction involving materials that produce particulates or any of the specified contaminants is conducted during flush-out, start flush-out over.
   4. If interior spaces must be occupied prior to completion of the flush-out, supply a minimum of 25 percent of the total air volume prior to occupancy, and:
      a. Begin ventilation at least three hours prior to daily occupancy.
      b. Continue ventilation during all occupied periods.
      c. Provide minimum outside air volume of 0.30 cfm per square foot or design minimum outside air rate, whichever is greater.
   5. Show Building Flush-Out on overall construction schedule.

D. Install new HVAC filtration media after completion of flush-out and before occupancy or further testing.

END OF SECTION

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General product requirements.

B. Transportation, handling, storage and protection.

C. Product option requirements.

D. Substitution limitations and procedures.

E. Procedures for Owner-supplied products.

F. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 RELATED REQUIREMENTS

A. Document 00 21 13.01 - Instructions to Bidders: Product options and substitution procedures prior to bid date.

B. Divisions 00 and 01 – All Sections.

C. Section 01 40 00 - Quality Requirements: Product quality monitoring.

D. Section 01 60 01 – Contractors Substitute Request Form: Form referred to in this Section.

E. Section 01 74 19 - Construction Waste Management and Disposal: Waste disposal requirements potentially affecting packaging and substitutions.

1.03 SUBMITTALS

A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project. See Section 01 30 00 - Administrative Requirements, for more information regarding product data submittals.

B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances. See Section 01 30 00 - Administrative Requirements, for more information regarding Shop Drawings.

C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.01 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by the Contract Documents.

B. Do not use products made using or containing CFC's or HCFC's.

2.02 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers with product model: Use a product of one of the manufacturers named; no substitutions if so indicated; substitutions by following substitution procedures.

C. Products Specified by Naming One manufacturer with other acceptable manufacturers listed without product model: Submit a product meeting all standards listed within the specification – clearly documenting the product’s attributes compared to the Basis of Design.

2.03 MAINTENANCE MATERIALS

A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual Specification Sections.

B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION PROCEDURES

A. Substitutions are changes, modifications or deviations in those products, materials, equipment, and methods of construction required by the Contract Documents proposed by the Contractor after the receipt of Bids. Substitutions for the convenience of the Contract or subcontractors, or materials suppliers will only be considered if submitted prior to the receipt of Bids, in strict conformance with the Instructions to Bidders. The following shall not be considered substitutions:
   1. Changes, modifications, or deviations requested by Bidders during the bidding period and accepted prior to the receipt of Bids shall be considered as included in the Contact Documents and are not subject to the requirements of this Section.
   2. Revisions to Contract Documents requested by the Owner or Architect.
   3. Specified options of products or materials included in the Contract Documents.
   4. The Contractor's compliance with governing regulations and orders issued by governing authorities, subject to the Architect's prior written notice and approval.

B. Substitution Requests: Request for substitution will be considered only if, in the opinion of the Architect, such substitution will be of benefit to the Owner. Substitution requests after receipt of bids will not be considered solely related to an "or approved equal" clause in the Contract Documents.
   1. The Contractor's substitution request will be considered by the Architect when all of the following conditions are satisfied, as determined by the Architect; otherwise requests will be returned without action.
      a. Extensive revision to the Contract Documents are not required.
      b. Proposed changes are in keeping with the general intent of the Contract Documents.
      c. The request is timely, fully documented and properly submitted.
      d. In addition to the above conditions, one or more of the following conditions must be satisfied, as determined by the Architect. The Contractor shall provide written documentation for each condition noted.
         1) The specified product cannot be provided within the Contract Time. However, the request will not be considered if the specified product cannot be provided as a result of the Contractor's failure to submit to the Architect or order from the manufacturer in a timely fashion.
         2) The specified product cannot receive necessary approval of governing authority and the requested substitution can be approved.
         3) A substantial advantage is offered to the Owner, in terms of cost savings, time savings, 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 compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner or separate Contractors, and similar considerations.
         4) The specified product cannot be provided in a manner that is compatible with or coordinated with other materials, and where the Contractor certifies that the substitution will overcome the incompatibility.
         5) The specified product cannot provide the warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provides the required warranty.

C. Substitution Request Procedure: Complete the Contractor's Substitution Request form provided at the end of this Section. Submit electronically request for substitution using the provided form with all required information. Incomplete forms will not be reviewed.

D. Architect's Action: The Architect may request additional information to evaluate the substitution if any is required. Within ten (10) working days of receipt of all necessary information, the Architect will notify the Contractor of acceptance or rejection of the proposed substitute. If a decision on the use of a proposed substitute is not or cannot be made or obtained within the time allocated, the Contractor shall use the specified product.

E. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in Sections 00 and 01 (all sections).

F. A request for substitution constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
   2. Will provide the same or better warranty for the substitution as for the specified product.
   3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
   4. Waives claims for additional costs or time extension that may subsequently become apparent. The Contractor shall be responsible for any and all additional costs subsequently incurred as a result of the substitution including those of other trades.

G. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

H. Acceptance of Submittals and Shop Drawings indicating or implying a different product than the specified product shall not be deemed an acceptable substitution request, unless clearly indicated (notes specifically accepting a substituted product) by the Architect or Engineer as part of the submittal review.

I. Whether the Architect declines or accepts a substitution request, the Contractor does not have the right to request a time extension to complete the contract.

3.02 OWNER-SUPPLIED PRODUCTS

A. Owner's Responsibilities:
   1. Arrange for and deliver shop drawings, product data, certificates, manufacturer's instructions and samples, to Owner.
   2. Arrange and pay for product delivery to site in accordance with the progress schedule.
   3. On delivery, inspect products jointly with Contractor.
   4. Submit claims for transportation damage and arrange for replacement of damaged, defective, or deficient items.
   5. Arrange for manufacturers' warranties, inspections, and service.

B. Contractor's Responsibilities:
   1. Review Owner reviewed shop drawings, product data, and samples. Submit to the Architect with notification of any observed discrepancies or problems anticipated due to non-conformance with the Contract Documents.
   2. Receive and unload products at site; inspect for completeness or damage jointly with Owner. Record shortages, and damaged or defective items.
   3. Install blocking and supports as required for proper installation.
   4. Handle, uncrate, store, assemble, install, connect, adjust and finish products.
   5. Protecting products from damage and from exposure to the elements.
   6. After receipt, repair or replace items damaged the Contractor or persons under his control.

3.03 TRANSPORTATION AND HANDLING

A. The Contractor shall be responsible for the proper protection from damage of all materials and equipment prior to and following their incorporation into the Work. Materials and equipment shall be inspected by the Contractor

B. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

C. Transport and handle products in accordance with manufacturer's instructions.

D. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.

E. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, products are undamaged and if found to be damaged or otherwise unsuitable, shall be promptly rejected.

F. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

G. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

H. All materials stored on or off the site shall be kept in secured, weathertight enclosures, and the Contractor shall correct, at no additional cost to the Owner, any damages resulting from his failure to provide proper protection. Such corrective work shall include total replacement if so required by the Architect.

I. The Contractor shall exercise caution in temporarily loading materials on floors, decks, roofs, etc. It shall be the Contractor's responsibility to determine the size of loads to be imposed and the adequacy of the affected structure to support such loads. The Contractor shall correct, at no additional cost to the Owner, any resultant damages.

3.04 STORAGE AND PROTECTION

A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.

B. Store and protect products in accordance with manufacturers' instructions.

C. Store with seals and labels intact and legible.

D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.

E. For exterior storage of fabricated products, place on sloped supports above ground.

F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

G. Prevent contact with material that may cause corrosion, discoloration, or staining.

H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

CONTRACTOR'S SUBSTITUTION REQUEST

To Architect: _____ Date: _____

From Contractor: _____ Number: _____

Specification Section:_____ Page: _____

Article / Paragraph: _____

1. Reason for Substitution Request: _____

   _____

   _____

   Post Bidding, Check One:

   - ○ *The specified product is no longer available.*
   - ○ *The specified product is not available within the contract time (and could not have been provided within the contract time if ordered within a reasonable period after bid award).*
   - ○ *There is an AHJ approval issue with specified product*
   - ○ *Significant Cost Savings to Owner – of which the Owner and the Architect agree to.*
   - ○ *Specified product is not compatible with other materials, but substituted product is.*
   - ○ *The specified product cannot provide the warranty required.*

2. Product data for proposed substitution to include: Description of product, reference standards, performance, and test data for both the specified product and the proposed product. Attach hereto.

   Sample attached: Yes__ No __ (To be sent if requested by Architect)

3. Itemized comparison of proposed substitution with product specified is attached. (Note the comparison must list all aspects of the product specified as well as the product being substituted including but not limited to dimensions, attributes, thickness, warranty, quality, etc).

	ORIGINAL PRODUCT	PROPOSED SUBSTITUTION
Trade Name, Model:		
Manufacturer:		
Installer:		
Warranty:		
Other Material Requirements or Specified attributes: (List all specified)		
_____:		
_____:		
_____:		
_____:		
_____:		
_____:		
_____:		
_____:		

_____: _____ _____

_____: _____ _____

_____: _____ _____

_____: _____ _____

_____: _____ _____

_____: _____ _____

History of proposed substitution: New product __ 2-5 years old __ 5-10 years old__ > 10 years old ___

Significant variations of proposed substitution from original product: _____

_____

Proposed substitution affects other parts of the Work: No __ Yes, explain _____

_____

Similar installations within 150 miles: Provide project name, address, architect, install date: _____

_____

_____

4. Unit costs, if applicable: State if cost is materials only ___ or materials installed ___.

Original product $ _____ per _____ Substitution $ _____ per _____

Savings to Owner for accepting substitution: _____ $_____

Proposed substitution changes Contract Time: No ___ Yes __ Add/Deduct _____ days.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior to the specified product.
- Same or longer warranty will be furnished for proposed substitution as for the specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated herein is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions, functional clearances or design appearance.
- No additional building design, including A/E design, detailing, sketches, proposal requests, Supplemental Instructions, etc are required by the Architect or Engineers.
- Coordination, installation and changes in the Work as necessary for accepted substitution will be complete in all respects.
- Costs associated with changes to other trades will be paid for by the submitting contractor.

Submitted by: _____

Attachments: _____

SECTION 01 71 00
CUTTING AND PATCHING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included in This Section:
   1. Provide all labor, materials, equipment and services, etc., required for all cutting (including excavation), removal, fitting, patching, and/or repairs as required to:
      a. Make the several parts fit properly.
      b. Uncover work to provide for installing, inspecting, or both, of ill-timed work.
      c. Remove and replace work not conforming to requirements of the Construction Documents.
      d. Remove and replace defective work.

B. Related Work:
   1. In addition to other requirements noted or specified, upon the Architect's request uncover work to provide for observation by the Architect of covered work, and remove samples of installed materials for testing.
   2. Do not cut or alter work performed under separate contracts without the Architect's written permission.

1.02 SUBMITTALS

A. Where cutting and/or patching is required, the Architect's review of proposed cutting and patching procedures is required. The following information shall be included in the submission prior to proceeding with cutting:
   1. Clearly describe the extent of cutting and patching required and how it is to be performed. Layout the work on-site as appropriate. Indicate why it cannot be avoided.
   2. Describe the anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components and changes in the building's appearance and other visual elements.
   3. List products to be used and firms that will perform the Work. Indicate dates for cutting and patching. Submit samples of actual materials to be used for patching.
   4. List any utilities that will be disturbed, relocated, made temporarily out-of–service, and indicate the length of service disruption.
   5. Where cutting and patching involves the addition of reinforcement to structural elements, submit details and engineering calculations to show how reinforcement is integrated with the original structure.

B. Acceptance of the cutting and patching proposal by the Architect does not waive the Architect's right to later require complete removal and replacement of Work found to be unsatisfactory, nor does it alter the Contractor's sole responsibility for the safe and proper execution of all cutting and patching.

C. Submit written notice to the Architect designating the time the Work will be uncovered, to provide for the Architect's observation.

1.03 QUALITY ASSURANCE

A. Structural Work: Do not cut and patch structural elements in a manner that would reduce their structural characteristics such as load-carrying capacity or load deflection ratio.
   1. Obtain approval of the cutting and patching proposal before cutting and patching structural elements, including but not necessarily limited to:
      a. Foundation construction.
      b. Bearing and retaining walls.
      c. Structural concrete.
      d. Structural steel.
      e. Lintels.

f. Structural decking.
g. Stair systems.
h. Miscellaneous structural metals.
i. Equipment supports.
j. Piping, ductwork, vessels, and equipment.

B. Operational and Safety Limitations: Do not cut and patch operating elements or safety components in a manner that would reduce their capacity to perform as intended, or would increase maintenance, or decrease operational life or safety.
1. Obtain approval of the cutting and patching proposal before cutting and patching operating elements or safety related systems, including but not necessarily limited to:
a. Shoring, bracing, and sheeting.
b. Primary operational systems and equipment.
c. Firewalls and fire separation assemblies.
d. Fire-rated and non-fire-rated smoke barriers.
e. Water, moisture, or vapor retarders.
f. Membranes and flashings.
g. Fire protection systems.
h. Sprayed-on Fireproofing.
i. Control systems.
j. Voice, video, and data systems.
k. Conveying systems.
l. Electrical wiring systems.

C. Miscellaneous: Do not cut and patch elements in a manner that would reduce their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
1. Obtain approval of the cutting and patching proposal before cutting and patching building elements, including but not necessarily limited to:
a. Water, moisture or vapor barriers.
b. Membranes and flashings.
c. Exterior curtainwall construction.
2. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching. Remove and replace work cut and patched in a visually unsatisfactory manner.

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

PART 2 - PRODUCTS

2.01 MATERIALS

A. For replacement of items removed, use materials identical to existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible. Use materials whose performance will equal or surpass that of existing materials.

2.02 PAYMENT FOR COSTS

A. Perform cutting and patching needed to comply with the Construction Documents at no additional cost to the Owner.

B. All costs resulting from ill-timed or defective work, or work otherwise not conforming to the Contract Documents shall be borne by the Contractor.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Inspection: Inspect existing conditions, including elements subject to movement or damage during cutting, excavating, patching, and backfilling.

B. After uncovering the work, inspect conditions affecting installation of new work.

C. Prior to proceeding, meet with all parties involved in cutting and patching including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

D. Discrepancies: If uncovered conditions are not as anticipated, immediately notify the Architect and secure needed directions. Do not proceed until unsatisfactory conditions are corrected.

3.02 PREPARATION PRIOR TO CUTTING

A. Provide required protection including, but not necessarily limited to, shoring, bracing, and support to maintain structural integrity of the Work.

B. Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Work that might be exposed during cutting and patching operations.

C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas. Take all precautions to avoid cutting existing pipe, conduit, or ductwork serving the building, but scheduled to be removed or relocated until provisions have been made to bypass them.

D. Provide proper dirt, dust, fume, vapor, and noise control.

E. Verify the conditions and requirements of all existing warranties that may be affected by cutting and patching (such as roofing warranties). It is the intent that all cutting and patching be performed in a manner that preserves all such warranties in full, without compromise.

3.03 PERFORMANCE

A. General: Cutting and patching shall be kept to an absolute minimum by careful planning and through proper holes, sleeves, anchors, inserts, or other built-ins as the Work progresses.

B. Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

C. The Contractor shall properly restore work that has been cut or removed and install new products to provide completed work in accordance with the requirements of the Construction Documents. Existing surfaces shall be restored to their original condition.

D. Cutting: Perform cutting and demolition by methods least likely to damage elements to be retained or adjoining construction and that will provide proper surfaces to receive installation of repair and new work. Where possible, review procedures with the original installer. Comply with the original installer’s recommendations.

E. In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

F. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.

G. Cut through concrete and masonry using a cutting machine such as a carborundum saw or diamond core drill.

H. Perform necessary excavating and backfilling as required under pertinent other Sections of these Specifications.

I. By-pass utility services such as pipe or conduit, before cutting, where services are shown, or removal required, relocated, or abandoned. Cut off pipe or conduit in walls or partitions, to be removed. Cap, valve, or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.

J. Patching: Perform fitting and adjusting of products as required to provide finished installations complying with the specified tolerances and finishes or otherwise satisfactory to the Architect.

K. Patch with durable seams that are as invisible as possible. Comply with specified tolerances.

L. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

M. Where the removal of walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary to achieve uniform color and appearance.

N. Where patching occurs in a smooth painted surface, extend final paint coat over the entire unbroken surface containing the patch, after the patched area has received primer and first coat.

O. Patch, repair, or re-hang existing ceilings, as necessary to provide an even plane surface of uniform appearance.

P. At penetrations in fire-resistive rated walls, partitions, ceilings, floors, or roof construction, completely seal voids with firestopping materials in compliance with Section 07 84 00 - Firestopping.

3.04 CLEAN-UP

A. All debris and rubbish shall be properly removed from the premises as it occurs. All materials shall be properly disposed of off-site, in strict accordance with all applicable Laws, Rules, Regulations, and Ordinances.

B. Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Completely remove paint, mortar, oils, putty, and similar items. Thoroughly clean surfaces before painting or finishing.

END OF SECTION

SECTION 01 74 19
CONSTRUCTION WASTE MANAGEMENT

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

A. Owner requires that this project generate the least amount of trash and waste possible.

B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.

C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.

D. Demolition debris and construction waste shall be sent to a certified recycling facility for sorting to recycle and reuse whenever possible. Any loads contaminated with municipal solid waste shall be taken to a municipal transfer station for off-loading and trucking to a certified recycling facility. Materials that cannot be recycled or reused shall be landfilled.

E. Methods of trash/waste disposal that are not acceptable are:
   1. Burning on the project site.
   2. Burying on the project site.
   3. Dumping or burying on other property, public or private.
   4. Other illegal dumping or burying.
   5. Incineration, either on-site or off-site.

F. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.02 DEFINITIONS

A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.

B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.

C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.

D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.

E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.

F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.

G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.

H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.

I. Return: To give back reusable items or unused products to vendors for credit.

J. Reuse: To reuse a construction waste material in some manner on the project site.

K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.

L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.

M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.

N. Toxic: Poisonous to humans either immediately or after a long period of exposure.

O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.

P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Monthly Reports: The certified recycling facility shall submit monthly reports of all project demolition debris and construction waste removed, recycled and landfilled. The report shall include:
   1. Date, disposal ticket #, materials type, total weight of the load, weight of material recycled from the load, % of materials recycled, materials destinations, tipping fees and disposal cost.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Manager: Contractor to designate a person who will be responsible for implementing the plan, instructing workers, coordinating waste materials handling, any on-site separation requirements for all trades and overseeing and documenting results of the Waste Management Plan.

B. Facilities: Provide specific facilities for on-site containment and transportation of demolition debris and construction waste materials to off-site recycling and disposal facility for use by all contractors and installers specifically for the scope of work within this Bid Package.
   1. Provide containers as required.
   2. Provide adequate space for pick-up and delivery of containers.
   3. Keep trash/waste bin areas neat and clean.

C. Keep trash/waste collection areas neat and clean.

D. Do not handle, separate, store, salvage, or recycle hazardous materials. Contact Owner if hazardous materials are encountered.

END OF SECTION

SECTION 01 78 00
PROJECT CLOSE-OUT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Substantial Completion procedures.
   1. Project Close-out meeting.
   2. Occupancy Permit.

B. Project Record Documents.
   1. Record Drawings.
   2. Record Product Data.
   3. List of Subcontractors and material suppliers.
   4. Operation and Maintenance Data.
   5. Warranties and bonds.
   6. Contractor's Certificate of No Hazardous Materials.
   7. Testing Agency Final Report.
   7. Air-Tightness Final Report.

C. Architect's evaluation of the Work.

D. Final Acceptance procedures.

E. Operating and Maintenance Instructional Sessions.

F. Adjustments.

G. Final Cleaning.

H. Repair of the Work.

1.02 RELATED REQUIREMENTS

A. Section 00 72 00 - General Conditions

B. Section 01 00 00 - General Requirements.

C. Section 01 00 30 - Electronic Media: Record Drawing backgrounds.

D. Section 01 30 00 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.

E. Section 01 40 00 - Quality Requirements: Final Test Reports.

F. Section 01 78 10 - Warranties: General warranty requirements.

G. Individual Product Sections: Specific requirements for operation and maintenance data.

H. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBSTANTIAL COMPLETION PROCEDURES

A. Prior to requesting evaluation of the Work for certification of Substantial Completion, the Contractor shall complete the following items.

B. Close-out Meeting: Not less than thirty (30) days prior to the anticipated date of Substantial Completion, the Contractor shall conduct a Project close-out meeting. Participants in the meeting shall include the Contractor, subcontractors, Owner and Architect. The Contractor shall prepare the agenda and schedule of close-out tasks, for prior distribution, which, among other items as may be determined by the Contractor, shall include the following:
   1. HVAC Start-up Activities.
      a. Air and water balancing
      b. Controls sequence check
      c. HVAC filter replacement
      d. Cleaning of ductwork used during construction.

2. Programming of Energy Management System
3. Indoor Air Quality Testing (as applicable)
4. Testing and Inspections with Authorities Having Jurisdiction:
    a. Fire alarm system test
    b. Sprinkler system testing
    c. Certificate of Occupancy inspection
    d. Required Testing and Inspections
5. Other Testing.
    a. Security system
    b. Data and Telephone distribution systems
6. Owner's Equipment Testing.
    a. Telephone equipment
    b. Computer network equipment
    c. Audio-visual equipment
7. Delivery of tools, spare parts, extra stock, etc.
8. Punch Lists:
    a. Contractor
    b. Architect / Owner
9. Final Cleaning Operations.
10. Transition Security Issues.
    a. Removal of construction trailers, fencing, gates, etc. Door key change-over
    c. Set-up key cabinet
    d. Miscellaneous key turn-over (casework, millwork, toilet accessories, gas valves, etc.)
    e. Activation of the security system
11. Transition Issues.
    a. Electric service change-over.
    b. Telephone service change-over.
    c. Insurance change-over.
    d. Owner's schedule for move-in of furnishings and equipment
12. Instructional Sessions:
    a. Mechanical, sprinkler and electrical systems.
    b. Domestic water system
    c. Door hardware, windows, and window operators
    db. Finish cleaning & maintenance
13. Record Information:
    a. Warranty binder
    b. Record Drawings
    c. Record survey
    d. O&M manuals
14. Close-out Paperwork:
    a. Release of Liens
    b. Consent of Surety
    c. Certification of No Hazardous Materials
    d. Certificate of Occupancy.

C. Contractor's Punch List: Prior to preparation of a punch list by the Owner and Architect, the Contractor shall prepare their own comprehensive punch list, and along with their subcontractors. The receipt of the Contractor's written punch list, clearly identifying all completed and pending items, shall be considered a prerequisite for the commencement of the Owner and Architect's evaluation of the Work for Substantial Completion. The list shall include values of each item on the list and reasons why the Work is incomplete, and date the work is anticipated to be completed. If, in the opinion of the Architect, the Contractor fails to provide a comprehensive punch list documenting incomplete work, work requiring correction, closeout tasks still to be completed (including but not limited to owner training, cleaning, or record documents, commissioning responses, etc), then substantial completion may not be reached,

and the Architect and Owner may not proceed with evaluation of the work or creation of their own Punch List.

D. Advise Owner of pending insurance and utility change-over requirements.

E. Submit warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.

F. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities, including Occupancy Permits, operating certificates and similar releases. If the Project is completed in phases, obtain Occupancy Permits as required by governing authorities.

G. Deliver tools, spare parts, extra stock, and similar items.

H. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Engineer. Label with manufacturer's name and model number where applicable.
   1. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Engineer’s signature for receipt of submittals.

I. Make final change-over for locks, keys, and other security provisions.

I. Complete start-up testing of equipment and systems, conduct Owner's training sessions.

J. Discontinue, change over and remove temporary facilities from the site. Remove temporary protection measures provided during construction.

K. Final Cleaning.

M. Certificate of Occupancy: The Contractor shall schedule various inspections with the Authority Having Jurisdiction as required to obtain a Certificate of Occupancy.

1.04 SUBMITTALS

A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
   1. Record Drawings: Shall be required for all Architecture, Building Structure, Plumbing Systems, Mechanical Systems, Fire Protection Systems, Audio Visual, Lighting, Communications, and Electrical Systems.
      a. The Contractor shall maintain one set of Contract Drawings for use in the preparation of Record Drawings. This set shall be maintained at the site, and upon them, the Contractor shall clearly and accurately record all Addenda, Supplementary Instructions, Change Orders, Architect's responses to Contractor's Requests for Information, and all significant changes made during construction to the Work hereinafter listed. Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect’s reference during normal working hours
      b. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
         1) Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
         2) Record data as soon as possible after obtaining it
         3) Record and check the markup before enclosing concealed installations.
      c. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.

d. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location. Mark digital files with digital overlay indicating changes distinguishable from the original drawings.
e. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
f. Initial Submittal:
    1) Submit record digital data files (PDF).
    2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
    3) Resubmittal may be required to achieve a complete set of record documents.
f. Final Submittal:
    1) Submit record digital data files and two (2) set(s) of printed documents.
    2) Plot each drawing file, whether or not changes and additional information were recorded.
g. Format: Annotated PDF electronic file, bookmarked by discipline and sheet number.
h. Upon completion of the Contract, and as a prerequisite to final Payment, the Contractor shall prepare (draft as necessary), check, and certify the Record Drawings for completeness and accuracy and submit them to the Architect. The Contractor's submittal shall include electronic media files and two sets blackline hard copy Record Drawings. The Contractor shall imprint the following text on each Record Drawing and Record Drawing Electronic Media File:
    1) “PROJECT RECORD DRAWING. NOTE: This drawing has been produced by (name and address of contractor). It is not the originally designed Contract Document. It is a Record Drawing.”
    2) Include the following Identification on each electronic file or print:
        a) Project name.
        b) Date.
        c) Name of Architect and Engineer.
        d) Name of Contractor.
    3) See Section 01 00 30 - Electronic Media for information regarding obtaining electronic Contract Documents for use in preparing for Record Drawings.
i. The Architect will casually review such drawings but will in no way ascertain or certify their completeness or correctness, which shall remain the sole responsibility of the Contractor. The Architect shall be entitled to rely upon the thoroughness and accuracy of the Contractor's documents, without further verification. Following his review, the Architect will forward all Record Drawings to the Owner for his use.

2. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work. Complete miscellaneous records, place in good order, properly identified and bound ready for reference and submit to the Architect for the Owner's records.
3. Record Product Data:
    a. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
        1) Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
        2) Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
        3) Note related Change Orders and record Drawings where applicable.
    b. Format: Submit record Product Data as annotated PDF electronic file or two (2) paper copies.
4. List of Subcontractors: The Contractor shall submit to the Architect two (2) typed updated lists of all subcontractors, service organizations, and principal vendors, including names, addresses, and telephone numbers where they can be reached for emergency service at all times including nights, weekends, and holidays.
5. Certificate of Occupancy.

6. **The Contractor shall provide the Owner with all Material Safety Data sheets (MSDS) for all materials and chemicals used on the project. The Material Safety Data Sheets are to be provided in both PDF format saved to a thumb drive (2 thumb drive copies) and hardcopies compiled into a binder. The sheets, in both the PDF and hardcopy formats, are to be organized alphabetically by the name of the materials and chemicals used on the project. [Addenda #4]**

B. Operation and Maintenance Data:
   1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return one copy with comments.
   2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
   3. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
   4. Submit two sets of revised final documents in final form within 10 days after final inspection.

C. Warranties and Bonds:
   1. The Contactor shall submit to the Architect two (2) typed sets, neatly bound and indexed in a loose leaf binder, of all warranties, certificates and bonds as required by the Contract Documents.
      a. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
      b. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
      c. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
   2. For equipment or component parts of equipment put into service during construction with Owner's permission, submit a copy of documents within 10 days after acceptance.
   3. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
   4. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period. Pages shall be pre-punched for insertion into the bound set.

D. Contractor's punch list submission to Architect.

E. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.05 ARCHITECT'S EVALUATION

A. On receipt of a written request from the Contractor, the Architect will either proceed with evaluation of the Work for Substantial Completion or advise the Contractor of requirements yet to be completed prior to evaluation.

B. Based on his/her observations, the Architect will provide a written list, or "Punch List", of items to be corrected or to be completed. The Architect's list may not include all Work necessary for completion in accordance with the Contract Documents and shall not in any way relieve the Contractor of responsibility for compliance with the Contract Documents. The Architect may review and modify the value of each punch list item provided by the Contractor.

C. The Architect shall prepare the AIA G704 Certificate of Substantial Completion form and attach his/her written evaluation list thereto.

D. Additional Work found to be incomplete or not in conformance with the Contract Documents after the Architect's evaluation shall be completed or corrected before Final Acceptance and Final Payment.

E. When Work has been completed or corrected, the Contractor shall submit to the Architect a written request for re-evaluation. Include a copy of the Architect's previous evaluation report with notation of action taken for each item.

F. The Architect shall be responsible for one re-evaluation of their punch list, and only after the Contractor has completed 100% of the items on the initial list. Should additional visits by the Architect be required for more than one re-evaluation of the punch list, the Contractor shall be responsible for the costs of the Architect and Consultants (at the Architect's and Consulting Engineer's current hourly rates plus mileage) for additional visits. For these additional services, the Architect will charge the Owner, and the Owner may deduct the additional service amount from their final payment to the contractor.

G. The value of payment and retainage withheld will be reviewed by the Architect and the Owner at the time of closeout. This value may be significantly higher than the value of the work listed on the punchlist in an effort to protect the Owner's interests and ensure completion of the work.

1.06 FINAL ACCEPTANCE

A. At time of Substantial Completion, the Contractor shall provide a list of final Contract requirements with anticipated completion dates including:
   1. List of incomplete Work.
   2. Final Change Orders.
   3. Assurances that unsettled claims will be settled.
   4. Record Drawings, O& M Manuals, Final Project Photos, Damage or Settlement Survey or other final record information.
   5. Final Application for Payment with releases and supporting documentation, including final waivers of lien.
   6. Written confirmation that corrective work related to any failed quality control testing has been provided, and that satisfactory retesting has been performed and approved by the testing agency.

B. Re-evaluation Procedure: The Architect will re-evaluate the Work upon receipt of written notice from the Contractor that the Work, including correction of all (or a majority of) items previously noted, have been completed.
   1. Upon completion of re-evaluation, the Architect will prepare a Certificate of Final Acceptance, or advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for Final Acceptance.
   2. If necessary, re-evaluation for Final Acceptance will be repeated. Cost of re-evaluation beyond the first site visit for re-evaluation, including costs (Hourly rate plus mileage) of the Architect and the Engineers, will be the responsibility of the Contractor, and may be deducted from their final payment by the Owner.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 INDOOR AIR QUALITY MANAGEMENT

A. The Contractor and his various subcontractors as he may direct shall implement the procedures throughout construction in an effort to improve indoor air quality during the Owner's occupancy. See 01 57 21 - Indoor Air Quality Controls.

3.02 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Specifications
   3. Addenda.
   4. Change Orders and other modifications to the Contract.

5. Reviewed shop drawings, product data, and samples.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress.

E. Record Drawings: Legibly mark each item to record actual construction including:
   1. Field changes of dimension and detail.
   2. Details not on original Contract drawings.
   3. Changes made to systems and dimensions via shop drawings or coordination drawings.
   4. Changes made via Change Order, Sketch, RFI, ASI, CCD, etc.

3.03 OPERATION AND MAINTENANCE DATA

A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.

B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.04 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

A. For Each Product, Applied Material, and Finish:
   1. Product data, with catalog number, size, composition, and color and texture designations.

B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

3.05 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. For Each Item of Equipment and Each System:
   1. Description of unit or system, and component parts.
   2. Identify function, normal operating characteristics, and limiting conditions.
   3. Include performance curves, with engineering data and tests.
   4. Complete nomenclature and model number of replaceable parts.

B. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.

C. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

D. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

E. Provide servicing and lubrication schedule, and list of lubricants required.

F. Include manufacturer's printed operation and maintenance instructions.

G. Include sequence of operation by controls manufacturer.

H. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

I. Provide control diagrams by controls manufacturer as installed.

J. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

K. Include test and balancing reports.

L. Additional Requirements: As specified in individual product specification sections.

3.06 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.

B. Where systems involve more than one specification section, provide digital divisions or bookmarks for easy navigation.

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

D. Prepare data in the form of an instructional manual.

E. Provide all material in digital searchable file format as well as one hard copy.

F. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.

G. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.

H. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.

I. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.

J Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.

K. Text: Manufacturer's printed data on 24 pound paper.

L. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages, house in plastic sleeves.

M. Arrange content by systems under section numbers and sequence of Table of Contents of this Project Manual.

N. Contents: Prepare a Table of Contents for each volume, with each product or system description identified, in three parts as follows:
   1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect, Contractor, Subcontractors, and major equipment suppliers.
   2. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
      a. Significant design criteria.
      b. List of equipment.
      c. Parts list for each component.
      d. Operating instructions.
      e. Maintenance instructions for equipment and systems.
      f. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
   3. Part 3: Project documents and certificates, including the following:
      a. Shop drawings and product data.
      b. Air and water balance reports.
      c. Certificates.
      d. Photocopies of warranties and bonds.

3.07 SPARE PARTS AND MAINTENANCE PRODUCTS

A. Provide spare parts, maintenance, and extra products in quantities as specified in individual Specification Sections. Deliver to the site and place in locations as directed by the Owner. Obtain receipts signed by Owner's Representative and submit copies to the Architect if so directed.

3.08 WARRANTIES AND BONDS

A. See Section 01 78 10: Warranties, for additional information.

B. Retain warranties and bonds until time specified for submittal.

C. Manual: Bind in commercial quality 8-1/2 by 11 inch three D side ring binders with durable plastic covers.

D. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.

E. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.

F. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

3.09 CERTIFICATE OF NO ASBESTOS

A. See Section 01 30 00 - Administrative Requirements, for requirements for submission of Certificate(s) of No Asbestos.

3.10 FINAL TESTING REPORTS

A. See Section 01 40 00 - Quality Services, for requirements for the Testing Agency's Final Report.

3.11 OPERATING AND MAINTENANCE INSTRUCTIONS / OWNER TRAINING

A. Instructions: The Contractor and his subcontractors and suppliers shall jointly, thoroughly instruct the Owner's representative and maintenance personnel in the proper maintenance and operation of all materials and systems that require training for proper operation and/or regular maintenance as follows:

1. Demonstrated and written detailed instructions shall be provided and reviewed for materials and systems listed in Substantial Completion Preliminary Procedures paragraph of this Section, shall include, but not be limited to:
    a. Start-up and Shut-down procedures.
    b. Emergency operations.
    c. Noise and vibration adjustments.
    d. Control sequences.
    e. Troubleshooting.
    f. Safety procedures.
    g. Maintenance manuals.
    h. Maintenance agreements.
    i. Warranties.
    j. Record Drawings.
    k. Tools, spare parts, lubricants.
    l. Cleaning, economy, and efficiency adjustments.
    m. Fuels, and fuel conversion, if applicable.
    n. Identification systems.
    o. Hazards. Any operations that, if improperly performed, might endanger the building's occupants, or damage the building's equipment or contents.

2. Video all demonstrations of operation and maintenance sessions, which shall be held at the completed facility to instruct the Owner in the proper operation of equipment and systems. Prior to final payment, deliver two (2) copies to the Architect for forwarding to the Owner.
3. The Contractor shall obtain sign-off from the Owner for meeting with each installer or manufacturer's representative.
4. For equipment or systems requiring seasonal operation perform demonstrations for the other season within six (6) months.

3.12 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation. For testing, adjusting, and balancing of HVAC systems see Division 25 - Mechanical.

3.13 FINAL CLEANING

A. Final Cleaning: Upon the completion of the Work, the Contractor shall remove all tools, scaffolding, surplus materials, debris, and shall leave the Work "broom clean" or its equivalent. In addition to general broom cleaning, the Contractor shall 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. Use products that are non-hazardous. Cleaning shall be in compliance with requirements of Section 01 73 40 - Indoor Air Quality and with all manufacturer's written instructions. The following cleaning shall be done just before inspection for certification of Substantial Completion and final acceptance of the Work:

1. Transparent Materials: Clean mirrors and glazing in doors and windows; remove paint and glazing compounds that are noticeably vision obscuring; wash and polish, taking care not to scratch materials. Replace chipped, scratched, or broken materials.
2. Ceiling and Wall Surfaces: Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, marks, fingerprints, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Carefully clean (vacuum) fabric type surfaces as recommended by manufacturer. Generally clean as required to leave in first class condition.
3. Flooring: Remove all temporary protection; remove all spots, soil and paint; and clean, shampoo, wax, and buff, etc. all ceramic tile, resilient flooring, base, and other floors in accordance with manufacturer's recommendations. Leave concrete floors broom clean. Vacuum carpeted surfaces.
4. Hardware: Clean and polish all hardware for all trades; this shall include removal of all paint stains, dust, dirt, etc.
5. All fixtures, equipment, doors, and door and window frames: Clean all surfaces per manufacturer's instructions, removing all stains, paint, dirt and dust.
6. Labels: Remove all labels that are not permanent.
7. Mechanical and Electrical Equipment: Wipe surfaces of equipment to be free of paint, dirt, and dust. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps. Replace burned-out lamps.

3.13 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

END OF SECTION

SECTION 01 78 10
WARRANTIES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Administrative and procedural requirements for warranties.

1.02 RELATED SECTIONS

A. Section 01 00 00 - General Requirements.

B. Section 01 78 00 - Project Close-out.

C. All other Specification Divisions for specific Section requirements.

1.03 GENERAL

A. Manufacturers' 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.

B. "Standard Product Warranties" are preprinted written warranties published by individual manufacturers of particular products and are specifically endorsed by the manufacturer to the Owner.

C. "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.

1.04 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 has been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

D. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.

1. The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.

E. Owner's Right of Refusal: The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

F. Commencement Date of Warranties: The Date of Substantial Completion designates the commencement date for warranties unless specifically indicated otherwise.

1. Commencement of warranties for items not accepted shall not begin until after items have been accepted.

2. Items with deficiencies or needed corrections listed on the punch list as part of the substantial completion documents shall not begin their warranty period until all items related to the system have been completed. After verification of completion and acceptance by the Architect and/or commissioning agent (as applicable), a new revised substantial completion document shall be prepared by the Architect designating the warranty start date of these systems.
3. In the event that portions of a system are made operational, the entire system shall remain under warranty until the entire system is completed, operational, and accepted.
   a. If any system plans to be made operational prior to substantial completion for the Owners benefit, the contractor shall submit a request for warranty start date, in writing, and the Owner and Architect shall sign the request before the warranty start date may be initiated. The Owner may refuse to accept any system (and subsequent use thereof) prior to substantial completion.
   b. If accepted by the Owner and Architect, at that time, a one (1) year total system warranty period shall begin.

1.05 SUBMITTALS

A. Submit written warranties and bonds to the Architect in conformance with Section 01 78 00 - Project Close-out.

B. When a special warranty is required from the Contractor, or the Contractor and 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 Architect for review by the Owner prior to final execution.

C. Form of Submittal: At Final Completion, compile two copies of each required warranty and bond properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer.
   1. Verify the documents are in proper form, contain full information, and are notarized. Co-execute warranties when required.

1.06 SCHEDULE OF GUARANTEES, WARRANTIES, AND BONDS

A. Guarantee: The Contractor shall guarantee the entire Work to be free from defective or improper work or materials and shall make good any damage due to such work or materials for a term of one year from the date of the satisfactory completion and acceptance of the Work. In general, the commencement date for warranties and guarantees shall be the date of Substantial Completion. Under no circumstances shall any warranties or guarantees for any individual or collective materials or items of equipment commence prior to the date of Substantial Completion. Extended guarantees or warranties shall be provided as specified elsewhere.

B. Provide guarantees, warranties, and bonds on products and installations as specified in individual Sections.

END OF SECTION

SECTION 02 41 00
DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of building elements for alterations purposes and as otherwise required for the complete and proper execution of the Work.

B. The Work of this Section is not necessarily fully represented on the Drawings or specifically identified herein. The Contractor, either himself or through his various subcontractors, shall thoroughly review all available documents and shall visit the existing building prior to bidding, as required to fully satisfy himself as to the types, locations and quantities of demolition work required for the complete and proper execution of the Work. No pleas of misunderstanding resulting from the failure to adequately inspect existing conditions will be entertained and no additional expenses related thereto will be granted.

1.02 RELATED REQUIREMENTS

A. Section 01 50 00 - Temporary Facilities: Site fences, security, protective barriers, and waste removal.

B. Section 01 60 00 - Product Requirements: Handling and storage of items removed for salvage and relocation.

C. Section 01 71 00 - Cutting and Patching

D. Section 01 74 19 - Construction Waste Management: Limitations on disposal of removed materials; requirements for recycling.

E. Section 04 20 00 – Unit Masonry: Selective demolition of existing CMU for new openings.

1.03 REFERENCE STANDARDS

A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.

B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
   1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences.
   2. Identify demolition firm and submit qualifications.
   3. Include a summary of safety procedures.

D. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.05 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Company specializing in the type of work required.
   1. Minimum of 5 years of documented experience.

PART 2 PRODUCTS

2.01 MATERIALS

A. For replacement of Work removed, use materials that comply with the pertinent Sections of these Specifications. All other materials, not specifically described but required for a complete and proper job, shall be as selected by the Contractor, subject to the approval of the Architect.

PART 3 EXECUTION

3.01 SPECIAL REQUIREMENTS FOR DEMOLITION

A. All methods, techniques and procedures of safety, shoring, barricading, fencing, protection, demolition, removal and disposal are left solely to the discretion of, and shall be the responsibility of the Contractor. Special attention shall be paid to the issues of safety and protection of existing construction and/or landscaping and site improvements to remain. The Contractor shall take all precautions necessary to prevent the movement, settlement, or failure of adjacent construction. See Section 01 00 00 - General Requirements, for additional information.

B. The Contractor shall be responsible for compliance with all applicable Local, State and Federal environmental regulations, including but not limited to the National Emission Standard for Hazardous Air Pollutants, as enforced by the United States Environmental Protection Agency. It shall be the Contractor's responsibility to provide all inspections and notifications related thereto.

3.03 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain and pay for all required permits and approvals required for demolition, hauling, dumping and in general, all activities related to the Work of this Section.
   2. Comply with applicable requirements of NFPA 241.

B. The Contractor shall be alert to potential problems or dangerous conditions. He shall exercise caution during demolition or removal which may affect structural safety. He shall proceed only when he has fully satisfied himself that he has provided proper support, shoring, bracing, protection, and safety precautions.
   1. If uncovered conditions are not as anticipated, immediately notify the Architect and secure needed directions. Do not proceed in areas of discrepancy until all such discrepancies have been fully resolved
   2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   3. Provide, erect, and maintain temporary barriers and security devices.
   4. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
   5. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
   6. Do not close or obstruct roadways or sidewalks without permit.
   7. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
   8. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.

C. Do not begin removal until receipt of notification to proceed from Owner.

D. Do not begin removal until built elements to be salvaged or relocated have been removed.

E. Protect existing structures and other elements that are not to be removed.
   1. Provide bracing and shoring.
   2. Prevent movement or settlement of adjacent structures.
   3. Stop work immediately if adjacent structures appear to be in danger.

F. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

G. The Architect's Scope of Services and responsibilities exclude the investigation, discovery, detection, identification, presence, leakage, release, use, handling, disposal, encapsulation,

abatement, treatment or removal of, or exposure of a person or persons to, hazardous materials, pollutants, contaminants, or disease transmitting organisms, preexisting or otherwise deposited at any time and in any form at the Project, including but not limited to volatile organic compounds, molds, fungus, bacteria, petroleum products, lead, asbestos or asbestos products, radon and electro-magnetic frequency radiation or other radiation. Should any such substances be encountered, the Owner and Architect shall be promptly notified, in writing.

H. Perform demolition in a manner that maximizes salvage and recycling of materials.
   1. Comply with requirements of Section 01 74 19 - Waste Management.
   2. Dismantle existing construction and separate materials.
   3. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.

3.04 EXISTING UTILITIES

A. The termination, demolition, and removal of utilities shall comply with the procedures, regulations, and recommendations of related utilities and governing authorities. The Contractor shall contact such agencies prior to proceeding, in order to assess their requirements and ensure proper coordination and full compliance.

B. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.

C. Protect existing utilities to remain from damage.

D. Do not disrupt public utilities without permit from authority having jurisdiction.

E. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.

F. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.

G. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

H. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

I. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone; identify and mark utilities to be subsequently reconnected, in same manner as other utilities to remain.

3.05 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as indicated.
   2. Report discrepancies to Architect before disturbing existing installation.
   3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.

B. Separate areas in which demolition is being conducted from other areas that are still occupied.
   1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 50 00 in locations indicated on drawings.

C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.

D. Remove existing work as indicated and as required to accomplish new work.
   1. Remove items indicated on drawings.

E. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, Telecommunications, and data systems): Remove existing systems and equipment as indicated.

1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
3. Verify that abandoned services serve only abandoned facilities before removal.
4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.

F. Protect existing work to remain.
1. Prevent movement of structure; provide shoring and bracing if necessary.
2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
3. Repair adjacent construction and finishes damaged during removal work.
4. Patch as specified for patching new work.

3.06 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site. Remove from site all materials not to be reused on site; comply with requirements of Section 01 74 19 - Waste Management. Contractor shall leave the site in neat, clean and safe condition, with all appropriate barricades, fencing, warning signage, etc. securely in place, ready for subsequent work. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 04 20 00
UNIT MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete Block, including standard shapes, solid units and grout filled cores as required.

B. Mortar and Grout.

C. Reinforcement, Ties, and Anchorage.

D. Building-in of lintels, bearing plates, anchors, items supplied by other trades, and premanufactured insulation inserts.

E. Accessories.

1.02 RELATED REQUIREMENTS

A. Section 05 50 00 - Metal Fabrications: Loose steel lintels, embedded items.

1.03 REFERENCE STANDARDS

A. ASTM A580/A580M - Standard Specification for Stainless Steel Wire; 2015.

B. ASTM A615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement; 2015.

C. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.

D. ASTM A580/A580M - Standard Specification for Stainless Steel Wire; 2015.

E. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units; 2014.

F. ASTM C91 - Standard Specification for Masonry Cement; 2012.

G. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units; 2011.

H. ASTM C140 - Standard Test Methods of Sampling and Testing Concrete Masonry Units and Related Units; 2014.

I. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar; 2011.

J. ASTM C150 - Standard Specification for Portland Cement; 2015.

K. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2011.

L. ASTM C270 – Standard Specification for Mortar for Unit Masonry, 2014a.

M. ASTM C404 - Standard Specification for Aggregates for Masonry Grout; 2011.

N. ASTM C476 - Standard Specification for Grout for Masonry; 2010.

O. ASTM C780 - Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry; 2012.

P. ASTM C1142 - Ready-mixed Mortar for Unit Masonry.

Q. ASTM E447 - Masonry Prism Test

R. NCMA - Specification for the Design and Construction of Load Bearing Concrete Masonry.

S. ASTM C1148 - Standard Test Method for Measuring the Drying Shrinkage of Masonry Mortar; 2008.

T. ASTM C1314 - Standard Test Method for Compressive Strength of Masonry Prisms; 2014.

U. ASTM C1357 - Standard Test Methods for Evaluating Masonry Bond Strength; 2009.

V. CRSI “Manual of Standard Practice”, 28th Edition; 2009.

W. CRSI “Placing Reinforcing Bars”, 8th Edition; 2011.

X. UL - Fire Resistance Directory; current edition.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Pre-installation Meeting: Convene a pre-installation meeting at least 1 month before starting work of this Section; require attendance by all relevant installers.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, masonry accessories, and all other manufactured products.

C. Shop Drawings:

1. Submit shop drawings of all masonry reinforcement detailing fabrication, bending, and placement of unit masonry reinforcing bars. Comply with ACI 315 - Details and Detailing of Concrete Reinforcing, showing bar schedules, stirrup spacing, lap lengths, diagrams of bent bars, and arrangement of masonry reinforcement, including elevations of all reinforced walls. Wall elevations shall include reinforcing at all architectural and mechanical openings.
2. Submit shop drawings of all special masonry shapes. Shop drawings shall indicate types of materials, finishes, dimensions, and anchorage. Shapes shall be represented in plan, elevation, and related details.
3. Submit shop drawing plan indicating proposed locations of all construction joints in masonry walls.

D. Mix Designs and Test Reports: Submit in dependent testing lab certificates:

1. CMU with integral water-repellent admixture.
2. Mortar mix designs and test results including proportions and mortar ingredients, prepared in accordance with ASTM C270.
3. Grout mix designs and test results including description of type and proportions of grout ingredients, prepared in accordance with ASTM C476.
4. Masonry unit’s compression, absorption and measurement test result.

1.06 QUALITY ASSURANCE

A. Comply with provisions of ACI 530/530.1/ERTA, except where exceeded by requirements of the Construction Documents.

B. Pre-construction Testing: If manufacturers published test reports are not available, the Contractor shall employ and pay an approved testing laboratory to perform pre-construction testing for:

1. Concrete unit masonry tests for each different unit for strength, absorption, and moisture content per ASTM C140 and fire-resistive tests per UL 618 and ACI 216.1/TMS 216.1.
2. Clay Unit Masonry Tests for each different unit per ASTM C67.
3. Prism tests for each type of wall construction per ASTM E447.
4. Mortar testing per ASTM C780.
5. Grout compressive strength testing per ASTM C1019.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

1. The maximum moisture content of concrete block when laid shall not exceed 30% for exterior exposures and 25% for interior exposures (as a percent of total absorption and is in addition to moisture level required under ASTM C90).

B. All mortar materials shall be stored under cover in a dry place.

C. Reinforcement steel, ties, and anchors shall be protected from the elements and, before being placed, shall be free from loose rust and other coating, including ice that will destroy or reduce the bond.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

A. Concrete Masonry Units (CMU): ASTM C90, normal weight. Manufactured with integral water-repellant admixture where required per this Section. Comply with referenced standards and as follows:
   1. Size: Standard units with nominal face dimensions of 16 x 8 inches and nominal depths as indicated on the Drawings for specific locations.
   2. Special Shapes: Provide non-standard blocks configured for corners, lintels, headers, control joint edges, soap, and other detailed conditions.
      a. 2-inch veneer soaps in widths and heights as indicated per the Drawings.
      b. Other shapes, sizes and configurations as indicated in the Drawings.
   3. Bonds and Patterns: Running bond unless otherwise indicated per the Drawings.
   4. Solid Units: Provide identical solid block units as follows:
      a. Wherever the cores of hollow block will be exposed to view following the completion of construction.
      b. At corbeled units and courses below corbeled units.
      c. Where indicated on the Drawings.
   5. Exposed Faces: Manufacturer's standard color and texture where indicated.
   6. Interior Units: Smooth uncolored faces, unless otherwise indicated.
   7. Minimum average net area compressive strength: 1,900 psi.

2.02 REINFORCEMENT AND ANCHORAGE

A. Reinforcing Steel: ASTM A 615 Grade 60 (420) deformed billet bars; uncoated. Provide reinforcing bar supports/positioners for accurate positioning.

B. Single Wythe Joint Reinforcement: Ladder type; ASTM A82 steel wire, hot dip galvanized after fabrication to ASTM A153, Class B2 and for interior walls to ASTM A641, Class 1. Standard 0.1875 inch (3/16”) side rods with 0.1483 inch (9 gauge) cross rods. Width as required to provide not more than 1 inch and not less than 1/2 inch of mortar coverage on each exposure.
   1. Products:
      a. Lox-All Ladder-Mesh 220 by Hohmann & Barnard / Dur-O-Wall.
      b. BL-10 by Blok-Lok.
      c. Ladder 2 Wire by Wire-Bond.
      d. Substitutions: See Section 01 60 00 - Product Requirements.

C. Reinforcing Bar Positioners: Provide reinforcing bar supports/positioners for accurate positioning of horizontal and vertical reinforcement in walls, bond beams, and lintels. Fabricate from cold-drawn plain 9 gage steel wire complying with ASTM A-82.
   1. Manufacturers:
      a. Dur-O-Wal.
      b. AA Wire Products Co.
      c. Substitutions: See Section 01 60 00 – Product Requirements.

D. Single Strand Reinforcement (For brick sills, soldier course and stack bond): Continuous single strand, galvanized, No. 9 gauge deformed wire.

E. Fasteners: Anchors shall be mechanically fastened to metal studs using self-drilling, self-tapping screws of sizes and types as recommended by the tie manufacturer. Screw finish shall be Type 304 stainless steel or a high-performance polymer coating, complying with ASTM B117, salt spray test result of no rust or other base metal corrosion after a minimum of 800 hours.

2.03 CMU MORTAR AND GROUT MIXES

A. Mortar for Unit Masonry: Pre-mixed masonry cement; ASTM C270; ASTM C91, commercially prepared type of Portland Cement Type 1 and hydrated lime Type S.
   1. Interior masonry: Type S.

2. Products:
   a. Quik-crete, Type S Portland/Lime Blend.
   b. Blue Circle.
   c. Eagle Bond.
   d. Substitutions: See Section 01 60 00 - Product Requirements.

B. Pigments for Colored Mortar: See 2.03 for this Section.

D. Grout: ASTM C476, 3,000 psi minimum 28-day compressive strength. Consistency required to fill completely volumes indicated for grouting.
   1. Fine grout shall be used for spaces less than 2” in either horizontal dimension.
   2. Mortar shall be used for spaces less than ¾” in width or spaces less than 1-1/2” x 2” in horizontal dimensions.
   3. Coarse Grout shall be used for filling cavities 2” or larger in width or cells 2” x 3” or larger in horizontal dimensions.
   4. Admixtures: Add to mixture at manufacturer's recommended rate and in accordance with manufacturer's instructions; mix uniformly.

E. Mixing: Use mechanical batch mixer and comply with referenced standards.

F. Use of accelerating admixtures in cold weather and set-retarding admixtures during hot weather only when reviewed and approved by the Architect.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive masonry.

B. Verify that related items provided under other Sections are properly sized and located.

C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 PREPARATION

A. Direct and coordinate placement of metal anchors and reinforcement supplied for installation under other sections.

B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

C. Steel sleeves shall be installed for all piping and cabling through masonry construction. Coordinate with Fire Protection, Plumbing, Mechanical and Electrical Divisions.

3.03 PROTECTON OF WORK

A. During erection, all walls shall be kept dry by covering at the end of each day or shutdown period with a strong, waterproof membrane. Partially completed walls not being worked on shall be similarly protected at all times. Covering shall completely cover all projecting rebar and overhang walls at least 2' on each side and shall be securely held in place.

3.04 COURSING, JOINTING AND BOND PATTERN

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

C. All masonry work shall be properly coordinated as required to maintain aligned coursing throughout the building, unless specifically noted otherwise.

D. Standard Concrete Masonry Units:
   1. Bond: Running Bond unless otherwise indicated per the Drawings.
   2. Mortar Joints: Concave.
   3. Joints scheduled to receive resilient floor base and other joints not exposed to view shall be flush-cut.

3.05 PLACING AND BONDING

A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.

B. Lay hollow masonry units with full bed of mortar on head joints, bed joints, and webs.

C. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.

D. Remove excess mortar and mortar smears as work progresses.

E. Remove excess mortar with water repellent admixture promptly. Do not use acids, sandblasting or high pressure cleaning methods.

F. Interlock intersections and external corners, except for units laid in stack bond.

G. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.

H. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

3.06 REINFORCEMENT AND ANCHORAGE - GENERAL

A. Wall reinforcement shall be installed continuously in all masonry cavity walls, in all interior block walls and partitions and at all other locations identified on the Drawings or specified herein.

B. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.

C. Place concrete masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 24 inches each side of opening.

D. Unless shown on the Drawings to be more closely spaced or where specifically indicated to be added, horizontal joint reinforcement for concrete masonry shall be installed in the first and second bed joints, 8" apart immediately above lintels and below sills at openings, and in bed joints at 16" vertical intervals elsewhere. Reinforcement in the second bed joint above or below openings shall extend two (2) feet beyond the jambs. All other reinforcement shall be continuous.

E. Side rods shall be lapped a minimum of 6 inches at splices.

F. Reinforcement shall be so placed as to assure a 1/2" minimum mortar cover on the faces of walls.

G. Prefabricated or job fabricated corners and tee sections shall be used to form continuous reinforcement around corners and for anchoring abutting walls and partitions. Materials in corner and tee sections shall correspond to type and design of reinforcement used.

H. Place horizontal and vertical reinforcing steel in walls and around openings as indicated on the Drawings. See Structural Drawings and Section 03 30 00 - Concrete, for additional information.

I. Fasten anchors to structural framing abutting masonry and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 16 inches horizontally and 16 inches vertically.

J. Structural steel clips shall laterally secure the tops of non-loading bearing masonry walls to building structure as required.

3.07 REINFORCEMENT AND ANCHORAGE - SINGLE WYTHE MASONRY

A. Install horizontal joint reinforcement 16 inches on center.

B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.

C. Place continuous joint reinforcement in first and second joint below top of walls.

D. Lap joint reinforcement ends minimum 6 inches.

E. Reinforce stack bonded unit joint corners and intersections with strap anchors 16 inches on center.

3.08 LINTELS

A. In general, and except where indicated otherwise, masonry lintels shall be provided at all openings in CMU walls 6 inches (nominal) or more in thickness. See Structural Drawings for a schedule of masonry lintels.

B. Loose steel angle lintels shall be provided for all openings in CMU masonry as indicated in the lintel schedule or on the Structural Drawings. For miscellaneous loose steel lintels not specified on the structural drawings, refer to Section 05 50 00 - Metal Fabrications.

C. Vertical cores below lintel ends shall be grouted solid full height to provide suitable bearing. Provide additional reinforcement and filled cores as indicated on the Drawings.

D. See Architectural and Structural Drawings for additional information related to reinforced concrete masonry lintels.

E. Temporarily brace lintels as required until mortar has adequately cured.

F. Maintain minimum 8 inch bearing on each side of opening, unless otherwise indicated.

G. A minimum of two courses below lintel ends shall be filled solid with mortar to provide suitable bearing.

3.09 BUILT-IN WORK

A. As work progresses, install built-in metal door frames, anchors and plates and other items to be built into the work and furnished under other sections.

B. Install built-in items plumb, level, and true to line.

C. Bed anchors of metal door frames in adjacent mortar joints. Fill frame voids solid with grout.
   1. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.

D. Do not build into masonry construction organic materials that are subject to deterioration.

3.10 TOLERANCES

A. Maximum Variation from Alignment of Columns: 1/4 inch.

B. Maximum Variation from Unit to Adjacent Unit: 1/16 inch.

C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft, 3/8 inch in any story and 1/2 inch in 40 feet or more.

D. Maximum Variation from Plumb at openings (windows, doors, etc): 1/8 inch in total height of opening.

E. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in 40 feet or more.

F. Maximum Variation from Level Coursing: 1/4 inch in any bay or 20 feet; 1/2 inch in 40 feet or more.

G. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.

H. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

3.11 NON-FIRE RATED AND ACOUSTICAL CONSTRUCTION

A. General: The following requirements shall apply to all non-fire rated masonry partitions and to all non-fire rated masonry partitions indicated on the Drawings to be "Acoustical Construction".

B. Where the tops of non-load bearing partitions meet the underside of the structure above, and where gaps in partitions are provided to allow for the penetration of structural members, safing insulation shall be installed. Insulation shall be compression fit and shall not be visible from below.

C. Acoustic Sealing and Smoke Sealing: Seal all cracks, joints, and voids in "Acoustical Construction" and in non-fire rated smoke partitions, airtight with sealing products specified in Section 07 90 05. Assemblies identified as "Acoustic Construction" are not fire-rated construction. Firestop products are required at fire-rated construction. Acoustic sealing and smoke sealing operations shall include, but shall not necessarily be limited to:

D. Sealing top of masonry partitions for Acoustical Construction on two sides at interface of top of wall to deck flutes.

E. Sealing all penetrations for pipes, conduits, structure, etc.

3.12 CUTTING AND FITTING

A. Cut and fit for chases, pipes, sleeves, and ductwork. Coordinate with other Sections of work to provide correct size, shape, and location.

B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.13 FIELD QUALITY CONTROL

A. Concrete Masonry Unit Tests: Test each variety of concrete unit masonry in accordance with ASTM C140/C140M for conformance to requirements of this specification.

B. Mortar Tests: Test each type of mortar in accordance with ASTM C780, testing with same frequency as masonry samples.

3.14 CLEANING

A. Remove excess mortar and mortar droppings.

B. Replace defective mortar. Match adjacent work.

C. Existing Masonry to Remain:
   1. Apply biocide treatment in accordance with manufacturer instructions.
   2. Clean soiled surfaces with cleaning solution. Application shall utilize a two-step process of a pre-wash followed by a final wash. Apply solutions in accordance with manufacturer instructions.

C. Clean soiled surfaces with cleaning solution.

D. All traces of excess mortar/grout, all efflorescence and all other construction stains shall be completely removed from exposed masonry.

3.15 PROTECTION

A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

B. Protect finishes until completion of project.

END OF SECTION

SECTION 05 50 00
METAL FABRICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Shop fabricated miscellaneous steel items. Including, but not limited to:
   1. Frames, brackets and supports for:
      a. Mechanical equipment, electrical equipment and other items as noted on the drawings

B. It shall be a requirement of the Work of the Section to thoroughly review all the Contract Documents and provide any and all miscellaneous metal fabrications required for a complete and proper job.

1.02 RELATED REQUIREMENTS

A. Section 04 20 00-Unit Masonry: Placement of metal fabrications in masonry.

B. Section 06 20 00 - Finish Carpentry and Architectural Millwork.

C. Section 09 21 16 – Gypsum Board Assemblies & Metal Studs.

E. Section 10 28 00 – Toilet and Healthcare Accessories.

1.03 REFERENCE STANDARDS

A. ASTM A36 - Standard Specification for Carbon Structural Steel; 2014.

B. ASTM A501 - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing; 2014.

C. AWS D1.1 - Structural Welding Code - Steel; 2015.

D. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel.

E. SSPC-SP 2 - Hand Tool Cleaning.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Submit for manufactured products specified herein.

C. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable. Submit lintel fabrication schedule including location, type, size, length and finish.

D. Certifications:
   1. Welders' Certificates: Submit certification for welders employed on the project, verifying AWS qualification within the previous 12 months.
   2. Fabricator's Qualification Statement: Provide documentation showing steel fabricator is accredited under IAS AC172.

E. Samples: Submit samples representative of materials and finished products as may be requested by the Architect.

1.05 QUALITY ASSURANCE

A. Structural Design Qualifications: Professional Structural Engineer experienced in design of this work and licensed in the State of Maine in which the Project is located, or personnel under direct supervision of such an engineer.

B. Fabricator's Qualifications: Only fabricators that maintain an agreement with an approved independent inspection or quality control agency to conduct periodic in-plant inspections at the fabricator's plant, at a frequency that will assure the fabricator's conformance to the requirements of the inspection agency's approved quality control program will be approved for this project.

C. Welding Standards: Comply with applicable provisions of ASW D1.1and ASW D1.3.

1.06 PRODUCT HANDLING

A. Delivery of Materials: Deliver, store and handle components in such a manner as to prevent damage to finished surfaces.

B. Storage of Materials: Store components in a dry, clean location, away from uncured masonry and concrete. Cover with tarpaulin or polyethylene sheeting.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

A. Steel Sections: ASTM A36.

B. Steel Tubing: ASTM A501 hot-formed structural tubing.

C. Plates: ASTM A283.

D. Fasteners: ASTM B33, Class FE/An 25 for electro-plated zinc coating, for exterior use or where built into exterior walls. Select fasteners for the type, grade, and class required.

E. Welding Materials: AWS D1.1; type required for materials being welded.

F. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

G. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

H. Slotted Channel Framing: ASTM A653 Grade 33, electro-galvanized steel metal channel framing and ASTM A1011 channel fittings system
   1. Engineered, fabricated and installed by the manufacturer's authorized installer with a minimum of ten (10) years of experience.
   2. Field inspection to verify job conditions, dimensions and suitability of primary structure to receive channel framing.
   3. Engineering of all channel framing, attachments between framing members, attachments between framing systems and building structure, and anchor points to receive attachments by the manufacturer of the building material or equivalent to be supported by the channel framing systems.
   4. Coordination of framing load capacity and anchor point types and locations with the requirements of the related material or equipment manufacturer.
   5. Submission of structural calculations including, but not limited to design criteria, stress and deflection analysis and selected framing, fittings and anchors prepared by a professional structural engineer licensed in the State of Maine.
   6. Manufacturer: Unistrut Corp.
      a. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 FABRICATION

A. NOTE: It is the Owner's intent to use energy conserving, environmentally friendly materials to the greatest extent practical. The Contractor is therefore encouraged to use recycled steel products.

B. Metal fabrications shall be standard approved products, fabricated in accordance with best shop practices and, wherever possible, shop assembled, ready for erection.

C. Metals shall be free from defects impairing strength, durability, or appearance and shall be best commercial quality for purposes specified. Metals shall be made with structural properties, to safely sustain and withstand strains, stresses, to which they will be normally subjected.

D. Fit and shop assemble items in largest practical sections, for delivery to site.

E. Fabricate items with joints tightly fitted and secured.

F. Continuously seal joined members by continuous welds.

G. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

H. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.

I. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.03 FABRICATED ITEMS

A. Miscellaneous Framing and Supports: Provide steel framing and supports for applications indicated that are not a part of structural steel scope as required to complete the Work. Fabricate units to sizes, shapes, and profiles indicated and required to receive adjacent construction. Fabricate from steel shapes, plates, and steel bars of welded construction using mitered joints for field connections. Cut, drill, and tap units to receive hardware, hangers, and similar items. Equip units with integrally welded anchors for casting into concrete or building into masonry.

B. Loose Steel Lintels
   1. Loose lintels shall be fabricated from A-36 steel from angles, shapes and masonry anchors of size and type scheduled for openings in masonry walls, unless otherwise indicated on the Drawings.
   2. Provide not less than eight (8") inches bearing at each side of openings, unless otherwise indicated. Under no circumstances shall bearing (each end) be less than one (1") inch per foot of span.
   3. Loose lintels, unless specifically otherwise noted, shall be installed with long legs vertical.
   4. Lintels shall be required over all openings in masonry walls, including openings required for all other trades (i.e. mechanical and electrical equipment and ductwork, etc.), except where CMU lintels are otherwise scheduled or detailed.

2.04 FINISHES - STEEL

A. Shop Priming: Shop prime all steel items, except the following: galvanized items those embedded in masonry. Do not prime surfaces in direct contact with concrete, where field welding is required, and items to be covered with sprayed fireproofing.
   1. Preparation:
      a. Prepare interior steel to be primed and steel to be fireproofed in accordance with SS PC-SP3 Power Tool Cleaning Standard.
      b. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
   2. Product: One coat shop standard primer, 2 - 3 mils DFT.

B. Galvanizing: Galvanize steel members after fabrication to ASTM A123 requirements by a member of the American Galvanizers Association, Inc. with a high grade, non-lead zinc bath.
   1. Smoothness: galvanizing shall a rugosity of 4 or less (16-20 microns of variation) when measured by a profilometer over a 1 inch straight line on the surface of elements that are less than 24 pounds per running foot. Profilometer shall be capable of operating in 1 micron increments.
   2. All hot-dipped galvanized material shall be stamped to indicate ASTM designation and ounces per square foot of zinc coating required by the specifications.
   3. Warranty: Galvanizer's standard warranty that materials shall be free from 10% or more visible rust for 20 years.
   4. Where hot-dip galvanizing prior to completion of fabrication (cutting or welding operations) cannot be avoided, joints and cuts shall be finished with four (4) full coats of touch-up galvanizing repair paint as recommended by the fabricator.

2.05 FABRICATION TOLERANCES

A. Squareness: 1/8 inch maximum difference in diagonal measurements.

B. Maximum Offset Between Faces: 1/16 inch.

C. Maximum Misalignment of Adjacent Members: 1/16 inch.

D. Maximum Bow: 1/8 inch in 48 inches.

E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work. Coordinate all work with the work of other trades.

3.02 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

B. Supply setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.

C. Shearing and punching shall leave clean true lines and surfaces. Weld or rivet permanent connections. Welds and flush rivets shall be finished flush and smooth on surfaces that will be exposed after installation. Welds shall be continuous unless otherwise noted. Welds shall not have voids or pockets and shall be ground to provide smooth transitions between metal surfaces. Do not use screws or bolts where they can be avoided; where used, heads shall be countersunk, screwed up tight and threads nicked to prevent loosening.

D. Fastenings shall be concealed where practicable. Thickness of metal and details of assembly and supports shall give ample strength and stiffness. Joints exposed to weather shall be formed to exclude water. Provide holes and connections for the work of other trades.

E. Connections and accessories shall be adequate to safely sustain, withstand stresses, strains, to which they will be normally subjected.
   1. Connections to steel unless otherwise specified shall be steel.
   2. Connections to genuine wrought iron work shall be wrought iron or steel.
   3. Connections to cast iron, unless otherwise specified shall be steel.
   4. Bolts, nuts, screws for exterior work shall be electrogalvanized, unless otherwise noted.

F. Furnish all standard screws, bolts, washers, and other such fastening devices as are necessary for attaching this work to other materials. Anchors and other connecting devices required in concrete or masonry shall be built-in as the work progresses. NOTE: Special attention shall be given to the firm and secure anchoring of overhead mounted materials and equipment.

G. Do cutting, punching, drilling, tapping required for attachment of other work coming in contact with miscellaneous metal where so indicated or where directions for same are given prior to or with review of shop drawings.

H. Unless otherwise indicated, bolt, and screw heads shall be flat countersunk in exposed faces of ornamental or finished character; elsewhere as required. Cut off bolts, screws, etc., where exposed, flush with nuts, or other adjacent metal. Except as otherwise required, weld shop-assembled connections; welds, bolts, or machine screws may be used for field connections. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Locate joints where least conspicuous. Exposed fastenings shall be the same materials, color, and finish as metal to which they apply, unless otherwise required.

I. Make up threaded connections tightly so that threads will be entirely concealed by fittings.

J. Allow for thermal movement resulting from a maximum temperature range change of 120 degrees F ambient and 180 degrees F surface by preventing buckling, opening up of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and night time sky heat loss.

3.03 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects. All work shall be designed for adjustment to field variation, fitted with proper joints and intersections, adequately anchored in place.

B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

C. Perform field welding in accordance with AWS D1.1.

D. Obtain approval prior to site cutting or making adjustments not scheduled.

E. Install all supporting members, fastening, framing, hangers, bracing, brackets, straps, bolts, angles, and the like required to set, connect work rigidly and properly to structural steel, masonry, other construction.

F. Setting bearing plates: Clean concrete and masonry bearing surfaces of bond reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of plates. Set bearing and leveling plates on wedges, shims or leveling nuts. After bearing members have been positioned and plumbed, tighten anchor bolts. Do not remove wedges or shims but, if protruding, cut off flush with edge of bearing plate before packing with grout. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

G. Immediately after erection, clean field welds, bolted connections and abraded areas of shop paint, and paint exposed areas with the same materials as used for shop painting, complying with SSPC-PA1. Apply by brush or spray to provide a minimum 2 mil dry film thickness. Clean field welds and abraded areas of galvanized surfaces to comply with ASTM A780.

H. Bollards: Anchor with post-installed anchors and bolts. Provide four 3/4-inch anchors at each bollard, unless otherwise indicated. Embed anchors at least 4 inches into concrete.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION

SECTION 06 10 54
WOOD BLOCKING AND CURBING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concealed fire-resistive treated wood blocking for support of wall mounted items furnished by the contractor and furnished by Owner, including, but not limited to: toilet and healthcare accessories, wall cabinets, counters, millwork and wall mounted equipment.

1.02 REFERENCES

A. ASTM A153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

C. PS 20 - American Softwood Lumber Standard.

D. SPIB - Grading Rules; Southern Pine Inspection Bureau, Inc.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide technical data on wood preservative materials.

C. Certifications: Submit wood preservative treated manufacturer's certifications that treated materials comply with requirements. Indicate type of preservative used, net amount of preservative retained, and chemical treatment manufacturer's written instructions for handling, storing, installing and finishing treated materials.

1.04 QUALITY ASSURANCE

A. Lumber: Comply with PS 20 and approved grading rules and inspection agencies.
   1. Acceptable Lumber Inspection Agencies: Any agency with rules approved by American Lumber Standards Committee. Inspection agencies shall include: NLGA, SPIB, WCLIB, WWPA. Lumber shall be piece factory-marked with agency grade stamp.
   2. Lumber of other species or grades, or graded by other agencies, is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.

B. Plywood Comply with PS 1.

C. Coordination with other Trades: Coordinate the locating of blocking and similar supports for finish materials, millwork, casework, finish carpentry, equipment, hardware and accessories, regardless of whether such items are Owner or Contractor furnished, so that the installation of finish work may be properly executed in compliance with the intended design requirements. Before starting installation of supports, carefully check all related shop drawings and submittals.

PART 2 PRODUCTS

2.01 DIMENSION LUMBER

A. Grading Agency: Southern Pine Inspection Bureau, Inc. (SPIB).

B. Nominal sizes as indicated on drawings, S4S.

C. Miscellaneous Blocking, Furring, Nailers and Curbs: No. 2 or Standard Grade.

D. Moisture Content:
   1. Untreated Lumber: Kiln-dry or MC15.
   2. Preservative Treated Lumber: (KDAT) Kiln dry after treatment to maximum moisture content of 12%.

2.02 ACCESSORIES

A. Fasteners and Anchors:

1. Fastener Coatings:
   a. Hot-dipped galvanized steel per ASTM A153 or AISI Type 304 stainless steel for exposed to weather or high humidity locations.
   b. AISI Type 304 stainless steel at preservative treated wood locations, as appropriate to suit job conditions.
2. Anchors: Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Expansion anchors shall conform to Federal Specification FF-S325.
   a. Anchors shall be capable of sustaining without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load Imposed when installed in concrete as determined by ASTM E488.
   b. Materials: Carbon-steel, zinc plated, ASTM B633, Class FE/Zn5, or Stainless-steel with bolts and nuts, ASTM F593 and ASTM F594, Alloy Group 1 or 2.
3. Lag Screws and Lag Bolts: Shall conform to Federal Specification FF-B-561 and ASME B18.2.1.
4. Power Driven Fasteners: Conform to National Evaluation Report NER-272.
5. Nails and Staples: Conform to Federal Specification FS-N-105 and ASTM F1667.
6. Bolts: Conform to Federal Specifications FF-B-571 and FF-B-575, ASTM A307, Grade A and ASTM A563 for hex nuts and flat washers.
7. Ground Anchorage: Wood plugs or nailing blocks are not acceptable for fastening grounds, furring, etc. to concrete or masonry. Hardened steel nails, expansion screws, toggle bolts, metal plugs, or metal inserts, as most appropriate for each type of masonry or concrete construction shall be used.

2.04 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
   1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.

B. Fire Retardant Treatment, Interior Type A: AWPA U1, Use Category UCFA, Commodity Specification H, low temperature (low hygroscopic) type, chemically treated and pressure impregnated, capable of providing a maximum flame spread rating of 25 when tested in accordance with ASTM E84 and with no evidence of significant combustion when test is extended for an additional 20 minutes.
   1. Kiln dry wood after treatment to a maximum moisture content of 15 percent for lumber and 15 percent for plywood.
   2. Provide fire-retardant treated wood products in the following locations:
      a. Wood lumber and plywood indicated to be Fire-Retardant Treated (F.R.T.) or Fire Retardant (F.R.) on the Drawings.
      b. ALL blocking within partitions and above ceilings in the addition and renovation areas, unless otherwise specifically noted.
   3. Do not use treated wood in applications exposed to weather or where the wood may become wet.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Examine and correct any conditions detrimental to the proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected. Set members level and plumb, in correct position.

B. Place horizontal members with crown side up.

C. Construct curb members of single pieces.

D. Space furring members 16 inches o.c.

E. Provide miscellaneous members as indicated or as required to support finishes, fixtures, specialty items, and trim.

F. Cut out and discard all defects that will render a piece unable to serve its intended function. The Architect may reject lumber whether or not it has been installed, for excessive checking, warp, twist, bow, crook, mildew, fungus or mold as well as for improper cutting and fitting.

G. Securely attach rough carpentry work to substrate by anchoring and fastening complying with CABO NER-272 for power-driven fasteners, and fastening schedules in the International Building Code, unless otherwise indicated.

H. All preservative treated wood shall be separated from all aluminum and steel surfaces by use of flexible membrane isolation strips.

3.02 INSTALLATION OF PLYWOOD

A. Secure with long dimension perpendicular to framing members, with ends over firm bearing and staggered, using nails, screws, or staples.

B. Materials shall be applied according to recommendations of the American Plywood Association.

C. Install telephone and electrical panel back boards made of plywood or other acceptable structural panels at locations indicated. Size back boards to be minimum 48 inches beyond size of telephone and electrical panels.

D. All preservative treated plywood shall be separated from all metal (coated and uncoated) by use of isolation strips

3.03 INSTALLATION OF WOOD BLOCKING

A. Install all wood blocking as required to provide anchorage for other materials, wall mounted equipment, counters, cabinets, fixtures, accessories, etc. Solid wood blocking shall be minimum 1-1/2" thick material. Wedge, anchor and align blocking to provide a rigid and secure installation of both blocking and other work related thereto.

B. All wall-mounted door stops and interior signage attached to gypsum wallboard surfaces shall have blocking within the supporting wall.

C. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated. Build anchor bolts into masonry during installation of masonry work wherever possible. Secure anchor bolts to formwork before concrete placement wherever possible.

D. All preservative treated wood blocking shall be separated from all metal (coated and uncoated) by use of isolation strips.

END OF SECTION

SECTION 06 20 00
FINISH CARPENTRY AND ARCHITECTURAL WOODWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Custom interior woodwork items including but not limited to:
   1. Reception – Registration desks.
   2. Adjustable and fixed wall shelving.
   3. End panels, cleats and counter support brackets for counters.
   4. Wall elements with resin panels, acoustic wall panels, aluminum trims.
   5. Aluminum channels at desk screen wall panel glazing.
   6. Other millwork items indicated in the Drawings

B. Hardware and attachment accessories.

1.02 RELATED REQUIREMENTS

A. Section 06 41 00 - Architectural Wood Casework: Shop fabricated custom cabinet work.

B. Section 08 80 00 –Glazing

C. Section 12 36 00 - Countertops.

1.03 REFERENCE STANDARDS

A. ANSI A208.1 - American National Standard for Particleboard; 2009.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

C. AWI/AWMAC/WI - Architectural Woodwork Standards; 2014.

D. AWPA U1 - Use Category System: User Specification for Treated Wood; 2012.

E. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

F. PS 20 - American Softwood Lumber Standard; 2010.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with plumbing rough-in, electrical rough-in, and existing wall construction and features.

B. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Provide manufacturer's technical information for all factory fabricated products, hardware, and accessories specified herein. Provide data on fire retardant treatment materials and application instructions.

C. Shop Drawings: Submit shop drawings of all items of finish carpentry and millwork. Indicate materials, species, arrangement, clearances, erection details, finishes and surfacing, thickness, size, component profiles, fastening methods, jointing details, accessories, and hardware, to a minimum scale of 1-1/2 inch to 1 ft.

D. Samples:
   1. Submit confirmation samples of selected plastic laminate and solid surface color chips.
   2. Submit panel veneer finished samples to confirm match to existing.

1.06 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this Section with minimum five years of documented experience and with at least one project in the past 5 years with value of woodwork within 50 percent of cost of woodwork for this Project.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Protect woodwork and millwork during transit, delivery, storage and handling to prevent moisture and other damage, soiling and deterioration.

B. Do not deliver woodwork and millwork until environmental conditions are suitable (enclosed, dry, with operating HVAC system), and painting and similar operations that could damage woodwork and millwork are complete.

PART 2 PRODUCTS

2.01 FINISH CARPENTRY ITEMS

A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI/AWMAC/WI Architectural Woodwork Standards for Premium Grade.

B. Surface Burning Characteristics: Provide materials having fire and smoke properties as required by applicable code.
   1. Exit Enclosures and Passageways: Class B, minimum.
   2. Exit Access Corridors: Finishes shall be Class B minimum.
   3. Other Rooms: Finishes shall be Class C minimum.

2.02 LUMBER MATERIALS

A. Hardwood Lumber (for transparent finish): Select Maple species, Plain sawn, moisture content of 5 to 11%.

B. Hardwood Lumber (for paint finish): Poplar species, Plain sawn, moisture content of 5 to 10 %. MDF is not acceptable for painted trim.

C. Wood fabricated from old growth timber is not permitted.

D. Provide sustainably harvested wood, certified or labeled as specified in Section 01 60 00 - Product Requirements.

E. Provide wood harvested within a 500 mile radius of the project site.

2.03 SHEET MATERIALS

A. Plywood is defined as a panel manufactured with 3 or more layers (plys) of wood products composed of outer veneers or overlays and core materials laminated into a single sheet or panel.
   1. All plywood shall be manufactured in the United States or Canada.
   2. Cores shall comply with published industry standards for cores manufactured for use in architectural woodwork.
   3. Where a core is not specified, selection shall be at the option of the AWI woodworker.

B. Panel for Plastic Laminate Facings: Particle board (PB), ANSI A208.1; Class M2; no urea formaldehyde-added, composed of wood chips, sawdust, or flakes of 38.7 PCF minimum density, made with water resistant adhesive to suit application; sanded faces; 3/4 inch thickness and as indicated.
   1. Applications for fire-resistive treated type (FT): Wall panels and where indicated.
   2. Modulus of Elasticity: 290,100 psi minimum.
   3. Screw Holding Face: 202 lbs minimum.
   4. Screw Holding Edge: 180 lbs minimum
   5. Products - fire-resistive:
      a. Encore FR by SierraPine.
      b. PyroBlock Formaldehyde Free PB by Panel Source International.

C. Panel Core for Plastic Laminate Facings: Medium density fiberboard (MDF); ANSI A208.2, Class MD or MD-EXT as applicable, no urea formaldehyde-added, composed of wood chips, sawdust, or flakes of 47 PCF minimum density, made with water resistant adhesive; of grade to suit application; sanded faces.
   1. Applications for moisture resistant type (MR): Where indicated.

2. Applications for fire-resistive treated type (FT): Wall panel substrate and where indicated.
3. Screw Holding Face: 250 lbs minimum (3/4" thickness).
4. Screw Holding Edge: 225 lbs minimum.
5. Panel Thickness: As indicated for each application.
6. Products - fire resistant:
   a. PyroBlock Formaldehyde Free MDF by Panel Source International.
   b. Medite FR by Roseburg.

D. Panel thicknesses shall be as follows, unless otherwise indicated on the Drawings:
1. Cabinet Tops and Bottoms: 3/4"
2. Cabinet Ends, Supports and Divider Panels: 3/4"
3. Shelves: 3/4" up to 36" long and 1" over 36" long.
4. Concealed Cabinet Backs: 3/8".
5. Exposed Cabinet Backs: 3/4".
6. Exposed Panels: 3/4".
7. Doors and Drawer Fronts: 3/4".
8. Tall Cabinet Doors: 1".
9. Stiles, Rails and Trim: 3/4".
10. Cabinet Valances: 3/4".
11. Cabinet Aprons: 3/4".
12. Drawer Backs and Bottoms: 1/2".
13. Wall Panels: 3/4”.

2.04 LAMINATE MATERIALS

A. High Pressure Decorative Laminate (PLam): NEMA LD 3. All panels shall be faced both sides for balanced construction. Provide solid colors with core of same color where indicated. Provide types for applications as follows:
1. Horizontal Surfaces: HGL, 0.039-inch nominal thickness; for exposed horizontal surfaces.
2. Vertical Surfaces: VGS, 0.028-inch nominal thickness; for exposed vertical surfaces, interior cabinet bottoms. May be used for semi-concealed faces.
3. Laminate Backer: BKL; 0.020-inch nominal thickness; undecorated plastic laminate. For concealed faces.
4. Manufacturers and Colors: See Finish Legend.

B. Laminate Adhesive: Type recommended by laminate manufacturer to suit application; not containing formaldehyde or other volatile organic compounds.

C. Plastic Edge Trim: PVC or ABS, 3 mm thickness, extruded flat shaped with eased edges; smooth finish; for machine application with hot melt adhesive; through colors; of width to match component thickness and length as required; colors as selected by the Architect from the manufacturer's full range of colors.
1. Products: Accent Edge by Dolken Woodtape or Charter Industries.

2.05 SOLID SURFACING

A. Solid Surfacing: Homogenous filled acrylic, meeting ANSI Z124.3 and Z124.6, Type VI.
1. Thickness: 1/2 inch.
2. Joint Adhesive: Manufacturer's standard two-part adhesive to create inconspicuous, non-porous joints, with a chemical bond.
3. Panel Adhesive: Manufacturer's recommended silicone.
4. Support Substrate: Type as required for plastic laminate facing; 3/4 inch thickness or as indicated.
5. Manufacturers and Colors: See Finish Legend.

2.06 FASTENINGS AND ACCESSORIES

A. Adhesive for Purposes Other Than Laminate Installation: Suitable for the purpose; no urea formaldehyde or volatile organic compounds.

B. Fasteners: Nails, screws, and other anchoring devices shall be of size, material, finish and type to suit application to provide secure attachment, concealed where possible; hot-dipped galvanized finish, complying with ASTM A153 in exposed locations of high humidity.

C. Concealed Joint Fasteners: Threaded steel.

D. Sealants: Comply with requirements of Section 07 90 00 - Sealants.

E. Lumber for Shimming, Blocking, and Furring: Softwood or hardwood lumber, kiln dried to less than 15% moisture content. Provide fire retardant treated.

2.07 WOOD TREATMENT

A. Fire Retardant Treatment (FR-S Type): Chemically treated and pressure impregnated; Class A, capable of providing flame spread index of 25 maximum for hardwoods and softwoods, fuel contributed index of 15 maximum for hardwoods and 25 maximum for softwoods, and smoke developed index of 0, maximum for hardwoods and 15 maximum for softwoods, when tested in accordance with ASTM E84
   1. AWPA U1; cured organic resin solution, relatively insoluble in water and shall not bleed through or otherwise adversely affect types of finishes indicated. Treatment shall permit milling of lumber after treatment and kiln drying by a plant certified by U.L. Maximum moisture content shall meet treatment manufacturer's standards.
   2. Provide fire retardant treated wood products in the following locations:
      a. Where wood members (lumber and plywood) are indicated to be Fire-Retardant Treated (F.R.T.) or Fire Retardant (F.R.) on the Drawings.

2.08 FABRICATION

A. The millwork details represented on the Drawings are not intended to indicate all of the framing, blocking and sheathing required for the proper construction and support of millwork. It shall be the Contractor's responsibility to properly detail such work for lasting strength and stability, and to accurately represent it on Shop Drawings.
   1. Note: There shall be no unfinished wood products. If not covered with plastic laminate products or otherwise finished, all wood surfaces shall receive a minimum of one coat of sealer in concealed or semi-concealed areas.

B. In general, woodwork shall be assembled and installed using concealed fasteners, unless otherwise approved by the Architect. Fasteners shall be concealed, blind nailed, or countersunk with matching plugs. Secure woodwork to anchors or blocking built-in or directly attached to substrates.

C. Trim shall be fastened in place with finishing nails, set heads for putty. Woodwork shall be sanded as necessary to remove irregularities and machine marks. The use of finishing screws shall not be permitted. All work shall be left free of blemishes and defects.

D. Joints in all work shall be tight and formed to conceal shrinkage. Running trim shall be in long lengths and joined only where solid fastenings can be made. End joints in built-up members shall be well distributed. Exterior corners shall be mitered and interior corners and/or angles shall be coped. All edges shall be slightly eased; edges of solid wood members 3/4" thick or less to 1/16"; edges of rails and similar members more than 3/4" thick to 1/8".

E. Complete fabrication in the shop, including assembly, finishing, and hardware application, to the maximum extent possible, before shipment to the site. Disassemble components only as necessary for shipment and installation. Pre-cut openings, where possible, to receive hardware, fixtures, electrical work and similar items.

F. Condition woodwork to average prevailing humidity conditions in installation areas before installation. Install woodwork level, plumb, true and straight to a tolerance of 1/8" to 96 inches. Shim as required with concealed shims. Scribe and cut woodwork to fit and refinish cut surfaces and repair damaged finish at cuts.

G. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting. Closure panels/strips, end panels and trim shall be provided as required for a complete, finished installation.

2.09 PLASTIC LAMINATES

A. Plastic laminates shall be installed in strict accordance with the manufacturer's recommendations. All edges shall be tooled smooth and square. Any scratched or defaced materials shall be completely replaced at no additional cost to the Owner. Where materials meet at edges and corners, joints shall butt and overlapping members shall be filed off smooth, forming a slightly eased joint.

B. Cap exposed plastic laminate finish edges with plastic trim, or as detailed on the Drawings.

C. Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises.

D. Apply laminate backing sheet to reverse face of plastic laminate finished surfaces.

2.10 HARDWARE

A. Hardware: BHMA A156.9. Basis of Design products indicated. For substitutions see Section 01 60 00 - Product Requirements.

B. Shelf Standards & Brackets: Heavy-duty; 7/8" wide x 11/16" high x 14 gage cold rolled steel, single track standards with 2" slot spacing, back supported style, anochrome finish. Bracket lengths as indicated on the Drawings. Provide 1 bracket for each shelf at each standard.
   1. Product: #87 Standard, #186/187 Bracket by Knape & Vogt (KV).
   2. Furnish anochrome #154 shelf fasteners for wood shelves.

C. Panel Support Clips: Interlocking aluminum Zee clips; 7/8" H x 3/16”D with 5/8" lift.
   1. Product: EAM-62518-1.5 by Eagle Mouldings.

D. Wiring Grommets: 2" outside diameter; plastic. Color selected from manufacturer's full range.
   1. Product: Series TG by Doug Mockett Co. Inc.

E. Counter Support Brackets: Sizes as required for counter depth (8" to 29"). Spacing as indicated on the Drawings, but in no case greater than 36" apart.
   1. Finish: Powder coat finish. Color as selected from manufacturer's standard range.
   2. Exposed and Concealed Mount Products: See Drawings.
      a. (Straight style) EH Series by Rakks.

2.11 SHOP FINISHING

A. Scope: It is intended that all millwork constructed of veneered and solid hardwood products shall be shop finished as specified herein.

B. Comply with referenced quality standards for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing architectural woodwork. Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of wood work. Apply 2 coats to back of panels and to end grain surfaces.

C. Sand work smooth and set exposed nails and screws.

D. Apply color matched wood filler in exposed nail and screw indentations.

E. On items to receive transparent finishes, use wood filler that matches surrounding surfaces and is of type recommended for the applicable finish.

F. Finish work in accordance with AWI/AWMAC/WI (AWS), Section 5 - Finishing for Grade specified and as follows:
   1. Transparent: Conversion varnish (formerly TR-4).
      a. Exposed Surfaces: Stain coat, sealer, and 2 topcoats.
      b. Semi-exposed Surfaces: stain coat, sealer, and 1 topcoat.
      c. Concealed Surfaces: 1 coat sealer.
      d. Sheen: Medium Rubbed.
   2. Opaque: 3 coats alkyd paint system; sheen to be confirmed with the Architect. Colors as selected by the Architect.

G. Field touchup after installation: Acrylic Lacquer.

H. Back prime woodwork items to be field painted, prior to installation.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify adequacy of backing and support framing.

B. Verify mechanical, electrical, and building items affecting work of this Section are placed and ready to receive this work.

C. See Section 06 54 10 - Wood Blocking and Curbing for installation of concealed wood blocking.

3.02 INSTALLATION

A. Install work in accordance with AWI/AWMAC/WI Architectural Woodwork Standards requirements for grade indicated.

B. Set and secure materials and components in place, plumb, true, straight and level.

C. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.

D. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation.

E. Handle and install fire retardant treated wood in accordance with manufacturer's recommendations.

3.03 TOLERANCES

A. Maximum Variation from True Position: 1/16 inch.

B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

3.04 CLEANING AND PROTECTION OF WORK

A. Erect and maintain temporary protective barriers until such time as permanent construction is in place and all danger of damage or defacement is past.

B. Repair damaged and defective woodwork, where possible to eliminate functional and visual defects. Where not possible to repair, replace woodwork. Clean woodwork on exposed and semi-exposed surfaces. Touch up shop applied finishes to restore damaged or soiled areas.

END OF SECTION

SECTION 06 41 00
ARCHITECTURAL WOOD CASEWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Specially fabricated cabinet units.

B. Hardware.

C. Factory Finishing.

D. Preparation for installing utilities.

1.02 RELATED REQUIREMENTS

A. Section 06 10 54 - Wood Blocking and Curbing: Concealed blocking and support framing.

B. Section 06 20 00 - Finish Carpentry and Architectural Woodwork.

C. Section 12 36 00 - Countertops.

1.03 REFERENCE STANDARDS

A. AWI/AWMAC/WI - Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).

B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards; 2021, with Errata.

C. BHMA A156.9 - Cabinet Hardware; 2020.

D. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; 2020.

E. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Pre-installation Meeting: Convene a pre-installation meeting not less than three weeks before starting work of this Section; require attendance by all affected installers.
   1. Discuss wall cabinet cleat system, securement inspection and cabinet installation.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data for all materials, finishes and products, including test results.

C. Shop Drawings: Indicate materials, finishes, component profiles, thicknesses, fastening methods, jointing details, elevations, hardware locations, finishes and accessories. Include field dimensions.
   1. Include plans, elevations, sections at 1-1/2 inch to 1 foot scale, component profiles, connection and attachment details, and finish schedule. Indicate locations and types of building services connections and supplementary or concealed supports.

D. Samples:
   1. Submit actual samples of architectural cabinet construction, minimum 12 inches square, illustrating proposed cabinet, countertop, and shelf unit substrate and finishes.
   2. Submit actual sample items of proposed pulls, hinges, shelf standards, and locksets, demonstrating hardware design, quality, and finish; unless otherwise directed by the Architect.

1.06 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this Section with minimum five years of documented experience and with at least one project in the past 5 years with value of woodwork within 50 percent of cost of woodwork for this Project.

B. Installer Qualifications: Same as fabricator.

1.07 PERFORMANCE REQUIREMENTS

A. Architectural Casework shall meet the fabrication requirements of the Architectural Woodwork Standards (AWS) for Custom Grade.

B. Incorporate systems and materials specified in other Sections and as indicated on the Drawings, including but not limited to glazing, electrical conduit, and communications cabling.

C. Casework shall be configured as indicated on the Drawings and finished on all exposed and semi-exposed sides and sealed on all concealed faces.

D. Structural Performance: Casework shall be capable of withstanding the effects of gravity loads, dead loads, and transverse loads.
   1. Cabinet shelving shall support 50 plf with a maximum deflection of L/180.
   2. Countertops shall support 100 plf for 24 inch deep counters with a maximum deflection of L/360.
   3. Seismic Performance: Anchor casework to withstand effects of earthquake motions determined according to ASCE 7 Minimum Design Loads for Buildings and Other Structures.

1.08 PROJECT CONDITIONS

A. Field Dimensions: The woodwork fabricator shall be responsible for coordinating the dimensions of all his work with actual field conditions, as well as with furniture, equipment and appliances to be furnished by others. The Contractor and fabricator shall cooperate to establish and maintain dimensions as required for a proper fit, without field modifications. Verify locations of concealed framing, blocking, reinforcements, and furring that support woodwork by accurate measurements before being enclosed.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Protect units during transit, delivery, storage, and handling to prevent moisture and other damage, soiling and deterioration.

B. Environmental Limitations: Do not deliver or install system and components until building is enclosed and finishing operations are complete, including adjacent ceiling and floor covering installation and painting.

1.10 FIELD CONDITIONS

A. Acclimate casework to conditions indicated below for a minimum of 72 hours, prior to installing.

B. Acclimate casework to conditions indicated below for a minimum of 72 hours, prior to installing. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy. Installation areas shall be climate controlled between 60 and 90 degrees F with Relative Humidity maintained between 25 and 55 per cent.

PART 2 PRODUCTS

2.01 CABINETS

A. Quality Standard: Premium Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless indicated otherwise.

B. Plastic Laminate Faced Cabinets: Custom grade.

2.02 WOOD-BASED COMPONENTS

A. Wood fabricated from old growth timber is not permitted.

B. Panel Core for Plastic Laminate Facing: Particle Board (PB); ANSI A208.1; Class M2, type as specified in AWI/AWMAC Architectural Woodwork Quality Standards Illustrated and herein; no urea formaldehyde-added, composed of wood fibers pressure bonded with water resistive adhesive to suit application; sanded faces; thicknesses as required.
   1. Density: 38.7 pcf minimum.
   2. Modulus of Elasticity: 290,100 psi minimum.

3. Screw Holding Face: 202 lbs minimum.
4. Screw Holding Edge: 180 lbs minimum.

C. Panel Core for Plastic Laminate Facing: Medium density fiberboard (MDF); ANSI A208.2; Class MD, type as specified in AWI/AWMAC Architectural Woodwork Quality Standards Illustrated and herein; no urea formaldehyde-added, composed of wood fibers pressure bonded with adhesive to suit application; sanded faces; thicknesses as required.
1. Applications: Moisture resistant type for cabinets, panels and aprons below sinks and where indicated on the Drawings.
2. Density: 47 pcf minimum.
3. Modulus of Elasticity: 405,000 psi minimum.
4. Screw Holding Face: 250 lbs minimum.
5. Screw Holding Edge: 225 lbs minimum.

D. Panel thicknesses shall be as follows, unless otherwise indicated on the Drawings:
1. Cabinet Tops and Bottoms: 3/4"
2. Cabinet Ends, Supports and Divider Panels: 3/4"
3. All Shelves: 3/4" up to 36" long and 1" over 36" long.
4. Concealed Cabinet Backs: 3/8".
5. Exposed Cabinet Backs: 3/4".
6. Exposed Panels: 3/4".
7. Doors and Drawer Fronts: 3/4".
8. Tall Cabinet Doors: 1".
9. Stiles, Rails and Trim: 3/4".
10. Cabinet Valances: 3/4".
11. Cabinet Aprons: 3/4".
12. Drawer Backs: 1/2".
13. Drawer Bottoms: 3/8".

2.03 LAMINATE MATERIALS

A. Manufacturers and colors:
1. Formica Corporation.
2. Panolam Industries International, Inc; Nevamar.
3. Wilsonart.
4. Substitutions: See Section 01 60 00 - Product Requirements.

B. Definitions:
1. Exposed Cabinet Faces: Exterior cabinet faces, both sides of doors and cabinet interiors without doors.
2. Semi-Exposed Cabinet Faces: Interior cabinet surfaces behind door and drawer fronts.
3. Concealed Cabinet Faces: Faces that are total concealed to view.

C. High Pressure Decorative Laminate (HPDL): NEMA LD 3, indicated "P Lam" on the Drawings. See Finish Legend for manufacturers and colors. All panels shall be faced both sides for balanced construction.

D. Provide types for applications as follows:
1. Vertical Surfaces: VGS, 0.028-inch nominal thickness. For exposed vertical and horizontal surfaces, inside faces of cabinet doors. (Inside cabinet bottoms).
2. Cabinet Liner: CLS, 0.020-inch nominal thickness. For semi-concealed reverse face of exposed surfaces, except as indicated.
3. Laminate Backer: BKL, 0.020-inch nominal thickness, undecorated; for application to concealed backside of panels faced with high pressure decorative laminate.

2.04 COUNTERTOPS

A. Countertops: See Section 12 36 00.

2.05 ACCESSORIES

A. Adhesive: Urea formaldehyde-free. Type recommended by fabricator to suit application.

B. Edge Banding: Extruded PVC or ABS, flat shaped with eased edges; smooth finish; of width to match component width.
   1. Banding thickness as follows:
      a. 3 mm applications: Door and drawer fronts, 4 sides; Cabinet body edges exposed; Shelf front edges exposed.
      b. 1 mm applications: Semi-concealed cabinet box edge faces and drawer box edges.
   2. Color: As selected by Architect from manufacturer's standard range.
   3. Products:
      a. Accent Edge by Dolken Woodtape.
      b. Edge Banding by Charter Industries.
      c. Substitutions: See Section 01 60 00 - Product Requirements.

C. Mounting Cleats: Solid hardwood; species is fabricator's option.

D. Fasteners: Size and type to suit application.

E. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.

F. Concealed Joint Fasteners: Threaded steel.

2.06 HARDWARE

A. Hardware: BHMA A156.9, types as recommended by fabricator for quality grade specified.
   1. Where applicable, equal products as manufactured by Bommer, Ives, Stanley, Knape and Vogt, Hafele are acceptable.
   2. Finish of all hardware shall be US26 Chrome, clear coated, unless otherwise indicated.

B. Shelf Pin Supports: Standard side-mounted system using multiple holes for pin supports and coordinated self-rests, anochrome finish, for nominal 1-inch spacing adjustments.
   1. Product: 345 by Knape and Vogt.

C. Drawer and Door Pulls: "U" shaped wire pull, steel with chrome finish, 4 inch centers.
   1. Product: #4484 by Stanley or equal.

D. Catches: Magnetic. Use 2 on doors over 34" high.
   1. Product: SP41 by Stanley.

E. Silencers: Use two per drawer or door.
   1. Products: Ives SR66; Glynn Johnson #GJ65, Corbin #34 or Sargent #3445.

F. Drawer and Shelf Slides: Telescoping on ball bearings, full extension type, heavy duty grade; side mounted with integral stops.
   1. Product: 3832 HDSC self-closing by Accuride

G. Hinges: European style concealed self-closing type, ANSI/BHMA A156.9, Grade 1, 107 degree opening, chrome plated steel with satin finish.
   1. Products:
      a. Institutional Hinge by Grass America Inc.
      b. Aximat 300 by Hafele

H. Wiring Grommet: 2" outside diameter; plastic or metal; finish/color selected from manufacturer's full range.
   1. Product: Series TG by Doug Mockett Co. Inc.

I. Cabinet Locks:
   1. Application(s): Provide two (3) locksets for each millwork elevation indicated in the Drawings. Architect shall select locations during submittal review. Locations may include cabinets and/or drawers.
      a. Keyed cylinder, two keys per lock, master keyed, steel with chrome finish.
      b. Product:
         1) Basis of Design: 02065 by Corbin
         2) Rockler.

3) Rylex

c. Or Approved Equal(s):

1) Substitutions: See Section 01 60 00 - Product Requirements.

2.07 FABRICATION

A. Cabinet Style: Flush overlay.

B. Cabinet Doors and Drawer Fronts: Custom Fabricated Flush Style.

C. Drawer Construction Technique: Dovetail joints.

D. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.

E. Wall Cleats: Provide an interlocking wall cleat system at the top of wall cabinets. Interlocking cleats shall be ¾" x 2-1/2" with 45 degree cut. Cabinet mounted cleat shall be glued and doweled to cabinet ends and glued to top and back of cabinet. The bottom cabinet cleat shall be secured to the cabinet similarly to the upper interlocking cleat. See Installation paragraph, for wall cleat mounting requirements. An interior clear dimension of 12" shall be maintained for wall cabinets, unless indicated otherwise on the Drawings.

1. Wall cleats shall be sealed in ALL areas.

F. Edging: Fit shelves, doors, and all edges with specified edging. Exposed and semi-exposed edges do not use more than one piece for any single length.

G. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.

H. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.

1. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.
2. Cap exposed plastic laminate finish edges with plastic trim.

I. Note: There shall be no unfinished wood products. If not covered with plastic laminate products or otherwise finished, all wood surfaces shall receive a minimum of one coat of sealer in concealed or semi-concealed areas.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify adequacy of backing and support framing. Verify type of support framing for determination of proper fastener type. A minimum load of 60 pounds/LF for wall cabinets shall be supported. Provide a safety factor of 2.

B. Verify location and sizes of utility rough-in associated with work of this Section.

3.02 INSTALLATION

A. Install work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.

B. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.

1. Install to a tolerance of 1/8" in 8'-0" for plumb and level and with 1/16" maximum offset in flush adjoining surfaces, 1/8" maximum offsets in revealed adjoining surfaces.

C. Wall Cleat System:

1. Wall mounted portion of the interlocking cleat system shall be secured to continuous 2x6 wood blocking concealed within the partition that is anchored to studs. Fasten wall cleat with #12 pan head or wood screws, minimum 2-1/2" long, maximum 8" on center, or a minimum of 2 per cabinet. Pre-drill holes in cleats. Cleat shall be a continuous piece where multiple cabinets are installed in a row.
2. Wall cleat securement to wall blocking shall be inspected and confirmed by the Owner prior to proceeding with wall cabinet installation.

3. Secure cabinet by first interlocking the cleat system. Secure cabinet to wall cleat with #12 wood screws, minimum 2-1/2" long, minimum 2 per cabinet per cleat at top cleat and at bottom cleat, following industry best practices.
4. Provide finished cabinet end panel if required to conceal end of wall cleat.

D. Use fixture attachments in concealed locations for wall mounted components.

E. Use concealed joint fasteners to align and secure adjoining cabinet units.

F. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.

G. Secure cabinets to floor using appropriate angles and anchorages.

1. Scribe base toe-kick board to uneven floor surfaces.

G. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

1. Plastic Laminate Cabinet Interiors: Conceal with color matching plastic plugs.

H. Install without distortion so that doors and drawers will fit openings properly and be accurately aligned.

3.03 ADJUSTING

A. Adjust moving or operating parts to function smoothly and correctly.

B. Touch-up finishes to restore damaged or soiled areas.

3.04 CLEANING

A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION

SECTION 07 21 00
THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Acoustic batt insulation in interior partitions.

B. Adhesives, stick clips, tape, spring clips, etc.

1.02 RELATED REQUIREMENTS

A. Section 09 21 16 - Gypsum Board Assemblies: Partitions for acoustic insulation.

1.03 REFERENCE STANDARDS

A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

C. Samples: Upon request, submit samples of each type of material to be used.

PART 2 PRODUCTS

2.01 APPLICATIONS

A. Acoustic Glass Fiber Batt Insulation: For metal framed walls and above ceilings.

2.02 BATT INSULATION MATERIALS

A. Glass Fiber Batt Insulation: (Acoustic) ASTM C665; flexible preformed batt or blanket, friction fit; minimum 25% recycled content.
   1. Surface Burning Characteristics, ASTM E84: Flame Spread Index 25 or less; Smoke Developed Index 450 or less.
   2. Formaldehyde Content: Zero.
   3. Thicknesses:
      a. Partitions: 3 inches.
   4. Facing: Unfaced within stud walls. Poly wrapped above ceilings.
   5. Products:
      a. Sound Shield Free by Johns Manville.
      b. EcoBatt by Knauf.
      c. ComfortTherm by Johns Manville. (poly wrapped)
      d. Substitutions: See Section 01 60 00 - Product Requirements.

2.03 ACCESSORIES

A. Fasteners and Adhesive: As recommended by the insulation manufactures and as approved by Factory Mutual, material manufacturers, and related codes where applicable. In general, adhesives and fasteners shall be "Construction Grade", corrosion resistant stainless steel or galvanized, as suitable for damp locations.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.

B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

END OF SECTION

SECTION 07 90 05
JOINT SEALERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Sealants and joint backing.

B. Compressible fillers.

1.02 RELATED REQUIREMENTS

A. Section 08 80 00 - Glazing: Glazing sealants and accessories.

B. Section 09 21 16 - Gypsum Board Assemblies: Acoustic construction.

1.03 REFERENCE STANDARDS

A. ASTM C834 - Standard Specification for Latex Sealants.

B. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications.

C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.

D. ASTM C1193 - Standard Guide for Use of Joint Sealants.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with other Sections referencing this Section.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data indicating sealant chemical characteristics.

C. Samples: Submit samples 2 inch in size illustrating sealant colors for selection.

D. Manufacturer's Installation Instructions: Indicate special procedures.

1.06 QUALITY ASSURANCE

A. Maintain one copy of each referenced document covering installation requirements on site.

B. Applicator Qualifications: Company specializing in performing the work of this Section with minimum five years of experience. Where applicable, applicators shall be approved by their respective material manufacturers as licensed applicators. All applicators shall be skilled personnel who are thoroughly trained and experienced in the necessary skills, completely familiar with the specific requirements of the Work.

1.07 FIELD CONDITIONS

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

B. Do not proceed with application of materials when surface or air temperatures are less than 40 degrees F or likely to drop to below 40 degrees F in the following 24 hours after sealant installation.

C. Do not apply materials unless surface to receive coating is clean and dry, or if precipitation is imminent.

D. Coordination: It shall be the responsibility of the Contractor to properly coordinate the Work of this Section with that of all other trades in order to ensure the providing of complete and continuous sealing and consistent use of products specified herein.

1.08 WARRANTY

A. See Section 01 78 10 - Warranties, for additional warranty requirements.

B. The manufacturer and installer shall provide a joint installation warranty that all Sealing shall be free of defects of materials and workmanship for two (2) years; and shall repair and/or replace such defective work, during the warranty term, without extra cost to the Owner.
   1. The following types of sealing failures will be considered defective Work: Leakage, loosening, loss of bond, hardening, cracking, crumbling, melting, shrinking, running, sagging, improper tooling, discoloration, or staining of adjacent work.
   2. Silicone sealants shall be warrantied for twenty years. Provide manufacturer's non-stain warranty.

PART 2 PRODUCTS

2.01 SEALANTS

A. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C834, Type OP, Grade NF single component, paintable. Colors shall be selected by Architect from manufacturer's standard range.
   1. Applications: Areas with minimal movement.
      a. Interior wall and ceiling control joints.
      b. Joints between door and window frames and wall surfaces, where minimal movement is expected and will receive field painting.
      c. Interior sound sealing, non-fire rated smoke sealing.
   2. Sealant compatibility with contact materials shall be verified prior to use.
   3. Limitations: Not for use at joints subject to dynamic movement, submerged in water, and as otherwise limited by the manufacturer.
   4. Products:
      a. Acrylic Latex 834 by Tremco Inc.
      b. AC20 + Silicone by Pecora.
      c. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint Backing (Interior): Open-cell polyurethane foam rod, diameter approximately 30% greater than width of the joint, as recommended by the sealant manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

B. Notify the Contractor of conditions detrimental to the proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected by the Contractor to meet acceptable industry standards in a manner acceptable to the Architect.

C. Verify that joint backing and release tapes are compatible with sealant.

3.02 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. Clean and prime joints in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Protect elements surrounding the work of this section from damage or disfigurement. Mask off adjoining surfaces as needed to prevent surface damage.

3.03 INSTALLATION

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Perform installation in accordance with ASTM C1193.

C. Perform acoustical sealant application work in accordance with ASTM C919.

D. Sealing at Acoustical Construction: At construction designated "Acoustical Construction" seal around all joints and pipe, conduit, structural member, duct, and electrical box openings to gypsum wallboard or masonry as applicable. Seal bottom of gypsum wallboard partitions to floor slabs. Seal tops of masonry and gypsum wallboard partitions to decks (including voids at fluted decks), and seal sides of partitions to abutting construction. Note: Sealing related to installation of partition framing members and gypsum wallboard is specified under Section 09 21 16 - Gypsum Board Assemblies.

E. Non-Fire Rated Smoke Sealing: At building assemblies identified as non-fire rated smoke barriers, seal all joints and pipe, conduit, structural member, duct and electrical box openings. Openings above finish ceilings or other concealed locations may be sealed on one side only. All openings and annular spaces shall be backed with fire safing insulation prior to installation of sealant.

F. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.

G. Do not leave gaps between ends of joint backers. Do not twist, stretch or tear backers.

H. Install bond breaker where joint backing is not used. Back rods shall be 25% wider than the joint width.

I. Application of Sealant: Sealant shall be gun-applied through a nozzle opening of such diameter so that the full bead of sealant is gunned into the joint, filling the joint completely. A superficial or skin bead will not be acceptable.
   1. Sealant geometry (depth to width ratios) shall be as recommended by the manufacturer for each specific application.
   2. Beads shall be tooled immediately after application to ensure firm, full contact with the inner faces of the joint. Excess material shall be struck off with a tooling stick or knife.
   3. The finished bead shall be smooth, properly contoured and flush with the adjacent surface, or as otherwise indicated.
   4. Remove all excess materials and smears adjacent to the joint as work progresses. All materials shall be used in accordance with the manufacturer's printed instructions.

J. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

K. Apply sealant when joint is cool to minimize chances of delamination and wrinkles.

L. Tool joints concave.

M. Fillers: Avoid joints except at ends, corners, and intersections; seal all joints with adhesive; install with face 1/8 to 1/4 inch below adjoining surface.

3.04 FIELD QUALITY CONTROL

A. Perform stain tests in accord with manufacturer's instructions and ASTM C1248 on mock-up joints prior to start of job installation.

B. Perform adhesion tests in accord with manufacturer's instructions and ASTM C1193, Method A, Field Applied Sealant Joints Hand Pull Test.
   1. Perform tests on mock-up joints prior to start of job installation.
   2. Perform a minimum of 1 test for every 200 linear feet of applied sealant and one (1) test per floor per building elevation minimum.
   3. For sealant applied to dissimilar materials, test both sides of the joint.

C. Sealant failing test shall be removed, surfaces cleaned, resealed and retested.

D. Maintain a test log and submit report to the Architect indicating tests, locations, dates, results and remedial action.

3.05 CLEANING

A. Clean adjacent soiled surfaces.

3.06 PROTECTION

A. Protect sealants until cured.

END OF SECTION

SECTION 08 11 13
HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Steel doors and frames, steel frames for wood doors, steel frames for glazing, and accessories.

B. Lead-lined steel door frames for wood doors.

1.02 RELATED REQUIREMENTS

A. Section 08 14 16 – Flush Wood Doors.

B. Section 08 71 00 - Door Hardware.

D. Section 09 90 00 - Painting and Coating: Field painting.

E. Section 13 49 05 - X-Ray Radiation Protection.

F. Division 26 – Electrical – Refer to Drawings

1.03 REFERENCE STANDARDS

A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.

B. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities; International Code Council.

C. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2011.

D. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2014.

E. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2011.

F. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2011.

G. ASTM A1008 - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2015.

H. ASTM A1011 - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2014.

I. ASTM E413 - Classification for Rating Sound Insulation; 2010.

J. BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2014.

K. NAAMM HMMA 805 - Recommended Selection and Usage Guide for Hollow Metal Doors and Frames; 2012.

L. NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames.

M. NAAMM HMMA 860 - Guide Specifications for Hollow Metal Doors and Frames; 2013.

N. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames.

O. UL 10B - Standard for Fire Tests of Door Assemblies; Current Edition, Including All Revisions.

P. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; Current Edition, Including All Revisions.

Q. UL 1784 - Standard for Air Leakage Tests of Door Assemblies; Current Edition, Including All Revisions.

R. SDI 117: Manufacturing Tolerances for Standard Steel Doors and Frames.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, cores, sound ratings, profiles, anchorage and fastening methods, and finishes.

C. Shop Drawings: Details of each opening, showing elevations, fire-ratings, glazing, frame profiles, anchors, and identifying location of different finishes, if any.

D. Samples: Upon request, submit samples of typical frame, door section, glazing frame and loose stop.

E. Installation Instructions: Manufacturer's published instructions, including any special installation instructions relating to this Project.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this Section with minimum ten years documented experience and a member of the Steel Door Institute.

B. Copies of Documents at Project Site: Maintain at the project site a copy of each referenced document that prescribes installation requirements.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store in accordance with NAAMM HMMA 840. Store all materials upright, in a protected dry area, at least 1" or more off the ground or floor and at least 1/4" between individual pieces. Materials shall not be permitted to rust or corrode.

B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design, Steel Doors: 707 Series by Curries Door Co.

B. Acceptable Manufacturer Steel Doors and Frames:
1. Ceco.
2. Republic Doors
3. Steelcraft.
4. Curries Door Co.
5. Pioneer.

2.02 DESIGN CRITERIA

A. Requirements for Hollow Metal Doors and Frames:
1. Steel used for fabrication of doors and frames shall comply with one or more of the following requirements; Galvannealed steel conforming to ASTM A653, cold-rolled steel conforming to ASTM A1008, or hot-rolled pickled and oiled (HRPO) steel conforming to ASTM A1011, Commercial Steel (CS) Type B for each.
2. Accessibility: Comply with ICC A117.1 and ADA Standards.
3. Door Top Closures: Welded, flush with top of faces and edges.
4. Door Edge Profile: Manufacturers standard for application indicated.
5. Typical Door Face Sheets: Flush.
6. Hardware Preparation: In accordance with DHI A115 Series, with reinforcement welded in place, in addition to other requirements specified in door grade standard.
7. Hardware Preparation for New Doors at New Frames: Hardware mounting heights shall match similar existing conditions, subject to modifications during shop drawing review.

2.03 HOLLOW METAL FRAMES

A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.

B. Frame Finish: Factory primed and field finished.

C. General:
   1. Frames for Hollow Metal Doors:
      a. ANSI A250.8 Level 2 Doors: 16 gage frames.
      b. ANSI A250.8 Level 3 Door Frames: 14 gage, 0.067 inch, minimum thickness.
      c. ANSI A250.8 Level 4 Doors: 14 gage frames.
   2. Frames for Wood Doors:
      a. Interior Opening 42 inches and less: 16 gage frames.
      b. Interior Openings exceeding 42 inches wide: 14 gage frames.
   3. Provide minimum 16 gage mortar guard boxes at hardware cut-outs in frames for masonry walls and at strike reinforcement in frames for stud partitions.
   4. Frames in Masonry Walls: Size to suit masonry coursing with head member 4 inches high to fill opening without cutting masonry units, unless detailed otherwise.
   5. Frames Wider than 48 Inches: Reinforce with steel channel, minimum 12 gage, factory welded to the frame head, flush with top. Such stiffeners shall not be used as lintels or load-carrying members.
   6. Provide welded continuous 12 gage reinforcement for continuous hinges.

D. Interior Door Frames Non-fire rated: Face welded type.

E. Frames in Masonry Walls: Size to suit masonry coursing with head member 4 inch high to fill opening without cutting masonry units.

F. Corner joints shall be die mitered. Exterior frames shall have all contact edges closed tight and continuously welded. Interior frames shall have all contact edges closed tight and faces continuously welded.

G. Frame, trim and profiles shall be as scheduled by the Architect and verified by the Contractor. All frame depths shall be coordinated with partition type depths by the Contractor. Frames for drywall partitions shall have 1/2 inch backbends with hooked profile, unless detailed otherwise.

H. Minimum depth of stops shall be 5/8". Use 3/4" only where required for fire rating or security.

I. When shipping limitations so dictate, frames for large openings shall be fabricated in sections designed for splicing in the field. All splicing locations and details shall be clearly identified on shop drawings.

J. Frames for multiple or special openings shall have mullion and/or rail members that are closed tubular shapes having no visible seams or joints. All joints between faces of abutting members shall be securely welded and finished smooth.

K. Frames shall be provided with supplemental internal concealed steel reinforcement, as engineered by the manufacturer.

L. Floor Anchors: Shall be securely welded inside each jamb, with 2 holes provided at each jamb for floor anchorage. Where required adjustable floor anchors, providing not less than 2" height adjustment, shall be provided. Minimum thickness of floor anchors shall be 14 gage, zinc coated per ASTM A591.

M. Masonry Jamb Anchors: Frames for installation in masonry walls shall be provided with adjustable jamb anchors of the T-strap type, 16 gage minimum, zinc coated per ASTM A591. Provide 3 anchors for frames up to 7'-6" high, 4 anchors for frames up to 8'-0" high and 1 additional anchor for each 2'-0" of height over 8'-0".

N. Stud Partition Jamb Anchors: Shall be steel anchors, compatible with the actual stud used, minimum 18 gage thickness, zinc coated per ASTM A-591 Provide 4 anchors for frames up to 7'-6" high, 5 anchors for frames up to 8'-0" high and 1 additional anchor for each 2'-0" of height over 8'-0".

O. Frames may be anchored to previously placed concrete, masonry or structural steel only with the prior approval of the Architect. Such frames shall be provided with anchors and fasteners of

suitable design. Provide a minimum of 4 anchors per jamb plus additional anchors in quantities as scheduled above for frames in stud partitions.

P. Electrical Knock-out Boxes: Factory weld 18 gauge electrical knock-out boxes to frame for electrical hardware preps; including but not limited to, electric through wire transfer hardware, electrical raceways and wiring harnesses, door position switches, electric strikes, magnetic locks, and jamb mounted card readers as specified in hardware sets.
   1. Provide electrical knock out boxes with a dual 1/2-inch and 3/4-inch knockouts.
   2. Conduit shall be coordinated and field installed under Division 26 from middle hinge box and strike box to door position box.
   3. Electrical knock-out boxes shall comply with NFPA requirements and fit electrical door hardware as specified in hardware sets.
   4. Electrical knock-out boxes for continuous hinges shall be located in the center of the vertical dimension on the hinge jamb.

Q. Interior Frames, Lead Lined for Doors and Glazing: Face welded type.
   1. Frames shall be reinforced to support the weight of the lead lining. See Sections 08 14 16 - FLUSH WOOD DOORS and 13 49 05 – X-Ray Radiation Protection.

2.05 ACCESSORY MATERIALS

A. Glazing: As specified in Section 08 80 00 - Glazing, field installed.

B. Removable Stops: Rectangular, flush set, 18 gage galvanized, primed steel, butted corners; prepared for countersink style torx tamperproof screws.

C. Fixed Stops: Custom full-flush with no apparent seams on the face of the door at the outside of spaces to be secured.

D. Silencers: Resilient rubber, fitted into drilled hole; 3 on strike side of single door, 3 on center mullion of pairs, and 2 on head of pairs without center mullions.
   1. Special Attention: Do NOT provide silencers or related frame prep for such at door frames located within Psychiatric ED Suite and other areas as indicated in the Drawings.

E. Temporary Frame Spreaders: Provide for all factory or shop-assembled frames.

F. Grout for Frames: Portland cement grout with maximum 4-inch slump for hand troweling; thinner pumpable grout is prohibited.

2.06 FINISH MATERIALS

A. Primer: Factory applied, rust-inhibiting, complying with ANSI A250.10, door manufacturer's standard.

B. After fabrication, all tool marks and surface imperfections shall be dressed, permanently filled and sanded as required to make all faces and vertical edges smooth, level and free of all irregularities. Doors shall be primed to ensure maximum paint adhesion, on all exposed surfaces with a rust-inhibitive primer in accordance with ANSI A-250 "Test Procedure and Acceptance Criteria for Primed Painted Steel Surfaces".

PART 3 EXECUTION

3.01 EXAMINATION

A. The Contractor shall take all measurements, make all investigations, and in general, provide field work and coordination as required to ensure the proper fit of all Work specified herein. Frames shall be sized, positioned, and installed in accordance with the design intent represented on the Drawings. The design intent shall not be modified due to the Contractor's failure to provide coordination or obtain properly fabricated materials. Such coordination shall be provided sufficiently in advance so as to avoid delays in the construction schedule.

B. Verify that opening sizes and tolerances are acceptable. It shall be the responsibility of the Contractor to coordinate frame thicknesses with wall and partition types to ensure proper fit.

C. Verify that finished walls are in plane to ensure proper door alignment.

D. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.

3.02 INSTALLATION

A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.

B. Install fire rated units in accordance with NFPA 80 and ASTM E119.

C. Coordinate frame anchor placement with wall construction. Wherever possible, leave frame spreader bars intact until frames are set perfectly square and plumb, and anchors are securely attached. Verify that frames are square and plumb following removal of temporary spreaders.

D. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.

E. Coordinate installation of hardware in accordance with hardware manufacturer's templates and instructions. Doors and frames fabricated with hardware cutouts and reinforcing which will not properly accommodate finish hardware shall be rejected and replaced at no additional cost to the Owner.

F. Coordinate installation of glazing.

G. Coordinate installation of electrical connections to electrical hardware items.

H. Immediately after erection, areas where prime coat or galvanizing has been damaged shall be sanded smooth and touch up with same primer or zinc rich rust-inhibitor primer as applied at the factory. Remove rust before touch-up is applied.

3.03 TOLERANCES

A. Clearances between Door and Frame:
   1. Steel doors and frame, at head and jambs: 1/8", with maximum 1/16" +/- variation.
   2. Wood doors and frame, at head and jambs: 1/8" maximum.
   3. Door bottoms: 3/4”.
   4. Smoke-rated door bottoms: 3/8" maximum.
   5. Meeting edges of pairs of doors: 1/8" maximum.
   6. Face of door and stop: 1/8".
   7. Note: Door sills, except at fire-rated doors, shall be undercut greater than the clearances above if so scheduled on the Drawings and/or on the Door & Frame Schedule. Fire-rated doors shall have clearances as specified in NFPA 80.

B. Maximum Diagonal Distortion: 1/16 in measured with straight edge, corner to corner.

3.04 ADJUSTING

A. Adjust for smooth and balanced door movement.

B. Protect installed doors, frames and accessories against damage from other construction work. Any damage prior to acceptance shall be repaired or replaced, if such action complies with the requirements and shows no evidence of repair or refinishing.

3.05 SCHEDULE

A. Refer to Door and Frame Schedule - See Drawings.

END OF SECTION

SECTION 08 14 16
FLUSH WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Flush wood doors.

B. Lead lined flush wood doors.

1.02 RELATED REQUIREMENTS

A. Section 08 11 13 - Hollow Metal Frames.

B. Section 08 71 00 - Door Hardware.

C. Section 08 80 00 - Glazing.

D. Section 13 49 05 - X-Ray Radiation Protection.

1.03 REFERENCE STANDARDS

A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.

B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.0; 2016.

C. WDMA I.S. 1A - Interior Architectural Wood Flush Doors; 2013.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.
   1. Provide information as required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).

C. Samples:
   1. Submit one full set of manufacturer's standard stain colors on specified veneer for selection.
   2. Submit samples of door veneer, 6 by 6 inch in size illustrating wood grain, stain color, and sheen for the selected range to confirm choice.
   3. Samples submitted and accepted shall serve to reflect the entire range of (color, texture, grain and sapwood/heartwood variation and shall be used as the standard for acceptance or rejection of installed materials.

D. Certificate: Submit labels and certificates required by quality assurance and quality control programs.

E. Manufacturer's certification that products are manufactured in the United States.

F. Manufacturer's Installation Instructions: Indicate special installation instructions.

1.05 QUALITY ASSURANCE

A. Maintain one copy of the specified door quality standard on site for review during installation and finishing.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this Section with minimum ten years of documented experience.
   1. Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.

C. Quality Certification:
   1. Provide labels or certificates indicating that the installed work complies with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade or grades specified.
   2. The contractor, upon award of the Work, shall register the work under this Section with the AWI Quality Certification Program.

3. Provide designated labels on shop drawings as required by certification program.
4. Provide designated labels on installed products as required by certification program.
5. Submit certifications upon completion of installation that verifies this work is in compliance with specified requirements.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect materials during transit, storage, and handling to prevent deterioration, damage and soiling. Package each door at the factory in a separate heavy sealed poly bag. Mark each bag at top and bottom of doors for location to correspond with opening number on the Drawings.

B. Accept doors on site in manufacturer's packaging. Inspect for damage. In the event of damage, immediately make all repairs and replacements necessary for approval of the Architect and at no additional cost to the Owner.

C. Protect doors with resilient packaging . Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation. Deliver door to job site only when building is dry and has reached average prevailing relative humidity of locality.

D. Coordinate the work with door opening construction, door frame and door hardware installation. The Contractor shall take all measurements, make all investigations, and in general provide field work and coordination as required to ensure the proper fit of all Work specified herein. Doors and frames shall be sized, positioned and installed in accordance with the design intent represented on the Drawings. The design intent shall not be modified due to the Contractor's failure to provide coordination or obtain properly fabricated materials. Such coordination shall be provided sufficiently in advance so as to avoid delays in the construction schedule.

1.07 WARRANTY

A. See Section 01 78 10 - Warranties for additional warranty requirements.

B. Interior Doors: Provide a special manufacturer's warranty, signed by both the manufacturer, installer and Contractor, for the life of the installation.

C. Include coverage for delamination of veneer, defective materials, telegraphing core construction, and warping. Unsatisfactory warpage shall be more than 1/4" in a 42" x 84" section and telegraphed core construction shall be defined as exceeding 0.01 inch in a 3 inch span. The warranty shall also include refinishing and reinstalling which may be required due to repair or replacement of defective doors.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Wood Veneer Faced Doors:
1. A&L Shielding.
2. VT Industries.
3. Haley Bros.
4. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 DOORS

A. All Doors: Wood veneer faced doors; 5-ply; 1-3/4 inch thickness; solid core flush construction. AWI Custom grade.
1. Smoke and Draft Control Doors: All door assemblies shall be tested in accordance with UL 1784 with maximum air leakage of 3.0 cfm per sq ft of door opening at 0.10 inch w.g. pressure at both ambient and elevated temperatures; if necessary, provide additional gasketing or edge sealing.

2.03 DOOR AND PANEL CORES

A. Non-Rated Solid Core Doors: Type particleboard core (PC), plies and faces as indicated.

B. Doors scheduled to receive closers and /or exit devices shall have solid lumber rails, without compromising labeling or listing requirements. Thru-bolting of finish hardware shall not be permitted, unless specifically noted elsewhere in the Construction Documents.

C. Lead Lined Doors: Minimum 1/16 inch thick, 4-pound lead unless otherwise indicated. See Section 13 49 05.
   1. Applications: Door 118A.

2.04 DOOR FACINGS

A. Veneer Facing for Transparent Finish: Maple, veneer grade in accordance with quality standard indicated, plain sliced (flat cut), with book match between leaves of veneer, running match of spliced veneer leaves assembled on door or panel face.
   1. Vertical Edges: Same species as face veneer.
   2. "Pair Match" each pair of doors; "Set Match" pairs of doors within 10 feet of each other when doors are closed.
   3. Intent: Match existing, field verify.

2.05 DOOR CONSTRUCTION

A. Fabricate doors in accordance with door quality standard specified.

B. Cores Constructed with stiles and rails:
   1. Provide solid blocks at lock edge for hardware reinforcement.
   2. Provide solid blocking for other through bolted hardware.

C. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.

D. Factory machine doors for hardware to match existing conditions at existing door frames, subject to modifications during shop drawing review.

E. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.

F. Lead Lined Doors: Equivalent to Type bonded particleboard core (PC) with continuous lead sheet from edge to edge in the center of the core or between the crossband and the core; lead thickness, plies, and faces as indicated above.

2.06 FACTORY FINISHING - WOOD VENEER DOORS

A. Factory finish doors in accordance with specified quality standard:
   1. Transparent Finish: Transparent catalyzed polyurethane, Premium quality, AWI TR-6 equal to Algoma Hardwoods "Univar" Catalyzed Polyurethane or Eggers Industries "Gardall II".

B. Factory finish doors in accordance with approved sample.

C. Seal door top edge with color sealer to match door facing.

2.07 ACCESSORIES

A. Hollow Metal Door Frames: As specified in Section 08 11 13.

B. Door Hardware: As specified in Section 08 71 00.

2.08 TOLERANCES

A. Comply with specified quality standard for telegraphing, warp, and squareness.

B. Edge Clearances shall be provided as follows:
   1. Between wood doors and steel frames at heads and jambs: 1/8" maximum.
   2. At door bottoms (undercut): 3/4" maximum.
   3. Between meeting edges of pairs of doors: 1/8" max.
   4. Note: Doors that are not fire or smoke rated may be undercut greater than the clearances indicated above if so indicated on the Drawings and/or Door Schedule. Undercutting shall be performed as part of factory fabrication process to prevent excessive removal of bottom rail. Doors with sound-ratings may required undercut less than maximum indicated above.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine all doors before hanging and reject doors with defects.

B. Verify existing conditions before starting work.

C. Verify that opening sizes and tolerances are acceptable.

D. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and specified quality standard.

B. Install fire-rated doors in accordance with NFPA 80 requirements.

C. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.

D. Use machine tools to cut or drill for hardware.

E. Coordinate installation of doors with installation of frames and hardware.

F. Coordinate installation of glazing.

3.03 TOLERANCES

A. Conform to specified quality standard for telegraphing, warp, and squareness.

B. Edge Clearances shall be provided as follows:
   1. Between wood doors and steel frames at heads and jambs: 1/8" maximum.
   2. At door bottoms: 3/4" maximum.
   3. Between meeting edges of pairs of doors: 1/8" max.
   4. Note: Doors that are not fire or smoke rated may be undercut greater than the clearances indicated above if so indicated on the Drawings and/or Door Schedule. Undercutting shall be performed as part of factory fabrication process to prevent excessive removal of bottom rail. Doors with sound-ratings may require undercut less than maximum indicated above.

3.04 ADJUSTING

A. Adjust doors for smooth and balanced door movement.

B. Adjust closers for full closure.

C. Align in frames for uniform clearance at each edge. Restore finish before installation if on-site fitting or machining is required. Replace or re-hang any doors which do not swing or operate freely, or are warped or twisted. Pre-finished doors damaged prior to acceptance shall be repaired or replaced. Doors may be prepared or refinished if work complies with requirements and show no evidence of repair or refinishing.

3.05 SCHEDULE

A. Refer to Door and Frame Schedule on the Drawings.

END OF SECTION

SECTION 08 71 00
DOOR HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Hardware for doors and frames.

B. Electro-mechanically operated and controlled hardware.

Note: Coordinate with Electrical and Fire Alarm as required.

1.02 RELATED REQUIREMENTS

A. Section 08 11 13 - Hollow Metal Doors and Frames.

B. Section 08 14 16 - Flush Wood Doors.

1.03 REFERENCE STANDARDS

A. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities.

B. ANSI/BHMA A156 Series - Certified Product Standards, most current edition.

C. 36 CFR 1191 - Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities; Final Rule, 2011; current edition

D. DHI WDHS.3 - Recommended Locations for Architectural Hardware for Flush Wood Doors; Door and Hardware Institute; 1993; also, in WDHS-1/WDHS-5 Series.

E. NFPA 80 - Standard for Fire Doors and Other Opening Protectives.

F. NFPA 101 - Life Safety Code, as adopted.

G. NFPA 105 - Smoke and Draft Control Door Assemblies, latest edition.

H. UL 10B - Fire Tests of Door Assemblies.

I. UL 305 - Panic Hardware.

J. UL - Building Materials Directory, current edition.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the manufacture, fabrication, and installation of products onto which door hardware will be installed.

B. Furnish templates for door and frame preparation to manufacturers and fabricators of products requiring internal reinforcement for door hardware.

C. Pre-installation Meeting: Convene a pre-installation meeting at least 3 weeks prior to commencing work of this Section; require attendance by all affected installers.

D. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly for applicable products.

1. Name and manufacturer of each item, type, style, function, size and finish for each item.
2. Door and frame sizes, thicknesses, materials, hand, degrees of opening for doors, with closers and/or overhead holders, and labeling.
3. Explanation of all abbreviations, symbols, and codes used on schedules, and any other relevant information.
4. The schedule shall be reviewed prior to submission by a certified Architectural Hardware Consultant (AHC).

C. Samples:
   1. Upon request, submit 1 sample of hinge, latchset, lockset, and closer illustrating style, color, and finish.
   2. Approved samples will be incorporated into the Work, rejected samples will be returned to the contractor and shall be re-submitted.

D. Hardware Schedule: Detailed listing of each item of hardware to be installed on each door. Use door numbering scheme as included in the Contract Documents. Identify electrically operated items and include power requirements.

E. Keying Schedule: It shall be the responsibility of the hardware supplier to meet with the Owner to determine and coordinate keying with door hardware for the Project. Submit separate detailed schedule, indicating clearly how the Owner's final instructions on keying of locks has been fulfilled.
   1. Function of door, flow of traffic, degree of security required, lockset function and future expansion plans.
   2. Preliminary key system schematic diagram.
   3. Requirements for key control system.
   4. Address for delivery of keys.

F. Wiring Diagrams: Submit complete and detailed system operation and electrical diagrams specially developed for each opening requiring electrified hardware, except openings where only magnetic hold-opens or door position switches are specified.

G. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention.

H. Close-out Documents:
   1. Project Record Documents: Record actual locations of concealed equipment, services, and conduit.
   2. Maintenance Data: Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.
   3. Catalog pages for each product, contact information for local representative for each manufacturer.
   4. As-installed hardware schedule, as-installed wiring diagrams and final keying schedule.
   5. All warranties and certification that electronic security hardware has been inspected and proper operation has been verified.

I. Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.

J. Warranty: Submit manufacturer's warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this Section with minimum twenty years of documented experience.

B. Hardware Supplier Qualifications: Company specializing in supplying commercial door hardware with ten years of experience.

C. Hardware Supplier Personnel: Employ an Architectural Hardware Consultant (AHC) to assist in the work of this section.

D. Electronic Security Hardware: The hardware supplier shall employ an individual knowledgeable in electrified components and systems who shall:
   1. Produce wiring diagrams and consulting as needed,
   2. Coordinate installation of the electronic security hardware with related sub-contractors,
   3. Verify that all components are working properly upon completion of the electronic security hardware installation.

E. Quantities: Furnish appropriate hardware for all doors in the Project. Approval of incomplete hardware schedule or acceptance of incorrect quantities at the job site will not alter this

requirement. It is the intent of the hardware sets, indicated in Part 3 of this Section, to accurately list the hardware required for each door on this Project. However, should any doors have been inadvertently omitted from the sets it will be the hardware supplier's responsibility to furnish hardware for these doors that is of the same quality, type, size, function, and finish as that specified for similar doors on the Project.

1.07 DELIVERY, STORAGE, AND HANDLING

A. All hardware shall be brought to the job site in the manufacturer's original packaging, with each hardware item individually labeled and identified with door opening code to match hardware schedule.

1.08 WARRANTY

A. See Section 01 78 10 - Warranties, for additional warranty requirements.

B. All finish hardware shall be warranted against manufacturing defects and faulty workmanship for a period of two years from the date of Substantial Completion, except for the following:
   1. Non-electronic door closers shall be warranted for ten years.
   2. Non-electrified exit devices shall be warranted for three years.
   3. Hinges shall be warranted for the life of the building.
   4. Continuous hinges shall be warranted for ten years.
   5. Mortised locks and latches shall be warranted for ten years.
   6. Overhead concealed closers shall be warranted for two years.
   7. Electromechanical door hardware shall be warranted for two years.

C. The hardware supplier, at his expense, shall adjust, repair, or replace, including labor for installation, any finish hardware supplied under this Section, which is found to be malfunctioning or defective during the above warrantee periods, except due to abuse.

PART 2 PRODUCTS

2.01 DOOR HARDWARE - GENERAL

A. Provide all hardware specified or required to make doors fully functional, compliant with applicable codes, and secure to the extent indicated.

B. Provide all items of a single type of the same model by the same manufacturer.

C. Provide products that comply with the following:
   1. Applicable provisions of federal, state, and local codes.
   2. ANSI/ICC A117.1, American National Standard for Accessible and Usable Buildings and Facilities.
   3. NFPA 101, Life Safety Code, as adopted.
   4. Products Requiring Electrical Connection: Listed and classified by UL as suitable for the purpose specified and indicated.

D. Electrically Operated and/or Controlled Hardware: Provide all power supplies, power transfer hinges, relays, and interfaces required for proper operation; provide wiring between hardware and control components and to building power connection.

E. Finishes: All door hardware the same finish unless otherwise indicated.
   1. In general, all hardware shall be finished to match existing, unless noted otherwise.
   2. Exit devices, pulls, push plates, and kick plates: US32D (satin stainless steel).
   3. Closers: Sprayed enamel or baked epoxy powder to match.
   4. Gaskets: Natural satin anodized aluminum.

F. Fasteners: All hardware shall be installed with fasteners provided by the hardware manufacturer. Exposed fasteners shall be finished to match the hardware finish. Generally, fasteners for hardware shall be concealed when the door is closed.

G. Acceptable Manufacturers: Only hardware manufactured by one of the companies indicated below shall be accepted for use in the Project, and acceptance is limited only to the category of hardware for which the manufacturer is specified or listed as an acceptable equal.

2.02 ELECTRONIC ACCESS CONTROLS

A. Owner's security vendor to provide all card readers and electric strikes, associated wiring, system programing, security door hardware control equipment modifications and panel expansion required for this Project.

2.03 HINGES

A. Hinges: Provide hinges on every swinging door.
   1. Provide five-knuckle full mortise butt hinges unless otherwise indicated.
   2. Provide ball-bearing hinges at all doors.
   3. Hinge pins shall be steel non-rising at interior doors.
   4. Provide hinges in the quantities indicated.
   5. Where electrified hardware is mounted in door leaf, provide power transfer hinges.
   6. Comply with BHMA A156.1 and A156.7; standard weight, 4-1/2" high, for doors up to 3 feet wide; heavy weight, 5" high, for doors over 3 feet wide.
   7. Provide hinge width of 4" or as required to clear surrounding trim. Provide long throw or clear swing hinges where frames are recessed in the wall and where greater than 110 degree swing is required.
   8. Materials: Interior hinges shall be steel.

B. Quantity of Hinges per Door:
   1. Doors From 60 inches High up to 90 inches High: Three hinges.
   2. Doors 90 inches High up to 120 inches High: Four hinges.

C. Basis of Design:
   1. Stanley FBB179 (up to 3 feet wide).
   2. Stanley FBB168 (greater than 3 feet wide).
   3. Stanley FBB199 (high frequency stainless steel)
   4. McKinney TB2714 (up to 3 feet wide).
   5. McKinney T4B3786 (greater than 3 feet wide).

D. Acceptable Manufacturers:
   1. Hager Companies.
   2. Stanley Hardware.
   3. Ives.

2.04 KEYING

A. Keying: Key to the existing key system in accordance with Owner requirements.
   1. All keys shall be shipped directly from the factory to the Owner via registered mail, confidential.
   2. Supply keys in the following quantities: 4 masterkeys, 2 construction keys, 4 change keys for each lock.
   3. Cylinder parts shall be constructed of brass, bronze, stainless steel or nickel silver. Keys shall be made of nickel silver.
   4. Factory key all cylinders with the manufacturer retaining permanent keying records. One bitting list shall be sent registered mail, confidential, to the Owner.
   5. All keys shall be stamped with their respective master key set letters. Do not stamp key with factory key change number. Stamp identification on back or side of cylinders.

B. Cylinders: Sargent 6300 Series removeable core No substitutes.

2.05 MORTISED LOCKSETS

A. Mortised Locksets: ANSI A156.13, Grade 1, with case and parts manufactured from heavy gauge steel, zinc plated for corrosion resistance, with brass, bronze, or stainless-steel armor plate.
   1. Standard 2-3/4" backset with a full 3/4" throw, stainless steel latchbolt. Deadbolts shall be stainless steel with hardened steel rollers and shall have a full 1" throw.

2. Lever trim shall be cast or forged with wrought roses. Levers shall be thru-bolted for proper alignment.
3. All doors shall have knurled or roughened levers for tactile warning to the visually impaired.
4. Provide wrought boxes and strikes with proper lip length to protect trim but not to project more than 1/8 inch beyond trim, frame or inactive leaf.
5. Removeable cylinders.
6. All lock functions shall be reviewed with the Owner during the keying meeting prior to ordering.
   a. Privacy set shall include occupancy indicator.

B. Basis of Design:
1. Mortised Lockset: Sargent 8200-LNB Series; function as scheduled. No substitutes.

2.06 ELECTRONIC LOCKS

A. Mortised, battery powered, push button lockset with key override. 100 user code availability programing. Cylinder shall be Owner's standard.

B. Product: Kaba-Ilco 2000 Series Ep-Plex lock. No substitute.

2.07 ELECTRIC STRIKES

A. Electric Strikes: ANSI/BHMA A156.5, BHMA 501, Grade 1 compliant; UL listed for Burglary Resistance, UL listed for use on fire-rated door assemblies.
1. Provide single unit, field adjustable, Fail-Safe or Fail-Secure operation as specified in the Hardware Schedule or as required by the Owner.
2. Coordinate and provide frame preparations. Units shall be wired to the building security system by the Electrical Contractor.
3. Finish shall match door hardware.

B. Basis of Design:
1. McKinney DS-6.

2.08 EXIT DEVICES

A. Locking Functions: Functions as defined in BHMA A156.3, and as follows:
1. Entry/Exit, Always-Unlocked: Outside lever unlocked, no outside key access, no latch holdback.
2. Entry/Exit, Free Swing: Key outside retracts latch, latch holdback (dogging) for free swing during occupied hours, not fire-rated; outside trim must be specified as lever or pull.
3. Entry/Exit, Always-Latched: Key outside locks and unlocks lever, no latch holdback (dogging).
4. Entry/Exit, Always-Locked: Key outside retracts latchbolt but does not unlock lever, no latch holdback.
5. Exit Only, Secure: No outside trim, no key entry, no latch holdback, deadlocking latchbolt.

A. Exit Devices: push-pad type, fabricated of brass, bronze, stainless steel, or aluminum, plated to match the architectural finish on the balance of the door hardware. All exit devices shall incorporate a fluid damper or other device to eliminate noise associated with device operation. The touch pad shall extend a minimum of one half of the door width. Only compression springs shall be used in devices, latches, and outside trims or controls. All devices shall incorporate a dead latching feature.
1. Exit devices shall be UL listed panic exit hardware. All devices for fire rated openings shall be UL labeled fire exit hardware.
2. Provide electric options as scheduled with all associated power units necessary for the proper operation of the device.
3. All floor catches for vertical rod exit devices shall be recessed cup or dust proof type. Surface mounted catches shall be permitted only where required by code.

4. Provide forged or cast heavy duty outside lever trim to closely match interior lockset lever design. Levers shall be vandal-resistant type that will travel to a 90 degree down position when more than 35 pounds of torque is applied, and which can easily be re-set.
5. Acceptable Manufacturers:
   a. Sargent 80 Series.

2.08 CLOSERS

A. Closers: BHMA A156.4. Fully hydraulic rack and pinion action with a high strength cast iron 1-1/2" diameter cylinder and full cover. Hydraulic fluid shall not require seasonal closer adjustment for temperatures ranging from 120 to -30 degrees F. Hydraulic regulation shall be by tamper proof, non-critical valves.
   1. Provide surface-mounted, door-mounted closers unless otherwise indicated.
   2. On pairs of swinging doors, if an overlapping astragal is present, provide coordinator to ensure the leaves close in proper order.
   3. At corridors, locate door-mounted closer on room side of door.
   4. Sizing of closers: Unless otherwise indicated, comply with the manufacturer's closer sizing recommendations for door size, exposure to weather, and anticipated frequency of use.
   5. Closer Adjustment: Separate adjustment for latch speed, general speed, and backcheck; spring power shall be continuously adjustable over the full range of closer sizes and shall provide for reduced opening force for the physically challenged.
   6. The Contractor shall adjust closing and latching speeds of all closers as required to provide smooth, continuous closing action.
   7. Delayed Action: Provide ADA compliant delayed action option for all closers.
   8. Arms: Solid forged steel main arms and fore arms. All door closers shall be furnished with PARALLEL ARMS wherever possible and unless specified otherwise. In general, door closers shall be mounted on the "room" side of doors and shall not be visible in corridors, lobbies and other public spaces unless necessary.
      a. Attachment Accessories: As required to properly attach the closer to the door and frame; including, but not limited to: drop plates, spacers, brackets and special arms.
   9. Basis of Design:
      a. LCN 4011/4111.

2.10 STOPS AND HOLDERS

A. Stops: Complying with BHMA A156.8; provide a stop for every swinging door, unless otherwise indicated.
   1. Provide all overhead stops, unless otherwise indicated or if field conditions do not allow for an overhead stop. Concealed blocking for attachment to walls shall be provided under Section 06 10 00. If wall stops cannot be used, provide a floor mounted stop. It shall be the responsibility of the Contractor to properly coordinate stops to suit specific job conditions.
   2. A positive stop feature of the door closer is not an acceptable substitute for a stop unless specifically indicated.

B. Overhead Closer/Holder: Surface mounted, heavy duty.

C. Basis of Design:
   1. Stops: Rockwood 409 or 442.
   2. Overhead Closer/Holder: 7100SZ Series Safezone by Norton Assa Abloy.

2.11 ELECTRO-MAGNETIC HOLDERS

A. BHMA A156.15; with die cast housing; low profile, aluminum finish; fail safe; doors release to close automatically when electrical current is interrupted; holding force of minimum 35 pounds-force.
   1. Wall mounted holders as indicated or as required for optimal job conditions. Provide all necessary accessories to properly align and extend door holders to door or wall surfaces.
   2. Voltage: 120 V. Electrical Contractor shall wire holders via relay to building fire alarm system. A separate power supply from fire alarm system shall be provided.

3. Basis of Design:
   a. LCN Sentronic 7840 / 7850.
   b. AHB 2100S.
   c. Rixson 998.

2.12 GASKETS

A. Gaskets: BHMA A156.22.

B. Smoke Gaskets: On doors in smoke barriers, provide smoke gaskets at top, sides, and meeting rails of pairs, unless integral gasketing is provided with the doors. If fire/smoke partitions are not indicated on Drawings, provide smoke gaskets on each door identified as a "smoke door" and 20-minute rated fire doors.
   1. Gaskets: Automatic door bottom and gaskets for head and jambs.

C. Thresholds: Aluminum with barrier-free profiles.
   1. Thresholds (thermally broken type) shall be provided at each exterior door unless otherwise indicated.
   2. Thresholds (floor plates) shall be provided at new openings in existing masonry walls.
   3. Field cut threshold to frame for tight fit. At openings with one or more mullions, cut out around mullions and extend continuously for the entire opening. Set thresholds in continuous bead of sealant. Use non-ferrous solid brass or stainless-steel screws to secure thresholds.
   4. Basis of Design:
      a. Exterior Thresholds: Pemko 253.

D. Acceptable Manufacturers:
   1. Pemko (PE).
   2. National Guard Products (NG).
   3. Reese (RE).

E. Where exterior door is also required to have fire or smoke rating, provide gaskets functioning as both smoke and weather seals.
   1. Products:
      a. Weatherstrip: Pemko 303 (Surface bulb).
      b. Door Bottoms: Pemko 29326 (surface vinyl).

2.13 PROTECTION PLATES AND ARCHITECTURAL TRIM

A. Custom Protection Plates: See Drawings.
   1. Material: 0.050" stainless steel, satin finish.

B. Protection Plates:
   1. Material: 0.050" stainless steel, satin finish. Mount plates 1/2" above bottom of door; provide 4 beveled edges; screws shall match plates.
   2. Armor Plates: 34" high x 2" less than width of door.

C. Acceptable Manufacturers - Protection Plates and Architectural Trim:
   1. Assa Abloy McKinney: www.assaabloydss.com.
   2. Hager Companies.
   3. Triangle Brass Manufacturing Co., Inc.
   4. Westware.

D. Silencers:
   1. Rubber plug-in type, not adhesive applied; 3 for each single frame, 2 for each paired door frame. All doors not scheduled to receive door stripping shall receive silencers.

E. Basis of Design:
   1. Protection Plates: K1050 manufactured by Rockwood.
   2. Silencers: Ives.

2.14 KEY CONTROLS

A. Key Management System: For each keyed lock on project, provide one set of consecutively numbered duplicate key tags with hanging hole and snap catch.
   1. Security Key Tags: For each keyed lock on project, provide one set of matching key tags for permanent attachment to one key of each set.
B. Facility Manager's Key Cabinet: Sheet steel construction, piano hinged door with key lock.
   1. Installation: The key cabinet shall be installed in a location as directed by the Owner.
C. Fire Department Secure Exterior Key Box:
   1. Key Box: Exterior, recessed mounted, U.L. listed, 5"h x 4"W x 3-1/4" D, high security key box; black. Verify location with Architect and Fire Department.
      a. Tamper Switch: Fire alarm connected tamper switch for the key box, wiring provided by the Electric Contractor.
      b. Product (as required by the Fire Department):
         1. Knox-Box by Knox.
         2. Supra Fire Department Key Box by Supra.

2.15 CLEANING

A. Clean adjacent surfaces soiled by hardware installation. Clean finished hardware per manufacturer's instructions after final adjustments has been made. Replace items that cannot be cleaned to manufacturer's level of finish quality at no additional cost.

2.16 PREPARATION

A. For steel doors and frames: Comply with DHI "Recommended Locations for Architectural Hardware for Steel Doors and Frames." Install hardware on fire-rated doors and frames in accordance with code and NFPA 80.

B. Install hardware in accordance with manufacturer's instructions and applicable codes.

C. Hardware shall only be installed by experienced finish hardware installers. Set units level, plumb and true to line and locations.

D. Verify that electric power is available to power operated devices and of the correct characteristics.

E. Verify that doors and frames are ready to receive work; labeled, fire-rated doors and frames are present and properly installed, and dimensions are as indicated on shop drawings.

PART 3 EXECUTION

3.01 TEMPLATES

A. Use templates provided by hardware item manufacturer.

B. For wood doors: Comply with DHI "Recommended Locations for Architectural Hardware for Wood Flush Doors."

C. Verify that electric power is available and is of the correct characteristics.

3.02 INSTALLATION

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

B. Coordinate installation of components with related and adjacent work; level and plumb.

C. Contact between aluminum and dissimilar materials shall be separated with neoprene isolation strips in compliance with AAMA 101 Dissimilar Materials Appendix, for prevention of electrolytic action and corrosion.

D. Door installer shall coordinate his work with the installation of electrical conduit. See Electrical Drawings and Specifications.

3.02 ADJUSTING AND INSPECTION

A. Provide an Architectural Hardware Consultant to inspect installation and certify that hardware and installation has been furnished and installed in accordance with manufacturer's instructions and as specified.

B. Adjust and check each item of hardware and each door, to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate freely and smoothly as intended for the application. Adjust door control devices to operate smoothly after building HVAC systems are operational for compliance with opening force requirements of the ADA Guidelines.

C. After the hardware has been installed, the hardware supplier shall inspect the Project and ascertain that all items of hardware have been properly installed, fastened, and are functioning as required. Any discrepancies shall be called to the attention of the Contractor, who shall be responsible for correcting them.

D. Clean adjacent surfaces soiled by hardware installation. All hardware shall be protected from dents and scratches. Hardware that is damaged prior to building completion shall be replaced at no cost to the Owner.

E. Approximately six months after the date of Substantial Completion, the installer and/or representatives of the latchset, lockset, panic device, closer and door control device hardware manufacturers shall return to the Project to perform the following work:
   1. Examine and re-adjust each item of door hardware as necessary to restore proper function.
   2. Consult with and instruct the Owner's personnel in recommended maintenance procedures.
   3. Replace hardware items that have deteriorated or failed due to faulty design, materials or installation of hardware units.
   4. Prepare a written report of current and predicable problems of substantial nature in the performance of the hardware.

3.03 HARDWARE SETS

A. Hardware sets are listed on the Drawings.

END OF SECTION

SECTION 08 80 00
GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Radiation Shielding Glass

1.02 RELATED REQUIREMENTS

A. Section 07 90 05 - Joint Sealers: Sealant and back-up material.

B. Section 13 49 05 - X-Ray Radiation Protection.

1.03 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; current edition.

B. ANSI Z97.1 - Safety Glazing Materials Used in Buildings, Safety Performance Specifications and Methods of Test; 2010.

C. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2011).

D. ASTM C1036 - Standard Specification for Flat Glass; 2011e1.

E. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2012.

F. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass; 2014.

G. ASTM C1376 – Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass.

H. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2012a.

I. ASTM E2141 – Standard Test Methods for Assessing the Durability of Absorptive Electrochromic Coatings on Sealed Insulating Glass Units.

J. ASTM E2188 – Standard Test Method for Insulating Glass Unit Performance

K. ASTM E2189 – Standard Test Method for Testing Resistance to Fogging in Insulating Glass Units.

L. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2010.

M. ASTM E2953 – Standard Specification for Evaluating Accelerated Aging Performance of Electrochromic Devices in Sealed Insulated Glass Units.

N. GANA - GANA Glazing Manual; Glass Association of North America; 2009.

O. GANA - GANA Sealant Manual; Glass Association of North America; 2008.

P. SIGMA TM-3000 - Glazing Guidelines for Sealed Insulating Glass Units; 2004.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Pre-installation Meeting: Convene a pre-installation meeting at least two weeks before starting work of this Section; require attendance by all affected installers.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data:
   1. Glass Types: Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.
   2. Glazing Compounds: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors.

C. Shop Drawings:
   1. Submit glazing schedule indicating all openings to be glazed, type of glazing.
D. Samples:
   1. Upon request, submit 8x8 inch samples of glass units.

1.06 QUALITY ASSURANCE

A. Perform Work in accordance with GANA Glazing Manual and FGMA Sealant Manual for glazing installation methods.
B. Installer Qualifications: Company specializing in performing the work of this Section with minimum five years documented experience.
C. All heat strengthened, tempered and laminated glass shall be permanently labeled by such means as etching, sandblasting, firing of ceramic materials on the glass, or by other suitable means so as to be easily visible and legible. The label shall identify the nominal thickness, glass type and compliance with requirements of ANSI Z97.1 and with a certification label of the Safety Glazing Certification Council (SGCC) or other certifying agency acceptable to the Authority Having Jurisdiction.

1.07 FIELD CONDITIONS

A. Do not install glazing when ambient temperature is less than 50 degrees F.
B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.08 WARRANTY

A. See Section 01 78 00 - Project Close-out, for additional warranty requirements.
B. Sealed Glass Units: Provide a ten (10) year warranty to include coverage for sealed glass units from seal failure, interpane dusting or misting, and replacement of same. The warranty shall ensure that coatings will not crack, flake, peel or otherwise fail or degrade.
C. Laminated Glass: Provide a ten (10) year warranty to include coverage for delamination, including replacement of failed units.
D. Plastic glazing: Provide a five year manufacturer’s warranty to repair or replace units that fail in material or workmanship.

PART 2 PRODUCTS

2.01 GLAZING TYPES

A. Type LG-1 – Leaded Glazing: Non-fire-rated, fully tempered.
   1. Applications: Vision panels located in lead-lined partition at “Rad. Training 118B”.
      a. See Section 13 49 05 – X-Ray Radiation Protection for other requirements.
   2. Thickness: 5/16 inch; providing protection equivalent to not less than 1/16 inch thick lead.
   3. Glazing Method: Interior wet method, glazing compound.

2.04 GLASS MATERIALS

A. Float Glass: All glazing shall be float glass unless otherwise indicated.
   1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality-Q3.
   2. Heat-Strengthened and Fully Tempered Types: ASTM C1048, Kind HS and Kind FT.
   3. Tinted Types: ASTM C1036, Class 2 - Tinted, color and performance characteristics as indicated.
   4. Thicknesses: As indicated; for exterior glazing comply with requirements indicated for wind load design regardless of thickness indicated.
   5. Manufacturers:
      a. AGC Glass Company North America, Inc.
      b. Cardinal Glass Industries.
      c. Guardian Industries Corp.

d. Pilkington North America Inc.
e. PPG Industries, Inc.

B. Laminated Glass: Float glass laminated in accordance with ASTM C1172.
1. Laminated Safety Glass: Comply with 16 CFR 1201 test requirements for Category II.
2. Plastic Interlayer: 0.060 inch thick, minimum.
3. Where fully tempered is specified or required, provide glass that has been tempered by the tong-less horizontal method.
4. Manufacturers:
a. AGC Flat Glass North America, Inc.
b. Cardinal Glass Industries.
c. Substitutions: Refer to Section 01 60 00 - Product Requirements.

2.07 GLAZING COMPOUNDS

A. Glazing Compound: Elastic type.
1. Bostik Inc.
2. Momentive Performance Materials, Inc.
3. Pecora Corporation.
4. BASF Construction Chemicals-Building Systems.
5. DAP Inc.
6. Dow.
7. Substitutions: Refer to Section 01 60 00 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that openings for glazing are correctly sized and within tolerance. Glass sizes indicated on the Drawings are approximate only.

B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and ready to receive glazing.

3.02 PREPARATION

A. Clean contact surfaces with solvent and wipe dry.

B. All frames shall be checked prior to glazing to make certain openings are square, plumb and secure in order that uniform face and edge clearances are maintained.

C. Prime surfaces scheduled to receive sealant.

D. Install sealants in accordance with ASTM C1193 and GANA Sealant Manual.

E. Install sealant in accordance with manufacturer's instructions.

3.03 GLAZING METHODS

A. All glazing shall be performed in accordance with standards of FGMA, AAMA and SIGMA, latest editions. Glass clearance dimensions shall be based on the type and thickness of the glass as determined by the FGMA Glazing Manual, or as hereinafter specified.

B. No glass shall be installed where it may be damaged unless it is properly protected at all times. Any damaged or defective glass shall be removed and replaced with new perfect glass at no additional cost to the Owner.

3.04 INSTALLATION - EXTERIOR/INTERIOR DRY METHOD (GASKET GLAZING)

A. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.

B. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.

C. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.06 INSTALLATION - INTERIOR DRY METHOD (TAPE AND TAPE)

A. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch above sight line.

B. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.

C. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.

D. Place glazing tape on free perimeter of glazing in same manner described above.

E. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.

F. Knife trim protruding tape.

3.07 INSTALLATION - INTERIOR WET/DRY METHOD (TAPE AND SEALANT)

A. Cut glazing tape to length and install against permanent stops, projecting 1/16 inch above sight line.

B. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.

C. Rest glazing on setting blocks and push against tape to ensure full contact at perimeter of pane or unit.

D. Install removable stops, spacer shims inserted between glazing and applied stops at 24 inch intervals, 1/4 inch below sight line.

E. Fill gaps between pane and applied stop with appropriate sealant to depth equal to bite on glazing, to uniform and level line.

F. Trim protruding tape edge.

3.08 CLEANING

A. Remove glazing materials from finish surfaces. Remove labels after Work is complete. Clean glass and adjacent surfaces.

END OF SECTION

SECTION 09 05 61
COMMON WORK RESULTS FOR FLOORING PREPARATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. This Section applies to all floors identified in the Contract Documents to receive resilient flooring.

B. Removal of existing floor coverings at renovation areas and patching.

C. Preparation of existing concrete floor slabs for installation of floor coverings.

D. Testing of existing and concrete floor slabs for moisture and alkalinity (pH).

E. Documentation of slab flatness.

F. Moisture barrier system for concrete slabs if testing determines such treatment is required for flooring installation.

1.02 RELATED REQUIREMENTS

C. Section 01 40 00 - Quality Requirements: Additional requirements relating to testing agencies and testing.

D. Section 09 65 00 - Resilient Flooring.

1.03 REFERENCES

A. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2011.

B. RFCI - Recommended Work Practices for Removal of Resilient Floor Coverings.

1.04 SUBMITTALS

A. Visual Observation Report: For existing floor coverings to be removed.

B. Product Data: Floor covering and adhesive manufacturers' product data for each specific combination of substrate, floor covering, and adhesive to be used; submit:
   1. Moisture and alkalinity (pH) limits and test methods.
   2. Manufacturer's required bond/compatibility test procedure.

C. Product Data: Moisture barrier system manufacturer's published data on each product to be used for remediation.
   1. Test reports indicating compliance with specified performance requirements, performed by nationally recognized independent testing agency.
   2. Manufacturer's installation instructions.
   3. Specimen Warranty: Copy of warranty to be issued by coating manufacturer and certificate of underwriter's coverage of warranty.

D. Field Reports:
   1. Submit visual observation report for existing floor coverings to be removed.
   2. Submit contractor's field adhesive bond and compatibility test results.

1.05 QUALITY ASSURANCE

A. Moisture and alkalinity (pH) testing may be performed by an independent testing agency employed and paid by Owner.

B. Contractor may perform adhesive and bond test with his own personnel or hire a testing agency.

C. Contractor's Responsibility Relating to Independent Agency Testing:
   1. Provide access for and cooperate with testing agency.
   2. Confirm date of start of testing at least 10 days prior to actual start.
   3. Allow at least 4 business days on site for testing agency activities.

4. Achieve and maintain specified ambient conditions.
5. Notify Owner when specified ambient conditions have been achieved and when testing will start.

D. Moisture Barrier Installer Qualifications: Company specializing in performing work of the type specified in this Section, trained by or employed by coating manufacturer, and able to provide at least 3 project references showing at least 3 years of experience installing moisture emission coatings.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, handle, and protect products in accordance with manufacturer's instructions and recommendations.

B. Deliver materials in manufacturer's packaging; include installation instructions.

C. Keep materials from freezing.

1.07 FIELD CONDITIONS

A. Maintain ambient temperature in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 65 degrees F or more than 85 degrees F.

B. Maintain relative humidity in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 40 percent and not more than 60 percent.

PART 2 PRODUCTS

2.01 MATERIALS

A. Patching Compounds: Cementious type recommended by adhesive material manufacturer and flooring manufacturer. Calcium sulphate, plaster or gypsum-based toppings, leveling and patching compounds are not acceptable.
   1. Product:
      a. K-15 by Ardex. (Slope / Build-up Product: SD-P by Ardex).
      b. Drytek Premium Skimcoat Patch Underlayment with Primer by Laticrete.
      c. Substitutions: See Section 01 60 00 – Product Requirements.

B. Self-leveling Cementious Underlayment: Portland cement-based self-leveling underlayment.
   1. Substrate preparation and conditions shall be reviewed and confirmed with the manufacturer's technical representative prior to installation.
   2. Slab primer as recommended by the underlayment manufacturer.
   3. Products:
      a. K-15 by Ardex.
      b. Premium Self-Levelign Underlayment by Koster American Corp.
      c. Supercap by Laticrete.
      d. Substitutions: See Section 01 60 00 – Product Requirements.

C. Slab Moisture Barrier System: Epoxy slab coating for moisture vapor remediation and primer coat. VOC regulation compliant; Low odor; VOC content <10 g/l. Work covered by allowance.
   1. Substrate preparation and conditions shall be reviewed and confirmed with the manufacturer's technical representative prior to installation.
   2. Primer: P82 by Ardex.
   3. Barrier Coating: MC Rapid by Ardex.
   4. Substitutions: See Section 01 60 00 – Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION AND FIELD TESTING

A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.

C. Concrete Floor Surfaces: Verify that substrate conforms to ASTM F710.
   1. Obtain instructions if test results are not within limits recommended by flooring manufacturer and adhesive materials manufacturer.
   2. Conduct adhesive bond tests.
   3. Conduct water absorption tests.

E. Owner's testing agency may test concrete slab surfaces prior to installation of any flooring. Test results shall be made available to the contractor for determination of acceptability by the flooring and adhesives manufacturers. Contractor shall obtain instructions from flooring manufacturers if test results are not within their recommendation limits. Testing shall include:
   1. Internal relative humidity rates per ASTM F2170
   2. Moisture vapor emission rates per ASTM F1869.
   3. Alkalinity, pH rates per ASTM 710.

F. Testing Agency's Report: Include:
   1. Description of areas tested; include floor plans and photographs if helpful.
   2. Summary of conditions encountered.
   3. Moisture and pH test reports.
   4. Copies of specified test methods.
   5. Recommendations for remediation of unsatisfactory surfaces.
   6. Include certification of accuracy by authorized official of testing agency.
   7. Submit report directly to Owner not more than two business days after conclusion of testing.

G. If remedial work is recommended by the flooring and adhesive manufacturers, the preparation for and installation of moisture control coatings shall be inspected by the product manufacturer's technical representative and tested for adequacy by the Owner's testing agency prior to resumption of the flooring installation.

H. Any conditions that could adversely affect the flooring installation shall be corrected, prior to proceeding with the Work. Commencement of the installation of flooring shall be considered acceptance of the concrete slab as being suitable for the intended application. Any conditions that could adversely affect the flooring installation shall be brought to the Contractor's attention, for resolution, prior to proceeding with the Work.

3.02 CONCRETE SLAB PREPARATION

A. Perform following operations in the order indicated:
   1. Existing concrete slabs with existing floor coverings:
      a. Visual observation of existing floor covering, for adhesion, water damage, alkaline deposits, and other defects.
      b. Removal of existing floor covering as recommended by the RFCI - Recommended Work Practices for Removal of Resilient Floor Coverings. Remove and dispose of removed materials in accordance with local, State, and federal regulations and as specified.
   2. Existing concrete slabs with coatings or penetrating sealers/hardeners/dustproofers:
      a. Do not attempt to remove coating or penetrating material.
      b. Do not abrade surface.
   3. Preliminary cleaning for all slabs.

B. Assuming test values exceed floor covering manufacturer's limits, Base Bid shall include slab moisture coating remediation for slab on grade. In the absence of manufacturer limits, perform remediation if any test value exceeds 95 percent relative humidity.
   1. Surface preparation for and installation of moisture control coatings shall include surface roughening by shot blasting. Surface shall be inspected by the product manufacturer's technical representative and tested for adequacy by the Owner's testing agency prior to resumption of the flooring installation.

2. Install self-leveling underlayment as/if required for adhesion of flooring adhesive over moisture barrier.

C. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor patching compound to achieve smooth, flat, hard surface. Provide transition strips directly over construction joints between new and existing floor slabs where applicable.

D. Resilient flooring shall not be installed over floors that have been treated with chemical compounds. Remove coatings, including curing compounds, and other substances that are incompatible with flooring adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by the manufacturer. Do not use solvents.

E. Installation of patching compounds:
1. Fill and smooth surface cracks, grooves, depressions, control joints and other non-moving joints, and other irregularities.
2. Subfloor surfaces shall not vary more than plus or minus 1/8" in any 10' dimension. Neither shall they vary at a rate greater than 1/16" per running foot. Leveling compound shall be used for larger areas. Prohibit traffic until patching and sloping compounds are cured.

F. All flooring surface transitions shall be as smooth and level as possible. Resilient flooring shall be laid flush with all adjacent flooring materials. Fill edge of subfloor adjacent to higher flooring with approved crack and leveling filler as required to provide a smooth transition. Filler shall be feathered back to subfloor a minimum of one foot for each 1/16" of thickness.

3.03 PRELIMINARY CLEANING

A. Clean floors of dust, solvents, paint, wax, oil, grease, asphalt, residual adhesive, adhesive removers, film-forming curing compounds, sealing compounds, alkaline salts, excessive laitance, mold, mildew, and other materials that might prevent adhesive bond.

B. Do not use solvents or other chemicals for cleaning.

3.04 PREPARATION

A. See individual floor covering Sections for additional requirements.

B. Comply with requirements and recommendations of floor covering manufacturer.

C. Fill and smooth surface cracks, grooves, depressions, control joints and other non-moving joints, and other irregularities with patching compound.

D. Do not fill expansion joints, isolation joints, or other moving joints.

3.05 PROTECTION

A. Cover prepared floors with building paper or other durable covering.

END OF SECTION

SECTION 09 21 16
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Performance criteria for gypsum board assemblies.

B. Interior metal stud wall framing and engineering of stud sizes and attachments for special loading conditions.

C. Suspended metal channel and hat furring ceiling framing system.

D. Acoustic Construction, including installation of acoustic insulation and sealing of joints at framing and gypsum board.

E. Gypsum wallboard products and framing.

F. Marking and identification of fire-rated assemblies.

G. Joint treatment, expansion and control joints, special shapes and accessories.

1.02 RELATED REQUIREMENTS

A. Section 06 10 54 - Wood Blocking and Curbing: Wood blocking for support of wall-mounted equipment.

B. Section 07 21 00 - Thermal Insulation: Acoustic insulation.

C. Section 07 90 05 - Joint Sealers: Acoustic sealant.

D. Section 09 51 00 – Suspended Acoustical Ceilings.

E. Section 13 49 05 – X-Ray Radiation Protection.

1.03 REFERENCE STANDARDS

A. AISI S100 - North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2004.

B. ANSI S200 - North American Standard for Cold-Formed Steel Framing - General Provisions.

C. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2011.

D. ASTM A1003 - Standard Specification for Steel Sheet, Carbon, Metallic-Coated and Nonmetallic-Coated for Cold-Formed Framing Members; 2005.

E. ASTM C475 - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2007.

F. ASTM C 645 - Standard Specification for Nonstructural Steel Framing Members; 2008.

G. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2011.

H. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2013.

I. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2011.

J. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2013.

K. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base; 2010a.

L. ASTM C1396- Standard Specification for Gypsum Board; 2011.

M. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2012.

N. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009.

O. ASTM E413 - Classification for Rating Sound Insulation; 2010.

P. GA-216 - Application and Finishing of Gypsum Board; Gypsum Association; 2013.

Q. GA-600 - Fire Resistance Design Manual; Gypsum Association; 2012.

R. UL - Fire Resistance Directory; Underwriters Laboratories Inc.; current edition.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data:
   1. Submit manufacturer's metal stud load tables where applicable for typical stud partition loading and deflection criteria, identifying stud height, size and thickness selections.
   2. Provide data on metal framing runners, head tracks, metal framing, gypsum board, accessories, and joint finishing system.

C. Shop Drawings:
   1. Submit fully engineered shop drawings for all new partitions with special load conditions including but not limited to: wall mounted cabinets, shelving, grab bars, counters, and other wall mounted equipment specified herein. Submit design criteria, calculations, size and thickness designations, type, location, spacing, connection to building structure, supplemental bracing or accessories, fasteners and details required for proper installation. Shop drawings shall bear the license seal of a professional structural engineer licensed to practice in Maine.
   2. Submit details associated with acoustic seals.

D. Samples: Upon request, submit samples of all materials and accessories.

1.05 QUALITY ASSURANCE

A. All procedures and workmanship shall be in accordance with Gypsum Association GA-216 "Application and Finishing of Gypsum Board" and Gypsum Association Specifications for the Installation of Screw-Type Steel Framing Members to Receive Gypsum Board.

B. Panel Products and Finishing Manufacturer: Unless otherwise indicated, gypsum board and other panel products, accessories and finishing materials shall be from a single manufacturer.

C. Metal Framing Manufacturer: Unless otherwise indicated, steel framing for gypsum board assemblies shall be from a single manufacturer.

D. Installer Qualifications: Company specializing in performing gypsum board application and finishing, with minimum 5 years of documented experience.

E. Framing components and assemblies required to be engineered and detailed on shop drawings shall include proper accommodations for all live and dead loads, differential building movement, etc. Provide industry standard safety factors as suited to specific job conditions. To the extent that component types and sizes are indicated in the Contract Documents, they shall be considered minimum requirements to be verified and increased (but not decreased) as determined to be necessary by the metal stud contractor's engineer. Framing member depths indicated on the Drawings shall not be altered without the Architect's prior written authorization.

1.06 PRE-INSTALLATION MEETING

A. At least 3 weeks prior to start of installation of metal framing systems, meet at the project site with installers of other work including door and window frames, demountable partition system, mechanical and electrical work. Review areas of potential interference and conflicts, coordinate layout, and support provisions for interfacing work.

1.07 DELIVERY, STORAGE AND HANDLING

A. All materials shall be delivered to the job site in their original unopened containers or bundles, stored flat under conditions providing adequate protection from damage and exposure to elements and adequately protected from foul weather conditions.

B. Steel framing and related accessories shall be stored and handled in accordance with AISI Code of Standard Practice.

C. All fire-rated materials shall bear testing agency labels and required classification numbers.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C840 and GA-216. See PART 3 for finishing requirements.

B. Interior Partitions Indicated as Acoustic: Provide completed assemblies with STC ratings as indicated on the Drawings, calculated in accordance with ASTM E413 by a qualified independent testing agency, based on tests conducted in accordance with ASTM E90.

C Seismic Design Requirements:
1. Seismic Design Category: See Structural

D. Design Requirements:
1. Steel partition stud maximum spacing: 16 inches on center.
2. Steel partition stud lateral deflections:
   a. Typical gypsum board faced partitions: L/240.
   b. Ceramic tile faced partitions: L/720.
3. Steel partition stud uniform lateral loads:
   a. Typical gypsum board faced partitions: 5 PSF.
   b. Ceramic tile faced partitions: 8 PSF.
4. Steel partition stud special loads in addition to uniform lateral loads:
   a. At a minimum, all partitions with gypsum board finish shall be capable of wall mounted cabinet loading.
   b. Wall mounted cabinets: Minimum 60 PLF applied vertically 6" from the face of the wall (for a 12" deep cabinet).
   c. Wall mounted shelving: Minimum 20 PLF per shelf applied vertically 6" from the face of the wall for number of shelves indicated spaced 12" apart with top shelf at 6 feet AFF (for a 12" deep shelf).
   d. Wall mounted counters: Minimum 100 PLF applied vertically 12" from the face of the wall (for a 24" deep counter) and applied vertically 15" from the face of the wall (for a 30" deep counter).
   e. Wall mounted video monitors: Minimum of 60 pounds, over area of wall indicated on the Drawings, applied vertically 4" from the face of the wall (for 8" deep monitor).
   f. Fixed wall mounted computer supports: 45 pounds.
   g. Adjustable wall mounted computer supports: 45 pounds applied at any point in any direction up to 45.5 inches from the wall surface.
   h. Wall mounted handrails: Minimum concentrated force of 200 pounds applied at any point in any direction and, but not simultaneously, a uniform load of 50 PLF applied in any direction 4" from the face of the wall.
   i. Wall mounted stationary grab bars: Minimum concentrated force of 250 pounds applied at any point in any direction 4" from the face of the wall.
5. Steel soffit and ceiling framing studs lateral deflection:
   a. Gypsum board: L/240.

2.02 METAL FRAMING MATERIALS

A. Manufacturers - Metal Framing, Connectors, and Accessories:
1. Dietrich Metal Framing.
2. Marino\Ware
3. EB Metals
4. Substitutions: See Section 01 60 00 - Product Requirements.

B. Framing System Components: ASTM C 645, roll-formed steel.

1. Protective Coating: ASTM A653 minimum G60 (Z180) hot-dip galvanized corrosion resistant coating.
2. Sizes: Sizes and properties necessary to comply with ASTM C 754 and for the spacing, deflection and load conditions indicated, but in no case less than 18 mils (0.0179 inches) minimum thickness.
3. Studs: C shaped with flat or formed webs, 1-1/4" legs (flanges) with knurled faces; web depths as indicated on the Drawings.
4. Runners: U shaped, sized to match studs.
5. Slip-Type Head Track Options:
    a. Single Long-Leg Runner System: ASTM C645 top runner with 2 inch deep flanges in thickness as required by engineering but not less than stud thickness, installed with studs friction fit into top runner and with continuous bridging located within 12 inches of the top of studs to provide lateral bracing.
    b. Double-Runner System: ASTM C645 top runners, inside runner with 2 inch deep flanges in thickness as required by engineering and fastened to studs, and outer runner sized to friction fit inside runner and in thickness as required by engineering but not less than stud thickness.
    c. Deflection Track: Steel sheet top runner to accommodated deflection of structure above; in thickness as required by engineering but not less than stud thickness and in width to accommodate depth of studs.
6. Ceiling Carrying Channels: C shaped, minimum 54 mils (0.0538 inches); minimum 1/2 inch wide flanges; depth 3/4", 1-1/2", 2", 2-1/2" and as indicated on the Drawings.
7. Furring Channels: Hat-shaped sections, depth of 7/8 inch with 1/2 inch wide flanges; 22 ga (0.269 inch).
8. Channel Bridging and Bracing: U shaped; 54 mils thickness; minimum 0.5 inch wide flanges; depth as indicated or required.
9. Flat Strap and Backing Plates: Continuous straps or plates of electro-galvanized sheet steel, widths as indicated, but not less than three (3) inches in wide. Actual size and thickness shall be as engineered by the stud manufacturer considering weight or loading resulting from items to be supported.
10. Angles, legs, clips and other miscellaneous accessories as indicated in the drawings and as required to complete the work, whether shown or not.
11. Clips (For securing metal framing to structural steel components intended to receive sprayed-on fireproofing): Galvanized steel, depth as required for thicknesses of fireproofing, size and thickness as determined by system engineering.

C. Ceiling and Soffit Suspension Systems: Comply with ASTM C754.
    1. Interior Ceilings and Soffits:
        a. Carrying Channels, Furring Channels, Resilient Channels: See above.
        b. Flat steel hangers: Zinc coated sheet steel; type and size as specified in ASTM C754 for spacing required; minimum size 1 inch x 3/16 inch by length required.
        c. Wire Hangers: ASTM A641, Class 1 zinc coating, soft temper, sized for the specific application, but in no case less than 0.162 inch diameter.
        d. Tie Wire: ASTM A641, Class 1 zinc coated, soft temper, sized for the specific application, but in no case less than 0.0625 inch or double strand of 0.0475 inch diameter wire.
        e. Anchors: Fabricated from corrosion-resistant materials with holes or loops for attaching wire hangers and capable of sustaining, without failure, a load equal to 5 times that imposed by construction as determined by testing according to ASTM E488.

D. Z-Furring (For securing head tracks, wall studs, sill plates, channels and other framing indicated to structural components intended to receive sprayed-on fireproofing): Galvanized steel, depth as required for thicknesses of fireproofing and associated wall construction, size and thickness as determined by system engineering.

E. Partition Head To Structure Connections (Deflection Head Tracks) Non-fire Rated:

1. Existing primary steel deflection is 2 inches and existing secondary steel (bar joist) deflection is 2 inches. Movement joints with sealant shall accommodate the 50% movement ability of sealant, thereby setting the deflection gap at joints with sealant at existing primary and secondary steel at 4 inches.
2. For non-fire rated assemblies with joint sizes and vertical movement requirements within vertical movement capability of sealants, as / if required.
3. Provide track fastened to structure with legs of sufficient length to accommodate movement required, for friction fit of studs cut short and fastened as determined by the fabricator/installer's engineering. In no case shall tracks be less than 33 mils; ASTM C653 sheet steel, SS Grade 50/340, with G60/Z180 hot dipped galvanized coating. Options include:
    a. Single Long-Leg Runner System: 2 inch minimum deep flanges, gage as required by engineering but not less than stud gage, installed with studs friction fit into top runner, with continuous bridging located within 12 inches of the top of studs or other mechanical anchorage to allow vertical movement but prevent rotation of studs while maintaining structural performance of the partition.
    b. Double-Runner System: 2 inch minimum deep flanges in gage as required by engineering and fastened to studs, with an outer runner sized to friction fit inside runner and in gage as required by engineering but not less than stud gage.

2.03 BOARD MATERIALS

A. Gypsum Wallboard: Type X, 5/8 inch thickness except as indicated below, paper-faced gypsum panels as defined in ASTM C1396; sizes to minimize joints in place; ends square cut.
    1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
    2. At toilet rooms and wet-walls provide mold-resistant type wallboard.
    3. Products:
        a. ProRoc Brand Gypsum Board by CertainTeed Corp.
        b. ToughRock Fireguard and ToughRock FireGuard C by Georgia-Pacific Gypsum.
        c. Gold Bond Brand Gypsum Wallboard by National Gypsum Co.
        d. Sheetrock Brand Gypsum Panels by USG Corp.

A. Lead-lined Gypsum Wallboard: See Section 13 49 05 – X-Ray Radiation Protection. Installation height and lead thickness as determined by physicist.
    1. Application: X-Ray Rooms.
    2. Installation: Height and lead thickness as determined by physicist.

2.04 ACCESSORIES

A. Acoustic Insulation: As specified in Section 07 21 00.

B. Acoustic and Smoke Sealant: As specified in Section 07 90 05.

C. Finishing Accessories for Wallboard: ASTM C1047, galvanized steel or rolled zinc, not less than 26 gage, unless otherwise indicated.
    1. General Types: As detailed or required for finished appearance.
    2. "J" Beads: Channel shaped with a concealed wing not less than 1-1/8" wide and an exposed wing, equal to Type 400. "J" beads may be used only where specifically identified on the Drawings or otherwise approved by the Architect. All other edge trim shall be Casing Beads.
    3. Casing and Trim Beads: Channel and angle types as required, screwed into place and suitable for finishing with joint compound, equal to Type 200.
        a. Vinyl Rip Bead L Trim is acceptable.
    4. Corner Beads: Angle-shaped with 1-1/4" width wings, and perforated for screwing and joint treatment, equal to Type 103. Use Mult-Flex, steel reinforced, tape bead for corners less than or greater than ninety degrees.
    5. Edge Beads: (For use at perimeter of ceilings) Channel or angle-shaped with wings not less than 3/4" wide. Exposed wing edge shall be folded flat, with bead for taping and floating, equal to Type 200.

6. Control Joints: Zinc extrusions equal to Type 093, or deep rigid PV extrusions equal to Type 093V by Trimtex for larger joints.
7. Miscellaneous Shapes: In addition to conventional cornerbead and control joints, provide other configurations indicated or as otherwise required for a complete and proper job. At exterior locations provide exterior grade rigid PVC trims.

E. Joint Materials: ASTM C475 and as recommended by gypsum board manufacturer for project conditions.
1. Tape: 2 inch wide, creased paper tape for joints and corners for all interior locations.
2. Ready-mixed vinyl-based joint compound.

F. High Build Drywall Surfacer: Vinyl acrylic latex-based coating for spray application, designed to take the place of skim coating and separate paint primer in achieving Level 5 finish for semi-gloss painted surfaces and walls scheduled to receive wall coverings.
1. Product: Tuff-Hide manufactured by USG.

G. Screws for gypsum board attachment to Steel Members From 0.033 to 0.112 Inch in thickness: ASTM C 954; steel drill screws for application of gypsum board to loadbearing steel studs.
1. Size, penetration and spacing shall be in strict accordance with the stud manufacturer's recommendations and the stud fabricator's engineering requirements. Penetration through joined steel materials shall not be less than 3 exposed threads or 3/8".
2. Coatings:
a. General interior areas: Corrosion resistant, zinc plated with chromate complying with ASTM B633 and B117.

H. Anchorage to Substrate: Anchorage of tracks to the structure (size, penetration, type and spacing) shall be in strict accordance with the stud fabricator/installer's engineering requirements for the specific application and shall rigidly secure materials in place.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this Section to commence.

3.02 FRAMING INSTALLATION

A. Metal Framing: Comply with ASTM C754, fabricator's engineering drawings and manufacturer's instructions.

B. Suspended Ceilings and Soffits: Space framing and furring members as indicated and in accordance with fabricator's engineering drawings. Suspend carrying channels from structure above at not more than 4 feet on center and within 6 inches of walls. Attach furring channels to the carrying channels at no more than 16 inches on center and within 2 inches of walls.
1. Level ceiling system to a tolerance of 1/8" in 10 feet'.
2. Install hangers plumb and free of contact with other objects that are not part of the supporting system for the ceiling. Install supplemental suspension members where width of ducts or other construction interferes with hanger locations.
3. Provide control and expansion joints as indicated on the Drawings, or otherwise required.
4. Laterally brace entire suspension system. Reinforce openings in suspension system which interrupt main carrying channels or furring channels with lateral channel bracing. Extend bracing a minimum of 24 inches past each opening.
5. NOTE: At the Contractor's option, drywall direct suspension systems may be used, in lieu of the carrying/furring channel system specified, subject to review and acceptance by the Architect. Direct suspension systems shall be complete with main beams, cross channels, wall angles, clips, and hangers, and shall be as recommended by the gypsum board manufacturer for the proposed installations. Systems shall be suitable for fire-rated installations as required.
7. Fasteners for hanger wires shall be of types and sizes that will resist corrosion, and provide lasting anchorage without pullout or failure. Verify compatibility with structure to

receive fasteners prior to proceeding. Do not attach hangers to steel roof deck or steel deck tabs.

C. Runner Tracks: Install continuous tracks sized to match stud, aligned accurately to layout at base and tops of studs. Secure tracks as recommended by stud manufacturer and engineered design for type of construction involved.

D. Studs: Space studs at 16 inches on center unless closer spacing is required by the fabricator's engineering. Spacing shall not exceed 16 inches without the Architect's prior written authorization.
   1. Extend partition framing to structure in all locations.
   2. Partitions Terminating at Structure: Provide deflection head track at all locations where metal framing is attached to or otherwise affected by the deflection of other structural building components. Secure the top of studs in such a way as to allow movement of the deflection head track with respect to the studs. Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs with continuous bridging, or as otherwise required by the fabricator's engineering drawings.
   3. Provide minimum clear space as indicated on the partition types on the Drawings for deflection.

E. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs of all window and door openings and shall be located not more than 2 inches from frames jambs. Two jamb studs shall be used for any opening larger than 2 feet square. Over door frames install a cut-to-length section of runner with flanges slit and web bent to allow flanges to overlap adjacent vertical studs and securely screw-attached to adjacent studs. A cut-to-length stud extending from door frame header to ceiling runner shall be positioned over the door frame.
   1. Provide additional framing as required by engineered design to reinforce headers for adequate stability.
   2. Unless otherwise indicated on the Drawings, partitions above and below door and window openings shall be the same construction as adjacent partitions.

F. Blocking: As part of the scope of Section 06 10 54 - Wood Blocking and Curbing, install wood blocking for support of:
   1. Framed openings.
   2. Wall mounted cabinets.
   3. Toilet partitions.
   4. Toilet accessories.
   5. Wall mounted door hardware.
   6. Grab bars and hand rails
   7. Wall mounted countertops
   8. Coiling doors, and window treatments
   9. AV display monitors (at AV outlet locations mounted at 66” AFF or higher)
   10. Projection screens
   11. Door Hardware
   12. Mounted equipment – see Mechanical and Electrical Drawings
   13. Signage
   14. Other wall or ceiling mounted equipment and items requiring blocking.

G. Supplemental Framing: Install supplementary framing, blocking and bracing in metal framing system wherever walls or partitions are indicated to support fixtures, equipment, services, casework, heavy trim and furnishings, and similar work requiring attachment to the walls or partitions. Where type of supplementary support is not otherwise indicated by the engineered design, comply with stud manufacturer's recommendations and industry standards in each case, considering weight or loading resulting from item supported, for firm and rigid construction.

H. Penetration and Opening Insulation: Install firesafing insulation as required to meet firestop product manufacturer's tested assemblies for all openings and penetrations in fire-rated construction, smoke partitions and at acoustic sealing. Openings shall include steel deck flutes, structural penetrations, mechanical, electrical, piping, etc. Provide any necessary extra studs, furring channels or stick-clips to ensure that insulation will remain in proper alignment and fit around items penetrating partitions.

I. Expansion and Control Joints: Provide studs at each side of all horizontal and vertical joints. Space studs to align with width of joints. Stuff voids between studs full with firesafing insulation at all locations.

3.03 ACOUSTICAL CONSTRUCTION

A. The following requirements shall apply to all non-fire rated ceilings and partitions indicated on the Drawings to be "Acoustical Construction". Special attention shall be paid to the proper installation of acoustical construction components.

B. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions. Prior to installation of gypsum board, verify that acoustical insulation is in place and secure, completely filling all voids.

C. Acoustic Sealant (at non-fire-rated construction): Install in accordance with manufacturer's instructions. Seal all cracks, joints, deck flutes, piping, conduit, duct penetrations and voids in "Acoustical Construction" airtight with sound sealing products.
   1. Place continuous bead at perimeter of each layer of gypsum board.
   2. In non-fire-rated construction, seal around all penetrations by conduit, pipe, ducts, and rough-in boxes.

3.04 BOARD INSTALLATION

A. General: Inspect materials to which gypsum board is to be applied. Remedy all defects prior to installation of gypsum materials. Maintain a uniform room temperature between 55 and 65 degrees F during application and until completely dry or occupied. Provide adequate ventilation to carry off excess moisture.

B. Field verify the layout of all walls and partitions prior to proceeding with the Work, in order to avoid dimensional errors and confirm proper placement. Verify that all required insulations are properly in place prior to covering up.

C. Where the Drawings indicate multiple partition or wall types back-to-back, each scheduled type shall be complete. Inner layers of insulation or gypsum board shall not be omitted.

D. Comply with ASTM C840 and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
   1. Gypsum wallboard shall be cut by scoring and breaking, or by sawing, working from the face side. Scribe neatly to projecting surfaces and fit wallboard neatly around pipes, ducts and other penetrations.
   2. Apply wallboard first to soffits (ceilings) then to walls. Allow 1/4" maximum space between bottom of wall sheets and floor, unless otherwise noted. Apply wallboard at interior soffits with long dimensions of board perpendicular to axis of supports.
   3. At ductwork and piping provide a 1/2 inch gap between the drywall and the penetrating element to minimize any vibration noise transmission to the partition. Void shall be acoustically sealed.

E. Single-Layer Non-Rated: Install gypsum board perpendicular to framing, with ends and edges occurring over firm bearing.

F. Fastening Gypsum Wall and Soffit Board: Wallboard shall be held in firm contact with the supports while the fasteners are being driven. Fasteners shall proceed form central portion of board towards ends and edges. Fasteners shall be driven home with the heads slightly below the surface of the board in a dimple formed by the driving tool. Care shall be taken to avoid breaking the paper face. Improperly driven fasteners shall be removed.

1. In general, drywall screws shall be spaced not to exceed 16 inches o.c. At fire-resistive construction, space screws 12 inches o.c. in field and 8 inches o.c. at board perimeters, unless otherwise required by the applicable U. L. fire-rated assembly.

G. STC Rated Assemblies: Provide assemblies continuous without interruption of wallboard layers required.
   1. Intersection of non-rated/non-acoustical partitions with STC rated partitions: Install required wallboard layers continuous across intersection of stud partitions. Tape/seal all joints and seams as required per assemblies indicated. Butt non-rated/non-acoustical partitions to face of STC rated partition wallboard. Finish all seams per specifications.

3.06 INSTALLATION OF TRIM AND ACCESSORIES

A. Control Joints: Place control joints consistent with lines of building spaces, as recommended by the gypsum board manufacturer, and as indicated. Locations not indicated on the Drawings shall be located by the Contractor subject to the Architect's prior approval. Provide control joints or expansion joints where partitions, walls, ceilings, or soffits cross construction or building joints in stud framing or other supporting materials.
   1. Building expansion joints,
   2. Intersections of dissimilar substrates or finish materials,
   3. Floor lines,
   4. Ceiling and soffit intersections with a structural element or the vertical penetration,
   5. Openings more than 6 feet long,
   6. Adjacent to corners and intersections of walls within a distance equal to half the general control joint spacing noted above.
   7. Locations where concentrated stress or movement is anticipated,
   8. All locations identified on the Drawings,
   9. Locations as recommended by the board manufacturer.

B. Control joint width shall be as required to accommodate anticipated movement.

C. Wall boards shall be discontinuous at the joint, sealant shall fill the gap and control joint trim shall be fastened at both flanges along the entire length of the joint.

D. Corner Beads: Install with screws at external corners, using longest practical lengths.

E. Casing Beads: Install at locations where gypsum board abuts dissimilar materials and as indicated.

3.07 JOINT TREATMENT

A. Paper Faced Gypsum Board: Use paper joint tape, bedded with ready-mixed vinyl-based joint compound and finished with ready-mixed vinyl-based joint compound.

B. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
   1. Level 5: On walls that are double height (2-story) tall and pass over the wall-to-floor deck transition; Areas to receive semi-gloss paint finishes, areas scheduled to receive wall coverings and other areas indicated per the Drawings.
   2. Level 4: Walls and ceilings to receive paint finish, unless otherwise indicated.
   2. Level 3: On walls to receive protective finish (wall tile, wall protection, etc..), areas above the ceiling or not accessible in the completed construction.

C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
   1. Feather coats of joint compound so that camber is maximum 1/32 inch.
   2. Taping, filling and sanding is not required at base layer of double layer applications, except as required in fire-rated applications.

D. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.

3.08 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

SECTION 09 51 00
SUSPENDED ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended metal grid ceiling systems for interior ceilings.

B. Acoustical tiles.

1.02 RELATED REQUIREMENTS

A. Division 23 – HVAC – Refer to Drawings

B. Division 26 – Electrical – Refer to Drawings

1.03 REFERENCE STANDARDS

A. ASTM C635 - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.

B. ASTM C636 - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.

C. ASTM E580 - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions.

D. ASTM E1264 - Standard Classification for Acoustical Ceiling Products.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.

B. Do not install acoustical tiles until after interior wet work is dry.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on suspension system components and acoustical units.

C. Manufacturer's Installation Instructions: Indicate special procedures, including those related to long suspension lengths

D. Samples: Upon request:
   1. Submit 4” x 4” minimum size samples of selected acoustical tiles.
   2. Submit 8 inch long minimum samples of suspension system main runner.

1.06 QUALITY ASSURANCE

A. Acoustic Tile and Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this Section with minimum of fifteen years of documented experience.

1.07 FIELD CONDITIONS

A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of no more than 70 percent prior to, during, and after acoustical unit installation. Acoustic materials shall reach room temperature and moisture content prior to installation. Operate ventilation system for not less than 48 hours beginning acoustical panel ceiling installation.

PART 2 PRODUCTS

2.01 ACOUSTICAL TILES

A. Acoustical Tile Type ACT-1: Painted wet-felted mineral fiber, ASTM E1264, Class A, Type B.
   1. Size: 24 x 24 inches.

2. Thickness: 1 inch.
3. Light Reflectance, ASTM E1264: 0.88.
4. NRC, ASTM E1264: 0.95.
5. Edges: To match existing.
6. Surface Color / Pattern: White; Fine Textured.
7. Suspension System: Exposed grid Type 1.
8. Installation type: Acoustic drop-in.
9. Basis of Design: Certainteed Symphony f 1342.

2.03 SUSPENSION SYSTEMS

A. General: ASTM C635; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.

B. Exposed Steel Suspension System: Formed steel, commercial quality cold rolled; heavy-duty.
   1. Profile: Tee; 15/16-inch-wide face.
   2. Finish: White, painted.
   4. Products: Certainteed EZ Stab Classic.

2.04 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.
   1. Hanger wire: Galvanized soft temper, pre-stretched steel wire, per ASTM A641, with yield strength of at least 3 times design load, but not less than 12-gage diameter.

B. Perimeter Moldings: Same material and finish as grid, size suitable for suspension system and ceiling unit profile.

C. Stiffening Brace: As manufactured by the suspension system manufacturer to provide grid stabilization.

D. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work. Proceed with installation only after unsatisfactory conditions have been corrected.

B. Verify that layout of hangers will not interfere with other work.

C. Any questions or conflicts shall be brought to the attention of the Architect prior to proceeding with the Work.

3.02 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C636, ASTM E580, and manufacturer's instructions and as supplemented in this Section.

B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.

C. Do not support ceiling directly from steel roof deck or tabs. Provide additional hangers and inserts as required. Connect hanger wires directly either to structure, or to inserts, eye screws or other devices that are secure and appropriate for the substrate. All hangers and supports shall be secured in such a way that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.

D. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Install hangers plumb. Angle hangers only where required to miss obstructions. Any non-plumb hangers that result in horizontal forces shall be braced. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

E. Secure wire hangers to ceiling suspension members and to supports above with a minimum of three (3) tight turns. Secure bracing wire to ceiling suspension members and to supports with a minimum of four (4) tight turns.

F. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance. Alternatively, install supplemental suspension members and hangers in the form of trapeze or equivalent devices, sized to support ceiling loads.

G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

H. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
   1. Provide supplemental supports for grid where cubicle curtain tracks are attached to grids shall support a vertical test load of 50 lbs without visible deflection or damage to supports and safely support moving loads.

I. Do not eccentrically load system or induce rotation of runners.

J. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions. Use longest practical lengths and overlap corners.

K. Provide additional hangers for the suspension system at each corner of light fixtures if independent support of fixtures is not provided by Division 26 - Electrical. All light fixtures in excess of 56 lb shall be independently supported.

L. Provide additional hangers for air terminal units or services weighing more than 20 lb but less than 56 lb in addition to positively attaching them to the ceiling suspension system. Units weighing more than 56 lb shall be independently supported to the building structure.

M. Provide framing for recessed light fixtures, air outlets, diffusers, etc. See Architectural, Mechanical, and Electrical Drawings.

3.03 INSTALLATION - SUSPENSION SYSTEM SEISMIC REQUIREMENTS

A. Provide suspension, bracing, and attachments in strict accordance with IBC 2009, ASTM C635, ASTM C636 and ASTM E580. The requirements for seismic bracing shall generally include, but not be limited to the following features:
   1. For Seismic Design Categories A, B and C: (provision of ASCE 7)
      a. For spaces less than 144 sq. ft. in size, no seismic restraint is required.
      b. For spaces 144 sq. ft. and greater in size, in general provide:
         1) The total weight of the suspension system (grid), tiles, and other ceiling components (light fixtures, air terminals, etc) shall be no greater than 2.5 PSF, or other ceiling components shall be independently supported.
         2) The suspension system (grid) shall be designed, tested, and rated for ultimate load capacity as per ASCE 7.
         3) All sides of the space shall have tees cut back 3/8" at the perimeter to accommodate movement and shall not be attached to the perimeter molding. Perimeter moldings shall provide a minimum supporting ledge of 7/8" for tees or all tees shall be independently supported within 8" of the perimeter. All ends of main runners and cross members shall be tied together or shall have stabilizer/spacer bars attached to members to prevent spreading. Permanent attachment (i.e. pop rivets) for grid alignment shall not be permitted.
         4) Openings for sprinkler heads shall provide a minimum of ¼" clearance on all sides of the piping. All other ceiling penetrations shall provide a minimum of 3/8" clearance.

3.04 INSTALLATION - ACOUSTICAL TILES

A. Owner's Inspection: All areas above suspended ceilings shall be inspected by the Owner prior to installation of ceiling tiles. The Contractor shall obtain written permission from the Owner to

proceed with ceiling tile installation. Failure to follow this procedure shall result in removal and reinstallation of ceiling panels to facilitate inspection at no additional cost to the Owner.

B. Install acoustical tiles in accordance with manufacturer's instructions.

C. Fit acoustical tiles in place, free from damaged edges or other defects detrimental to appearance and function.

D. Lay directional patterned tiles with pattern parallel to longest room axis.

E. Fit border trim neatly against abutting surfaces.

F. Install tiles after above-ceiling work is complete. Do not install tile until mechanical and electrical systems are tested and complete and all firestopping and smoke seals have been inspected and accepted.

G. Install acoustical tile level, in uniform plane, and free from twist, warp, and dents.

H. Cutting Acoustical Tile:
   1. Cut to fit irregular grid and perimeter edge trim.
   2. Make field cut edges of same profile as factory edges.
   3. Double cut and field paint exposed reveal edges.

I. Where round obstructions occur, provide preformed closures to match perimeter molding.

3.05 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

3.06 CLEANING

A. Clean soiled exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension system members as recommended by the manufacturer. Remove and replace damaged ceiling components that cannot be successfully cleaned and repaired.

END OF SECTION

SECTION 09 65 00
RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient sheet flooring, tile flooring, resilient base, stair treads/risers, installation accessories.

B. See ID Drawings for flooring pattern layouts.

1.02 RELATED REQUIREMENTS

A. Section 01 40 00 - Quality Requirements.

B. Section 09 05 61 - Common Work Results for Flooring Preparation: Independent agency testing of concrete slabs, removal of existing floor coverings, cleaning, preparation and slab moisture barrier system.

1.03 REFERENCE STANDARDS

A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2014c.

B. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

C. ASTM F1303 - Standard Specification for Sheet Vinyl Floor Covering with Backing; 2014

D. ASTM F1861 - Standard Specification for Resilient Wall Base; 2012.

E. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2015.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

C. Shop Drawings: Indicate seaming plan for all sheet goods. All proposed seams shall be indicated. Installation shall not begin prior to the Architect's review and acceptance.

D. Verification Samples: Submit samples, 12”X12” min. size to confirm selected colors and patterns.

E. Certification and Field Reports:
   1. Prior to installation of flooring, submit written certification by each flooring manufacturer that condition of sub-floor is acceptable.
   2. Submit copies of manufacturer's technical representative's field reports for each field visit.

F. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

1.05 QUALITY ASSURANCE

A. All resilient flooring shall comply with ASTM E84 Flame Spread Rating of Class II (75 or less) and ASTM E662 Smoke Developed (450 or less) unless otherwise indicated.

B. All colors shall match as directed by the Architect and shall be from the same "color run" or "dye lot".

C. All adhesives shall be as recommended by the flooring product manufacturer for substrate conditions and shall be formulated asbestos-free.

1.06 PRE-INSTALLATION MEETING

A. Convene a pre-installation meeting after the results of slab testing are available and at least one week before starting work of this Section; require attendance by the Contractor, a technical representative from each flooring manufacturer, flooring installer, Architect and Owner, to review slab conditions, floor surface conditions, temperature and preparation requirements,

ambient temperature and relative humidity during and after installation, materials, installation procedures and coordination of related work.

1. A field report summarizing the findings and recommendations from this meeting shall be issued by the technical representatives and copied to the Owner and Architect.
2. Written certification from each flooring manufacturer that condition of sub-floor is acceptable for flooring installation shall be issued and copied to the Owner and Architect.

1.07 DELIVERY, STORAGE, AND PROTECTION

A. Store all materials off of the floor in an acclimatized, weather-tight space.

B. Protect roll materials from damage. Store roll material as directed by the manufacturer. All resilient flooring materials shall be stored in undamaged condition as packaged by the manufacturer, with manufacturer's seals and labels intact.

1.08 FIELD CONDITIONS

A. See Section 01 00 00 - General Requirements, for minimum indoor air quality improvement requirements.

B. Maintain temperature in storage area between 65 degrees F and 90 degrees F.

C. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain ambient and floor slab conditions at 60 degrees F and above. Slab and ambient conditions shall be monitored.

1.09 WARRANTY

A. See Section 01 78 00 - Project Close-out, for additional requirements.

B. Provide manufacturer's product warranty. See product listing for term.

PART 2 PRODUCTS

2.01 SHEET FLOORING

A. Rubber Sheet Flooring Type RF-1: Vulcanized, Homogeneous rubber compound.
   1. Surface Burning, ASTM E662: Flaming 450 or less.
   2. Total Nominal Thickness: 3mm.
   3. Static Load, ASTM F970: Passes 250 psi
   4. Slip Resistance, ASTM D2047: >0.5 required
   5. Tile: 24 X 24 inches
   6. Surface: Smooth
   7. Colors: See Finish Legend.
   8. Warranty: 5 years.
   9. Basis of Design: noraplan sentica.
      a. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 RESILIENT BASE

A. Resilient Base Type RB-1: Type TP, rubber coated PVC; field made outside corners.
   1. Surface Burning Characteristics, ASTM E84: Class A.
   2. Critical Radiant Flux, ASTM E648: Class 1; minimum 0.45 watt per sq cm.
   3. Height: 4 inches.
   4. Thickness: 0.125 inch thick.
   5. Finish: Satin.
   6. Length: Roll.
   7. Colors: See Finish Legend.
   8. Warranty: Two years.
   9. Products:
      a. Traditional Rubber Wall Base by Tarkett - Johnsonite, Inc.
      b. Substitutions: See Section 01 60 00 - Product Requirements.

2.04 ACCESSORIES

A. Subfloor Patching Compounds: See Section 09 05 61 - Common Work Results for Flooring Preparation.

B. Self-Leveling Underlayment: See Section 09 05 61 - Common Work Results for Flooring

C. Primers, Adhesives, and Seaming Materials: Waterproof; low VOC types, as required to provide bonding for measured slab porosity; recommended by flooring manufacturers.
   1. Capable of meeting a relative humidity of 95%, minimum.

D. Flooring Transitions:
   1. Resilient flooring to resilient flooring transition: No transition strip. Use scribing felt at unequal thickness products.
   2. Carpet to resilient flooring transition: No transition strip. Seal carpet edge per carpet manufacturer's recommendations. Adjust resilient substrate surface to match bottom elevation of carpet pile.
   3. Carpet to resilient flooring or other transitions: Use vinyl transition strips and as otherwise required for a complete and proper job.
   4. Colors and Finishes: See Finish Legend.
   5. Configurations to suit job conditions, subject to Architect's prior review.
   6. Products:
      a. Metal: Schluter.
      b. Vinyl: Wheeled Traffic Transitional Mouldings by Johnsonite, Inc.

PART 3 EXECUTION

3.01 GENERAL

A. Floor pattern layouts shall be as designed by the Architect. Flooring shall be placed so that fields or patterns center on area. The Architect shall select the pattern (direction of grain) to be used.

B. For renovations, thoroughly inspect all of the Contract Documents and provide resilient flooring and base patching to match existing adjacent materials throughout the building.

C. Base shall be continuous as scheduled unless otherwise approved by the Architect. Base shall return to door or window frames at all openings.

D. Unless otherwise approved by the Architect, flooring materials shall extend below fixed casework and millwork to cover the entire floor areas. Where integral base is provided, it shall extend behind casework to form a watertight base.

E. Work shall not be started until work of other trades, which goes through resilient flooring, has been completed.

3.02 EXAMINATION AND FIELD TESTING

A. See Section 09 05 51 - Common Work Results for Flooring Preparation.

B. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.

C. Any conditions that could adversely affect the flooring installation shall be corrected, prior to proceeding with the Work. Commencement of the installation of flooring shall be considered acceptance of the concrete slab as being suitable for the intended application. Any conditions that could adversely affect the flooring installation shall be brought to the Contractor's attention, for resolution, prior to proceeding with the Work.

3.03 PREPARATION

A. See Section 09 05 51 - Common Work Results for Flooring Preparation.

3.04 FLOORING INSTALLATION - GENERAL

A. Starting installation constitutes acceptance of sub-floor conditions.

B. Install in accordance with manufacturer's written instructions.

C. Spread only enough adhesive to permit installation of materials before initial set.

D. Fit joints and butt seams tightly.

E. Set flooring in place, press with heavy roller to attain full adhesion.

F. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.

G. Install terminations as identified above. In general, flooring substrates shall be shimmed to provide a level transition between flooring surfaces without transition strips.

H. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.

I. Scribe flooring to walls, columns and other appurtenances to produce tight joints.

3.05 INSTALLATION - TILE FLOORING

A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless manufacturer's instructions say otherwise. Lay tile in pattern and grain direction as directed by the Architect. Follow manufacturer’s installation instructions.

3.06 INSTALLATION - RESILIENT BASE

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints. Install wall base in lengths as long as possible without gaps at seams and with tops of adjacent pieces aligned. Tightly adhere wall base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

B. Miter internal corners. At external corners, use pre-molded units. Special attention shall be paid to firmly securing base around bull nose corners.

C. Install base on solid backing. Bond tightly to wall and floor surfaces.

D. Scribe and fit to door frames and other interruptions. Install base on all built-in cabinets, locker bases, etc., unless specifically indicated otherwise. Base shall extend around all sides of cabinetwork.

3.07 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for general requirements for field quality control and inspection.

B. Manufacturer's Inspections: Following the requirements for pre-installation field meeting and sub-floor preparations for the flooring installation, inspections shall be made by technical representatives of each flooring system manufacturer at the following points in the flooring installation:

1. First, early in the installation process to ascertain that flooring procedures and details discussed at the pre-construction meeting are being followed.
2. Second, at the completion of the installation, to review the completed installation. Manufacturer's technical representative's field reports for each site visit shall be copied to the Owner and Architect.

3.08 CLEANING

A. Immediately after installation, remove excess adhesive and other blemishes from floor, base, and wall surfaces without damage.

B. Clean in accordance with manufacturer's written instructions.

3.09 PROTECTION

A. Prohibit traffic on resilient flooring for 48 hours after installation. Protect flooring against marks and damage from construction operations utilizing methods recommended by the flooring manufacturer. Cover tiles with undyed building paper until inspection for Substantial Completion.

END OF SECTION

SECTION 09 90 00
PAINTING AND COATING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. All necessary surface preparation.

B. Field application of paints.

C. Scope: Finish all interior surfaces exposed to view, unless fully factory-finished in the Work Area.

D. Do Not Paint or Finish the Following Items:
   1. Items fully factory-finished unless specifically so indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
   5. Stainless steel, anodized aluminum, bronze items.
   6. Floors, unless specifically so indicated.
   7. Ceramic and other tiles.
   8. Glass.
   9. Acoustical materials, unless specifically so indicated.
   10. Concealed pipes, ducts, and conduits.

E. Surface preparation, patching and repainting of existing interior walls, partitions, and ceilings as indicated on the Drawings or as otherwise required.

F. Sealing of all unfinished wood and wood product surfaces (i.e. concealed edges of unfinished counter substrates and cabinets).

G. Field testing for substrate moisture content and alkalinity.

H. Field testing compatibility of new paint with existing paint or finishes to be covered.

I. Verification of compatibility of shop primers with finish coatings specified herein.

J. The painting subcontractor shall examine all the Sections of the Specifications and shall thoroughly familiarize himself with all their provisions regarding painting and finishing.
   1. All surfaces that are primed or left unfinished by the requirements of other Sections of the Specifications shall be painted or finished as a part of this Section, unless specifically indicated otherwise.
   2. Areas of new patches in existing construction shall be painted or finished, and where not scheduled, shall match the existing finish.

K. Color / Finish Schedule: Refer to the Finish Legend on the Interior Design Drawings for color selections and locations.

1.02 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency ; current edition.

B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications.

C. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials.

D. GreenSeal GS-11 - Paints.

E. SSPC - Good Painting Practice: SSPC Painting Manual, Vol. 1; Society for Protective Coatings.

1.03 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Submit data on all finishing products, including VOC content. List each product and cross-reference it to the specification's Part 2, Products.

C. Samples: Submit confirmation color chip samples, 4x4 inch paper card, of all selected colors and sheens.

D. Certification: By manufacturer that all paints and coatings comply with VOC limits specified.

E. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

F. Following the satisfactory completion of all painting, the Contractor shall prepare and submit to the Architect typed copies of a complete list of all materials and colors used for the Work. This list shall be sufficiently clear and complete for the Owner's use in purchasing materials required for touch-up and repainting.

1.04 QUALITY ASSURANCE

A. Applicator Qualifications: Company specializing in performing the work of this Section with minimum five years of experience and shall have completed similar painting system applications with a record of successful in-service performance.

B. Material Data Sheet product information for all painting products shall be kept on file on the job site before work begins.

C. All materials shall be thoroughly stirred. No materials shall be reduced or changed in any way. Any tinting or matching of colors shall be done to the satisfaction of the Architect. In all cases a sample shall be applied on the job and Architect must approve before work is actually begun. Execute work in accordance with manufacturer's printed instructions.

1.05 REGULATORY REQUIREMENTS

A. All field applied paints and coatings shall meet state VOC standards.

1.07 PRE-INSTALLATION MEETING

A. A pre-installation meeting shall be held at the jobsite, at least 3 weeks prior to start of the scope of Work, including: Contractor, painting subcontractor, paint manufacturer's technical representative, Owner's representative and Architect. The purpose of the meeting shall be to review existing conditions. The paint manufacturer's technical representative shall perform an on-site inspection to confirm compatibility and suitability of specified materials, following which he shall provide written certification that all materials specified are entirely suitable for their proposed applications.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in manufacturer's sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

D. Store all materials used on the job in a single place. Keep storage place neat, dry and clean. All soiled or used rags, waste and trash must be removed from the building every night, and every precaution taken to avoid the danger of fire. All materials shall be protected from freezing.

1.09 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

D. The Owner and all subcontractors shall be kept informed of the use of products that may generate fumes in advance of the use of such products.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.

B. Paints: Sherwin Williams Co.

2.02 PAINTS AND COATINGS - GENERAL

A. All materials used on the Work shall be as specified in brand and quality. No claims as to unsuitability or unavailability of any materials specified, or unwillingness to use same, or inability to produce first class work with same, will be entertained unless such claims are made in writing and submitted prior to the receipt of proposals.

B. Paints and Coatings: Ready mixed.
   1. Provide paints and coatings of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
   2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
   3. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.
   4. Supply each coating material in quantity required to complete entire project's work from a single production run.
   5. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.

C. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.

D. Volatile Organic Compound (VOC) Content:
   1. Provide coatings that comply with the most stringent requirements specified in the following:
      a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
      b. Architectural coatings VOC limits of New Hampshire.
   2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

2.03 PAINT SYSTEMS - INTERIOR

A. Ferrous Metals, Shop primed, Acrylic, 3 Coats:
   1. Application: Interior H.M door frames & windows (Factory Primed).
   2. Semi-Gloss: 1st and 2nd coats; B66W00651 - Pro Industrial High-Performance Acrylic.

B. Gypsum Board, Latex, 3 Coats:
   1. Applications: For walls.
   2. 1st coat primer; B28W02600 - ProMar® 200 Zero VOC Interior Latex Primer; White
   3. Eggshell: 2nd and 3rd coats; B20W12651 - ProMar® 200 Zero VOC Interior Latex Eggshell.

D. Gypsum Board, Latex, 3 Coats:

1. Applications: For ceilings and soffits.
2. 1st coat primer; B28W02600 - ProMar® 200 Zero VOC Interior Latex Primer; White.
3. Flat: 2nd and 3rd coats; B30W12651 - ProMar 200 Zero VOC Interior Latex Flat.

2.04 ACCESSORY MATERIALS

A. Accessory Materials: Other materials not specifically indicated but required to achieve the finishes specified; commercial quality, "best grade" of "first line" made by reputable, recognized manufacturers, shall be compatible with related products and shall bear manufacturer's labels.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 WORKMANSHIP

A. Employ skilled mechanics to ensure the very best workmanship. Quality workmanship is required. Materials shall be applied by craftsmen experienced in the use of the specific product involved.

B. All materials shall be applied in strict accordance with the manufacturer's printed instructions.

C. Finish work shall be uniform and of the approved color. Paint and stain shall completely cover, be smooth and free from runs, sags, clogging, excessive flooding, or brush marks. Make edges of paint and stain adjoining other materials or colors sharp and clean without overlapping.

3.02 EXAMINATION

A. Do not begin application of coatings until substrates have been properly prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Gypsum Wallboard: 12 percent.

E. Prime coats specified herein will not be required on items delivered with shop or factory prime coats already applied, providing that shop prime coats are equal in quality to those specified and the painting subcontractor determines their total compatibility with finish coats.

3.03 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to coating application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. General: Do not begin painting on any surface until it is in proper condition to receive the paint or as specified. Should any surface be found unsuitable to produce a proper finish, the Architect and product manufacturer shall be notified in writing and no material shall be applied until the unsuitable surfaces have been made satisfactory.

D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

E. Seal surfaces that might cause bleed through or staining of topcoat.

F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

G. New Gypsum Board Surfaces to be Painted: Fill minor defects with filler compound and sand to smooth level surface. Exercise care to avoid raising nap of paper. Spot prime defects after repair.

H. For Previously Painted Gypsum Board Surfaces: Remove grease, dirt, and other foreign materials as necessary to receive paint. Lightly sandpaper to smooth and even surface and then dust off. Fill all minor irregularities with approved patching materials and sand to smooth level surface. Exercise care to avoid raising nap of paper. Prime paint any patched surfaces.

I. New Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by power tool wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint entire surface; spot prime after repairs.

J. New Shop-Primed Interior Steel Surfaces to be Finish Painted: 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.

K. Previously Painted Ferrous Metal: Remove grease, dirt, rust, and other foreign materials as necessary to receive paint. Sandpaper surfaces to a smooth, even surface and dust off. Touch-up any chipped or abraded surfaces and fill all holes and other surface imperfections with metal repair bondo, sand smooth and prime.

L. Non-compatible Shop Primers: Cover with suitable barrier coat or remove primer and reprime as required.
   1. Testing: Apply a test patch of the new painting system to test for adhesion. Allow to dry one week before testing per ASTM D3359. If new painting system lifts, completely remove the existing finish.

M. Metal Frames to be Painted: Prime metal door top and bottom edge surfaces. Touch-up any scratches in factory primed surfaces.

3.04 APPLICATION

A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

B. Spray painted wall surfaces shall be back-rolled.

C. Interior Conditions for Painting: See Environmental Requirements for application air temperature requirements. Relative humidity shall be 75% maximum. Moisture levels for painting shall be within 5 degrees F of the dew point and shall be determined by use of an electronic moisture meter.

D. The atmosphere shall be relatively free of airborne dust. Each coat of paint shall be applied smoothly, worked out evenly and allowed to dry completely before the subsequent coat is applied. Follow manufacturer's labeled instructions for drying time between coats

E. Apply products in accordance with manufacturer's instructions.

F. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.

G. Before painting, remove hardware, accessories, plates, lighting fixtures and similar items or provide ample protection of such items. On completion of each area, replace items removed.

H. Apply each coat to uniform appearance. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.

I. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

J. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

K. All closets shall be finished the same as adjoining rooms, unless otherwise indicated.

L. All doors and frames shall have the same finish and number of coats on both interior and exterior sides. Do not paint over door and frame fire-rating labels. Door frame shall match wall color. If frame is set in an accent color wall, frame shall match corridor wall color. If corridor wall is two-tone, frame shall match color on lower portion of the wall.

M. Upon completion, touch up and restore finish where damaged and leave in good condition.

N. Paint shop-primed equipment.

O. Access panels, registers, cabinet heaters, radiators, and electrical panels and similar equipment shall be painted in colors as selected by the Architect.

P. Access panel doors and frames shall be painted to match wall color.

R. Upon completion of painting, reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

S. Wall surfaces to receive wall protection panels shall be primed.

3.05 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for general requirements for field testing.

B. The Owner may provide field testing during the period that paint is being applied to sample paint materials being used and verify paint application thickness.

C. If test results show material being used does not comply with the specified requirements, the Contractor may be directed to stop painting, remove non-complying paint, pay for testing and repaint surfaces coated with the rejected product.

3.06 CLEANING AND PROTECTION

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.07 PROTECTION

A. Protect finished coatings until completion of project.

B. Provide drop cloths in all areas where painting is being done to protect floors and other work form damage during painting. Mask or otherwise protect smaller objects adjacent to painted surfaces.

C. Waste materials shall not be disposed of in the existing sanitary system.

D. When the Work of this Section is completed, remove all surplus materials and scaffolding from the premises and clean off all misplaced paint, varnish, stain and the like so as to leave the premises in perfect condition, free of all paint.

END OF SECTION

SECTION 10 14 25
CODE REQUIRED BUILDING SIGNAGE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. All interior signage shall be provided by the Owner. This Section describes code required signage.

1.02 REFERENCES

A. ANSI/ICC A117.1 - Accessible and Useable Buildings and Facilities; 2009.

B. IBC - International Building Code; as adopted.

C. ATBCB ADAAG - Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG) 2011.

PART 2 PRODUCTS

2.01 INTERIOR SIGNS

A. Accessibility-Compliant Interior Signage:
   1. General: Signs with tactile lettering, numbers and symbols raised 1/32 inch minimum from sign plate face.
   2. Lettering Style: Standard Medium, upper case.
   3. Character width, stoke width, character spacing, line spacing shall comply with ANSI A117.1 requirements.
   4. Braille: Grade 2 Braille, placed directly below the corresponding text, and for multi-line text below the entire text. Spacing and dimensions shall comply with ANSI A117.1 requirements.
   5. Performance: Non-static, fire-retardant, and self-extinguishing.
   6. Contrast: Non-glare finish; letters numbers and symbols shall contrast with background.
   7. Borders, Materials and Colors: As selected by the Owner.
   8. Letter and Number Sizes: 1 inch.
   9. Pictograms (if provided) shall be located in a clear area 6 inches high.
   10. Sign Sizes: As required by sign content and selected by the Owner, but in no case less than 6 by 6 inches.

B. Required Sign Types:
   1. Room Number Signs: One sign with room number for every door scheduled on the Door Schedule.
   2. Coordinate style with Owner.

PART 3 EXECUTION

3.01 PREPARATION

A. Verify mounting heights and locations for interior signage will comply with referenced standards.

B. Clean mounting locations of dirt, dust, grease or similar conditions that would prevent proper installation.

3.02 INSTALLATION

A. Install signs level, plumb, without distortion, and in proper relationship with adjacent surfaces using manufacturer's recommended standard mounting system.

B. Sign mounting locations shall be in compliance with referenced codes. See code analysis plan for general locations of code required signage.

1. In general, signs shall be mounted no higher than 60" above the floor to the baseline of the tactile character of the sign. Sign mounting height shall be consistent throughout the project and reviewed with the Owner prior to installation.
2. Door signs shall be mounted within 18" of door latch jambs. Signs shall not be located so as to be obscured by doors in the open position.
3. At double doors with one inactive leaf, the sign shall be mounted on the inactive leaf.
4. At double doors with two active leaves, the sign shall be located to the right of the right hand door.
5. Where there is no wall space on the latch side of a single door, or to the right of double doors, signs shall be located on the nearest adjacent wall.
6. Tactile signs shall be located to provide a clear floor area 18 inches by 18 inches minimum, centered on the tactile sign beyond the arc of any door swing between the closed position and 45 degree open position.

END OF SECTION

SECTION 10 26 01
WALL PROTECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Corner guards and wall protection panels.

1.02 RELATED REQUIREMENTS

A. Section 09 21 16 - Gypsum Board Assemblies: Metal stud wall construction.

1.03 REFERENCE STANDARDS

A. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities; International Code Council; 2009.

B. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

C. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Indicate physical dimensions, features, anchorage details, and rough-in measurements.

C. Shop Drawings: Submit seaming diagrams for all wall protection panels.

D. Samples: Upon request, submit sample sections of corner guard, 24 inch long, illustrating component design, configuration, color and finish.

PART 2 PRODUCTS

2.01 COMPONENTS

A. Item WP-1 - Wall Protection Panels:
   1. Fire-rating: UL723 Class A; Flame Spread 20 or less; Smoke Developed 400 or less.
   2. Top Edge: Beveled edge.
   3. Seams: Color matched caulk.
   4. Panel Size: Maximum sheet size to minimize seams, and panel layout as identified on Drawings.
   5. Colors / Texture: See Finish Legend.
   6. Adhesive: Water-based, low odor, as recommended by the panel manufacturer.
   7. Product: Acrovyn Wall Covering by Construction Specialties.

B. Corner Guards Type CG-1: Surface mounted, high impact HDPE vinyl with extruded aluminum full height retainer and integral impact absorbing device.
   1. Leg Size: 2 inches.
   2. Corner: Square and custom angles. Note: All corner angles shall be field verified. Provide end wall style where required.
   3. Color: See Finishes Legend.
   4. Length: One piece, see Drawings.
   5. Basis of Design: FS-20RN by Acrovyn.

C. Fasteners, sealants, adhesives and other components as recommended by manufacturer for installation.

2.02 FABRICATION

A. Fabricate components with tight joints, corners and seams. Pre-drill holes for attachment.

B. Form end trim closure by capping and finishing smooth.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that rough openings, concealed blocking, and anchors are correctly sized and located.

B. Verify that field measurements are as indicated on Drawings.

3.02 CORNER GUARDS, CHAIR RAILS AND WALL PROTECTION PANEL INSTALLATION

A. Install components in accordance with manufacturer's instructions, level and plumb, at proper height.

B. Wall Protection Panels:
   1. Verify wall surfaces are primed.
   2. Clean substrate surfaces to remove dust, debris, and loose particles.
   3. Locate panel seams per approved shop drawings.
   4. Adhere panels to substrate with troweled on adhesive as recommended by the panel manufacturer. Smooth roll the surface.
   5. Clean-up surfaces in accordance with manufacturers maintenance instructions.

3.03 TOLERANCES

A. Maximum Variation from Required Height: 1/4 inch.

B. Maximum Variation from Level or Plane for Visible Length: 1/4 inch.

END OF SECTION

SECTION 10 28 00
TOILET AND HEALTHCARE ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Accessories for toilet rooms and other locations as indicated on the Drawings.

B. Accessories to be provided as an allowance.

1.02 RELATED REQUIREMENTS

A. Section 06 10 54 - Wood Blocking and Curbing: Concealed wood blocking.

B. Section 09 21 16 - Gypsum Board Assemblies: Metal stud partitions for special loading imposed by grab bars.

1.03 REFERENCE STANDARDS

A. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2011.

B. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.

C. ASTM B456 - Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium; 2011.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with the placement of internal wall reinforcement to receive anchor attachments.

1.05 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on accessories describing size, finish, details of function, attachment methods.

C. Samples: Submit samples of each accessory, illustrating color and finish, if requested by Architect.

D. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.

E. Close-out Requirements: Submit maintenance data, operating instructions and keys required for each type of equipment and lock.

1.06 PRODUCT HANDLING

A. Deliver items in manufacturer's original unopened protective packaging. Store materials as required to prevent soiling, damage, or wetting. Maintain protective covers on all units. Remove protective covers at final clean-up of installation.

1.07 WARRANTY

A. Provide manufacturer's standard product warranty for mirrors against silver spoilage for ten (10) years.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design: Bobrick Washroom Equipment, Inc.

B. Toilet Accessories:
   1. Bradley Corp.
   2. McKinney Parker.

C. All items of each type to be made by the same manufacturer.

2.02 MATERIALS

A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
   1. Grind welded joints smooth.
   2. Fabricate units made of metal sheet of seamless sheets, with flat surfaces.

B. Stainless Steel Sheet: ASTM A666, Type 304, 0.034 inch (22 gage) minimum thickness, unless otherwise indicated.

C. Galvanized Sheet Steel: Hot-dipped galvanized steel sheet, ASTM A653, with G90/Z275 coating.

D. Mirror Glass: Annealed float glass, ASTM C1036 Type I, Class 1, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.

E. Adhesive: Two component epoxy type, waterproof.

F. Fasteners, Screws, and Bolts: Hot dip galvanized, tamper-proof and of same materials as accessory where exposed.

2.03 FINISHES

A. Stainless Steel: No. 4 Brushed finish.

B. Chrome/Nickel Plating: ASTM B456, SC 2, satin finish.

2.04 TOILET ROOM ACCESSORIES

A. NOTE: Coordinate all Accessory with Owner. Provide all necessary installation components and materials as required by manufacturer’s installation instructions.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work. Check opening scheduled to receive recessed units for correct dimensions, plumbness of blocking or frames, and preparation that would affect installation of accessories.

B. Verify exact location of accessories for installation. Check for conditions that would affect placement, quality and execution of work.

C. Verify that field measurements are as indicated on drawings. Verify spacing of plumbing fixtures and toilet partitions that affect installation of accessories.

D. See Section 06 10 54 - Wood Blocking and Curbing, for installation of blocking, reinforcing plates, and concealed anchors in walls and ceilings. Do not begin installation of accessories until openings and surfaces are acceptable and adequate blocking has been provided.

E. Secure all items to concealed blocking, steel support assemblies or anchor plates installed in walls. All anchors shall be fully concealed.
   1. Stationary grab bar mounting devices and supports within walls shall support a concentrated force of 250 pounds applied at any point in any direction 4" from the face of the wall.

3.02 PREPARATION

A. Deliver inserts and rough-in frames to site for timely installation.

B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

A. Install accessories in accordance with manufacturers' instructions in locations indicated on the drawings.

B. Install plumb and level, securely and rigidly anchored to substrate.

C. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.

D. Mounting Heights and Locations: As required by accessibility regulations and as indicated on drawings.

E. Secure all items to concealed blocking or anchor plates installed in walls. All anchors shall be fully concealed.

F. All accessories installed in wet shower areas shall have fastener penetrations sealed with silicone sealant.

G. Adjust accessories for proper operation. After completion of installation, clean and polish all exposed surfaces. Deliver keys and instruction sheet to Owner. All keys shall be clearly labeled.

H. Paper towel and soap dispensers shall be installed at all sinks outside of restrooms, whether indicated or not on the Drawings.

END OF SECTION

SECTION 12 36 00
COUNTERTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Countertops for architectural casework and wall-hung counters.

B. Sink bowls at countertops.

1.02 RELATED REQUIREMENTS

A. Section 06 10 54 - Wood Blocking and Curbing: Concealed FR wood supports.

B. Section 06 20 00 - Finish Carpentry and Millwork: Counter supports, grommets.

C. Section 06 41 00 - Architectural Wood Casework.

D. Division 22 – Plumbing – Refer to Drawings

1.03 REFERENCE STANDARDS

A. ANSI A208.1 - American National Standard for Particleboard; 2009.

B. ANSI A208.2 - American National Standard for Medium Density Fiberboard for Interior Use.

C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

D. AWI/AWMAC/WI - Architectural Woodwork Standards; 2014.

E. AWMAC/WI - North American Architectural Woodwork Standards, U.S. Version 3.0; 2016.

F. NEMA LD 3 - High-Pressure Decorative Laminates.

1.04 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's data sheets for surfacing, substrate and other products; include manufacturer’s maintenance instructions and recommendations.

C. Shop Drawings: Complete details of materials and installation; combine with shop drawings of cabinets and casework specified in other sections.

D. Verification Samples: Submit 4 inches square minimum size samples representing actual products and colors selected.

E. Maintenance Data: Manufacturer's instructions and recommendations for maintenance and repair of countertop surfaces.

1.05 QUALITY ASSURANCE

A. Fabricator Qualifications: Same fabricator as for Section 06 41 00 - Architectural Wood Casework.

B. Installer Qualifications: Company specializing in performing work of the type specified in this Section, with not less than five years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

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

1.07 FIELD CONDITIONS

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

PART 2 PRODUCTS

2.01 COUNTERTOP ASSEMBLIES

A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI or AWMAC/WI, unless otherwise indicated.

B. Solid Surfacing Countertops: Solid surfacing sheet or plastic resin casting over continuous substrate. Comply with ISSFA-2 and NEMA LD 3; acrylic or polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.
   1. Flat Sheet Thickness: 1/2 inch, minimum.
   2. Surface Burning Characteristics, ASTM E4: Flame spread 25, maximum; smoke developed 450.
   3. Manufacturers and Colors: See Finish Legend.
   4. Exposed Edge Treatment: Built up to minimum 1-1/4 inch thick; eased edge, or as indicated on the Drawings.
   5. Back and End Splashes: Same sheet material, square top; minimum 4 inches high.
   6. Aprons: Same sheet materials, eased edges.
   7. Counter Substrate: See Accessories below.

2.02 ACCESSORY MATERIALS

A. Counter Substrate: Particle board; ANSI A208.1 Class M2; no urea formaldehyde-added.
   1. Application: Counters with no sinks.
   2. Density; 38.7 pcf min.
   3. Modulus of Elasticity: 290,100 psi minimum.
   4. Panel Thickness for Plastic Laminate Facing: 1-1/8 inches.
   5. Panel Thickness for Solid Surfacing: 3/4 inches minimum.

B. Counter Substrate: Medium density fiberboard, ANSI A208.2; Grade 130; no urea formaldehyde-added; water resistant.
   1. Application: Counters with sinks.
   2. Density: 45 pcf min.
   3. Modulus of Elasticity: 405,000 psi minimum.
   4. Panel Thickness: 3/4 inches
   5. Product: Medex by Roseburg.

C. Adhesives: Silicone adhesive as recommended by manufacturer of materials being joined.

D. Joint Sealant: Mildew-resistant silicone sealant, clear.

E. Wiring Grommets: Plastic, 3" outside diameter; colors selected from manufacturer's full color range.
   1. Product: Series TG by Doug Mockett Co., Inc.
   2. Quantity: Confirm quantity of grommets with Owner.
   3. Location: Confirm locations of grommets with Owner.

F. Counter Support Brackets: Brackets mounted on demountable modular partitions shall be by the partition system manufacturer. All other locations, brackets shall be as specified in Section 06 20 00 – Finish Carpentry and Architectural Millwork.

2.03 FABRICATION

A. Fabricate in accordance with standards governing fabrication quality that are specified in herein. Field conditions shall be carefully measured prior to fabrication of countertops.

B. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
   1. Join lengths of tops using self-leveling metal splines to draw sections together.
   2. Fabricate to overhang fronts and ends of cabinets 1 inch except where top butts against cabinet or wall.
   3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.

C. Solid Surfacing:
   1. Fabricate tops up to 12 feet inches long in one piece.
   2. Join pieces with adhesive sealant in accordance with manufacturer's recommendations and instructions.
   3. Provide separate square edge side splashes.
   4. Located seams at least 3 inches from corners.

D. Provide back and end splashes wherever counter edge abuts vertical surface unless otherwise indicated. Fabricate splashes 4 inches high, unless otherwise indicated. Splashes shall be fabricated loose, unless indicated to be integral with the counter surface.

E. Fabrication Tolerances:
   1. Variation in component size: 1/8” maximum.
   2. Location of openings: Maximum 1/4” from indicated location.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Acclimate countertop materials to temperature and relative humidity of the installation site for at least 24 hours.

3.03 INSTALLATION

A. Securely attach countertops to cabinets using concealed fasteners and with contact surfaces set in waterproof glue. Verify that cabinet top surfaces are level. Shim where required.

B. Counter cleats shall be installed at walls where indicated and where required for counter support. See Section 06 20 00 - Finish Carpentry. At countertops with no sinks, if counter cantilevers more than 3 inches beyond cabinet support, install 3/4" plywood over cabinet tops extending to full countertop cantilever. Use moisture resistant MDF at counters with sinks.

C. Solid Surface Countertops:
   1. Secure countertops to cabinets with silicone sealant. Do not use water-based adhesives.
   2. Provide a 1/32 inch expansion for 8 foot length of counter.
   3. Sealant joints shall be 1/8 inch minimum in width.
   4. Seam and finish joints as recommended by the manufacturer.

D. Loose countertop back and side splashes shall be set in a continuous bead of silicone sealant at the countertop and at the wall.
   1. Provide a neat continuous bead of silicone at the joint between top of splash and vertical wall surface.

3.04 TOLERANCES

A. Variation from Horizontal: 1/8 inch in 10 feet, maximum.

B. Offset from Wall, Countertops: 1/8 inch maximum; 1/16 inch minimum.

C. Field Joints: 1/8 inch wide, maximum.

3.05 CLEANING

A. Clean countertops surfaces thoroughly.

3.06 PROTECTION

A. Protect installed products until completion of project.

B. Any scratched or defaced materials shall be completely replaced at no additional cost to the Owner.

C. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

SECTION 13 49 05
X-RAY RADIATION PROTECTION

NOT FOR CONSTRUCTION: THIS SECTION HAS BEEN PROVIDED FOR SCOPE BIDDING PURPOSES ONLY. FINAL EDITS AND REVIEW FOR CONSTRUCTION USE IS PENDING THE OWNER'S PHYSICIST "RADIATION SHIELDING REPORT", OWNER SELECTED VENDOR REVIEW AND FINAL REVIEW BY THE OWNER. UPON RELEASE OF FINAL REPORT AND REVIEW APPROVAL PROCESS THIS SECTION SHALL BE RE-ISSUED PER ADDENDA TO THE CONTRACTOR – "FOR CONSTRUCTION" BY THE ARCHITECT.

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Construction of lead enclosure around x-ray treatment rooms and control rooms.

B. Sheet lead applied to gypsum board.

C. Lead lining applied to door frames and borrowed lite frames.

D. Lead-lined doors and leaded glass.

E. Lead-lined operator screens.

1.02 RELATED REQUIREMENTS

A. Section 08 11 13 - Hollow Metal Doors and Frames: Lead-lined hollow door frames and borrowed lite frames.

B. Section 08 14 16 - Flush Wood Doors: Lead-lined flush wood doors.

C. Section 08 71 00 - Door Hardware: Lead-lined door hardware.

D. Section 08 80 00 - Glass and Glazing: Leaded glass.

E. Section 09 21 16 - Gypsum Board Assemblies: Lead-lined gypsum board and finishing.

1.03 REFERENCE STANDARDS

A. ASTM B749 - Standard Specification for Lead and Lead Alloy Strip, Sheet, and Plate Products; 2003 (Reapproved 2009).

B. NCRP Report 147 - Structural Shielding Design for Medical X-Ray Imaging Facilities; 2004.

1.04 SYSTEM DESCRIPTION

A. X-Ray Radiation Protection: Walls, fixed control screens, including wall interruptions for doors.

1.05 ADMINISTRATIVE REQUIREMENTS

A. Coordinate this work with the construction of the building elements that x-ray protection is applied to or installed in.

B. Lead thicknesses and configurations have been determined by the Owner's radiation physicist consultant. The Owner shall make the Radiation Shielding Report available to the contractor. Provide lead thickness of 1/16 inch or equivalent, as identified in the report. The thickness of lead used in doors, frames, glass, penetrating shielding, joint strips and other items located in a lead lined assembly shall not be less than that of the lead in the assembly where they are installed.

C. Make joints, fasten to substrates and shield penetrations to maintain the integrity of the shielding system.

D. Preinstallation Meeting: Convene (4) four weeks prior to commencing work of this section.

1.06 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on leaded glass.

C. Shop Drawings: Indicate layout, details, dimensions, interface with adjoining work, and special components or installation conditions.

D. Product Data: Provide data on installation components, leaded glass and gypsum wallboard.

E. Manufacturer's Certificate: Certify that leaded glazing capabilities meet or exceed specified requirements.

1.07 QUALITY ASSURANCE

A. Perform Work in accordance with NCRP Report 147 and local regulatory agency regulations.

B. Maintain one copy of each document on site.

C. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this Section with minimum five years documented experience.

D. Installer Qualifications: Company specializing in performing the work of this Section with minimum five years experience.

E. Testing: After x-ray equipment has been installed and placed in operating condition, the Owner will provide for a radiation physicist certified by the American Board of Radiology, to test the x-ray protection in coordination with regulatory agency requirements. Testing shall be in accordance with the National Bureau of Standards Handbook 76, X-Ray Protection Up to Three Million Volts.
   1. Test Results: The Owner will provide copies of tests conducted after installation of materials and equipment are complete.

1.08 REGULATORY REQUIREMENTS

A. Conform to applicable health and occupation code for integrity of radiation protection and continuity of protected construction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. X-Ray Radiation Protection:
   1. A & L Shielding Inc.
   2. Radiation Protection Products.
   3. Ray-Bar Engineering Corp.
   4. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 SHEET LEAD AND ASSOCIATED MATERIALS

A. Sheet Lead: ASTM B749, 1/16 inch thick; type as required by Owner's Radiation Shielding Plan.

B. Gypsum Board: ASTM C1396, Type X fire-resistant, paper faced, square edges and square ends; 48 x 96 inch size, 5/8 inch thick.

C. Nails: Lead headed to twice thickness of sheet lead.

D. Tie Wire: Leaded steel, annealed.

2.03 FABRICATION

A. Lead Laminated Gypsum Board: Fabricate with monolithic sheet lead bonded to one surface of board, extend lead sheet 1 inch beyond one side and one end of board.
   1. Joint Strips: Provide 2" wide lead strips for lapping at joints.

B. Lead Lined Wood Doors: Specified in Section 08 14 16.

C. Lead Lined Door and Glazed Frames: Specified in Section 08 11 13.

1. Frames shall be provided with additional reinforcement and internal supports to adequately carry the weight of lead lined doors, installed prior to lining frames with lead.
2. Line inside of frames with single un-pierced strip of lead sheet. Form lead sheet to match contour of frame, continuous in each jamb and across head. Form lead shields around areas prepared to receive hardware.
3. Fabricate lead lining wide enough to maintain an effective lap with lead of adjoin shielding components. Lead thickness shall match thickness of wall in which frame is installed.

D. Hardware: Specified in Section 08 71 00.

E. Threshold: Formed lead, channel shape, to receive grout fill, 4 inch wide x width of door opening plus 4 inches to fit under frame section.

2.04 COMPONENTS AND ACCESSORIES

A. Leaded Glass: See Section 08 80 00 - Glass and Glazing.

B. Accessories and Fasteners: Manufacturer's standards, maintaining equivalent protection as the system. Lead headed fasteners shall be of size, type and design as recommended by the manufacturer.

C. Radiation Protection Plaque: Wall mounted, designating lead thickness in wall, degree of continuity, exceptions.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate construction is ready to receive work and opening dimensions are as indicated on shop drawings.

3.02 INSTALLATION - LEAD LINED GYPSUM BOARD

A. Install board with long edge parallel to studs and lead lining facing the studs. Provide blocking at end joints.

B. Install control joints and expansion joints where indicated, with appropriate trim accessories. Install lead strip on the face of the framing, extending across the joint, and lap with lead lining of gypsum board.

C. Lap edges and ends of lead sheets 1 inch, minimum.

D. Extend lead protection from finished floor to a height of 84 inches.

E. Openings: Extend gypsum board into frames of openings, lapping lead lining with lead frame linings. Arrange board around openings so that neither the horizontal nor vertical joints occur at corners of openings.

F. Install joint strips to face of supports, corners and transitions. Install blocking where joints occur. Secure lead strips with nails along outer edge. Provide shims at intermediate supports.

G. Fasten gypsum board with lead heads or lead tabs/disks, at 8 inches o.c. at perimeter and 12 inches o.c. in field, unless otherwise indicated or recommended by the board manufacturer. Install lead strips covering face of framing and wrapped around the flange to cover point of screws.

H. Install corner beads at outside corners and metal taping bead trim where appropriate.

I. Gypsum board shall be finished as part of the Work of Section 09 21 16.

3.03 INSTALLATION OF PENETRATING ITEMS

A. At penetrations of lead linings, provide lead shields to maintain continuity of protection. Install shields according to manufacturer's instructions.

B. Provide lead linings, sleeves, shields and other protection in an equivalent thickness of lead used in the system being penetrated.

C. Outlet Boxes and Conduit: Cover or line with lead sheet tapped over adjacent lead lining. Lap conduit with lead sheet for a distance of 10 inches from box.

D. Penetration Shielding: Apply strips or patches of lead sheet behind all electrical, telephone, data or communications boxes and other penetrations to shielding. Secure lead to framing.

E. Piping Shielding: Provide strip of lead sheet behind piping. Strip to extend beyond piping a minimum of 4 inches on each side. Secure to piping with copper wire.

3.04 INSTALLATION - COMPONENTS AND ACCESSORIES

A. Install components and accessories in accordance with manufacturer's instructions.

B. Install lead lined glazed frames as specified in the Section where the frames are specified and in accordance with the lead lining fabricator's instructions.

C. Install lead lined doors as specified in the Section where the doors are specified; coordinate installation of door hardware.

D. Install leaded glass in prepared frames as specified in Section 08 80 00, with a wet glazed method.

E. Install radiation protection plaque in room where radiation protection is provided. Coordinate location with the Owner.

3.05 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed under provisions of Section 01 40 00.

B. Upon completion and after x-ray equipment has been installed, inspection and testing will be performed for the Owner by a licensed radiologist technician in coordination with regulatory agency requirements, to ascertain conformance of installation regarding radiation passage or leakage.

C. Cooperate and offer assistance in such work. Execute instructions given.

D. Make all corrections required by the physicist. If radiation protection installation is defective, uncover, and repair or replace, including work affected thereby. Arrange and pay for additional testing by the registered radiation physicist until no more corrections are required.

END OF SECTION