

**00 01 01**  
**Project Manual and Specifications**

# Cross State Office Building

# Lobby Renovations

Bureau of General Services  
State House Station 77  
Augusta, Maine 04333

# Project Manual



**Winton Scott Architects**  
5 Milk Street  
Portland, Maine 04101

August 22, 2016



**PROJECT MANUAL**  
**TABLE OF CONTENTS**

<b>DIVISION 00</b>	<b>PROCUREMENT AND CONTRACTING REQUIREMENTS</b>
00 01 01	Project Manual Cover
01 01 10	Project Manual Table Of Contents
00 11 13	Notice To Contractors
00 21 13	Instructions To Bidders
00 41 13	Contractor Bid Form
00 52 13	Contract Agreement
00 63 63	Change Order Form
00 71 00	Definitions
00 72 13	General Conditions
00 73 46	Wage Determination Schedule
<b>DIVISION 01</b>	<b>GENERAL REQUIREMENTS</b>
01 10 00	Summary of the Work
01 14 00	Work Restrictions
01 30 00	Alterations, General
01 31 00	Project Management and Coordination
01 70 00	Execution Requirements
01 73 10	Cutting and Patching
01 77 00	Closeout Procedures
01 85 00	Dust Control
<b>DIVISION 02 – EXISTING CONDITIONS</b>	
02 41 19	Selective Demolition
<b>DIVISION 03 - 05</b>	<b>NOT USED</b>
<b>DIVISION 06</b>	<b>WOOD AND PLASTICS</b>
06 10 00	Rough Carpentry
06 40 23	Interior Architectural Woodwork
<b>DIVISION 07</b>	<b>THERMAL AND MOISTURE</b>
07 84 13	Penetration Firestopping
<b>DIVISION 08</b>	<b>OPENINGS</b>
08 11 13	Hollow Metal Doors and Frames
08 41 13	Aluminum-Framed Storefront Framing
08 71 00	Door Hardware
08 81 00	Glass and Glazing
<b>DIVISION 09</b>	<b>FINISHES</b>
09 29 00	Gypsum Board
09 51 13	Acoustical Panel Ceilings

09 65 00	Resilient Flooring
09 68 00	Carpeting
09 91 00	Painting
<b>DIVISION 10</b>	<b>SPECIALTIES</b>
10 55 00	Postal Specialties
<b>DIVISION 11 - 20</b>	<b>NOT USED</b>
<b>DIVISION 21</b>	<b>SPECIALTIES</b>
21 10 00	Fire Sprinklers
<b>DIVISION 22</b>	<b>NOT USED</b>
<b>DIVISION 23</b>	<b>HVAC</b>
23 00 00	Ductwork Modifications
<b>DIVISION 24 - 25</b>	<b>NOT USED</b>
<b>DIVISION 26</b>	<b>ELECTRICAL</b>
26 00 00	General Electrical Requirements
<b>DIVISION 27</b>	<b>NOT USED</b>
<b>DIVISION 28</b>	<b>ELECTRONIC SAFETY AND SECURITY</b>
28 10 00	Door Access Control and Intrusion Detection

END OF TABLE OF CONTENTS

**00 11 13  
Notice to Contractors**

**Cross State Office Building Lobby Renovations**

*The work consists of interior renovations for reception areas on three floors and a new mail room in the Cross State Office Building in Augusta, Maine.*

The cost of the work is approximately \$ 90,000. The work to be performed under this contract shall be completed on or before 1 November 2016. Work consists of selective demolition, drywall, millwork, aluminum storefront, SAT ceilings, carpet, painting and mechanical and electrical work, as well as provision temporary protection, and including all associated incidental work.

1. Sealed Contractor bids for the project noted above, in envelopes plainly marked "Cross State Office Building Lobby Renovations" and addressed to:

<i>Ms. Jill Instasi</i>
Director of Special Projects
Bureau of General Services
State House Station 77
Augusta, Maine 04333

will be opened and read aloud at *Bureau of General Services, Cross State Office Building, 111 Sewall Street, Augusta, ME* at **2:00 p.m.** on **September 13, 2016**. Bids submitted after the noted time will not be considered and will be returned unopened.

2. The bid shall be submitted on the Contractor Bid Form (Section 00 41 13) provided in the Bid Documents. The Owner reserves the right to accept or reject any or all bids as may best serve the interest of the Owner.
3. 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.
4. Performance and Payment Bonds *are required* on this project.  
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.
5. Filed Sub-bids *are not required* on this project.
6. There *are no* Pre-qualified General Contractors on this project.


7. An on-site pre-bid conference *will* be conducted for this project.  
The pre-bid conference is *mandatory* for General Contractors and optional for Subcontractors and suppliers. Contractors who arrive late or leave the meeting early may be prohibited from participating in this meeting and bidding. *The mandatory pre-bid walk through is at 10:00 AM on*

*September 1, 2016 at BGS on the fourth floor of the Cross State Office Building. Bidders will sign in and then be escorted to the project site.*

8. Bid Documents - in full sets only - will be available on or about *August 22, 2016* and may be purchased at cost from *Am-At-Uer Service*. Sets can also be shipped for an additional charge from:

<i>Am-At-Uer Service</i>
<i>231 Oxford Street</i>
<i>Portland, Maine 04101</i>
<i>207-772-7006</i>

9. Bid Documents may be examined at:

<i>AGC Maine</i>	<i>Construction Summary</i>
<i>188 Whitten Road</i>	<i>734 Chestnut Street</i>
<i>Augusta, ME 04332</i>	<i>Manchester, NH 03104</i>
<i>Phone 207-622-4741 Fax 207-622-1625</i>	<i>Phone 603-627-8856 Fax 603-627-4524</i>

**00 21 13**  
**Instructions to Bidders**

1. Bidder Requirements

- 1.1 A bidder is a Contractor who is 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 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. Refer to section 00 73 13 General Conditions for specific requirements.
- 1.7 Contracts developed from this bid shall not be assigned, sublet or transferred without the written consent of the Owner.

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 sum of the lowest acceptable bid plus any Alternate Bids the Owner elects to include.
- 2.3 The Owner is exempt from the payment of Federal Excise Taxes and Federal Transportation Tax on all shipments, as well as Maine State Sales and Use Taxes on items "...physically incorporated in real property ...". The bidder shall not include these taxes in their bid. See Section 00 72 13 for additional information.

**00 21 13**  
**Instructions to Bidders**

**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 opening date and time.
- 3.3 A bid that contains an escalation clause is considered invalid.
- 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 shall include the cost of Performance and Payment Bonds in the bid amount if the bid amount will result in a construction contract value over \$125,000, inclusive of alternate bids that may be awarded in the contract. Pursuant to 14 M.R.S.A., Section 871, Public Works Contractors' Surety Bond Law of 1971, subsection 3, the selected Contractor is required to provide these bonds before a contract can be executed. The form of bonds are shown in section 00 61 13.13 and 00 61 13.16.
- 3.6 Bidders may modify bids in writing 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 shall acknowledge on the bid form all Addenda issued in a timely manner. The Architect shall not issue Addenda affecting bidders less than 72 hours prior to the bid closing time. 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. After the bid closing time, such written withdrawal requests may be allowed in consideration of the bid bond or, without utilizing a bid bond, if the Contractor provides documented evidence to the satisfaction of the Bureau that factual errors had been made on the bid form.
- 3.9 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.
- 3.10 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.

**00 41 13  
Contractor Bid Form**

**Cross State Office Building Lobby Renovations**

To:

<i>Ms. Jill Instasi</i>
Director of Special Projects
Bureau of General Services
State House Station 77
Augusta, Maine 04333

1. The undersigned, or "Bidder", having carefully examined the form of contract, general conditions, specifications and drawings dated *August 22, 2016*, prepared by *Winton Scott Architects* for *Cross State Office Building Lobby Renovations*, as well as the premises and conditions relating to the work, proposes to furnish all labor, equipment and materials necessary for and reasonably incidental to the construction and completion of this project for the Base Bid amount of:

\_\_\_\_\_ Dollars

\$ \_\_\_\_\_

Allowances and Unit Prices on this project are as follows: *none*.

2. Alternate bids *are not required* on this project.
3. The Bidder acknowledges receipt of the following addenda to the specifications and drawings:  
  
Addendum No. \_\_\_\_\_ Dated:  
Addendum No. \_\_\_\_\_ Dated:  
Addendum No. \_\_\_\_\_ Dated:  
Addendum No. \_\_\_\_\_ Dated:  
Addendum No. \_\_\_\_\_ Dated:
4. Bid security *is required* on this project.
5. Filed Sub-bids *are not required* on this project.

**00 41 13  
Contractor Bid Form**

6. The Bidder agrees, if this bid is accepted by the Owner, to sign the designated Owner-Contractor contract and deliver it, with any and all bonds and affidavits of insurance specified in the Bid Documents, within twelve calendar days after the date of notification of such acceptance, except if the twelfth day falls on a State of Maine government holiday or other closure day, a Saturday, or a Sunday, in which case the aforementioned documents must be received before 12:00 noon on the day following the holiday or other closure day, Saturday or Sunday.

As a guarantee thereof, the Bidder submits, together with this bid, a bid bond or other acceptable instrument as and if required by the Bid Documents.

7. This bid is hereby submitted by:

Signature: \_\_\_\_\_

Printed name and title: \_\_\_\_\_

Company name: \_\_\_\_\_

Mailing address: \_\_\_\_\_

City, state, zip code: \_\_\_\_\_

Phone number: \_\_\_\_\_

Email address: \_\_\_\_\_

State of incorporation,  
if a corporation: \_\_\_\_\_

List of all partners,  
if a partnership: \_\_\_\_\_

**STATE OF MAINE**  
**Bureau of General Services**  
**CONSTRUCTION CONTRACT**

THIS AGREEMENT made the date of month in the year 2016 by and between the State of Maine through the Bureau of General Services hereinafter called the *Owner* and Contractor company name hereinafter called the *Contractor*.

**BGS Project No.:** \_\_\_\_\_

**Other Project No.:** \_\_\_\_\_

The *Owner* and the *Contractor* for the consideration hereinafter named agree as follows:

**ARTICLE 1 SCOPE OF WORK**

§ 1.1 The *Contractor* shall furnish all of the materials and perform all the work described in the specifications and shown on the drawings for the project entitled: *Cross State Office Building Lobby Renovations*.

§ 1.2 The specifications and the drawings have been prepared by *Winton Scott Architects*, acting as Designer and named in the documents as the Architect or Engineer. This firm has responsibilities for defining the scope of work governed by their agreement with the *Owner*, the specifications and the drawings, and the General Conditions and Special Provisions of the contract.

**ARTICLE 2 COMPLETION DATE**

§ 2.1 The work to be performed under this contract shall be completed on or before *October 31, 2016*. For each calendar day the project remains uncompleted *\$Per Sect 007213 37.5* shall be charged as liquidated damages.

**ARTICLE 3 CONTRACT SUM**

§ 3.1 The *Owner* shall pay the *Contractor* for the performance of the contract, subject to additions and deductions provided by approved Change Orders in current funds as follows: *amount in words* dollars and *00*cents, *\$0.00*

**ARTICLE 4 CONTRACT BONDS**

§ 4.1 Contract bonds are not required if the contract amount is less than \$125,000 unless bonds are specifically mandated by the contract documents.

§ 4.2 On this project, the *Contractor* *shall* furnish the *Owner* the appropriate contract bonds in the amount of 100% of the contract amount.

**ARTICLE 5 PROGRESS PAYMENTS**

§ 5.1 The *Owner* shall make payments on account of the contract 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.

§ 5.2 The *Owner* may cause the *Contractor* to be paid such portion of the amount retained hereunder as he deems advisable.

**ARTICLE 6 FINAL PAYMENT**

§ 6.1 Final payment shall be due 30 days after completion and acceptance of the work, provided the *Contractor* has submitted evidence satisfactory to the *Owner* that all payrolls, material bills and other indebtedness connected with the work has been paid.

**ARTICLE 7 CONTRACT DOCUMENTS**

§ 7.1 The General Conditions of the contract, instructions to bidders, bid form, Special Provisions, the written specifications and the drawings, and any Addenda, together with this agreement, form the contract; they are as fully a part of the contract as if hereto attached or herein repeated.

§ 7.2 Specifications: *August 11, 201*

§ 7.3 Drawings: *Number and Title of All Drawing Sheets*

§ 7.4 Addenda: *each addenda number and date, or "none"*

**ARTICLE 8 OTHER PROVISIONS**

§ 8.1 The *Owner* and the *Contractor* are required to comply with applicable provisions of the American Recovery and Reinvestment Act (ARRA), and the Qualified School Construction Bonds (QSCB) program, including, but not limited to, the Buy American criteria, federal wage rates, and program-specific reporting requirements, for those projects funded through ARRA and QSCB.





**00 63 63  
Change Order Form**

**Cross Sate Building Lobby Renovations**

Bureau of General Services

State House Station 77

Augusta, ME 04333

C. O. Number:

Date: \_\_\_\_\_

Other Project Number: \_\_\_\_\_

BGS Project Number: \_\_\_\_\_

To: **[Contractor company name]** \_\_\_\_\_

- > Number and briefly summarize each Change Order item below. Include description of and reason for work, and cost.
- > Attach appropriate supporting documentation including drawings and specifications.
- > Change Order is not valid until signed by all parties.

No.	Description	Cost
1	[Replace this text. Please keep the description brief so the text is completely visible when printed. Indicate item number at left and cost at right. Repeat below for items as needed.]	
<b>Total:</b>		<b>\$0</b>

	Add	Deduct	Total
Amount of This Change Order	\$0	\$0	\$0
Amount of Previous Change Orders	\$0	\$0	\$0
Net Change Orders to Date	\$0	\$0	\$0
Original Contract Amount	\$0	\$0	\$0
Contract Total to Date	\$0	\$0	\$0

Current Completion Date: \_\_\_\_\_

Extend Completion Date by This Number of Days: \_\_\_\_\_

New Completion Date: \_\_\_\_\_

**Architect/Engineer**  
Winton Scott Architects  
5 Milk Street  
Portland, ME 04101

**Contractor**  
[Company name]  
[address]  
[city state zip]

**Owner**  
Bureau of General Services  
State House Station 77  
Augusta, ME 04333

Mark Wilcox  
date: \_\_\_\_\_

[type name here - signature above]  
date: \_\_\_\_\_

Jill Instasi  
date: \_\_\_\_\_

> approved by: **Bureau of General Services** \_\_\_\_\_ date: \_\_\_\_\_



**00 71 00**  
**Definitions**

1. Definitions

- 1.1 *Addendum*: A document issued by the Architect 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*: The Architect or Engineer acting as Professional-of-Record for the project. The Architect is responsible for the design of the Project.
- 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 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.
- 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 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.
- 1.12 *Certificate of Substantial Completion*: A document developed by the Architect 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 also include a provisional list of items (a "punch

**00 71 00**  
**Definitions**

list") remaining to be corrected by the Contractor, if any, and identifies a 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 Architect and approved by the Bureau.
- 1.15 *Change Order Proposal (COP)*: Change proposed by the Contractor in the contract amount, requirements, or time, which becomes a Change Order when approved by the Owner.
- 1.16 *Clerk of the Works*: The authorized representative of the Architect on the job site. Clerk of the Works is also called Architect's representative.
- 1.17 *Construction Change Directive (CCD)*: A written order prepared by the Architect and signed by the Owner and Architect, 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 Price*: The dollar amount of the construction contract, also called *Contract Sum*.
- 1.22 *Contract Time*: The designated duration of time to execute the Work of the contract, with a specific date for completion.
- 1.23 *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.
- 1.24 *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.

**00 71 00**  
**Definitions**

- 1.25 *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.
- 1.26 *Final Completion*: Project status indicating when the Work is fully completed in compliance with the Contract Documents. Final Completion is documented by a date on which the Contractor's obligations under the contract are complete and accepted by the Owner and final payment becomes due and payable.
- 1.27 *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.
- 1.28 *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 Architect and Contractor.
- 1.29 *Owner's Representative*: The individual or entity contracted by the Owner to be an advisor and information conduit regarding the Project.
- 1.30 *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.
- 1.31 *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.
- 1.32 *Post-Bid Addendum*: Document issued by the Architect 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.
- 1.33 *Project*: The construction project proposed by the Owner to be constructed according to the Contract Documents. The entire public improvement project may also include separate construction and other activities conducted by the Owner or other contractors. The Owner shall inform all contractors of the scope of the entire public improvement project relative to each individual contract.
- 1.34 *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.

**00 71 00**  
**Definitions**

A proposal shall include all costs for overhead and profit. After acceptance by all parties a proposal amends the contract and is implemented by the Contractor.

- 1.35 *Proposal Request (PR)*: An Owner's written request to the Contractor for a Change Order Proposal.
- 1.36 *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.
- 1.37 *Request For Information (RFI)*: A Contractor's written request to the Architect 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 Work.
- 1.38 *Request For Proposal (RFP)*: An Owner's written request to the Contractor for a Change Order Proposal.
- 1.39 *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*.
- 1.40 *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.)
- 1.41 *Sample*: A physical example provided by the Contractor which illustrates materials, equipment or workmanship and establishes standards by which the Work will be judged.
- 1.42 *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.
- 1.43 *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*.
- 1.44 *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.
- 1.45 *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.
- 1.46 *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

**00 71 00**  
**Definitions**

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.

- 1.47 *Substantial Completion*: Project status indicating 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.
- 1.48 *Superintendent*: The representative of the Contractor on the job site, authorized by the Contractor to receive and fulfill instructions from the Architect.
- 1.49 *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.
- 1.50 *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.



**00 72 13**  
**General Conditions**

Table of Contents of this General Conditions Section

1. Preconstruction Conference
2. Intent and Correlation of Contract Documents
3. Additional Drawings and Specifications
4. Record of Documents
5. Ownership of Contract Documents
6. Shop Drawings
7. Samples
8. Substitutions
9. Patents and Royalties
10. Surveys, Layout of Work
11. Permits, Laws, and Regulations
12. Taxes
13. Labor and Wages
14. Insurance Requirements
15. Contract Bonds
16. Allowances
17. Assignment of Contract
18. Separate Contracts
19. Subcontracts
20. Contractor-Subcontractor Relationship
21. Supervision of the Work
22. Inspection of the Work
23. Architect's Status
24. Management of the Premises
25. Safety and Security of the Premises
26. Changes in the Work
27. Correction of the Work
28. Owner's Right to do Work
29. Termination of Contract and Stop Work Action
30. Delays and Extension of Time
31. Payments to the Contractor
32. Payments Withheld
33. Liens
34. Indemnification
35. Workmanship
36. Close-out of the Work
37. Date of Completion and Liquidated Damages
38. Dispute Resolution

**00 72 13**  
**General Conditions**

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 Architect. The purpose of this conference is to:
- a) introduce all parties who have a significant role in the Project, including:
    - Owner (State Agency)
    - Bureau of General Services (BGS)
    - Architect
    - Consultants
    - Clerk-of-the-works
    - Contractor (GC)
    - Superintendent
    - Subcontractors
    - Other State agencies
    - Owner's Representative
    - Construction testing company
    - Commissioning agent
    - Special Inspections agent;
  - b) review the responsibilities of each party;
  - c) review any previously-identified special provisions of the Project;
  - d) review the Schedule of the Work calendar submitted by the Contractor to be approved by the Owner and Architect;
  - e) review the Schedule of Values form submitted by the Contractor to be approved by the Owner and Architect;
  - f) establish routines for Shop Drawing approval, contract changes, requisitions, et cetera;
  - g) discuss jobsite issues;
  - h) discuss Project close-out procedures;
  - i) provide an opportunity for clarification of Contract Documents before work begins;
  - j) 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 Architect and authorized in writing by the Architect, 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 Architect in writing of such errors or omissions. The Architect shall make any corrections or clarifications necessary in such a situation to document the true intent of the Contract Documents.

**00 72 13**  
**General Conditions**

3. Additional Drawings and Specifications

- 3.1 The Owner shall provide to the Contractor, at no additional expense to the Contractor, a reasonable quantity of additional Drawings and Specifications for the execution of the Work.
- 3.2 The Architect shall promptly furnish additional revised Drawings and Specifications that are created due to corrections or clarifications made by the Architect. 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. Record of Documents

- 4.1 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 Architect.
- 4.2 The Contractor shall maintain, continuously updated, complete records of Requests for Information, Architectural Supplemental Instructions, Information Bulletins, supplemental sketches, Change Order Proposals, Change Orders, Shop Drawings, testing reports, et cetera, for access by the Owner and Architect.

5. Ownership of Contract Documents

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

6. Shop Drawings

- 6.1 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.
- 6.2 The Architect 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.
- 6.3 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.
- 6.4 The Contractor shall make any corrections required by the Architect, and shall submit a quantity of corrected copies as may be needed. The acceptance of Shop Drawings or schedules by the Architect 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 Architect at the time of submission and secured the Architect's written approval. The acceptance of Shop Drawings or schedules by the Architect does not relieve the Contractor from responsibility for errors in Shop Drawings or schedules.

**00 72 13**  
**General Conditions**

**7. Samples**

- 7.1 The Contractor shall furnish for approval, with reasonable promptness, all samples as directed by the Architect. The Architect 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.

**8. Substitutions**

- 8.1 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.
- 8.2 The Contractor may submit detailed information about a proposed substitution to the Architect 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 Architect. The request for substitution shall include a cost comparison and a reason or reasons for the substitution.
- 8.3 The Architect 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 Architect should briefly state the rationale for the decision. The decision shall be considered final.
- 8.4 The duration of a substitution review process can not be the basis for a claim for delay in the Schedule of the Work.

**9. Patents and Royalties**

- 9.1 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.
- 9.2 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.

**10. Surveys, Layout of Work**

- 10.1 The Owner shall furnish all property surveys unless otherwise specified.
- 10.2 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

**00 72 13**  
**General Conditions**

- 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.
- 10.3 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 Architect prior to commencing work.

11. Permits, Laws, and Regulations

- 11.1 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.
- 11.2 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.
- 11.3 The Owner is responsible for obtaining any federal agency project approvals necessary to complete the Work, unless otherwise indicated in the Contract Documents.
- 11.4 The Owner is responsible for obtaining all easements for permanent structures or permanent changes in existing facilities.
- 11.5 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.
- 11.6 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 Architect 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.
- 11.7 The Contractor shall comply with local, state and federal regulations regarding construction safety and all other aspects of the Work.

12. Taxes

- 12.1 The Owner is exempt from the payment of Federal Excise Taxes on articles not for resale and from the Federal Transportation Tax on all shipments, as well as Maine State Sales and Use Taxes. Pricing in all Change Order Proposals from the Contractor and Subcontractors shall not include these taxes.
- 12.2 Maine statute (36 M.R.S.A. §1760) allows "...an exemption from sales and use tax on items which will be physically incorporated in real property of an exempt organization. This exemption only applies to lumber, hardware, doors and windows, nails, insulation and other building materials actually affixed to realty. Tools, wearing apparel, consumable supplies, machinery and equipment used by the Contractor are taxable even if purchased specifically for the exempt job."
- 12.3 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.A. §1760 and detailed in Rule 302 (18-125 CMR 302).

**00 72 13**  
**General Conditions**

**13. Labor and Wages**

- 13.1 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.
- 13.2 The Architect 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.
- 13.3 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.
- 13.4 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.
- 13.5 The Contractor shall conform to Maine statute by providing to the Owner 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.
- 13.6 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.
- 13.7 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.
- 13.8 The Contractor may contact the Maine Department of Labor, 54 State House Station, Augusta, Maine 04333 for guidance on labor issues.

**14. Insurance Requirements**

- 14.1 The Contractor shall not commence work under this contract until the Contractor has obtained all insurance required under this article and such insurance has been approved by the Owner. The Contractor shall not allow any Subcontractor to commence work on a subcontract until all similar insurance required of the Subcontractor has been so obtained and approved.
- 14.2 The Owner does not warrant or represent that the insurance required under this article constitutes an insurance portfolio which adequately addresses all risks faced by the Contractor or its Subcontractors. The Contractor and Subcontractors of every tier shall satisfy themselves as to the existence, extent and adequacy of insurance prior to commencement of work.
- 14.3 The Contractor and any Subcontractor shall procure and maintain for the duration of the Project insurance of the types and limits set forth under this article and such insurance as will protect themselves from claims which may arise out of or result from the Contractor's or Subcontractor's execution of the work, whether such execution be by themselves or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable. The insurance coverage provided by the Contractor and any Subcontractor will be primary coverage.

**00 72 13**  
**General Conditions**

14.4 Workers' Compensation Insurance

Worker's Compensation insurance for all employees on 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

14.5 Liability Insurance

a) General Liability Insurance

General liability insurance 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. It shall include collapse and underground coverage - as well as explosion coverage if explosion hazards exist. Aggregate limits shall apply on a per 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

b) Automobile Liability Insurance

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.....	\$1,000,000
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c) Owners Protective Liability Insurance

For Contracts exceeding \$50,000 in total Contract amount, Contractor shall secure an Owners Protective Liability policy naming the Owner as the Named Insured.

Minimum acceptable limits are:

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

d) Pollution Liability Insurance

In the event that any disruption, handling, abatement, remediation, encapsulation, removal, transport, or disposal of contaminated or hazardous material is required, the Contractor or its Subcontractor shall secure a pollution liability policy in addition to any other coverages contained in this section. The insurance shall be provided on an occurrence based policy and shall remain in effect for the duration of the Project.

Minimum acceptable limit is:

Each occurrence limit.....	\$1,000,000
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**00 72 13**  
**General Conditions**

14.6 Property Insurance

a) New Construction Only

The Contractor shall procure and maintain Builder's Risk insurance naming the Owner, Contractor and all Subcontractors as insureds as their interest may appear. The covered cause of loss form shall be Risks of Direct Physical Loss, endorsed to include flood, earthquake, testing and ensuing loss and shall include coverage for materials in transit and materials stored off site. Coverage shall be on a replacement cost and a completed value basis. Unless specifically authorized by the Owner, the limit of insurance shall not be less than the contract amount and coverage shall apply during the entire contract period until the Certificate of Substantial Completion is accepted by the Owner.

b) Renovations within and Additions to Existing Buildings Insured by State of Maine Risk Management Division

Insurance shall be provided by the Owner. The Owner shall provide the following Project information to the State of Maine Risk Management Division prior to commencement of the Work in order to initiate the insurance coverage: building name, street address and municipality, brief project description, project start date and completion date, contract dollar value, and Contractor name and address. Said insurance shall name the Contractor and all Subcontractors as insureds as their interest may appear. The covered causes of loss form shall be Risks of Direct Physical Loss, endorsed to include flood, earthquake, testing and ensuing loss and shall include coverage for materials in transit and materials stored off site. Theft coverage is not included and exclusions common to commercial property policies are applicable. The Contractor shall be responsible for a \$500 deductible per occurrence. Unless specifically authorized by the Owner, the limit of insurance shall not be less than the contract amount and coverage shall apply during the entire contract period until the Certificate of Substantial Completion is accepted by the Owner. Verification of insurance will be furnished to the Contractor upon request. The Contractor may independently acquire, at the Contractor's expense, coverage in excess of that maintained by the State of Maine.

- 14.7 The Contractor shall provide four original copies of all certificates of insurance in a form, and issued by, companies acceptable to the Owner prior to commencement of work. The certificates shall name the Owner as certificate holder. The certificates shall contain a provision that coverage afforded under the insurance policies will not be canceled or materially changed unless at least thirty (30) calendar days prior written notice by registered letter has been given to the Owner.

15. Contract Bonds

- 15.1 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 addition or deductions of the contract.
- 15.2 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.

**00 72 13**  
**General Conditions**

16. Allowances

- 16.1 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.
- 16.2 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.

17. Assignment of Contract

- 17.1 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.

18. Separate Contracts

- 18.1 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.
- 18.2 The Contractor shall promptly report to the Architect 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.
- 18.3 Similarly, the Contractor shall promptly report to the Architect and Owner any apparent deficiencies in their own work that would impact the proper execution or results of the Owner's other contractors.
- 18.4 The Contractor shall report to the Architect 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.
- 18.5 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.

19. Subcontracts

- 19.1 The Contractor shall not subcontract any part of this contract without the written permission of the Owner.
- 19.2 The Contractor shall submit a complete list of named Subcontractors and material suppliers to the Architect 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.

**00 72 13**  
**General Conditions**

- 19.3 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.
- 19.4 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.
- 19.5 Neither the Contract Documents nor any Contractor-Subcontractor contract shall indicate, infer or create any direct contractual relationship between any Subcontractor and the Owner.

**20. Contractor-Subcontractor Relationship**

- 20.1 The Contractor shall be bound to the Subcontractor by all the obligations in the Contract Documents that bind the Contractor to the Owner.
- 20.2 The Contractor shall pay the Subcontractor, in proportion to the dollar value of the work completed by the Subcontractor, the dollar amount allowed to the Contractor at the time each Contractor's Requisition for Payment is approved by the Owner.
- 20.3 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.
- 20.4 The Contractor shall pay the Subcontractor on demand for subcontract work or materials as far as executed and fixed in place, less retainage, at the time the Contractor's Requisition for Payment is approved by the Owner, even if the Architect fails to certify a portion of the Requisition for Payment for a cause not the fault of the Subcontractor.
- 20.5 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.
- 20.6 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.
- 20.7 The Contractor shall give the Subcontractor an opportunity to present and to submit evidence in any progress conference or disputes involving subcontract work.
- 20.8 The Contractor shall pay the Subcontractor a just share of any fire insurance payment received by the Contractor.
- 20.9 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.
- 20.10 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.
- 20.11 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 Architect's instructions.

**21. Supervision of the Work**

- 21.1 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.

**00 72 13**  
**General Conditions**

- 21.2 The superintendent represents the Contractor on the jobsite. Directives given by the Architect 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 Architect and Owner are not responsible for the acts or omissions of the superintendent or assistant superintendents.
- 21.3 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 Architect. 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 Architect that was not revealed by the superintendent in a timely way.

**22. Observation of the Work**

- 22.1 The Contractor shall allow the Owner, the Architect 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.
- 22.2 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.
- 22.3 The Contractor shall schedule inspections and obtain all required certificates of inspection for inspections by a party other than the Architect.
- 22.4 The Architect 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 Architect, the Contractor shall notify the Architect of the construction schedule in this regard. Work concealed or buried prior to the Architect's approval may need to be uncovered at the Contractor's expense.
- 22.5 The Architect 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.
- 22.6 The Bureau shall periodically observe the Work during the course of construction and make recommendations to the Contractor or Architect as necessary. Such recommendations shall be considered and implemented through the usual means for changes to the Work.

**23. Architect's Status**

- 23.1 The Architect represents the Owner during the construction period, and observes the work in progress on behalf of the Owner. The Architect 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 Architect has authority to stop the work whenever such an action is necessary, in the Architect's reasonable opinion, to ensure the proper execution of the contract.
- 23.2 The Architect is the interpreter of the conditions of the contract and the judge of its performance. The Architect shall favor neither the Owner nor the Contractor, but shall use the Architect's powers under the contract to enforce faithful performance by both parties.

**00 72 13**  
**General Conditions**

23.3 In the event of the termination of the Architect'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 Architect relative to this contract shall be that of the former Architect.

**24. Management of the Premises**

- 24.1 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 Architect's directions shall not cause the use of premises to be impeded for the Contractor or Owner.
- 24.2 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.
- 24.3 The Contractor shall enforce the Architect'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.
- 24.4 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.

**25. Safety and Security of the Premises**

- 25.1 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.
- 25.2 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.
- 25.3 The Contractor shall designate, and make known to the Architect and the Owner, a safety officer whose duty is the prevention of accidents on the site.
- 25.4 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.
- 25.5 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.
- 25.6 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.
- 25.7 Damage to the Work, including that which is reasonably protected, shall be repaired or replaced at the expense of the party who caused the damage.
- 25.8 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 Architect may consult with the Contractor on such means and methods of construction, however, the ultimate responsibility lies with the Contractor.

**00 72 13**  
**General Conditions**

- 25.9 The Contractor shall not jeopardize any work in place with subsequent construction activities such as blasting, drilling, excavating, cutting, patching or altering work. The Architect 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.
- 25.10 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.
- 25.11 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.

**26. Changes in the Work**

- 26.1 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.
- 26.2 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.
- 26.3 The Architect shall prepare the Construction Change Directive representing a complete scope of work, with proposed Contract Price and Contract Time revisions, if any, clearly stated.
- 26.4 The Contractor shall promptly carry out a Construction Change Directive which has been signed by the Owner and the Architect. 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.
- 26.5 The method of determining the dollar value of extra work shall be by:
- a) an estimate of the Contractor accepted by Owner as a lump sum, or
  - b) unit prices named in the contract or subsequently agreed upon, or
  - c) cost plus a designated percentage, or
  - d) cost plus a fixed fee.
- 26.6 The Contractor shall determine the dollar value of the extra work for both the lump sum and cost plus designated percentage methods using the following rates. The rates include all overhead and profit expenses.
- a) Contractor - for any work performed by the Contractor's own forces, 20% of the cost;
  - b) Subcontractor - for work performed by Subcontractor's own forces, 20% of the cost;
  - c) Contractor - for work performed by Contractor's Subcontractor, 10% of the amount due the Subcontractor.
- 26.7 The Contractor shall keep and provide records as needed or directed for the cost plus designated percentage method. The Architect shall review and certify the appropriate amount which includes the Contractor's overhead and profit. The Owner shall make payments based on the Architect's certificate.

**00 72 13**  
**General Conditions**

- 26.8 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.
- 26.9 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.
- 26.10 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.
- 26.11 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.
- 26.12 The Architect may order minor changes in the Work, not involving extra cost, which is consistent with the intent of the design or project.
- 26.13 The Contractor shall immediately give written notification to the Architect 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 Architect. The Architect shall promptly investigate the conditions and respond to the Contractor's notice with direction that avoids any unnecessary delay of the Work. The Architect shall determine if the discovered conditions warrant a Change Order.
- 26.14 The Contractor shall, within ten calendar days of receipt of the information, give written notification to the Architect if the Contractor claims that instructions by the Architect will constitute extra cost not accounted for by Change Order or otherwise under the contract. The Architect shall promptly respond to the Contractor's notice with direction that avoids any unnecessary delay of the Work. The Architect shall determine if the Contractor's claim warrants a Change Order.
27. Correction of the Work
- 27.1 The Contractor shall promptly remove from the premises all work the Architect 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.
- 27.2 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 Architect. 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.
- 27.3 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.

**00 72 13**  
**General Conditions**

The Owner shall promptly give notice of observed defects to the Contractor and Architect. The Architect shall determine the status of all claimed defects.

- 27.4 The Architect 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.

**28. Owner's Right to do Work**

- 28.1 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 Architect 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.
- 28.2 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.

**29. Termination of Contract and Stop Work Action**

- 29.1 The Owner may, owing to a certificate of the Architect 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: if the contractor is adjudged bankrupt, or makes a general assignment for the benefit of its creditors, or if a receiver is appointed due to the Contractor's insolvency, or if the Contractor persistently or repeatedly refuses or fails to provide enough properly skilled workers or proper materials, or if the Contractor fails to make prompt payment to Subcontractors or material or labor suppliers, or if the Contractor persistently disregards laws, ordinances or the instructions of the Architect, or is otherwise found guilty of a substantial violation of a provision of the Contract Documents.
- 29.2 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 Architect shall certify the expense incurred by the Contractor's default. This obligation for payment shall continue to exist after termination of the contract.
- 29.3 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 Architect, terminate this contract. The Contractor may then recover from the Owner payment for all work executed, any proven loss and reasonable profit and damage.

**00 72 13**  
**General Conditions**

29.4 The Contractor may, if the Architect 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 Architect, with seven days written notice to the Owner and the Architect, stop the Work or terminate this Contract.

**30. Delays and Extension of Time**

30.1 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 Architect, 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 Architect shall determine the status of all claimed causes.

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

30.3 The contract shall not be extended due to failure of the Architect to furnish drawings if no schedule or agreement is made between the Contractor and the Architect indicating the dates which drawings shall be furnished and fourteen calendar days has passed after said date for such drawings.

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

**31. Payments to the Contractor**

31.1 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 Architect. The Architect 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.

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

31.3 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.

31.4 The Architect shall verify and certify each Requisition for Payment which appears to be complete and correct prior to payment being made by the Owner. The Architect 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.

31.5 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

**00 72 13**  
**General Conditions**

- in the Work, the full amount previously allowed shall be deducted from subsequent payments unless the Contractor satisfactorily replaces said material.
- 31.6 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 Architect 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.
- 31.7 Subcontractors may request, and shall receive from the Architect, copies of approved Requisitions for Payment showing the amounts certified in the Schedule of Values.
- 31.8 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.
- 31.9 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 (M.R.S.A. 5, Section 1746).

**32. Payments Withheld**

- 32.1 The Architect 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:
- a) defective work not remedied;
  - b) claims filed or reasonable evidence indicating probable filing of claims;
  - c) failure to make payments properly to Subcontractors or suppliers;
  - d) a reasonable doubt that the contract can be completed for the balance then unpaid;
  - e) liability for damage to another contractor.

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

**33. Liens**

- 33.1 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.

**00 72 13**  
**General Conditions**

- 33.2 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.

**34. Indemnification**

- 34.1 The Contractor shall indemnify and hold harmless the Owner, its officers, agents, and employees from and against any and all claims, liabilities and costs, including reasonable attorney's fees, for any or all injuries to persons, property or claims for money damages arising from the negligent acts or omissions of the Contractor, its employees or agents, officers or subcontractors in the performance of work under this Agreement.

**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 Architect'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 Architect 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 Architect at the Contractor's expense.
- 35.4 The Contractor shall request clarification or revision of any design work by the Architect, 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 Architect 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 Architect 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 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 exactly cleaning is specified. The Contractor shall wash all windows and glass immediately prior to the final inspection, unless otherwise directed.

**00 72 13  
General Conditions**

- 36.2 The Owner may conduct the cleaning of the premises where the Contractor, duly notified by the Architect, 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, generally called the "punch list", to be corrected by the Contractor. The Architect shall document the successful completion of the Work in a dated Certificate of Substantial Completion, to be signed by Owner, Architect, and Contractor.
- 36.4 The Contractor shall not call for final inspection of any portion of the Work that is not complete and permanent 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 Architect 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 Architect determines has followed the expected rate of progress.
- 37.4 The Architect 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.

<u>If the original contract amount is:</u>	<u>The per day Liquidated Damages shall be:</u>
More than \$100,000 and less than \$2,000,000 .....	\$750
More than \$2,000,000 and less than \$10,000,000 .....	\$1,500
More than \$10,000,000 .....	\$1,500 plus \$250 for each \$2,000,000 over \$10,000,000

**00 72 13**  
**General Conditions**

38. Dispute Resolution

38.1 Mediation

- a) In the event of a dispute between the parties which arises under this Agreement in which the dispute cannot be resolved through informal negotiation, the dispute shall be submitted to a neutral mediator jointly selected by the parties.
- b) 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.
- c) In any mediation between the Owner and the Architect, the Owner has the right to consolidate related claims between Owner and Contractor.

38.2 Arbitration

- a) 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.
- b) 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.
- c) The costs of the arbitration, including the arbitrators’ fees shall be borne equally by the parties to the arbitration, unless the arbitrator orders otherwise.
- d) In any arbitration between the Owner and the Architect, 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 THE PERTAINING STATE FUNDED PREVAILING WAGE CONSTRUCTION SITE

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

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

Title of Project -----Cross State Office Building Lobby Project

Location of Project --Augusta, Kennebec County

**2016 Fair Minimum Wage Rates  
Building 2 Kennebec County  
(other than 1 or 2 family homes)**

Occupation Title	Minimum Wage	Minimum Benefit	Total	Occupation Title	Minimum Wage	Minimum Benefit	Total
Asbestos/Lead Removal Worker	\$13.00	\$0.51	\$13.51	Insulation Installer	\$19.25	\$2.33	\$21.58
Assembler – Metal Building	\$13.63	\$3.38	\$17.01	Ironworker - Reinforcing	\$21.00	\$6.80	\$27.80
Boom Truck (Truck Crane) Operator	\$21.00	\$2.85	\$23.85	Ironworker - Structural	\$23.20	\$20.52	\$43.72
Bricklayer	\$22.00	\$2.68	\$24.68	Laborers (incl. Helpers & Tenders)	\$14.00	\$0.35	\$14.35
Bulldozer Operator	\$17.63	\$3.24	\$20.87	Laborers - Skilled	\$16.00	\$1.20	\$17.20
Carpenter	\$21.00	\$3.47	\$24.47	Loader Operator – Front End	\$17.21	\$2.66	\$19.87
Carpenter - Acoustical	\$15.00	\$2.68	\$17.68	Mechanic - Maintenance	\$20.00	\$2.79	\$22.79
Carpenter - Rough	\$18.65	\$0.16	\$18.81	Mechanic - Refrigeration	\$20.00	\$3.63	\$23.63
Cement Mason/Finisher	\$17.75	\$2.15	\$19.90	Millwright	\$23.95	\$19.19	\$43.14
Communication Equipment Installer	\$24.04	\$8.00	\$32.04	Oil/Fuel Burner Servicer & Installer	\$24.43	\$6.13	\$30.56
Concrete Pump Operator	\$24.25	\$5.40	\$29.65	Painter	\$18.75	\$0.00	\$18.75
Crane Operator <15 Tons	\$21.25	\$2.58	\$23.83	Paperhanger	\$17.00	\$3.16	\$20.16
Crane Operator =>15 Tons	\$24.50	\$6.61	\$31.11	Pipe/Steam/Sprinkler Fitter	\$26.25	\$13.84	\$40.09
Crusher Plant Operator	\$15.80	\$3.76	\$19.56	Pipe Layer	\$19.33	\$2.37	\$21.70
Dry-Wall Applicator	\$21.50	\$2.63	\$24.13	Plasterer	\$43.93	\$27.43	\$71.36
Dry-Wall Taper & Finisher	\$25.00	\$3.00	\$28.00	Plumber (Licensed)	\$25.00	\$3.16	\$28.16
Electrician - Licensed	\$25.00	\$5.47	\$30.47	Plumber Helper/Trainee (Licensed)	\$17.59	\$2.61	\$20.20
Electrician Helper/Cable Puller Licensed	\$16.00	\$2.31	\$18.31	Propane & Natural Gas Service & Inst. (Licensed)	\$21.00	\$3.87	\$24.87
Elevator Construction/Installer	\$53.30	\$33.36	\$86.66	Roofer	\$15.00	\$1.15	\$16.15
Excavator Operator	\$19.06	\$2.44	\$21.50	Sheet Metal Worker	\$20.59	\$4.76	\$26.01
Fence Setter	\$15.25	\$1.32	\$16.57	Sider	\$22.75	\$4.33	\$27.08
Flagger	\$16.70	\$7.95	\$24.65	Stone Mason	\$17.80	\$0.00	\$17.80
Floor Layer	\$19.50	\$4.51	\$24.01	Tile Setter	\$21.25	\$4.76	\$26.01
Furniture Installer/Assembler	\$13.75	\$0.85	\$14.60	Truck Driver – Light	\$15.00	\$0.99	\$15.99
Glazier	\$20.82	\$2.71	\$23.53	Truck Driver – Medium	\$15.00	\$0.10	\$15.10
Grader/Scraper Operator	\$17.50	\$1.04	\$18.54	Truck Driver – Heavy	\$14.25	\$0.83	\$15.08
Heating Ventilation Air Conditioning	\$24.31	\$4.63	\$28.94	Truck Driver – Tractor Trailer	\$16.24	\$3.28	\$19.52

The Laborer classifications include a wide range of work duties. Therefore, if any specific occupation to be employed on this project is not listed in this determination, call the Bureau of Labor Standards at the above number for further clarification.

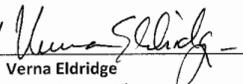
Welders are classified in the trade to which the welding is incidental.

Apprentices - The minimum wage rate for registered apprentices are those set forth in the standards and policies of the Maine State Apprenticeship and Training Council for approved apprenticeship programs.

Posting of Schedule - Posting of this schedule is required in accordance with 26 MRSA §1301 et. seq., by any contractor holding a State contract for construction valued at \$50,000 or more and any subcontractors to such a contractor.

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 with the Secretary of State.

Determination No: B2-082-2016  
Filing Date: July 30, 2016  
Expiration Date: 12-31-2016

A true copy  
Attest:   
Verna Eldridge  
Wage & Hour Director  
Bureau of Labor Standards

BLS 424B2 (R2016)(Building 2 Kennebec)

SECTION 01 10 00  
SUMMARY OF THE WORK

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
  - 1. Work covered by the Contract Documents.
  - 2. Type of the Contract.
  - 3. Work under other contracts.
  - 4. Owner-furnished products.
  - 5. Use of premises.
  - 6. Owner's occupancy requirements.
  - 7. Specification formats and conventions.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification: Project consists of interior renovations.
  - 1. Project Location: Cross State Office Building, Augusta, Maine.
  - 2. Owner: State of Maine.
- B. Architect Identification: The Contract Documents, dated August 22, 2016, were prepared for the Project by Winton Scott Architects, P.A., 5 Milk Street, Portland, ME 04101. Tel: 207-774-4811.
- C. The Work includes but is not limited to selective demolition, gypsum board walls and ceilings, painting, flooring, millwork, glass and glazing and electrical systems complete and ready for use.

1.3 COMPLETION DEADLINE

- A. The work shall be substantially complete on or before October 31, 2016.

1.4 TYPE OF CONTRACT

- A. Project will be constructed under a single prime contract.
- B. Contract Type: State of Maine - Section 2-E, Contract Agreement (State Projects).

1.5 WORK UNDER OTHER CONTRACTS

- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed under separate contracts.

1.6 OWNER-FURNISHED PRODUCTS – N/A

1.7 USE OF PREMISES

- A. General: Contractor shall have full use of premises for construction operations, including use of Project site, during construction period.
- B. Use of Site: Limit use of premises to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Owner Occupancy: Allow for Owner occupancy of Project site around building.
  2. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
    - a. Schedule deliveries to minimize use of driveways and entrances.
    - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
  - C. Use of Existing Building: Maintain the existing building in a weather tight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period. Coordinate precautions with Owner.
  - D. Time Restrictions for Performing Interior and Exterior Work: Monday through Friday; 7 am to 5 p.m., unless arrangements are made with the Owner prior to the start of work.
    1. Provide 24 hour notice to Architect when performing work other than normal working hours.
- 1.8 OWNER'S OCCUPANCY REQUIREMENTS
- A. The Owner will occupy the building during the construction period.
    1. Continuous use of the existing building shall be maintained through the project.
    2. Work areas shall be phased as shown.
    3. The Owner shall move furniture before the start of work of each phase as needed.
  - B. Precautions to minimize noise shall be required throughout the course of the work.
- 1.9 SPECIFICATION FORMATS AND CONVENTIONS
- A. Specification Format: The Specifications are organized into Divisions and Sections using the 49-division format and CSI/CSC's "MasterFormat 2004" numbering system.
    1. Section Identification: The Specifications use section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of sections in the Contract Documents.
  - B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
    1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
    2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
      - a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

- C. References to Related Sections: This paragraph lists only products, construction, and equipment that the reader might expect to find in this Section but are specified elsewhere. This is not meant to be a continuation of a list of work included in each section.

1.10 MISCELLANEOUS PROVISIONS

- A. Contract Documents: These documents, including the Contract, General Conditions, Supplementary Conditions, Specification sections, Drawings, Addenda and Modifications, indicate the work of the Contract and related requirements and conditions that have an impact on the project. It is recognized that work of the contract is also unavoidably affected or influenced by natural phenomenon including weather conditions and other forces outside the contract documents. Allow for additional time in the construction schedule for abnormal weather conditions. No change orders will be approved for adverse weather conditions. No change orders will be approved for additional winter heating expenses due to cold weather or rise in fuel costs.
- B. Hazardous Materials other than Asbestos: Included in the work may be the removal and/or covering over of hazardous materials. It is the responsibility of the contractor to follow applicable Federal, State and Local guidelines to insure safe and proper handling of these materials.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION



## SECTION 01 14 00

## WORK RESTRICTIONS

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

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

## 1.2 USE OF PREMISES

- A. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of site beyond areas in which the Work is indicated.
1. Limits: Confine constructions operations areas shown.
  2. Owner Occupancy: Allow for Owner occupancy of site and use by the public.
  3. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
    - a. Schedule deliveries to minimize use of driveways and entrances.
    - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- B. Use of Existing Building: Maintain existing building in a weathertight condition throughout construction period. Repair damage caused by construction operations. Protect building and its occupants during construction period.
- C. General: Limitations on site usage as well as specific requirements that impact site utilization are indicated on the drawings and by other contract documents. In addition to these limitations and requirements administer allocation of available space equitably among entities needing both access and space so as to produce the best overall efficiency in performance of the total work of the project. Schedule deliveries so as to minimize space and time requirements for storage of materials and equipment on site.
- D. Special Provisions: The Owner shall be consulted in advance in all premises matters regarding use of the site. All deliveries and transport at the premises are to be coordinated through the Project Manager. In the even of an apparent conflict of activities, the Owner's needs shall have priority.
1. Secure Access: The job site is located inside a special access area. Personnel must be cleared to be in the work areas.
  2. Work Areas: Staging areas shall be limited to the immediate work area on an adjacent roof. All tools, ladders, dumpster, debris etc. shall be confined within the staging areas. The Contractor shall provide the following:
    - a. Dumpster with a locking lid.

- b. Porta potty with a locking door. The door must be locked at all times.
- 3. Tools and Storage: Tools shall be stored in locked boxes when not in use on the roof.
  - a. Tools shall be stored in locked boxes when not in use on the roof. No tools shall be left unguarded or unattended.
  - b. Ladders shall be chained when not in use.
- 4. Smoking: Smoking is not allowed anywhere on the property. A minimum penalty of \$100 shall be withheld from the Contractor's payment for each item of tobacco product or portion thereof found on the construction site.
- 5. Equipment: No lift, portable or otherwise shall be left on the site overnight.
- E. Notify Owner and get approval prior to commencing any loud or noisy activity.

### 1.3 OCCUPANCY REQUIREMENTS

- A. Full Owner Occupancy: Owner will occupy site and existing building during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations.
- B. Partial Owner Occupancy: Owner reserves the right to occupy and to place and install equipment in completed areas of building, before Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and partial occupancy shall not constitute acceptance of the total Work.
  - 1. Architect will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied before Owner occupancy.
  - 2. Obtain a Certificate of Occupancy from authorities having jurisdiction before Owner occupancy.
  - 3. Before partial Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will provide, operate, and maintain mechanical and electrical systems serving occupied portions of building.
  - 4. On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of building.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 14 00

## SECTION 01 30 00

## ALTERATIONS, GENERAL

## 1. GENERAL

1.01 GENERAL CONDITIONS: The General Conditions, Supplementary General Conditions and all Sections of Division 1 shall apply to each and every contract and contractor, person or persons supplying material, labor or entering into the work directly or indirectly.

1.02 DESCRIPTION:

- A. The work covered by all sections of specifications shall conform to the conditions of this Section.
- B. The phrase “match existing” shall mean the following: Where Contract Documents call for exact matching, match existing work exactly in quality and appearance. When Contract Documents do not call for exact matching, match existing work as nearly as possible, using normally available materials and workmanship. If normally available materials and workmanship do not approximate existing work notify Architect. If in the Architect’s judgment it is impossible to approximate existing work with normally available materials and workmanship, the Architect may issue suitable Change Orders. Changes imposing extra costs to the Contractor will not be ordered without the Contractor’s approval. Existing structures and materials are indicated “existing”.
- C. In general, structures and materials which are not indicated existing are included in the work.

## 2. PRODUCTS

2.01 GENERAL

- A. Materials used to replace, patch or repair existing exposed work shall match or be compatible with existing adjacent finished surfaces.
- B. Materials used for such replacement, patching and repairing shall be as specified in the applicable section of this specification and/or as indicated on the drawings, or as approved by the Architect.

## 3. EXECUTION

3.01 TEMPORARY PARTITIONS Construct necessary temporary dust proof partitions to isolate construction work from adjacent areas and remove partitions when work in area is completed.

3.02 CUTTING AND PATCHING

- A. Contractor shall do all demolition, cutting, altering, removing, replacing and patching as necessary for the performance of the contract. Unless otherwise provided by the drawings or specifications, no structural members shall be cut or altered without authorization of the Architect.
- B. Where any alteration or new work is indicated it will be required that the contractor perform all necessary cutting, patching, altering and rebuilding necessary to produce a complete, finished and operational element.
- C. Work remaining in place which is damaged or defaced by reason of work done under this contract shall be restored equal to its condition at the time of the award of the contract.
- D. Where existing work is removed, exposed surfaces shall be finished to match adjacent surfaces.
- E. All disturbed plaster areas and all holes, cracks and loose plaster shall be patched to provide a smooth uniform and sound wall, matching existing surfaces. Plaster around ne openings in existing walls shall be cut back to firm bond and patched to match surrounding area. Materials for patching shall be similar to adjacent materials. Bonding agents shall be used as required to produce positive bond.
- F. Contractor shall provide all necessary shoring and temporary supports required for proper support of existing and new work during execution of the contract and shall remove same when support is no longer required.

3.03 COOPERATION: The Owner shall have the right, at any time during the construction of the structure, to enter the same for the purpose of installing any necessary work, or for any other purpose in connection with the installation of facilities, it being mutually understood and agreed, however, that the Contractor and the Owner will labor to mutual advantage where their several works in the above mentioned or unforeseen instances touch upon or interfere with each other.

3.04 SALVAGE All materials which are removed will become the property of the Contractor and shall be removed from the premises, unless indicated otherwise on the drawings or in these specifications.

END OF SECTION

SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. General project coordination procedures.
  - 2. Administrative and supervisory personnel.
  - 3. Project meetings.
  - 4. Requests for Information (RFIs).
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific contractor.
- C. Related Sections include the following:
  - 1. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's Construction Schedule.
  - 2. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
  - 3. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

- A. RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

- 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.
- B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
1. Post copies of list in project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

#### 1.5 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.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

1.6 REQUESTS FOR INFORMATION (RFIs)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in either of the form(s) specified.
  1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
  2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
  1. Project name.
  2. Project number.
  3. Date.
  4. Name of Contractor.
  5. Name of Architect and Construction Manager.
  6. RFI number, numbered sequentially.
  7. RFI subject.
  8. Specification Section number and title and related paragraphs, as appropriate.
  9. Drawing number and detail references, as appropriate.
  10. Field dimensions and conditions, as appropriate.
  11. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
  12. Contractor's signature.
  13. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
    - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. Hard-Copy RFIs: Form at end of this Section.
  1. Identify each page of attachments with the RFI number and sequential page number.
- D. Software-Generated RFIs: Software-generated form with substantially the same content as indicated above.
  1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- E. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow seven working days for Architect's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.

1. The following RFIs will be returned without action:
    - a. Requests for approval of submittals.
    - b. Requests for approval of substitutions.
    - c. Requests for coordination information already indicated in the Contract Documents.
    - d. Requests for adjustments in the Contract Time or the Contract Sum.
    - e. Requests for interpretation of Architect's actions on submittals.
    - f. Incomplete RFIs or RFIs with numerous errors.
  2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.
  3. 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 Division 01 Section "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 10 days of receipt of the RFI response.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.
- G. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:
1. Project name.
  2. Name and address of Contractor.
  3. Name and address of Architect and Construction Manager.
  4. RFI number including RFIs that were dropped and not submitted.
  5. RFI description.
  6. Date the RFI was submitted.
  7. Date Architect's response was received.
  8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
  9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

## 1.7 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
  2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
  3. Minutes: General progress items and discussions will be recorded by the Architect and distributed.

- B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
1. Attendees: Authorized representatives of Owner, Construction Manager, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  2. Agenda: Discuss items of significance that could affect progress, including the following:
    - a. Tentative construction schedule.
    - b. Phasing.
    - c. Critical work sequencing and long-lead items.
    - d. Designation of key personnel and their duties.
    - e. Procedures for processing field decisions and Change Orders.
    - f. Procedures for RFIs.
    - g. Procedures for testing and inspecting.
    - h. Procedures for processing Applications for Payment.
    - i. Distribution of the Contract Documents.
    - j. Submittal procedures.
    - k. Construction waste management.
    - l. Construction indoor air quality.
    - m. Preparation of Record Documents.
    - n. Use of the premises and existing building.
    - o. Work restrictions.
    - p. Working hours.
    - q. Owner's occupancy requirements.
    - r. Responsibility for temporary facilities and controls.
    - s. Procedures for moisture and mold control.
    - t. Procedures for disruptions and shutdowns.
    - u. Construction waste management and recycling.
    - v. Parking availability.
    - w. Office, work, and storage areas.
    - x. Equipment deliveries and priorities.
    - y. First aid.
    - z. Security.
    - aa. Progress cleaning.
  3. Minutes: The Architect will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
  2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

- a. The Contract Documents.
  - b. Options.
  - c. Related RFIs.
  - d. Related Change Orders.
  - e. Purchases.
  - f. Deliveries.
  - g. Submittals.
  - h. Review of mockups.
  - i. Possible conflicts.
  - j. Compatibility problems.
  - k. Time schedules.
  - l. Weather limitations.
  - m. Manufacturer's written recommendations.
  - n. Warranty requirements.
  - o. Compatibility of materials.
  - p. Acceptability of substrates.
  - q. Temporary facilities and controls.
  - r. Space and access limitations.
  - s. Regulations of authorities having jurisdiction.
  - t. Testing and inspecting requirements.
  - u. Installation procedures.
  - v. Coordination with other work.
  - w. Required performance results.
  - x. Protection of adjacent work.
  - y. Protection of construction and personnel.
- 3. Construction Manager will record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
  - 4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
  - 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Conduct progress meetings at weekly intervals. Coordinate dates of meetings with preparation of payment requests.
- 1. Attendees: In addition to representatives of Owner, Construction Manager, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  - 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to

do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

- 1) Review schedule for next period.
- b. Review present and future needs of each entity present, including the following:
  - 1) Interface requirements.
  - 2) Sequence of operations.
  - 3) Status of submittals.
  - 4) Deliveries.
  - 5) Off-site fabrication.
  - 6) Access.
  - 7) Site utilization.
  - 8) Temporary facilities and controls.
  - 9) Progress cleaning.
  - 10) Quality and work standards.
  - 11) Status of correction of deficient items.
  - 12) Field observations.
  - 13) Status of RFIs.
  - 14) Status of proposal requests.
  - 15) Pending changes.
  - 16) Status of Change Orders.
  - 17) Pending claims and disputes.
  - 18) Documentation of information for payment requests.
  - 19) Construction waste management.
  - 20) Construction indoor air quality.
3. Minutes: Construction Manager will record and distribute to Architect the meeting minutes.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
  - a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.
- E. Project Closeout Conference: Construction Manager will schedule and conduct a Project closeout conference, at a time convenient to Owner and Architect, but no later than 90 days prior to the scheduled date of Substantial Completion.
  1. Conduct the conference to review requirements and responsibilities related to Project closeout.
  2. Attendees: Authorized representatives of Owner, Construction Manager, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
  3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
    - a. Preparation of record documents.

- b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
  - c. Submittal of written warranties.
  - d. Requirements for preparing sustainable design documentation.
  - e. Requirements for preparing operations and maintenance data.
  - f. Requirements for demonstration and training.
  - g. Preparation of Contractor's punch list.
  - h. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
  - i. Submittal procedures.
  - j. Coordination of separate contracts.
  - k. Owner's partial occupancy requirements.
  - l. Installation of Owner's furniture, fixtures, and equipment.
  - m. Responsibility for removing temporary facilities and controls.
4. Minutes: Entity conducting meeting will record and distribute meeting minutes.
- F. Coordination Meetings: Conduct Project coordination meetings at regular intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
- 1. Attendees: Each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  - 2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to Combined Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
    - b. Schedule Updating: Revise Combined Contractor's Construction Schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
    - c. Review present and future needs of each contractor present, including the following:
      - 1) Interface requirements.
      - 2) Sequence of operations.
      - 3) Status of submittals.
      - 4) Deliveries.
      - 5) Off-site fabrication.
      - 6) Access.
      - 7) Site utilization.
      - 8) Temporary facilities and controls.
      - 9) Work hours.

- 10) Hazards and risks.
  - 11) Progress cleaning.
  - 12) Quality and work standards.
  - 13) Change Orders.
3. Reporting: Record meeting results and distribute copies to Architect and everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 00

**REQUEST FOR INFORMATION**

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Project: \_\_\_\_\_ R.F.I. Number: \_\_\_\_\_  
 \_\_\_\_\_ From: \_\_\_\_\_  
 To: \_\_\_\_\_ Date: \_\_\_\_\_  
 \_\_\_\_\_ A/E Project Number: \_\_\_\_\_  
 Re: \_\_\_\_\_ Contract For: \_\_\_\_\_

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Specification Section: Paragraph: Drawings Reference: Detail:

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Request:

Signed by:

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Response:

\_\_\_ Attachments

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Response from:	To:	Date Rec'd	Date Ret'd
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Signed by:

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Copies to:

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SECTION 01 70 00

EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Construction layout.
  - 2. General installation of products.
  - 3. Coordination of Owner-installed products.
  - 4. Progress cleaning.
  - 5. Starting and adjusting.
  - 6. Protection of installed construction.
  - 7. Correction of the Work.
- B. Related Sections include the following:
  - 1. Division 1 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
  - 2. Division 1 Section "Cutting and Patching" for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.
  - 3. Division 1 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 QUALITY ASSURANCE

- A. General: Develop and maintain procedures to ensure that entities performing work at site are skilled and knowledgeable in methods and craftsmanship needed to produce required quality-levels for workmanship in completed work. Remove and replace work which does not comply with workmanship standards as specified and as recognized in the construction industry for applications indicated. Remove and replace other work damaged or deteriorated by faulty workmanship or its replacement.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
  - 1. Before construction, verify the location and points of connection of utility services.
- B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of utilities and other construction affecting the Work.
- C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations. Reject damaged and defective items.
  - 1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
    - a. Description of the Work.
    - b. List of detrimental conditions, including substrates.
    - c. List of unacceptable installation tolerances.
    - d. Recommended corrections.
  - 2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
  - 3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
  - 4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
  - 5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

## 3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility and/or Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Architect and Owner not less than two days in advance of proposed utility interruptions.
  2. Do not proceed with utility interruptions without Owner's written permission.
- C. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- D. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- E. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Submit requests on CSI Form 13.2A, "Request for Interpretation."

### 3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. General: Lay out the Work using accepted surveying practices.
1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
  2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
  3. Inform installers of lines and levels to which they must comply.
  4. Check the location, level and plumb, of every major element as the Work progresses.
  5. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
  6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

### 3.4 FIELD ENGINEERING

- A. Identification: Owner will identify existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
  - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
  - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
  - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
  - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
  - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

### 3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
  - 1. Make vertical work plumb and make horizontal work level.
  - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
  - 4. Maintain minimum headroom clearance of 8 feet in spaces without a suspended ceiling.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion. Isolate each unit of work from incompatible work as necessary to prevent deterioration.
- D. Recheck measurements and dimensions of the work, as an integral step of starting each installation.
- E. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

- F. Coordinate enclosure of the work with required inspections and tests, so as to minimize the necessity of uncovering work for that purpose. Apply protective finish to items before concealment. Paint aluminum, built into masonry or buried, with one coat bituminous paint. Paint other concealed materials with same finish specified for exposed surfaces. Concealed corrosion-protected materials need not be painted unless so specified.
- G. Tools and Equipment: Do not use tools or equipment that produce objectionable noise levels. Owner shall determine times during which noise producing operations may be performed. Such times may include scheduling of operations for weekend work.
- H. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work. Installed items shall be able to withstand 150% of maximum anticipated load, as estimated by the Architect.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect. Refer questionable mounting height choices to the Architect/Engineer for final decision.
  - 2. Allow for building movement, including thermal expansion and contraction.
  - 3. Provide galvanic insulation between dissimilar metals.
  - 4. All fasteners used by all trades on the exterior or where exposed to dampness shall be corrosion resistant. Exposed fasteners used for finished metals shall match adjacent metals in finish. Exposed fasteners used for other materials shall have hardware finish specified in FINISH HARDWARE section. Nails used for exterior siding and trim, whether set and puttied or not, shall be stainless steel. Concealed and painted fasteners for wood and ferrous metal shall be galvanized or zinc plated.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints. Make joints tight to the extent provided in the design or per industry standards. If such is impossible, and if directed by the Architect, apply moldings, sealant, or other closure.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.
- K. Provide adequate blocking, bracing, nailers and fastenings. Install items securely.

### 3.6 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction forces.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction forces.
  - 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
  - 2. Preinstallation Conferences: Include Owner's construction forces at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend

preinstallation conferences conducted by Owner's construction forces if portions of the Work depend on Owner's construction.

### 3.7 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
  - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  - 2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F (27 deg C).
  - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
  - 1. Remove liquid spills promptly.
  - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Cutting and Patching: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.
  - 1. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.
- H. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- I. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- J. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

- K. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

### 3.8 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 1 Section "Quality Requirements."

### 3.9 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

### 3.10 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."
  - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01700



SECTION 01 73 10

CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.
- B. Related Sections include the following:
  - 1. Division 1 Section "Selective Demolition" for demolition of selected portions of the building for alterations.
  - 2. Divisions 2 through 16 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
    - a. Requirements in this Section apply to mechanical and electrical installations. Refer to Divisions 22, 23 & 26 Sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

1.3 DEFINITIONS

- A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
  - 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
  - 2. Changes to Existing Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
  - 3. Products: List products to be used and firms or entities that will perform the Work.
  - 4. Dates: Indicate when cutting and patching will be performed.

5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.
6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

## 1.5 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
  1. Primary operational systems and equipment.
  2. Air or smoke barriers.
  3. Fire-protection systems.
  4. Control systems.
  5. Communication systems.
  6. Conveying systems.
  7. Electrical wiring systems.
  8. Operating systems of special construction in Division 13 Sections.
- C. Miscellaneous Elements: Do not cut and patch the following elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
  1. Water, moisture, or vapor barriers.
  2. Membranes and flashings.
  3. Exterior curtain-wall construction.
  4. Equipment supports.
  5. Piping, ductwork, vessels, and equipment.
  6. Noise- and vibration-control elements and systems.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
  1. If possible, retain original Installer or fabricator to cut and patch exposed Work listed below. If it is impossible to engage original Installer or fabricator, engage another recognized, experienced, and specialized firm.
    - a. Processed concrete finishes.
    - b. Stonework and stone masonry.
    - c. Ornamental metal.

- d. Matched-veneer woodwork.
  - e. Preformed metal panels.
  - f. Roofing.
  - g. Firestopping.
  - h. Window wall system.
  - i. Stucco and ornamental plaster.
  - j. Terrazzo.
  - k. Finished wood flooring.
  - l. Fluid-applied flooring.
  - m. Aggregate wall coating.
  - n. Wall covering.
  - o. HVAC enclosures, cabinets, or covers.
- E. Cutting and Patching Conference: Before proceeding, meet at Project site with 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.
- F. Prevent movement or settlement of adjacent elements of construction. Provide and place bracing or shoring and be responsible for safety and support of structure. Be liable for any such movement or settlement and any damage or injury caused.

## 1.6 WARRANTY

- A. Existing Warranties: 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

### 2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections of these Specifications.
- B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
- 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
- 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to minimize interruption of services to occupied areas.

### 3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
  1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
  1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
  5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  6. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
  2. Exposed Finishes: 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.
  3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
  4. Ceilings: Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
  5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- D. Cease operations and notify the Architect immediately, if safety of structure appears to be endangered. Take all precautions to properly support structure. Do not resume operations until permission is granted by the Architect and authorities having jurisdiction.

END OF SECTION 01731



## SECTION 01 77 00

## CLOSEOUT PROCEDURES

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

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

## 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Inspection procedures.
  - 2. Operation and maintenance manuals.
  - 4. Warranties.
  - 5. Instruction of Owner's personnel.
  - 6. Final cleaning.

## 1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
  - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
  - 2. Advise Owner of pending insurance changeover requirements.
  - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  - 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  - 5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs damage or settlement surveys, property surveys, and similar final record information.
  - 6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
  - 7. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  - 8. Complete final cleaning requirements, including touchup painting.
  - 9. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection

or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for Final Completion.

#### 1.4 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
  1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
  2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
  3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
  4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

#### 1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

#### 1.6 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
  1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.

2. 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.
  3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

## PART 3 - EXECUTION

### 3.1 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and anti-pollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
  1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
    - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
    - e. Remove snow and ice to provide safe access to building.
    - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
    - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.

- h. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
  - i. Leave Project clean and ready for occupancy.
- C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01770

## SECTION 01 85 00

## DUST CONTROL MEASURES

## PART 1 - GENERAL

## 1.01 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification sections, apply to work of this section.
- B. Contract Documents: Indicate the work of the Contract and related requirements and conditions that have an impact on the project. Related requirements and conditions that are indicated on the Contract Documents include, but are not necessarily limited to the following:
  - 1. Existing conditions and restrictions on the use of the floor.
  - 2. Requirements for partial Owner occupancy of portions of the work prior to substantial completion of the Contract Work.

## 1.02 SUMMARY OF DUST CONTROL MEASURES

- A. The work of this section can be summarized as follows:
  - 1. The purpose of this Section is to develop and implement actions required to be taken to compensate for hazards posed by dust which may be dislodged during construction.
  - 2. All temporary construction partitions shall be extended from the floor through the suspended ceiling, and shall be taped against the ceiling system for a complete seal.
  - 3. The construction area shall be vacuumed prior to beginning construction, using a vacuum cleaner equipped with a HEPA filtering system.
  - 4. All penetrations into the construction area shall be sealed, windows closed, and all supply, exhaust / return air ducts capped when possible. Coordinate this work with the Owner.
  - 5. Temporary partitions to isolate the construction site shall have gasketed doors and dampened walk-off mats both inside and outside the construction area.
  - 6. Debris removal from the construction site shall be completed by a predetermined route at times when staff are in their rooms with their doors closed, or during off hours. Debris shall be transported in clean containers with tight-fitting covers.
  - 7. Any dust tracked out of the construction site shall be removed immediately. Cleaning in patient-occupied areas shall be with HEPA-filtered vacuum cleaners.
  - 8. All air-handling ducts shall be shut down or covered whenever possible during demolition activities.
  - 9. HEPA vacuum work areas on a regular basis to eliminate dust.

10. All temporary partitions shall remain in place until all cleaning within the work areas has been completed.

PART 2 - PRODUCTS (Not applicable).

PART 3 - EXECUTION (Reserved).

END OF SECTION 01 85 00

SECTION 02 41 19  
SELELCTIVE DEMOLITION

## PART 1 - GENERAL

## 1.1 SUMMARY

- A. This Section includes the following:
  - 1. Demolition and removal of selected portions of a building.
  - 2. Demolition and removal of selected site elements.
  - 3. Patching and repairs.

## 1.2 DEFINITIONS

- A. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the Owner's property.
- B. Remove and Salvage: Detach items from existing construction and deliver them to Owner.
- C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

## 1.3 PERFORMANCE REQUIREMENTS

- A. Design, furnish, install, monitor, and maintain temporary shoring, support and protection systems capable of supporting existing structure and construction loads.
  - 1. Provide professional engineering services needed to assume engineering responsibility, including preparation of Shop Drawings and a comprehensive engineering analysis by a qualified professional engineer.
  - 2. Install temporary shoring, support and protection systems without damaging existing buildings, pavements, and other improvements adjacent to demolition area.

## 1.4 SUBMITTALS

- A. Shop Drawings for Information: Prepared by or under the supervision of a qualified professional engineer for temporary shoring, support and protection systems.
  - 1. Include Shop Drawings signed and sealed by the qualified professional engineer responsible for their preparation.
- B. Proposed Dust-Control and Noise-Control Measures: Submit statement or drawing that indicates the measures proposed for use, proposed locations, and proposed time frame for their operation. Identify options if proposed measures are later determined to be inadequate.
- C. Schedule of Selective Demolition Activities: Indicate the following:
  - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity.
  - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
  - 3. Coordination for shutoff, capping, and continuation of utility services.
  - 4. Use of elevator and stairs.
  - 5. Detailed sequence of selective demolition and removal work to ensure uninterrupted progress of Owner's on-site operations.

6. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
7. Locations of temporary partitions and means of egress.

#### 1.5 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Predemolition Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to selective demolition including, but not limited to, the following:
  1. Inspect and discuss condition of construction to be selectively demolished.
  2. Review structural load limitations of existing structure.
  3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
  4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.

#### 1.6 PROJECT CONDITIONS

- A. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- C. Hazardous Materials:
  1. Hazardous materials will be removed by Owner before start of the Work.
  2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Owner will remove hazardous materials under a separate contract.
- D. Storage or sale of removed items or materials on-site is not permitted.
- E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
  1. Maintain fire-protection facilities in service during selective demolition operations.

#### 1.7 WARRANTY

- A. Existing Special Warranty: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

#### PART 2 - PRODUCTS (Not Applicable)

#### PART 3 - EXECUTION

##### 3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped.

- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with the intended function or design are encountered, investigate and measure the nature and extent of the conflict. Promptly submit a written report to the Architect.
- E. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

### 3.2 UTILITY SERVICES

- A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.
  1. Comply with requirements for existing services/systems interruptions specified in Division 1 Section "Summary."
  2. Provide not less than 72 hours' notice to Owner if shutdown of service is required during changeover.
- B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
  1. Owner will arrange to shut off indicated utilities when requested by Contractor.
  2. Arrange to shut off indicated utilities with utility companies.
  3. Where utility services are required to be removed, relocated, or abandoned, provide bypass connections to maintain continuity of service to other parts of the building before proceeding with selective demolition.
  4. 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 after bypassing.
    - a. Where entire wall is to be removed, existing services/systems may be removed with removal of the wall.

### 3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
  1. Comply with requirements for access and protection specified in Division 1 Section "Temporary Facilities and Controls."
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
  1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
  2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
  3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
  4. Cover and protect furniture, furnishings, and equipment that have not been removed.
  5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Division 1 Section "Temporary Facilities and Controls."

- C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
  - 1. Strengthen or add new supports when required during progress of selective demolition.

### 3.4 SELECTIVE DEMOLITION, GENERAL

- A. Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete Work within limitations of governing regulations and as follows:
  - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition work above each floor or tier before disturbing supporting members on lower levels.
  - 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. To minimize disturbance of adjacent surfaces, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
  - 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
  - 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
  - 5. Maintain adequate ventilation when using cutting torches.
  - 6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
  - 7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
  - 8. Locate selective demolition equipment throughout the structure and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  - 9. Dispose of demolished items and materials promptly.
- B. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

### 3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Concrete: Demolish in small sections. Cut concrete to a depth of at least **3/4 inch (19 mm)** at junctures with construction to remain, using power-driven saw. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete indicated for selective demolition. Neatly trim openings to dimensions indicated.
- B. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals, using power-driven saw, then remove concrete between saw cuts.
- C. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, then remove masonry between saw cuts.
- D. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.
- E. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI-WP and its Addendum.

1. Remove residual adhesive and prepare substrate for new floor coverings by one of the methods recommended by RFCI.
- F. Roofing: Remove no more existing roofing than can be covered in one day by new roofing and so that building interior remains watertight and weathertight. Refer to Division 7 Sections for new roofing requirements.
1. Remove existing roof membrane, flashings, copings, and roof accessories.
  2. Remove existing roofing metal edge flashings.
  3. Existing roofing wood nailers shall remain in place.
  4. Existing roof rigid insulation shall remain in place; remove insulation in designated areas only.
- G. Air-Conditioning Equipment: Remove equipment without releasing refrigerants.

### 3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
1. Do not allow demolished materials to accumulate on-site.
  2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.
- D. Enter into a contract for the transportation and disposal of all solid waste in accordance with the applicable State, Local and Federal regulations.

### 3.7 CLEANING

- A. Sweep the building broom clean on completion of selective demolition operation.
- B. Change filters on air-handling equipment on completion of selective demolition operations.

END OF SECTION



SECTION 06 10 00  
ROUGH CARPENTRY

## PART 1 - GENERAL

## 1.1 SUMMARY

- A. This Section includes the following:
1. Wood blocking and nailers.

## 1.2 DEFINITIONS

- A. Rough Carpentry: Carpentry work not specified in other Sections and not exposed, unless otherwise indicated.
- B. Exposed Framing: Dimension lumber not concealed by other construction.
- C. Lumber grading agencies, and the abbreviations used to reference them, include the following:
1. NELMA - Northeastern Lumber Manufacturers Association.
  2. NLGA - National Lumber Grades Authority.
  3. SPIB - Southern Pine Inspection Bureau.
  4. WCLIB - West Coast Lumber Inspection Bureau.
  5. WWPA - Western Wood Products Association.

## 1.3 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber, plywood, and other panels; place spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

## PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Pressure-Treated Wood:
    - a. Arch Treatment Technologies, Inc.

## 2.2 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review.
1. Factory mark each piece of lumber with grade stamp of grading agency.
  2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
  3. Provide dressed lumber, S4S, unless otherwise indicated.
  4. Provide dry lumber with 15 percent maximum moisture content at time of dressing for **2-inch nominal (38-mm actual)** thickness or less, unless otherwise indicated.

## 2.3 DIMENSION LUMBER

- A. General: Provide dimension lumber of grades indicated according to the American Lumber Standards Committee National Grading Rule provisions of the grading agency indicated.

## 2.4 MISCELLANEOUS LUMBER

- A. General: Provide lumber for support or attachment of other construction, including the following:
  1. Rooftop equipment bases and support curbs.
  2. Blocking.
  3. Furring.
  4. Nailers.
- B. For items of dimension lumber size, provide No. 2 grade lumber with 15 percent maximum moisture content and any of the following species:
  1. Spruce-pine-fir (south) or Spruce-pine-fir; NELMA, NLGA, WCLIB, or WWPA.

## 2.5 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
  1. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Power-Driven Fasteners: CABO NER-272.
- D. Wood Screws: ASME B18.6.1.
- E. Screws for Fastening to Cold-Formed Metal Framing: Hilti Kwik-Flex or Elco Dril-Flex; no substitutes,
  1. Plywood sheathing: 10-24 x 1-1/4 inch wafer head #3.
  2. 2 x wood blocking: 12-24 x 2-1/2 inch wafer head #3.
- F. Lag Bolts: **ASME B18.2.1.** (ASME B18.2.3.8M).
- G. Bolts: Steel bolts complying with **ASTM A 307, Grade A** (ASTM F 568M, Property Class 4.6); with **ASTM A 563** (ASTM A 563M) hex nuts and, where indicated, flat washers.
- H. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
  1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- B. Do not use materials with defects that impair quality of rough carpentry or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- C. Apply field treatment complying with AWPAC M4 to cut surfaces of preservative-treated lumber and plywood.

- D. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
  - 1. CABO NER-272 for power-driven fasteners.
  - 2. Published requirements of metal framing anchor manufacturer.
  - 3. Table 2305.2, "Fastening Schedule," in the BOCA National Building Code.
- E. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; predrill as required.
- F. Use finishing nails for exposed work, unless otherwise indicated. Countersink nail heads and fill holes with wood filler.

### 3.2 WOOD BLOCKING, AND NAILER INSTALLATION

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
  - 1. Install blocking for Owner-installed furnishings. Coordinate with Architect for locations and refer to drawings.
- B. 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. Where possible, secure anchor bolts to formwork before concrete placement.

### 3.3 WOOD FURRING INSTALLATION

- A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.
- B. Furring to Receive Gypsum Board: Install **1-by-2-inch nominal-** (19-by-38-mm actual-) size furring vertically at **16 inches** (406 mm) o.c.

END OF SECTION 06 10 00



## SECTION 06 40 23

## INTERIOR ARCHITECTURAL WOODWORK

## PART 1 - GENERAL

## 1.1 SUMMARY

- A. This Section includes the following:
1. Plastic-laminate cabinets.
  2. Solid surfacing countertops.
  3. Metal support brackets.
  4. Maple standing and running trim.
  5. Staining and finishing of maple trim.
  6. Cork wall finish for tackboard.

## 1.2 SUBMITTALS

- A. Product Data: For medium-density fiberboard, particleboard, plywood, high-pressure decorative laminate, adhesive for bonding plastic laminate, thermoset decorative overlay, cabinet hardware and accessories.
- B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
1. Show details full size.
  2. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
  3. Show locations and sizes of cutouts and holes for plumbing fixtures, faucets, and other items installed in architectural woodwork.
  4. Show veneer leaves with dimensions, grain direction, exposed face, and identification numbers indicating the flitch and sequence within the flitch for each leaf.
- C. Samples for Selection: Manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available for each type of material indicated.
1. Shop-applied transparent finishes.
  2. Shop-applied opaque finishes.
  3. Plastic laminates.
  4. Thermoset decorative overlays.
  5. Lumber with or for transparent finish, 5 inches (125 mm) wide by 24 inches (600 mm) long, for each species and cut, finished on 1 side and 1 edge.
  6. Wood-veneer-faced panel products with or for transparent finish, 8 by 10 inches (200 by 250 mm), for each species and cut. Include at least one face-veneer seam and finish as specified.
  7. Exposed cabinet hardware and accessories, one unit for each type and finish.

- D. Product Certificates: Signed by manufacturers of woodwork certifying that products furnished comply with requirements.

### 1.3 QUALITY ASSURANCE

- A. Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Quality Standards" for grades of interior architectural woodwork, construction, finishes, and other requirements.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General: Provide materials that comply with requirements of the AWI quality standard for each type of woodwork and quality grade specified, unless otherwise indicated.
- B. Wood Species and Cut for Transparent Finish: Plain Sliced American Maple
- C. Wood Species for Painted Finish: Poplar.
- D. Wood Products: Comply with the following:
  1. Hardboard: AHA A135.4.
  2. Medium-Density Fiberboard: ANSI A208.2, Grade MD.
  3. Particleboard: ANSI A208.1, Grade M-2.
  4. Softwood Plywood: DOC PS 1.
  5. Hardwood Plywood and Face Veneers: HPVA HP-1.
- E. Thermoset Decorative Overlay: Particleboard complying with ANSI A208.1, Grade M-2, or medium-density fiberboard complying with ANSI A208.2, Grade MD, with surface of thermally fused, melamine-impregnated decorative paper complying with LMA SAT-1.
  1. Core: Medium Density Fiberboard.
  2. Color: Almond.
  3. Basis of Design Product: Panolam TFL Thermofused Laminate.
- F. Plastic Laminate: High-Pressure Decorative Laminate; NEMA LD 3, grades as indicated, or if not indicated, as required by woodwork quality standard.
  1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering high-pressure decorative laminates that may be incorporated into the Work include, but are not limited to, the following:
    - a. Formica Corporation.
    - b. Pionite Decorative Surfaces .
    - c. Wilsonart International; Div. of Premark International, Inc.
- G. Panel Edging: 3mm PVC to match laminate by Dollken-Woodtape or approved equal.
  1. Provide for all drawer and door fronts.
- H. Adhesive for Bonding Plastic Laminate: Contact cement.

## 2.2 CABINET HARDWARE AND ACCESSORIES

- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets.
- B. Hardware Standard: Comply with BHMA A156.9 for items indicated by referencing BHMA numbers or items referenced to this standard.
- C. Frameless Concealed Hinges (European Slip-On Type): BHMA A156.9, B01602, 110 degrees of opening, self-closing.
  - 1. Grass G173 and G174.
  - 2. MEPLA SSP 21-243-S/00 and S/08.
- D. Wire Pulls: Back mounted, 3 inches (76 mm) centers, 5/16 inches (8 mm) in diameter. Solid stainless steel.
- E. Door Locks: Install locks furnished by Division 8 Hardware.
  - 1. Install one per locker door.
  - 2. Provide epoxy adhesive to retain lock attachments in place.
- F. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
  - 1. Satin Chromium Plated: BHMA 626 for brass or bronze base; BHMA 652 for steel base.
  - 2. Satin Stainless Steel: BHMA 630.
- G. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

## 2.3 INSTALLATION MATERIALS

- A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln-dried to less than 15 percent moisture content.
- B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide nonferrous-metal or hot-dip galvanized anchors and inserts on inside face of exterior walls and elsewhere as required for corrosion resistance. Provide toothed-steel or lead expansion sleeves for drilled-in-place anchors.

## 2.4 FABRICATION, GENERAL

- A. Interior Woodwork Grade: Provide Custom grade interior woodwork complying with the referenced quality standard.
- B. Wood Moisture Content: Comply with requirements of referenced quality standard for wood moisture content in relation to ambient relative humidity during fabrication and in installation areas.
- C. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to radius indicated for the following:

1. Corners of Cabinets and Edges of Solid-Wood (Lumber) Members 3/4 Inch (19 mm) Thick or Less: 1/16 inch (1.5 mm).
  2. Edges of Rails and Similar Members More Than 3/4 Inch (19 mm) Thick: 1/8 inch (3 mm).
  3. Corners of Cabinets and Edges of Solid-Wood (Lumber) Members and Rails: 1/16 inch (1.5 mm).
- D. Complete fabrication, including assembly, and hardware application, to maximum extent possible, before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
1. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended and check measurements of assemblies against field measurements indicated on Shop Drawings before disassembling for shipment.
- E. Shop cut openings, to maximum extent possible, to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.
1. Seal edges of openings in countertops with a coat of varnish.

## 2.5 PLASTIC-LAMINATE CABINETS

- A. Quality Standard: Comply with AWI Section 400 requirements for laminate cabinets.
- B. Grade: Custom.
- C. AWI Type of Cabinet Construction: Flush overlay without on face frame.
- D. Cladding for Surfaces: High-pressure decorative laminate complying with the following requirements:
1. Body members - ends, bottom, divisions, rails and tops: .028" exterior laminate over 3/4 inch thick MDF, interior Thermoset Decorative Overlay (melamine) with 3 mm PVC edging, all exposed and semi-exposed sides.
  2. Shelves: 3/4 inch thick MDF, Thermoset Decorative Overlay (melamine) each side with 3 mm PVC edging. Provide laminate over plywood where shelf widths are required to meet AWI 400-G-8.
  3. Cabinet Doors: .028" exterior laminate over 3/4 inch thick MDF, interior Thermoset Decorative Overlay (melamine) with 3 mm PVC edging.
  4. Edging: Band all exposed case edges with 0.020 HPDL. No PVC tape allowed.
- E. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
1. Provide Architect's selections from laminate manufacturer's full range of colors and finishes in the following categories:
    - a. Solid colors.
    - b. Patterns.
  2. Allow for 4 color selections.

## 2.6 SOLID SURFACING COUNTERTOPS

- A. Grade: Premium, for all countertops.
- B. Solid Surfacing: 1/2 in. thick, Corian, color as selected by Architect.
  - 1. Include options from Color Groups A, B, C and D.
- C. Edging and Backsplashes: Built-up solid surfacing unless otherwise indicated, same material as face.
  - 1. Backsplash shall be coved with integral weld continuous with counter top surface.
- D. Core Material: Plywood.
- E. Sealant: Type as manufactured or recommended in writing by manufacturer of plastic laminate, color to match plastic laminate.
  - 1. Silicone Sealant: Mildew resistant type, formulated for pointing of tile, color to match the plastic laminate where feasible; or clear as directed by Architect.

## 2.7 SHOP FINISHING

- A. Quality Standard: Comply with AWI Section 1500, unless otherwise indicated.
  - 1. Grade: Provide finishes of same grades as items to be finished.
- B. General: Finish architectural woodwork at fabrication shop as specified in this Section. Defer only final touchup, cleaning, and polishing until after installation.
- C. Preparations for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing architectural woodwork, as applicable to each unit of work.
  - 1. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of woodwork. Apply two coats to back of paneling and to end-grain surfaces. Concealed surfaces of plastic-laminate-clad woodwork do not require backpriming when surfaced with plastic laminate, backing paper, or thermoset decorative overlay.
- D. Transparent Finish: Comply with requirements indicated below for grade, finish system, staining, and sheen, with sheen measured on 60-degree gloss meter per ASTM D 523:
  - 1. Grade: Custom.
  - 2. AWI Finish System TR-5: Catalyzed vinyl.
  - 3. Staining: None required.
  - 4. Open Finish for Open-Grain Woods: Do not apply filler to open-grain woods.
  - 5. Sheen: Satin, 30-50 gloss units.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Condition woodwork to average prevailing humidity conditions in installation areas before installation.
- B. Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

### 3.2 INSTALLATION

- A. Quality Standard: Install woodwork to comply with AWI Section 1700 for the same grade specified in Part 2 of this Section for type of woodwork involved.
- B. Install woodwork level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm).
- C. Scribe and cut woodwork to fit adjoining work, and refinish cut surfaces and repair damaged finish at cuts.
- 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. Use fine finishing nails for exposed fastening, countersunk and filled flush with woodwork and matching final finish if transparent finish is indicated.
- E. Standing and Running Trim: Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to greatest extent possible. Do not use pieces less than 36 inches (900 mm) long, except where shorter single-length pieces are necessary.
  - 1. Fill gaps, if any, between top of base and wall with plastic wood filler, sand smooth, and finish same as wood base, if finished.
  - 2. Install wall railings on indicated metal brackets securely fastened to wall framing.
  - 3. Install standing and running trim with no more variation from a straight line than 1/8 inch in 96 inches (3 mm in 2400 mm).
- F. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
  - 1. Install cabinets with no more than 1/8 inch in 96-inch (3 mm in 2400-mm) sag, bow, or other variation from a straight line.
  - 2. Maintain veneer sequence matching of cabinets with transparent finish.
  - 3. Fasten wall cabinets through back, near top and bottom, at ends and not more than 16 inches (400 mm) o.c. with No. 10 wafer-head screws sized for 1-inch (25-mm) penetration into wood framing, blocking, or hanging strips.
- G. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.
  - 1. Install countertops with no more than 1/8 inch in 96-inch (3 mm in 2400-mm) sag, bow, or other variation from a straight line.
  - 2. Secure backsplashes to tops.
  - 3. Calk space between backsplash and wall with sealant specified in Division 7 Section "Joint Sealants."

3.3 ADJUSTING AND CLEANING

- A. Repair damaged and defective woodwork, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.
- B. Clean, lubricate, and adjust hardware.
- C. Clean woodwork on exposed and semi-exposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION 06 40 23



## SECTION 07 84 13

## PENETRATION FIRESTOPPING

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

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

## 1.2 SUMMARY

- A. This Section includes, unless specified elsewhere, through-penetration firestop systems for penetrations through fire-resistance-rated constructions, including both empty openings and openings containing penetrating items.
- B. Related Sections include the following:
  - 1. Division 07 Section "Fire-Resistive Joint Systems."
  - 2. Division 21 Sections specifying fire-suppression piping penetrations.
  - 3. Division 22 and 23 Sections specifying duct and piping penetrations.
  - 4. Division 26, 27, and 28 Sections specifying cable and conduit penetrations.

## 1.3 PERFORMANCE REQUIREMENTS

- A. General: For penetrations through fire-resistance-rated constructions, including both empty openings and openings containing penetrating items, provide through-penetration firestop systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated.
- B. Rated Systems: Provide through-penetration firestop systems with the following ratings determined per ASTM E 814 or UL 1479:
  - 1. F-Rated Systems: Provide through-penetration firestop systems with F-ratings indicated, but not less than that equaling or exceeding fire-resistance rating of constructions penetrated.
  - 2. T-Rated Systems: For the following conditions, provide through-penetration firestop systems with T-ratings indicated, as well as F-ratings, where systems protect penetrating items exposed to potential contact with adjacent materials in occupiable floor areas:
    - a. Penetrations located outside wall cavities.
    - b. Penetrations located outside fire-resistance-rated shaft enclosures.
  - 3. L-Rated Systems: Provide through-penetration firestop systems with L-ratings of not more than 3.0 cfm/sq. ft at both ambient temperatures and 400 deg F.

- C. For through-penetration firestop systems exposed to view, traffic, moisture, and physical damage, provide products that, after curing, do not deteriorate when exposed to these conditions both during and after construction.
  - 1. For piping penetrations for plumbing and wet-pipe sprinkler systems, provide moisture-resistant through-penetration firestop systems.
  - 2. For floor penetrations with annular spaces exceeding 4 inches in width and exposed to possible loading and traffic, provide firestop systems capable of supporting floor loads involved, either by installing floor plates or by other means.
  - 3. For penetrations involving insulated piping, provide through-penetration firestop systems not requiring removal of insulation.
- D. For through-penetration firestop systems exposed to view, provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.

#### 1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For each through-penetration firestop system, show each type of construction condition penetrated, relationships to adjoining construction, and type of penetrating item. Include firestop design designation of qualified testing and inspecting agency that evidences compliance with requirements for each condition indicated.
  - 1. Submit documentation, including illustrations, from a qualified testing and inspecting agency that is applicable to each through-penetration firestop system configuration for construction and penetrating items.
  - 2. Where Project conditions require modification to a qualified testing and inspecting agency's illustration for a particular through-penetration firestop condition, submit illustration, with modifications marked, approved by through-penetration firestop system manufacturer's fire-protection engineer as an engineering judgment or equivalent fire-resistance-rated assembly.
- C. Through-Penetration Firestop System Schedule: Indicate locations of each through-penetration firestop system, along with the following information:
  - 1. Types of penetrating items.
  - 2. Types of constructions penetrated, including fire-resistance ratings and, where applicable, thicknesses of construction penetrated.
  - 3. Through-penetration firestop systems for each location identified by firestop design designation of qualified testing and inspecting agency.
- D. Qualification Data: For Installer.
- E. Product Certificates: For through-penetration firestop system products, signed by product manufacturer.
- F. Product Test Reports: From a qualified testing agency indicating through-penetration firestop system complies with requirements, based on comprehensive testing of current products.

## 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A firm experienced in installing through-penetration firestop systems similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful performance. Qualifications include having the necessary experience, staff, and training to install manufacturer's products per specified requirements. Manufacturer's willingness to sell its through-penetration firestop system products to Contractor or to Installer engaged by Contractor does not in itself confer qualification on buyer.
- B. Fire-Test-Response Characteristics: Provide through-penetration firestop systems that comply with the following requirements and those specified in Part 1 "Performance Requirements" Article:
  - 1. Firestopping tests are performed by a qualified testing and inspecting agency. A qualified testing and inspecting agency is UL or another agency performing testing and follow-up inspection services for firestop systems acceptable to authorities having jurisdiction.
  - 2. Through-penetration firestop systems are identical to those tested per testing standard referenced in "Part 1 Performance Requirements" Article. Provide rated systems complying with the following requirements:
    - a. Through-penetration firestop system products bear classification marking of qualified testing and inspecting agency.
    - b. Through-penetration firestop systems correspond to those indicated by reference to through-penetration firestop system designations listed by the following:
      - 1) UL in its "Fire Resistance Directory."
- C. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."
- D. Special Inspections: Allow for 1 of each type of firestopping system to be removed and inspected for conformance with approved submittals. All firestopping shall be inspected prior to the installation of ceilings.
- E. Above Ceiling review: Prior to the installation of ceilings, a review of construction completion shall be conducted for firestopping and other items that will not be visible when the ceilings have been installed.

## 1.6 DELIVERY, STORAGE, AND HANDLING

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

## 1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install through-penetration firestop systems when ambient or substrate temperatures are outside limits permitted by through-penetration firestop system manufacturers or when substrates are wet due to rain, frost, condensation, or other causes.
- B. Ventilate through-penetration firestop systems per manufacturer's written instructions by natural means or, where this is inadequate, forced-air circulation.

## 1.8 COORDINATION

- A. Coordinate construction of openings and penetrating items to ensure that through-penetration firestop systems are installed according to specified requirements.
- B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate through-penetration firestop systems.
- C. Notify Owner's inspecting agency at least seven days in advance of through-penetration firestop system installations; confirm dates and times on days preceding each series of installations.
- D. Do not cover up through-penetration firestop system installations that will become concealed behind other construction until each installation has been examined by building inspector, if required by authorities having jurisdiction.

## PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, through-penetration firestop systems that may be incorporated into the Work include those systems indicated that are produced by one of the following manufacturers:
  - 1. Grace, W. R. & Co. - Conn.
  - 2. Hilti, Inc.
  - 3. Nelson Firestop Products.
  - 4. RectorSeal Corporation (The).
  - 5. Specified Technologies Inc.
  - 6. 3M; Fire Protection Products Division.
  - 7. Tremco; Sealant/Weatherproofing Division.
  - 8. USG Corporation.

## 2.2 FIRESTOPPING, GENERAL

- A. Compatibility: Provide through-penetration firestop systems that are compatible with one another; with the substrates forming openings; and with the items, if any, penetrating through-penetration firestop systems, under conditions of service and application, as demonstrated by through-penetration firestop system manufacturer based on testing and field experience.

- B. Accessories: Provide components for each through-penetration firestop system that are needed to install fill materials and to comply with Part 1 "Performance Requirements" Article. Use only components specified by through-penetration firestop system manufacturer and approved by qualified testing and inspecting agency for firestop systems indicated. Accessories include, but are not limited to, the following items:
1. Permanent forming/damming/backing materials, including the following:
    - a. Slag-/rock-wool-fiber insulation.
    - b. Sealants used in combination with other forming/damming/backing materials to prevent leakage of fill materials in liquid state.
    - c. Fire-rated form board.
    - d. Fillers for sealants.
  2. Temporary forming materials.
  3. Substrate primers.
  4. Collars.
  5. Steel sleeves.
- C. Maximum VOC Content: 250 g/l.

### 2.3 FILL MATERIALS

- A. General: Provide through-penetration firestop systems containing the types of fill materials as required by UL approved Through-Penetration Firestop System. Fill materials are those referred to in directories of the referenced testing and inspecting agencies as fill, void, or cavity materials.
- B. Cast-in-Place Firestop Devices: Factory-assembled devices for use in cast-in-place concrete floors and consisting of an outer metallic sleeve lined with an intumescent strip, a radial extended flange attached to one end of the sleeve for fastening to concrete formwork, and a neoprene gasket.
- C. Latex Sealants: Single-component latex formulations that after cure do not re-emulsify during exposure to moisture.
- D. Elastomeric Spray: Single component, water-based elastomeric compound.
- E. Firestop Devices: Factory-assembled collars formed from galvanized steel and lined with intumescent material sized to fit specific diameter of penetrant.
- F. Intumescent Composite Sheets: Rigid panels consisting of aluminum-foil-faced elastomeric sheet bonded to galvanized steel sheet.
- G. Intumescent Putties: Nonhardening dielectric, water-resistant putties containing no solvents, inorganic fibers, or silicone compounds.
- H. Intumescent Wrap Strips: Single-component intumescent elastomeric sheets with aluminum foil on one side.

- I. Mortars: Prepackaged dry mixes consisting of a blend of inorganic binders, hydraulic cement, fillers, and lightweight aggregate formulated for mixing with water at Project site to form a nonshrinking, homogeneous mortar.
- J. Pillows/Bags: Reusable heat-expanding pillows/bags consisting of glass-fiber cloth cases filled with a combination of mineral-fiber, water-insoluble expansion agents, and fire-retardant additives.
- K. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.
- L. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below:
  - 1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces, and nonsag formulation for openings in vertical and other surfaces requiring a nonslumping, gunnable sealant, unless indicated firestop system limits use to nonsag grade for both opening conditions.
  - 2. Grade for Horizontal Surfaces: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces.
  - 3. Grade for Vertical Surfaces: Nonsag formulation for openings in vertical and other surfaces.
- M. Unfaced, Slag-Wool-/Rock-Wool-Fiber Board Insulation: ASTM C 612, maximum flame-spread and smoke-developed indices of 15 and 0, respectively; passing ASTM E 136 for combustion characteristics; and of the following density, type, thermal resistivity, and fiber color:
  - 1. Nominal density of 4 lb/cu. ft., Types IA and IB, thermal resistivity of 4 deg F x h x sq. ft./Btu x in. at 75 deg F.
  - 2. Color: Natural.
  - 3. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Fibrex Insulations Inc.
    - b. Owens Corning.
    - c. Thermafiber.

## 2.4 MIXING

- A. For those products requiring mixing before application, comply with through-penetration firestop system manufacturer's written instructions for accurate proportioning of materials, water (if required), type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other items or procedures needed to produce products of uniform quality with optimum performance characteristics for application indicated.

## PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of work.
  - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

## 3.2 PREPARATION

- A. Surface Cleaning: Clean out openings immediately before installing through-penetration firestop systems to comply with firestop system manufacturer's written instructions and with the following requirements:
  - 1. Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of through-penetration firestop systems.
  - 2. Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with through-penetration firestop systems. Remove loose particles remaining from cleaning operation.
  - 3. Remove laitance and form-release agents from concrete.
- B. Priming: Prime substrates where recommended in writing by through-penetration firestop system manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.
- C. Masking Tape: Use masking tape to prevent through-penetration firestop systems from contacting adjoining surfaces that will remain exposed on completion of Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove smears from firestop system materials. Remove tape as soon as possible without disturbing firestop system's seal with substrates.

## 3.3 THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLATION

- A. General: Install through-penetration firestop systems to comply with Part 1 "Performance Requirements" Article and with firestop system manufacturer's written installation instructions and published drawings for products and applications indicated.
- B. Install forming/damming/backing materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.
  - 1. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not indicated as permanent components of firestop systems.
- C. Install fill materials for firestop systems by proven techniques to produce the following results:
  - 1. Fill voids and cavities formed by openings, forming materials, accessories, and penetrating items as required to achieve fire-resistance ratings indicated.

2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
3. For fill materials that will remain exposed after completing Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

### 3.4 IDENTIFICATION

- A. Identify through-penetration firestop systems with preprinted metal or plastic labels. Attach labels permanently to surfaces adjacent to and within 6 inches of edge of the firestop systems so that labels will be visible to anyone seeking to remove penetrating items or firestop systems. Use mechanical fasteners for metal labels. For plastic labels, use self-adhering type with adhesives capable of permanently bonding labels to surfaces on which labels are placed and, in combination with label material, will result in partial destruction of label if removal is attempted. Include the following information on labels:
  1. The words "Warning - Through-Penetration Firestop System - Do Not Disturb. Notify Building Management of Any Damage."
  2. Contractor's name, address, and phone number.
  3. Through-penetration firestop system designation of applicable testing and inspecting agency.
  4. Date of installation.
  5. Through-penetration firestop system manufacturer's name.
  6. Installer's name.

### 3.5 FIELD QUALITY CONTROL

- A. Where deficiencies are found, repair or replace through-penetration firestop systems so they comply with requirements.
- B. Proceed with enclosing through-penetration firestop systems with other construction only after inspection reports are issued and firestop installations comply with requirements.
- C. Reinstall firestopping materials that have been removed for inspection.

### 3.6 CLEANING AND PROTECTING

- A. Clean off excess fill materials adjacent to openings as Work progresses by methods and with cleaning materials that are approved in writing by through-penetration firestop system manufacturers and that do not damage materials in which openings occur.
- B. Provide final protection and maintain conditions during and after installation that ensure that through-penetration firestop systems are without damage or deterioration at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated through-penetration firestop systems immediately and install new materials to produce systems complying with specified requirements.

END OF SECTION 07 84 13

SECTION 08 11 13

HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

- 1. Standard hollow metal doors and frames.
- 2. Stile and rail hollow metal doors.
- 3. Hollow metal windows.

B. Related Sections:

- 1. Division 04 Section "Unit Masonry" for embedding anchors for hollow metal work into masonry construction.
- 2. Division 08 Section "Door Hardware" for door hardware for hollow metal doors.
- 3. Division 09 Sections "Exterior Painting" and "Interior Painting" for field painting hollow metal doors and frames.

1.3 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings.
- B. Standard Hollow Metal Work: Hollow metal work fabricated according to ANSI/SDI A250.8.

1.4 SUBMITTALS

- A. General: Submittals for Sections 081113, 081416 and 087100 shall be made concurrently.
- B. Product Data: For each type of product indicated. Include construction details, material descriptions, core descriptions, fire-resistance rating, and finishes.
- C. Shop Drawings: Include the following:
  - 1. Elevations of each door design.
  - 2. Details of doors, including vertical and horizontal edge details and metal thicknesses.
  - 3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
  - 4. Locations of reinforcement and preparations for hardware.

5. Details of each different wall opening condition.
6. Details of anchorages, joints, field splices, and connections.
7. Details of accessories.
8. Details of moldings, removable stops, and glazing.

D. Other Action Submittals:

1. Schedule: Provide a schedule of hollow metal work prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with door hardware schedule.

E. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each type of hollow metal door and frame assembly.

1.5 QUALITY ASSURANCE

A. Source Limitations: Obtain hollow metal work from single source from single manufacturer.

B. Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.

C. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257 or UL 9. Label each individual glazed lite.

D. Smoke-Control Door Assemblies: Comply with NFPA 105 or UL 1784.

E. Regulatory Requirements: Comply with the Americans with Disabilities Act (ADA) and with code provisions as adopted by authorities having jurisdiction.

1. Doors: Provide doors as required by accessibility regulations and requirements of authorities having jurisdiction. These include, but are not limited to, the following:

- a. Clear Width: 32 inches (815 mm) with door 90 degrees open.
- b. Maneuvering Clearances: Refer to Code for various side and approach clearances.
- c. Double-Leaf Doorways: Provide at least one leaf that meets the clear width and maneuvering clearances.
- d. Two Doors in Series: Provide a distance of four feet plus the width of any door swinging into the space between hinged or pivoted doors.

2. Notify Architect of details or specifications not conforming to code.

F. Preinstallation Conference: Conduct conference at Project site.

1. Inspect and discuss condition of substrate and other preparatory work performed by other trades.
2. Review tie-in to air barrier system.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow metal work palletized, wrapped, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.
  - 1. Provide additional protection to prevent damage to finish of factory-finished units.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.
- C. Store hollow metal work under cover at Project site. Place in stacks of five units maximum in a vertical position with heads up, spaced by blocking, on minimum 4-inch- high wood blocking. Do not store in a manner that traps excess humidity.
  - 1. Provide minimum 1/4-inch space between each stacked door to permit air circulation.

1.7 PROJECT CONDITIONS

- A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.8 COORDINATION

- A. Coordinate installation of anchorages for hollow metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Standard Steel Doors and Frames:
    - a. Ceco Door Products; a United Dominion Company.
    - b. Curries Company.
    - c. de La Fontaine, Industries.
    - d. Steelcraft; a division of Ingersoll-Rand.

2.2 MATERIALS

- A. Recycled Content of Steel Products: Provide products with average recycled content of steel products so postconsumer recycled content plus one-half of preconsumer recycled content is not less than 25 percent.

- B. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- C. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- D. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with minimum G60 or A60 metallic coating.
  - 1. Wipe Coat Galvanneal materials will not be considered acceptable.
- E. Frame Anchors: ASTM A 591/A 591M, Commercial Steel (CS), 40Z coating designation; mill phosphatized.
  - 1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.
- F. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.
- G. Powder-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow metal frames of type indicated.
- H. Grout: ASTM C 476, except with a maximum slump of 4 inches, as measured according to ASTM C 143/C 143M.
- I. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool with 6- to 12-lb/cu. ft. density; with maximum flame-spread and smoke-development indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.
- J. Glazing: Comply with requirements in Division 08 Section "Glazing."
- K. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

### 2.3 STANDARD HOLLOW METAL DOORS

- A. General: Provide doors of design indicated, not less than thickness indicated; fabricated with smooth surfaces, without visible joints or seams on exposed faces unless otherwise indicated. Comply with ANSI/SDI A250.8.
  - 1. Design: Flush panel.
  - 2. Core Construction: Manufacturer's standard kraft-paper honeycomb, polystyrene, polyurethane, polyisocyanurate, mineral-board, or vertical steel-stiffener core.
    - a. Fire Door Core: As required to provide fire-protection ratings indicated.

- b. Thermal-Rated (Insulated) Doors: Where indicated, provide doors fabricated with thermal-resistance value (R-value) of not less than 10.0 deg F x h x sq. ft./Btu when tested according to ASTM C 1363.
    - 1) Locations: Exterior doors and interior doors where indicated.
  - c. Do not use composite wood and agrifiber products containing urea-formaldehyde resins. Additionally, the laminating adhesive used in fabrication of on-site and shop-applied composite wood and agrifiber assemblies must contain no added urea formaldehyde resins.
3. Vertical Edges for Single-Acting Doors: Beveled edge.
    - a. Beveled Edge: 1/8 inch in 2 inches.
  4. Top and Bottom Edges: Closed with flush or inverted 0.042-inch- thick, end closures or channels of same material as face sheets.
  5. Tolerances: Comply with SDI 117, "Manufacturing Tolerances for Standard Steel Doors and Frames."
- B. Exterior Doors: Face sheets fabricated from metallic-coated steel sheet. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:
1. Level 2 (18 ga faces) and Physical Performance Level B (Heavy Duty), Model 2 (Seamless).
- C. Interior Doors: Face sheets fabricated from cold-rolled steel sheet unless metallic-coated sheet is indicated. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:
1. Level 2 (18 ga faces) and Physical Performance Level B (Heavy Duty), Model 2 (Seamless).
  2. Face Design: Flush or embossed as shown.
- D. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.
- E. Fabricate concealed stiffeners and hardware reinforcement from either cold- or hot-rolled steel sheet.
- 2.4 STANDARD HOLLOW METAL FRAMES
- A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.
- B. Exterior Frames: Fabricated from metallic-coated steel sheet.
1. Fabricate frames with mitered or coped corners.
  2. Fabricate frames as face welded unless otherwise indicated.
  3. Frames for Level 2 Steel Doors: 0.053-inch- thick steel sheet.

- C. Interior Frames: Fabricated from cold-rolled steel sheet, unless metallic-coated sheet is indicated.
  - 1. Fabricate frames with mitered or coped corners.
  - 2. Fabricate frames as knocked down unless otherwise indicated.
  - 3. Frames for Level 2 Steel Doors: 0.053-inch- thick steel sheet.
  - 4. Frames for Wood Doors: 0.053-inch- thick steel sheet.
  - 5. Frames for Borrowed Lights: 0.053-inch- thick steel sheet.
- D. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as frames.

## 2.5 FRAME ANCHORS

- A. Jamb Anchors:
  - 1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
  - 2. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch thick.
  - 3. Postinstalled Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch-diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.
- B. Floor Anchors: Formed from same material as frames, not less than 0.042 inch thick, and as follows:
  - 1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.
  - 2. Separate Topping Concrete Slabs: Adjustable-type anchors with extension clips, allowing not less than 2-inch height adjustment. Terminate bottom of frames at finish floor surface.

## 2.6 STOPS AND MOLDINGS

- A. Moldings for Glazed Lites in Doors: Minimum 0.032 inch thick, fabricated from same material as door face sheet in which they are installed.
- B. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch high unless otherwise indicated.
- C. Loose Stops for Glazed Lites in Frames: Minimum 0.032 inch thick, fabricated from same material as frames in which they are installed.

## 2.7 LOUVERS

- A. Provide louvers for interior doors, where indicated, that comply with SDI 111C, with blades or baffles formed of 0.020-inch- thick, cold-rolled steel sheet set into 0.032-inch- thick steel frame.

1. Sightproof Louver: Stationary louvers constructed with inverted V-shaped or Y-shaped blades.
2. Lightproof Louver: Stationary louvers constructed with baffles to prevent light from passing from one side to the other, any angle.
3. Fire-Rated Automatic Louvers: Louvers constructed with movable blades closed by actuating fusible link, and listed and labeled for use in fire-rated door assemblies of type and fire-resistance rating indicated by same testing and inspecting agency that established fire-resistance rating of door assembly.

## 2.8 ACCESSORIES

- A. Mullions and Transom Bars: Join to adjacent members by welding or rigid mechanical anchors.
- B. Ceiling Struts: Minimum 1/4-inch-thick by 1-inch- wide steel.
- C. Grout Guards: Formed from same material as frames, not less than 0.016 inch thick.

## 2.9 FABRICATION

- A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.
- B. Tolerances: Fabricate hollow metal work to tolerances indicated in SDI 117.
- C. Hollow Metal Doors:
  1. Exterior Doors: Provide weep-hole openings in bottom of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.
  2. Glazed Lites: Factory cut openings in doors.
  3. Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted.
  4. Full hinge cut-outs for non-handed doors will not be acceptable.
- D. Hollow Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
  1. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
  2. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
  3. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
  4. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.

5. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
  6. Jamb Anchors: Provide number and spacing of anchors as follows:
    - a. Masonry Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
      - 1) Two anchors per jamb up to 60 inches high.
      - 2) Three anchors per jamb from 60 to 90 inches high.
      - 3) Four anchors per jamb from 90 to 120 inches high.
      - 4) Four anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.
    - b. Stud-Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
      - 1) Three anchors per jamb up to 60 inches high.
      - 2) Four anchors per jamb from 60 to 90 inches high.
      - 3) Five anchors per jamb from 90 to 96 inches high.
      - 4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
      - 5) Two anchors per head for frames above 42 inches wide and mounted in metal-stud partitions.
    - c. Compression Type: Not allowed.
    - d. Postinstalled Expansion Type: Locate anchors not more than 6 inches from top and bottom of frame. Space anchors not more than 26 inches o.c.
  7. Door Silencers: Except on weather-stripped doors, drill stops to receive door silencers as follows. Keep holes clear during construction.
    - a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
    - b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.
- E. Fabricate concealed stiffeners, edge channels, and hardware reinforcement from either cold- or hot-rolled steel sheet.
- F. Hardware Preparation: Factory prepare hollow metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."
1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.
  2. Reinforce doors and frames to receive nontemplated, mortised and surface-mounted door hardware.
  3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
  4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 26 Sections.

- G. Stops and Moldings: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints.
1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow metal work.
  2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
  3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.
  4. Provide loose stops and moldings on inside of hollow metal work.
  5. Coordinate rabbet width between fixed and removable stops with type of glazing and type of installation indicated.

## 2.10 STEEL FINISHES

- A. Prime Finish: Apply manufacturer's standard primer immediately after cleaning and pretreating.
1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.
- B. Prior to installation, adjust and securely brace welded hollow metal frames for squareness, alignment, twist, and plumbness to the following tolerances:
  1. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
  2. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.

3. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
  4. Plumbness: Plus or minus 1/16 inch, measured at jambs on a perpendicular line from head to floor.
- C. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
- D. At exterior walls and masonry walls, coat inside of frame profile with bituminous coating to a thickness of 1/16 inch.

### 3.3 INSTALLATION

- A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.
- B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11.
1. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
    - a. At fire-protection-rated openings, install frames according to NFPA 80.
    - b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
    - c. Install frames with removable glazing stops located on secure side of opening.
    - d. Install door silencers in frames before grouting.
    - e. Remove temporary braces necessary for installation only after frames have been properly set and secured.
    - f. Check plumbness, squareness, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
  2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.
    - a. Floor anchors may be set with powder-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
  3. Metal-Stud Partitions: Solidly pack mineral-fiber insulation behind frames.
  4. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.
  5. Concrete Walls: Solidly fill space between frames and concrete with grout. Take precautions, including bracing frames, to ensure that frames are not deformed or damaged by grout forces.
  6. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.

7. Ceiling Struts: Extend struts vertically from top of frame at each jamb to overhead structural supports or substrates above frame unless frame is anchored to masonry or to other structural support at each jamb. Bend top of struts to provide flush contact for securing to supporting construction. Provide adjustable wedged or bolted anchorage to frame jamb members.
8. Installation Tolerances: Adjust hollow metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
  - a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
  - b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
  - c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
  - d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.

C. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.

1. Non-Fire-Rated Standard Steel Doors:

- a. Jambs and Head: 1/8 inch plus or minus 1/16 inch.
- b. Between Edges of Pairs of Doors: 1/8 inch plus or minus 1/16 inch.
- c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch.
- d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch.

2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.

3. Smoke-Control Doors: Install doors according to NFPA 105.

D. Glazing: Comply with installation requirements in Division 08 Section "Glazing" and with hollow metal manufacturer's written instructions.

1. Secure stops with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c. and not more than 2 inches o.c. from each corner.

### 3.4 ADJUSTING AND CLEANING

A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.

B. Remove grout and other bonding material from hollow metal work immediately after installation.

C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

D. Metallic-Coated Surfaces: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.

END OF SECTION 08 11 13

SECTION 08 41 13

ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
  - 1. Disassembling and reconstruction of existing interior storefront framing.

1.3 DEFINITIONS

- A. ADA/ABA Accessibility Guidelines: U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disability Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines for Buildings and Facilities."

1.4 PERFORMANCE REQUIREMENTS

- A. General Performance: Aluminum-framed systems shall withstand the effects of the following performance requirements without exceeding performance criteria or failure due to defective manufacture, fabrication, installation, or other defects in construction:
  - 1. Dimensional tolerances of building frame and other adjacent construction.
  - 2. Failure includes the following:
    - a. Deflection exceeding specified limits.
    - b. Framing members transferring stresses, including those caused by thermal and structural movements to glazing.
    - c. Loosening or weakening of fasteners, attachments, and other components.
    - d. Sealant failure.

1.5 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for aluminum-framed systems.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

- B. Product Options: Information on Drawings and in Specifications establishes requirements for systems' aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, and in-service performance.
  - 1. Do not revise intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If revisions are proposed, submit comprehensive explanatory data to Architect for review.
- C. Accessible Entrances: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines.
- D. Source Limitations for Aluminum-Framed Systems: Obtain from single source from single manufacturer.
- E. Regulatory Requirements: Comply with the Americans with Disabilities Act (ADA) and with code provisions as adopted by authorities having jurisdiction.
  - 1. Notify Architect of details or specifications not conforming to code.

#### 1.7 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of structural supports for aluminum-framed systems by field measurements before fabrication and indicate measurements on Shop Drawings.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide indicated products by one of the following:
  - 1. Match existing manufacturer
- B. Products:
  - 1. Exterior Aluminum-Framed Storefronts Standard of Design Product:
    - a. Match existing product for proposed supplemental framing members.
    - b. Glazing Position: Center set.
    - c. Extrusion overall dimension: 2" x 4 1/2"

#### 2.2 MATERIALS

- A. Recycled Content of Aluminum Products: Provide products with average recycled content of aluminum products so postconsumer recycled content plus one-half of preconsumer recycled content is not less than 25 percent.

- B. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
  - 1. Sheet and Plate: ASTM B 209.
  - 2. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
  - 3. Extruded Structural Pipe and Tubes: ASTM B 429.
  - 4. Structural Profiles: ASTM B 308/B 308M.
  - 5. Welding Rods and Bare Electrodes: AWS A5.10/A5.10M.

### 2.3 FRAMING SYSTEMS

- A. Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.
  - 1. Construction: Non-thermal broken extruded aluminum.
  - 2. Glazing System: Retained mechanically with gaskets on four sides.
  - 3. Glazing Plane: Center.
- B. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.
- C. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.
  - 1. Use self-locking devices where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration.
  - 2. Reinforce members as required to receive fastener threads.
  - 3. Use exposed fasteners with countersunk Phillips screw heads, finished to match framing system, fabricated from stainless steel.
- D. Framing System Gaskets and Sealants: Manufacturer's standard, recommended by manufacturer for joint type.
  - 1. Provide sealants for use inside of the weatherproofing system that have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

### 2.4 GLAZING SYSTEMS

- A. Glazing: As specified in Division 08 Section "Security Glazing."
- B. Glazing Gaskets: Manufacturer's standard compression types; replaceable, molded or extruded, of profile and hardness required to maintain watertight seal.
- C. Spacers and Setting Blocks: Manufacturer's standard elastomeric type.

### 2.5 ACCESSORY MATERIALS

- A. Joint Sealants: For installation at perimeter of aluminum-framed systems, as specified in Division 07 Section "Joint Sealants."

1. Provide interior sealants for use inside of the weatherproofing system that have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

## 2.6 FABRICATION

- A. Form or extrude aluminum shapes before finishing.
- B. Framing Members, General: Fabricate components that, when assembled, have the following characteristics:
  1. Profiles that are sharp, straight, and free of defects or deformations.
  2. Accurately fitted joints with ends coped or mitered.
  3. Physical and thermal isolation of glazing from framing members.
  4. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
  5. Provisions for field replacement of glazing from exterior.
  6. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
- C. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.
- D. Storefront Framing: Fabricate framing in profiles indicated for flush glazing (without projecting stops). Provide subframes and reinforcing of types indicated or, if not indicated, as required for a complete system. Factory assemble components to greatest extent possible. Disassemble components only as necessary for shipment and installation.

## 2.7 ALUMINUM FINISHES

- A. Finish: Architectural Class I Clear Anodic Coating, AAMA 611.
  1. Class: Class I
  2. Color: Clear

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. General:
  1. Comply with manufacturer's written instructions.
  2. Do not install damaged components.
  3. Fit joints to produce hairline joints free of burrs and distortion.
  4. Rigidly secure non-movement joints.

5. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration.
6. Seal joints watertight unless otherwise indicated.

B. Metal Protection:

1. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or applying sealant or tape, or by installing nonconductive spacers as recommended by manufacturer for this purpose.
2. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.

C. Install components plumb and true in alignment with established lines and grades, and without warp or rack.

D. Install glazing as specified in Division 08 Section "Glazing."

E. Install perimeter joint sealants as specified in Division 07 Section "Joint Sealants" to produce weathertight installation.

3.3 ERECTION TOLERANCES

A. Install aluminum-framed systems to comply with the following maximum erection tolerances:

1. Location and Plane: Limit variation from true location and plane to 1/8 inch in 12 feet; 1/4 inch over total length.
2. Alignment:
  - a. Where surfaces abut in line, limit offset from true alignment to 1/16 inch.
  - b. Where surfaces meet at corners, limit offset from true alignment to 1/32 inch.

B. Diagonal Measurements: Limit difference between diagonal measurements to 1/8 inch.

3.4 ADJUSTING

A. Adjust operating entrance door hardware to function smoothly as recommended by manufacturer.

END OF SECTION 08 41 13



SECTION 08 71 00  
DOOR HARDWARE

1. GENERAL

1.01 GENERAL CONDITIONS: The General Conditions and Supplementary General Conditions and all sections of Division 1 shall apply to each and every contract and contractor, person or persons supplying material, labor or entering into the work, directly or indirectly.

1.02 SCOPE: This Section includes all labor, materials, equipment and related services necessary for the fabrication, delivery and installation of the work shown on the drawings and/or specified herein, including but not limited to the following:

A. Furnish and install finish hardware for all doors including:

1. Finish hardware.
2. Cabinet locks.

1.03 RELATED WORK:

- A. Section 08100 Hollow Metal Doors and Frames
- B. Section 08210 Wood Doors
- C. Section 08410 Aluminum Doors
- D. Section 09900 Painting
- E. Section 16000 Electrical

1.05 QUALITY ASSURANCE:

A. The hardware supplier shall have in his employ an architectural hardware consultant (AHC) or a person with equivalent number of years required for AHC qualifications. This person shall be recognized as having the ability to be fully responsible for the scheduling, detailing and execution of this section of the specifications and related items. This qualified consultant shall be responsible for processing all submissions, correspondence, technical matters related to the finish hardware and it's application specified in this section.

1.06 REFERENCES:

- A. ANSI A115 Standards for door and frame preparation
- B. ANSI A156 Standards for finish hardware
- C. NFPA 80
- D. Other applicable life safety or building codes.

1.07 SUBMITTALS:

A. The hardware supplier shall, if requested, submit for approval one sample of each of the hardware items listed prior to receiving approval of the finish hardware schedule. The approved samples shall be available for installation as part of the project, if the supplier determines it to be in his best interest to do so.

- B. The submission list accompanying samples shall include the following information:

Item	Catalog No.	Manufacturer
Lockset	6666	Lock Company

- C. The hardware supplier shall, if requested, submit for approval one sample of each of the hardware items listed prior to receiving approval of the finish hardware schedule. The approved samples shall be available for installation as part of the project.
- D. Samples required for use as physical templates by other trades shall be purchased and paid for by the respective trade requiring them.
- E. The finish hardware supplier shall submit for approval a complete and detailed finish hardware schedule using a vertical typewritten format. The finish hardware schedule shall contain a listing of the name of each manufacturer and the product listing for the series included in the hardware schedule.
- F. It shall be the responsibility of the finish hardware supplier to meet with the Owner or the Owner's Representative, and provide a detailed keying schedule listing the respective key symbol and location for the locksets having the corresponding key symbol. Lockset functions must also be verified with the Owner. This requirement will not be waived. Material shall not be ordered until certification of this meeting has been submitted to the Architect.
- G. Provide eight (8) regular copies of the finish hardware schedule for approval.
- H. The finish hardware supplier shall make available to the general contractor a detailed list of template numbers and templates required for each of the door manufacturers that require templates.

1.08 DELIVERY, STORAGE AND HANDLING:

- A. The finish hardware shall be delivered to the jobsite and received there by the general contractor. The general contractor shall prepare a locked storage room with adequate shelving, for all hardware. The storage room shall be in a dry, secure area, and shall not include storage of other products by other trades.
- B. All finish hardware shall have the necessary screws, bolts and other fastenings required for correct installation of each item. The cylinders, locksets, exit devices and door closers shall be clearly marked with the respective individual door or heading number.
- C. After the hardware has been installed and prior to the acceptance of the building by the owner, it shall be the general contractors responsibility to properly protect the hardware and the hardware finish from all dents, scratches, defacing that may occur during the construction period. Hardware that is considered damaged or scratched during the construction period shall be replaced by the general contractor at no cost to the owner or hardware supplier. Hardware items with paint on them shall be cleaned and/or replaced by the general contractor at no charge to the owner or hardware supplier.

1.09 WARRANTY:

- A. The finish hardware specified for this project shall be guaranteed against defects in material and workmanship for a period of (1) year from date of completion and acceptance of this building. In

addition, door closers shall carry a guarantee of ten (10) years from date of completion and acceptance of this building.

- B. If an item of hardware is found to be defective by reasons of defects in material and workmanship, it shall be replaced by the hardware supplier at no charge to the owner. The installation of the replacement item shall be the responsibility of the general contractor if within the building guarantee period specified under general conditions, or by the owner if beyond the building guarantee period.

1.10 APPROVAL OF SUBSTITUTIONS:

- A. Manufacturers and model numbers listed herein are to establish a standard of quality. If products other than those specifically identified herein are to be considered for use on this project, they must be submitted for approval by the architect at least ten (10) calendar days prior to receipt of bids by the owner.
- B. Requests for approval of substitutions shall be submitted in writing, to the architect, and must be accompanied by catalog cuts, technical information and physical samples.
- C. Approval of the substitutions will only be valid when issued to all bidders, by the architect, in the form of an addendum to this specification.

2. PRODUCTS

2.01 MATERIAL

A. Hinges

- 1. All hinges for this project shall be, steel, stainless steel, solid bronze, ball bearing type.
- 2. The following is a guide for hinge size (height) and type required for this specification.

	a. MANUFACTURER	EXTERIOR	INTERIOR
1 3/4" Doors up to 3'0" wide	Stanley	FBB191-4 1/2"	FBB179-4 1/2"
	Hager	BB1191-4 1/2"	BB1279-41/2"
	McKinney	TA-TB2314-4 1/2"	TA-TB2714-41/2"
1 3/4" Doors over 3'0" wide	Stanley	FBB199-4 1/2"	FBB168-41/2"
	Hager	BB1199-4 1/2"	BB1168-41/2"
	McKinney	T4A-T4B3386-4 1/2"	T4A-T4B3786-4 1/2"

- b. The width of hinges shall be sufficient to clear all trim.
- c. Doors in channel iron frames shall have half mortise hinges of a comparable weight as listed for full mortise hinges.
- d. Hinges of foreign manufacture shall not be considered acceptable for this project.
- 3. Two hinges shall be provided for each door leaf up to and including five feet (5'0") in height. An additional hinge shall be required for each additional two and one half feet (2'6") or fraction thereof in height.

4. All outswinging exterior doors, and any interior doors so indicated in hardware sets, shall be furnished with non-removable pins (NRP).
5. Refer to finish section for hinge finish.

B. Mortise Lever Handle Locksets:

1. Locksets for this project shall be mortise type with solid cast stainless steel lever handle with sectional trim.
2. Latchbolts shall be two piece mechanical anti-friction ANSI Standard 156.13 1000.
3. Strikes shall be curved lip stainless steel ANSI Standard A115.1, 4 7/8" x 1 1/4".
4. Locks and cylinders shall be manufactured and supplied by the same manufacturer. All locksets and cylinders for this project shall be manufactured in the United States of America by a recognized and reputable lock manufacturer.
5. Locksets for labeled fire doors shall have a fusible link or other mechanism to prevent latchbolt retraction in the event of fire.
6. Provide knurling or tactile warning on trim at doors indicated.
7. The following manufacturer and designs shall for this project to remain consistent with the existing building standard.

Sargent                      8200                      Series LNL                      Design

8. The following is a list of lock functions as indicated under "hardware sets":

FUNCTION	Corbin Russwin	Sargent	Schlage
A    Storeroom	57	04	80
B    Entrance	51	05	50
C    Passage	10	15	10
D    Classroom	55	37	70
E    Vestibule	72	16	60
F    Privacy	20	65	40

C. Keying:

1. All lock cylinders without exception shall be 7-Pin Small Format Interchangeable Core SFIC compatible.
2. SFIC:
  - a. Cores: KABA Part Number 3850-25-1007-K1
  - b. Key Blanks: KABA Part Number 3800-00-003K1 C95W21
  - c. The Owner will provide a letter of authorization to the hardware supplier in order for the hardware supplier to purchase these items.
3. Keying:
  - a. Final master key system shall be done by the Owner.

- b. Hardware supplier shall provide uncombined cores and uncut keys to the State of Maine PMD Lock Shop.

D. Door Closers:

1. All door closers for this project shall be the product of one manufacturer and shall have either a die cast aluminum or a cast iron case. The die cast aluminum shall be a special R14 aluminum alloy and shall contain a minimum of 14% silica for hardness to resist wear and minimize porosity of the aluminum case. Provide technical documentation regardless of which closer is proposed in order to verify that the door closer case is a minimum R14 aluminum alloy containing 14% silica for minimum porosity and wear, and designed for high tensile strength, without brittleness.
3. Door closers shall be full rack and pinion type construction, non handed and sized from 1 thru 6 in accordance with ANSI A117.1 handicap code.
4. All closers shall have separate adjustable, non critical key control valves, one each for the following:
  - (a) closing speed
  - (b) latching speed
  - (c) back check positioning valve and/or delayed action
5. Hydraulic fluid shall be of a type requiring no seasonal adjustment for varying temperatures.
6. The pinion shall be heavy duty double heat treated steel construction with a minimum 11/16" diameter.
7. The cylinder bore shall be no less than 1 1/2" diameter to provide maximum oil displacement, and to permit non-critical control of all valves.
8. The following door closer products shall be considered acceptable for this project:
 

LCN - 4041	(handicap sized)
Sargent - 351	(handicap sized)
9. The hardware contractor shall insert in the hardware schedule, beside each door listing, the required degree of opening for each door. If the door swing is over 140 degrees, parallel arm type closers shall be used. Door closers mounted on corner brackets, or top jamb application, shall not be permitted. Where indicated in the hardware set numbers, provide a parallel track arm mounted on the hinge side of the door frame head.
10. Provide hold open arms, where specified, in accordance with the hardware set numbers.
11. Door closers with cush-n-stop arms shall be provided for all exterior, out-swing doors and other openings as specified under hardware sets. They shall have heavy forged steel parallel arms and soffit plates attached to the frame by six (6) screws. The forged steel soffit plate shall have a positive stop bracket with an adjustable tension hold-open feature controlled with a slotted screw or control knob, permitting adjustment from hold-open to no hold-open and full restraint of door movement.
12. Where door closers are noted to require delayed action feature, provide closers as specified herein, but having a separate delayed action valve, to permit adjustment of delayed action

cycle. When adjusted, the door closer shall close at a controlled rate of speed, through the delayed action cycle range.

13. The installing contractor shall be responsible for proper installation of door closers in accordance with degree of opening indicated on hardware schedule. The installing contractor shall be responsible for adjustment of the three individual valves, for proper control as follows:

- 1- closing speed,
- 2- latching speed,
- 3- delayed action, or backcheck.

The installing contractor shall be responsible for providing the correct spring power adjustment, from size 1 thru 6, as individually required for each door leaf and as set forth in Part III Execution.

14. Where top rail of door is insufficient in height to mount the closer directly to the rail, drop bracket plates shall be provided.
15. Provide sex nuts and bolts mounting for closers on all wood doors without hardwood internal blocking.

E. Door Stops:

1. It shall be the responsibility of the hardware supplier to provide door stops for all doors in accordance with the following requirements.
2. Wall type bumpers with a concealed type flange shall be used wherever possible and shall be one of the following:
  - Ives - 407 1/2
  - Hager - 236W
  - Rockwood - 409

F. Silencers:

1. Provide rubber silencers for all interior pressed steel (hollow metal) frames. Silencers shall be pneumatic type 1/2" diameter with 1/8" projection.
2. Provide 3 silencers for the strike jamb of metal frames for single doors and two for the head for metal frames for pairs of doors. Provide 4 silencers for the strike jamb for frames for single dutch doors.

G. Push - Kick - Mop Armor Plates:

1. Armor plates shall be .050 gauge stainless steel 40" high by 2" less door width.

H. FINISH:

1. With the exceptions of hinges, door closers, plates, coordinators, thresholds and weatherstripping, all hardware items shall be furnished in dull chrome US26D.

2. Exceptions are as follows:

Door Closers: Sprayed Aluminum

2.02 HARDWARE SET NUMBERS:

- A. The Hardware Sets listed below indicate the items of hardware required for each opening. It is the bidders responsibility to accurately furnish the proper quantities, items, sizes, weights and functions as required by the plans and this specification. If an opening has, through error, been omitted from the following hardware set numbers listings, it shall be the bidders responsibility to supply hardware of equivalent quality and quantity, as that which is specified for a comparable opening.

**HW1 MAILROOM**

Doors 105A.1

- Each leaf to have:
- Hinges - McKinney TA2714
  - Closer – LCN 4040XP or 1400 Series / Sargent 351 or 281 Series
  - Mortise Lever Handle Lockset Storeroom Function
  - 7 Pin SFIC Core – verify keyway with Owner
  - Electric Strike – Fail Secure. Folger Adam 310 Series 24 VDC
    - Or Owner approved item by HES or VonDuprin.
  - Power Supply
  - Armor Plate
  - Stop
- Card Reader and Sentrol 1078C Recessed Door Position Switch provided by Security Subcontractor

**HW2 MAIL LOCKER DOOES**

Twenty-Four (24) Locker Doors

Furnish the following for installation by millwork subcontractor:

- Each door to have:
- Spring Latch Lock – Olympus Lock #L72V Latch Lock Include:
    - 7 Pin SFIC Core – verify keyway with Owner
    - (3) 10-350 Spacers
    - #56-1 Strike
    - TR78 Trim Ring

Provide one (1) box of one hundred (100) key blanks. Owner shall furnish letter of authorization for contractor's use.

## 3. EXECUTION:

3.01 INSPECTION: It shall be the general contractors responsibility to inspect all door openings and doors to determine that each door and door frame has been properly prepared for the required hardware. If errors in dimensions or preparation are encountered, they are to be corrected by the responsible parties prior to the installation of hardware.

3.02 PREPARATION: All doors and frames, requiring field preparation for finish hardware, shall be carefully mortised, drilled for pilot holes, or tapped for machine screws for all items of finish hardware in accordance with the manufacturers templates and instructions.

## 3.03 INSTALLATION/ADJUSTMENT/LOCATION

- A. All materials shall be installed in a workmanlike manner following the manufacturer's recommended instructions.
- B. Locksets shall be carefully installed so as to permit friction free operation of lever or knob. Latching mechanism shall also operate freely without friction or binding.
- C. Door closers shall be installed in accordance with the manufacturer's instructions. Each door closer shall be carefully installed, on each door, at the degree of opening indicated on the hardware schedule. Arm position shall be as shown on the instruction sheets and required by the finish hardware schedule.
- D. The adjustments for all door closers shall be the contractor's responsibility and these adjustments shall be made at the time of installation of the door closer. The closing speed and latching speed valves, shall be adjusted individually to provide a smooth, continuous closing action without slamming. The delayed action feature or back check valve shall also be adjusted so as to permit the corrected delayed action cycle or hydraulic back check cushioning of the door in the opening cycle. All valves must be properly adjusted at the time of installation. Each door closer has adjustable spring power capable of being adjusted, in the field, from size 2 thru 6. It shall be the contractors responsibility to adjust the spring power for each door closer in exact accordance with the spring power adjustment chart illustrated in the door closer installation sheet packed with each door closer.
- E. Installation of all other hardware, including locksets, push-pull latches, overhead holders, door stops, plates and other items, shall be carefully coordinated with the hardware schedule and the manufacturers instruction sheets.
- F. Locations for finish hardware shall be in accordance with dimensions listed in the pamphlet "Recommended locations for Builders' Hardware" published by the Door and Hardware Institute.

3.04 FIELD QUALITY CONTROL: Upon completion of the installation of the finish hardware, it shall be the responsibility of the finish hardware supplier to visit the project and to examine the hardware for each door on which he has provided hardware and to verify that all hardware is in proper working order. Should he find items of hardware not operating properly, he should make a report, in writing, to the general contractor, advising him of the problem and the measures required to correct the problem.

3.05 PROTECTION: All exposed portions of finish hardware shall be carefully protected, by use of cloth, adhesive backed paper or other materials, immediately after installation of the hardware

item on the door. The finish shall remain protected until completion of the project. Prior to acceptance of the project by the architect and owner, the general contractor shall remove the protective material exposing the hardware finish.

- 3.06 CLEANING: It shall be the responsibility of the general contractor to clean all items of finish hardware and to remove any remaining pieces of protective materials and labels.

END OF SECTION



SECTION 08 81 00

GLASS AND GLAZING

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Carefully review and examine all other Contract Documents for requirements therein affecting the work of this Section. Furthermore, coordinate and sequence the work of this Section with all other trades affected.

1.2 SUMMARY

- A. This Section includes glass and glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:
  - 1. Interior and exterior hollow metal doors and fixed frames.
  - 2. Interior and exterior Aluminum doors and frames.
  - 3. Interior wood doors.

1.3 RELATED WORK

- A. Examine Contract Documents for requirements that affect Work of this Section. Other Specification Sections that directly relate to Work of this Section include, but are not limited to:
  - 1. Division 8 Section "Hollow Metal Doors and Frames": for steel doors and fixed hollow metal framed openings receiving glass and glazing.
  - 2. Division 8 Section "Flush Wood Doors": for wood doors vision lites receiving glass and glazing.
  - 3. Division 8 Section "Aluminum Doors and Storefronts": for steel doors and fixed hollow metal framed openings receiving glass and glazing.
  - 4. Division 8 Section "Curtain Wall": for wood doors vision lites receiving glass and glazing.

1.4 REFERENCES

- A. Comply with applicable requirements of the following standards and those others referenced in this Section, under the provisions of Division 01 Section "References". Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.

1. ASTM C 1036 - Flat Glass.
  2. ASTM C 1048 - Heat-Treated Flat Glass - Kind HS, Kind FT Coated and Uncoated Glass.
  3. ANSI Z97.1 - Safety Performance Specifications and Methods of Test for Safety Glazing Used in Buildings.
  4. Federal Safety Standards for Architectural Glazing Materials 16CFR1201-I.II.
- B. The following reference materials are hereby made a part of this Section by reference thereto:
1. FGMA - Glazing Manual, and Sealant Manual.
  2. Consumer Product Safety Commission-Safety Standard for Architectural Glazing Materials.

#### 1.5 SUBMITTALS

- A. Submit the following under provisions of Division 01 Section "Submittal Procedures".
1. Product data sheets on glazing products: Provide chemical, functional, and environmental characteristics, size limitations, special application requirements. Identify available colors.
  2. Warranty: Provide copies of manufacturers' actual warranties for all materials to be furnished under this Section, clearly defining all terms, conditions, and time periods for the coverage thereof
  3. Samples:
    - a. 12 by 12 inch pieces of each specified type and thickness of glass, bearing labels indicating locations where each type of glass will be used.
    - b. Glazing tape: 12 inch length of specified type and size.

#### 1.6 QUALITY ASSURANCE:

- A. Source: For each glass and glazing type required for work of this Section, provide primary materials which are products of one manufacturer. Provide secondary or accessory materials which are acceptable to manufacturers of primary materials.
- B. Installer: A firm with a minimum of three years experience in type of work required by this Section and which is acceptable to manufacturers of primary materials.
- C. Glass Thickness: Determine and provide size and thickness of glass products that are certified to meet or exceed performance requirements specified in this Section. Provide units with proper thickness, edge clearance and tolerance to comply with recommendations of glass manufacturer.
- D. Perform work in accordance with FGMA Glazing Manual Sealant Manual.

#### 1.7 EXAMINATION OF SITE AND DOCUMENTS

- A. The bidders are expected to examine and to be thoroughly familiar with all contract documents and with the conditions under which work will be carried out. The Awarding Authority will not be responsible for errors, omissions and/or charges for extra work arising from General Contractor's or Subcontractor's failure to familiarize themselves with the contractor documents or site conditions. By submitting a bid, the bidder agrees and warrants that he has had the opportunity to examine the site and the contract documents, that he is familiar with the conditions and requirements of both and where they require, in any part of the work a given result to be produced, that the contract documents are adequate and that he will produce the required results.
- B. Pre-Bid Conference: Pre-Bid conference will be held on site; refer to Advertisement for Bids for time and date.

## 1.8 PROJECT CONDITIONS

- A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.
  - 1. Do not install liquid glazing sealants when ambient and substrate temperature conditions are outside limits permitted by glazing sealant manufacturer or below 50°F.
- B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

## 1.9 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials and products in unopened, factory labeled packages. Store and handle in strict compliance with manufacturer's instructions and recommendations and FGMA Manual.
  - 1. Protect materials from moisture, sunlight, excess heat, sparks and flame.
  - 2. Sequence deliveries to avoid delays, but minimize on-site storage.

## 1.10 WARRANTIES

- A. General: Warranties shall be in addition to, and not a limitation of, other rights the Owner may have under the Contract Documents.
- B. Manufacturer's Special Project Warranty on Laminated Glass:
  - 1. Warranty Period: Manufacturer's standard but not less than 5 years after date of substantial completion.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

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

2.2 GLASS - GENERAL

- A. General requirements for glass: Of domestic manufacture, conforming to the referenced standards and with the additional requirements specified herein; factory labeled on each pane stating the strength, type, thickness and quality; with all labels remaining on glass until final cleaning.
- B. Fabricate glass as required to openings with edge clearances and bite on glass as recommended by the manufacturer with clean-cut edges where concealed, and smooth ground, polished and seamed edges where exposed to view. Do not cut, seam, nip or abrade glass after tempering.
  - 1. For non-tempered to be cut at site, provide glass larger than required so as to obtain clean cut edges without seaming or nipping. Laminated glass products shall not be cut on site.
- C. Glass thickness shown and heat treatment specified are minimum requirements. Provide glass thickness and heat treatment as required to meet specified performance criteria, State and local codes and ordinances.

2.3 NON-SECURITY GLASS TYPES

- A. Tempered Float Glass; ASTM C 1048, Kind FT, Condition A, Type I, Class 1, tempered by the manufacturer's standard process (after cutting to final size).
  - 1. Thickness: 1/4 inch.
  - 2. Manufacturers:
    - a. Pilkington North America
    - b. PPG Industries, Inc, Glass Group, Pittsburgh, PA.
    - c. NSG Group, Toledo, OH.
    - d. or equal

2.4 SINGLE PANE SECURITY GLASS TYPES

- A. Product established as performance standard. Substitution must provide certified independent testing of performance data equal to specified product (see 2.6 for further details).
- B. Security Glazing.
  - 1. Basis-of-Design Product: SG4 by School Guard Glass as manufactured by Laminated Technologies Inc. (844) 744-5277 or equal.
    - a. Security glazing shall have the following characteristics
      - i. No more than 4.1 lbs. per square foot

- ii. 5-aa1 rated for a minimum of 6 minutes
  - iii. Glass clad on interior and exterior surfaces
  - iv. Optical Haze of no more than 1.8%
2. Basis-of-Design Product: SG5 by School Guard Glass as manufactured by Laminated Technologies Inc. (844) 744-5277 or equal.
- a. Security glazing shall have the following characteristics
    - i. No more than  $\frac{3}{8}$ " nominal thickness
    - ii. No more than 4.60 lbs. per square foot
    - iii. 5-aa1 rated up to 12 minutes
    - iv. Glass clad on interior and exterior surfaces
    - v. Optical Haze to be no more than 1.8%
    - vi. Blast rating shall be:
      - 1. 4 psi/28 psi-msec for pieces up to 48 "x 96"
      - 2. 10 psi/89 psi-msec for pieces up to 24 "x 48"
      - 3. Rating dependent on conforming framing

## 2.6 SECURITY GLASS TESTING METHODOLOGY FOR "OR EQUAL SUBSTITUTION"

- A. Security Glazing: Security glass and surrounding frames shall demonstrate the ability, through independent third party testing, to provide the following attributes:
1. Products will be tested as a whole system, including glass and doors or frames.
  2. Products tested shall be tested in full size, actual doors and framing members usable in a commercial setting, as applicable to project requirements, with security glazing installed as prescribed by the security glazing manufacturer. Testing shall not be done in framing other than what is specified in regards to quality or manufacturer as stated in the Contract Documents.
  3. Glass bite during testing shall be no more than the allowable glass bite in the specified door or framing system for this project.
  4. The security glass shall resist attack for a minimum of 6 minutes or greater to meet the desired level of protection required by the owner.
  5. Attack duration shall be continuous. Breaks between testing phases shall not be counted or timed for total duration.
  6. Security glass will be integrated into a framing system in such a way that the frame and glass are able to withstand a constant attack for 6 minutes.
  7. Attack resistance shall mean the security glazing is subjected to the following without failure:
    - a. Withstand a minimum of 5 shots from a military style assault rifle with a minimum caliber of 7.62mm.
    - b. Withstand a minimum of abuse as applied by a single assailant at full force and including strikes with feet, bricks, hammers, baseball bats, and sledgehammers without stoppage for 6 or 12 minutes.
  8. Failure is defined as a tear in the security glass large enough to allow an object 4-inches in diameter or more to pass through or separation made between the glass and surrounding door frame, storefront or curtain wall framing materials.
  9. Product shall not be damaged or scratched by scissors, writing implements, razor blades or the use of any similar sharp object.
  10. Glass shall not have an optical haze of more than 1.8% so glass is indistinguishable from standard tempered glass.

- B. Test reports from a recognized independent testing company shall show testing means and methodology consistent or similar to the 5-aal assault test.

## 2.7 GLAZING MATERIALS

- A. Glazing Material: Silicone Rubber Glazing Sealant; silicone rubber one-part elastomeric sealant; FS TT-S-001543, Class A; acid-type for non-porous channel surfaces, and nonacid type where any of the channel surfaces are porous.
1. Manufacturers and Products:
    - a. "995" by Dow Corning.
- B. Preformed Butyl Rubber Glazing Sealant; tape or ribbon (coiled on release paper) of polymerized butyl, or mixture of butyl and polyisobutylene, compounded with inert fillers and pigments, solvent-based with minimum 95 percent solids, thread or fabric reinforcement, tack-free within 24 hours, paintable, non-staining.
- C. Molded Neoprene Glazing Gaskets; molded or extruded neoprene gaskets of the profile and hardness required for watertight construction; ASTM D 2000 designation 2BC 415 to 3BC 620.
- D. Pure silicone caulk, closed cell PVC tape, or DAP 33 putty as recommended by Technical Glass Products to comply with U.L. Listing. Must be used for fire-rated glass to meet fire rated labeling requirements.
- E. Colors: For exposed materials provide color as indicated or, if not indicated, as selected by the Director from the manufacturer's standard colors. For concealed materials, provide any of the manufacturer's standard colors.
- F. Setting Blocks: Neoprene, 70-90 durometer hardness, with proven compatibility with sealants used.
- G. Spacers: Neoprene, 40-50 durometer hardness, with proven compatibility with glazing materials used.
- H. Compressible Filler Rod: Closed-cell or waterproof-jacketed rod stock of synthetic rubber or plastic foam, proven to be compatible with glazing materials used, flexible and resilient, with 5-10 psi compression strength for 25 percent deflection.
- I. Cleaners, Primers and Sealers: Type recommended by glazing material manufacturer.

## PART 3 - EXECUTION

### 3.1 EXAMINATION AND PREPARATION

- A. Inspect receiving surfaces and ensure that are dry and free from dust, or other foreign materials before glazing. Clean all surfaces with cloth saturated with mineral spirits of high-flash naphtha as recommended by glazing tape manufacturer, before glazing.
- B. Check all openings, prior to glazing, to make certain that the opening is square, plumb and secure in order that uniform face and edge clearances are maintained.
- C. Determine the actual sizes required by measuring the receiving openings. Size glass and mirrors to permit required clearance and bite around full perimeter of glass, as set forth in the referenced FGMA standards, or as recommended by the glass manufacturer. Do not nip edges, to remove flares or to reduce oversize dimensions, under any circumstance.
- D. Perform glazing work in accordance with FGMA Glazing Manual SIGMA and LSGA standards for glazing and installations methods.

### 3.2 INSTALLATION

- A. Each installation shall withstand normal temperature changes, applicable wind loading, and impact loading (for operating sash and doors) without failure of any kind including loss or breakage of glass, failure of sealants or gaskets to remain watertight and airtight, deterioration of glazing materials and other defects in the Work.
- B. Install glass in accordance with the standards detailed in the "Glazing Manual" of the Glass Association of North America and the "Sealant Manual" of the Flat Glass Marketing Association except as shown and specified otherwise, and except as specifically recommended otherwise by the manufacturers of the glass and glazing materials.
- C. Unify appearance of each series of lights by setting each piece to match others as nearly as possible. Inspect each piece and set with pattern, draw and bow oriented in the same direction as other pieces.
- D. Install glazing materials in accordance with the manufacturer's printed instructions.

### 3.3 GLAZING

- A. Install setting blocks of proper size at quarter points of sill rabbet. If required to keep in place set blocks in thin course of the heel-bead compound.
- B. Provide spacers inside and out, and of proper size and spacing, for all glass sizes larger than 50 united inches, except where gaskets are used for glazing. Provide 1/8 inch minimum bite of spacers on glass and use thickness equal to sealant width, except with sealant tape use thickness slightly less than final compressed thickness of tape.
- C. Voids and Filler Rods: Prevent exudation of sealant or compound by forming voids or installing filler rods in the channel at the heel of jambs and head (do not leave voids in

the sill channels) except as otherwise indicated, depending on light sizes, thickness and type of glass, and complying with manufacturer's recommendations.

- D. Do not cut, seam, nip, or abrade glass which is tempered, heat strengthened, or coated.
- E. Force glazing materials into channel to eliminate voids and to ensure complete "wetting" or bond of glazing material to glass and channel surfaces.
- F. Tool exposed surfaces of glazing sealants and compounds to provide a substantial "wash" away from the glass. Install pressurized tapes and gaskets to protrude slightly out of the channel, so as to eliminate dirt and moisture pockets.
- G. Where wedge-shaped gaskets are driven into one side of the channel to pressurize the sealant or gasket on the opposite side, provide adequate anchorage to ensure that gasket will not "walk" out when subjected to dynamic movement. Anchor gasket to stop with matching ribs, or by proven adhesives, including embedment of gasket tail in cured heel bead.
- H. Gasket Glazing: Miter cut and bond ends together at corners where gaskets are used for channel glazing, so that gaskets will not pull away from corners and result in voids or leaks in the glazing system.

#### 3.4 CURE, PROTECTION AND CLEANING

- A. Cure glazing materials in accordance with manufacturer's printed instructions and recommendations, to obtain high early bond strength, internal cohesive strength, and surface durability.
- B. Mark glazed openings immediately upon installation of glass by attaching crossed streamers to framing. Do not apply markers of any type to surfaces of glass.
- C. Replace glass included in the work which is broken, or otherwise damaged, from the time Work is started at the site until the date of physical completion.
- D. Maintain glass in a reasonably clean condition during construction to protect from buildup of harmful construction contaminants..
  - 1. Clean and trim excess glazing material from the glass and stops or frames promptly after installation.
- E. When directed, just before Substantial Completion, remove dirt and other foreign material and wash and polish glass included in the work on both sides.

END OF SECTION 08 81 00

SECTION 09 29 00

GYPSUM BOARD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:

- 1. Interior gypsum board.
- 2. Smoke resistant attic separation assemblies.

- B. Related Sections include the following:

- 1. Division 06 Section "Rough Carpentry" for wood framing and furring that supports gypsum board.
- 2. Division 07 Section "Thermal Insulation" for insulation and vapor retarders installed in assemblies that incorporate gypsum board.
- 3. Division 09 painting Sections for primers applied to gypsum board surfaces.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.

1.4 PERFORMANCE REQUIREMENTS

- A. Smoke Resistance Rated Assemblies: For smoke resistance rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

1.5 STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes. Stack panels flat to prevent sagging.

## 1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.
- B. Do not install interior products until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
  - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

## PART 2 - PRODUCTS

## 2.1 PANELS, GENERAL

- A. Size: Provide in maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

## 2.2 INTERIOR GYPSUM BOARD

- A. General: Complying with ASTM C 36/C 36M or ASTM C 1396/C 1396M, as applicable to type of gypsum board indicated and whichever is more stringent.
  - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. G-P Gypsum.
    - b. Lafarge North America Inc.
    - c. National Gypsum Company.
    - d. PABCO Gypsum.
    - e. USG Corporation.
- B. Regular Type:
  - 1. Thickness: as shown
  - 2. Long Edges: Tapered.

## 2.3 SPECIALTY GYPSUM BOARD

- A. Moisture Resistant Interior Gypsum Board: With mold/mildew/moisture resistant facers on both sides. Specifically designed for interior use.
  - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
    - a. National Gypsum Gold Bond XP Gypsum Board.
  - 2. Core: Thickness as shown.

3. Long Edges: Tapered.
4. Mold Resistance: ASTM D 3273, score of 10.
5. Product Use: Attic separation assemblies.

## 2.4 TRIM ACCESSORIES

- A. Interior Trim: ASTM C 1047.
  1. Material:
    - a. Galvanized or aluminum-coated steel sheet or rolled zinc.
    - b. Plastic where abutting exterior metal doors and windows.
  2. Shapes:
    - a. Cornerbead.
    - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
    - c. L-Bead: L-shaped; exposed long flange receives joint compound.
    - d. Expansion (control) joint.

## 2.5 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C 475/C 475M.
- B. Joint Tape:
  1. Interior Gypsum Wallboard: Paper.
  2. Mold-Resistant Gypsum Wallboard: 10-by-10 glass mesh.
- C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
  1. Pre-filling: At open joints and damaged surface areas, use setting-type taping compound.
  2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping or drying-type, all-purpose compound.
    - a. Use setting-type taping with mold-resistant gypsum wallboard.
  3. Fill Coat: For second coat, use setting-type, sandable topping or drying-type, all-purpose compound.
  4. Finish Coat: For third coat, use drying-type, all-purpose compound.
  5. Skim Coat: Not required.

## 2.6 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
- B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
  1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
- C. Thermal Insulation: As specified in Division 07 Section "Thermal Insulation."

- D. Vapor Retarder: As specified in Division 07 Section "Thermal Insulation."
- E. Firestopping: As specified in Division 07 Section "Penetration Firestopping."

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames and framing, for compliance with requirements and other conditions affecting performance.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.
- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Provide sealant bed at flanges of electrical boxes prior to application of gypsum panels.
- F. Form control and expansion joints with space between edges of adjoining gypsum panels.
- G. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
  - 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
  - 2. Fit gypsum panels around ducts, pipes, and conduits.
  - 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- wide joints to install sealant.
- H. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- wide spaces at these locations, and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

- I. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- J. Wood Framing: Install gypsum panels over wood framing, with floating internal corner construction. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members, or provide control joints to counteract wood shrinkage.
- K. Smoke-Rated Gypsum Board Assemblies: Provide a tight, taped joint at the top of smoke-rated assemblies and around any penetrations to assemblies at both side of the assembly. The use of acoustical sealant will be acceptable to fill gaps up to 3/8 inch wide.

### 3.3 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
  - 1. Regular Type: As indicated on Drawings.
  - 2. Type X: Where required for fire-resistance-rated assembly.
  - 3. Moisture and Mold-Resistant Type: as shown
  - 4. Abuse Resistant Type: At all corridors.
- B. Single-Layer Application:
  - 1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing, unless otherwise indicated.
  - 2. On partitions/walls, apply gypsum panels as follows:
    - a. Vertically (parallel to framing) for metal framing.
    - b. Horizontally (perpendicular to framing) for wood framing.
    - c. Stagger abutting end joints not less than one framing member in alternate courses of panels.
    - d. At stairwells and other high walls, install panels horizontally, unless otherwise indicated or required by fire-resistance-rated assembly.
  - 3. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
  - 4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

### 3.4 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints at locations indicated on Drawings or according to ASTM C 840 and in specific locations approved by Architect for visual effect.
- C. Interior Trim: Install in the following locations:
  - 1. Cornerbead: Use at outside corners, unless otherwise indicated.
  - 2. LC-Bead: Use at exposed panel edges.
  - 3. L-Bead: Use where indicated.

### 3.5 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
  - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
  - 2. Level 2: Where indicated on Drawings.
  - 3. Level 3: Where indicated on Drawings.
  - 4. Level 4: At panel surfaces that will be exposed to view, unless otherwise indicated.
    - a. Primer and its application to surfaces are specified in other Division 09 Sections.
  - 5. Level 5: Not required.

### 3.6 FIELD QUALITY CONTROL

- A. Above-Ceiling Observation: Before Contractor installs gypsum board ceilings, conduct an above-ceiling observation and report deficiencies in the Work observed. Do not proceed with installation of gypsum board to ceiling support framing until deficiencies have been corrected.
  - 1. Complete the following in areas to receive gypsum board ceilings:
    - a. Installation, insulation, and leak and pressure testing of water piping systems.
    - b. Installation of air-duct systems.
    - c. Installation of air devices.
    - d. Installation of mechanical system control-air tubing.
    - e. Installation of ceiling support framing.
    - f. Installation of Penetration Firestopping.

### 3.7 PROTECTION

- A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- B. Remove and replace panels that are wet, moisture damaged, and mold damaged.
  - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION

SECTION 09 51 13

ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes acoustical panels and exposed suspension systems for ceilings.
  - 1. Include prefinished metal fascia at open sides of room perimeters where shown.

1.3 DEFINITIONS

- A. AC: Articulation Class.
- B. CAC: Ceiling Attenuation Class.
- C. LR: Light Reflectance coefficient.
- D. NRC: Noise Reduction Coefficient.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each acoustical panel ceiling.

1.5 QUALITY ASSURANCE

- A. Acoustical Testing Agency Qualifications: An independent testing laboratory, or an NVLAP-accredited laboratory, with the experience and capability to conduct the testing indicated. NVLAP-accredited laboratories must document accreditation, based on a "Certificate of Accreditation" and a "Scope of Accreditation" listing the test methods specified.
- B. Source Limitations:
  - 1. Acoustical Ceiling Panel: Obtain each type through one source from a single manufacturer.
  - 2. Suspension System: Obtain each type through one source from a single manufacturer.

## 1.6 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics: Provide acoustical panel ceilings that comply with the following requirements:
  - 1. Fire-Resistance Characteristics: Where indicated, provide acoustical panel ceilings identical to those of assemblies tested for fire resistance per ASTM E 119 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
    - a. Fire-Resistance Ratings: Indicated by design designations from UL's "Fire Resistance Directory" or from the listings of another testing and inspecting agency.
    - b. Identify materials with appropriate markings of applicable testing and inspecting agency.
  - 2. Surface-Burning Characteristics: Provide acoustical panels with the following surface-burning characteristics complying with ASTM E 1264 for Class A materials as determined by testing identical products per ASTM E 84:
    - a. Smoke-Developed Index: 450 or less.
- B. Seismic Standard: Provide acoustical panel ceilings designed and installed to withstand the effects of earthquake motions according to the following:
  - 1. Standard for Ceiling Suspension Systems Requiring Seismic Restraint: Comply with IBC.

## 1.7 DELIVERY, STORAGE, AND HANDLING

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

## 1.8 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

## 1.9 COORDINATION

- A. Coordinate layout and installation of acoustical panels and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.

## 1.10 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Acoustical Ceiling Panels: Full-size panels equal to 2.0 percent of quantity installed.
  - 2. Suspension System Components: Quantity of each exposed component equal to 2.0 percent of quantity installed.
  - 3. Hold-Down Clips: Equal to 2.0 percent of quantity installed.

## PART 2 - PRODUCTS

## 2.1 ACOUSTICAL PANELS, GENERAL

- A. Recycled Content: Provide acoustical panels with recycled content such that postconsumer recycled content plus one-half of pre-consumer recycled content constitutes a minimum of 25 percent by weight.
- B. Acoustical Panel Standard: Provide manufacturer's standard panels of configuration indicated that comply with ASTM E 1264 classifications as designated by types, patterns, acoustical ratings, and light reflectances, unless otherwise indicated.
  - 1. Mounting Method for Measuring NRC: Type E-400; plenum mounting in which face of test specimen is 15-3/4 inches away from test surface per ASTM E 795.
- C. Acoustical Panel Colors and Patterns: Match appearance characteristics indicated for each product type.
  - 1. Where appearance characteristics of acoustical panels are indicated by referencing pattern designations in ASTM E 1264 and not manufacturers' proprietary product designations, provide products selected by Architect from each manufacturer's full range that comply with requirements indicated for type, pattern, color, light reflectance, acoustical performance, edge detail, and size.
- D. Broad Spectrum Antimicrobial Fungicide and Bactericide Treatment: Where indicated, provide acoustical panels treated with manufacturer's standard antimicrobial formulation that inhibits fungus, mold, mildew, and gram-positive and gram-negative bacteria and showing no mold, mildew, or bacterial growth when tested according to ASTM D 3273 and evaluated according to ASTM D 3274 or ASTM G 21.

## 2.2 ACOUSTICAL PANELS ACT-1

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. ACT-1: Armstrong World Industries, Inc.; Fine Fissured 1729.
- B. Classification: Provide panels complying with ASTM E 1264 for type, form, and pattern as follows:

1. Type and Form: Type III, mineral base with painted finish; Form 1, nodular or 2, water felted.
  2. Pattern: CE (perforated, small holes and lightly textured) and I (embossed).
- C. Color: White.
- D. LR: Not less than 0.85.
- E. NRC: Not less than 0.55.
- F. CAC: Not less than 35.
- G. Edge/Joint Detail: Square edge for 15/16" grid.
- H. Thickness: 3/4 inch.
- I. Modular Size: 24 by 48 inches.
- J. Antimicrobial Treatment: Broad spectrum fungicide and bactericide based.

### 2.3 ACOUSTICAL PANELS ACT-2

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
1. ACT-2: Armstrong World Industries, Inc.; Optima #3254.
- B. Classification: Provide panels complying with ASTM E 1264 for type, form, and pattern as follows:
- C. Color: White.
- D. LR: Not less than 0.90.
- E. NRC: Not less than 1.0.
- F. Edge/Joint Detail: Tegular edge for 9/16" grid.
- G. Thickness: 1 1/2 inch.
- H. Modular Size: 24 by 24 inches.
- I. Antimicrobial Treatment: Broad spectrum fungicide and bactericide based.

### 2.4 METAL SUSPENSION SYSTEMS, GENERAL

- A. Recycled Content: Provide products made from steel sheet with average recycled content such that postconsumer recycled content plus one-half of preconsumer recycled content is not less than 25 percent.
- B. Metal Suspension System Standard: Provide manufacturer's standard direct-hung metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable requirements in ASTM C 635.
- C. Finishes and Colors, General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Provide manufacturer's standard factory-applied finish for type of system indicated.

1. High-Humidity Finish: Comply with ASTM C 635 requirements for "Coating Classification for Severe Environment Performance" where high-humidity finishes are indicated.
- D. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.
- E. Wire Hangers, Braces, and Ties: Provide wires complying with the following requirements:
  1. Zinc-Coated, Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
  2. Size: Select wire diameter so its stress at 3 times hanger design load (ASTM C 635, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.106-inch- diameter wire.
- F. Hanger Rods or Flat Hangers: Mild steel, zinc coated or protected with rust-inhibitive paint.
- G. Angle Hangers: Angles with legs not less than 7/8 inch wide; formed with 0.04-inch- thick, galvanized steel sheet complying with ASTM A 653/A 653M, G90 coating designation; with bolted connections and 5/16-inch- diameter bolts.
- H. Hold-Down Clips: Where indicated, provide manufacturer's standard hold-down clips spaced 24 inches o.c. on all cross tees.
  1. Available Product: UHDC by Armstrong or L15 by USG.

## 2.5 METAL SUSPENSION SYSTEM FOR ACOUSTICAL PANEL CEILING

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
  1. Prelude 15/16" Exposed Tee System; Armstrong World Industries, Inc.
- B. Wide-Face, Capped, Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet, prepainted, electrolytically zinc coated, or hot-dip galvanized according to ASTM A 653/A 653M, not less than G30 coating designation, with prefinished 15/16-inch- wide metal caps on flanges.
  1. Structural Classification: Intermediate-duty system.
  2. End Condition of Cross Runners: Override (stepped) or butt-edge type, as standard with manufacturer.
  3. Face Design: Flat, flush.
  4. Cap Material: Steel cold-rolled sheet or aluminum.
  5. Cap Finish: Painted white.

## 2.6 METAL EDGE MOLDINGS AND TRIM

- A. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with

seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension system runners.

1. Provide manufacturer's standard edge moldings that fit acoustical panel edge details and suspension systems indicated and that match width and configuration of exposed runners, unless otherwise indicated.
  - a. For open sided installation shown provide manufacturer's standard 8" high fascia molding with prefinished exposed 1" flanges.
2. For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.
  1. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 PREPARATION

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

#### 3.3 INSTALLATION

- A. General: Install acoustical panel ceilings to comply with ASTM C 636 and seismic design requirements indicated, per manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
  1. Fire-Rated Assembly: Install fire-rated ceiling systems according to tested fire-rated design.
- B. Suspend ceiling hangers from building's structural members and as follows:
  1. Hangers shall be single lengths of wire without splices; coordinate lengths in deep ceiling cavities.
  2. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
  3. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.

4. Splay hangers only where required and, if permitted with fire-resistance-rated ceilings, to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
  5. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
  6. Secure wire hangers to ceiling suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
  7. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both structure to which hangers are attached and type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
  8. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
  9. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
  10. Do not attach hangers to steel deck tabs.
  11. Do not attach hangers to steel roof deck. Attach hangers to structural members.
  12. Space hangers not more than 48 inches o.c. along each member supported directly from hangers, unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
  13. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.
- C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or postinstalled anchors.
- D. Suspension system shall be reinforced to support diffusers, light fixtures and any additional members. Install hanger wires to grid at each corner of light fixtures. Coordinate location with electrical and other trades.
1. Each individual fixture and attachment with combined weight of 56 pounds or less shall have two 12-gage wire hangers attached at diagonal corners of the fixture. These wires shall be slack. Fixtures and attachments with a combined weight of greater than 56 pounds shall be independently supported from the structure at all four corners.
- E. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
1. Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet. Miter corners accurately and connect securely.
  2. Do not use exposed fasteners, including pop rivets, on moldings and trim.

- F. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- G. Install acoustical panels with undamaged edges and fit accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.
  - 1. Arrange directionally patterned acoustical panels as follows:
    - a. As indicated on reflected ceiling plans.
    - b. Install panels with pattern running in one direction parallel to long axis of space.
  - 2. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension system runners and moldings.
  - 3. For reveal-edged panels on suspension system runners, install panels with bottom of reveal in firm contact with top surface of runner flanges.
  - 4. Paint cut edges of panel remaining exposed after installation; match color of exposed panel surfaces using coating recommended in writing for this purpose by acoustical panel manufacturer.
  - 5. Install hold-down clips in areas within 10 feet of exterior doors or vestibule doors; space as recommended by panel manufacturer's written instructions, unless otherwise indicated or required.

#### 3.4 FIELD QUALITY CONTROL

- A. Above-Ceiling Observation: Before Contractor installs acoustical panel ceilings, conduct an above-ceiling observation and report deficiencies in the Work observed. Do not proceed with installation of acoustical panels until deficiencies have been corrected.
  - 1. Complete the following in areas to receive gypsum board ceilings:
    - a. Installation of 80 percent of lighting fixtures, powered for operation.
    - b. Installation, insulation, and leak and pressure testing of water piping systems.
    - c. Installation of air-duct systems.
    - d. Installation of air devices.
    - e. Installation of mechanical system control-air tubing.
    - f. Installation of penetration firestopping.

#### 3.5 CLEANING

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

END OF SECTION

SECTION 09 65 00  
RESILIENT FLOORING

## PART 1 - GENERAL

- 1.1 RELATED DOCUMENTS: Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.
- 1.2 DESCRIPTION OF WORK: Extent of resilient flooring and accessories is shown on drawings and in schedules.
- 1.3 QUALITY ASSURANCE:
- A. Manufacturer: Provide each type of resilient flooring and accessories as produced by a single manufacturer, including recommended primers, adhesives, sealants, and leveling compounds.
    - 1. Wherever possible, provide required resilient flooring and accessories produced by a single manufacturer.
  - B. Fire Test Performance: Unless otherwise indicated, provide resilient flooring having the following classifications or properties when tested in accordance with the standard fire tests referenced below:
    - 1. Flame Spread: Not more than 75 as per ASTM E 84.
    - 2. Smoke Developed: Not more than 450 as per ASTM E 84.
    - 3. Smoke Density: Not more than 450 as per NFPA 258.
- 1.3 SUBMITTALS:
- A. Product Data: Submit manufacturer's technical data and installation instructions for each type of resilient flooring and accessory.
  - B. Samples: Submit samples of each type, color, and pattern of resilient flooring, including accessories, required, indicating full range of color and pattern variation.
  - C. Certification for Fire Test Performance: Submit manufacturer's certification that resilient flooring furnished for areas indicated complies with required fire test performance and has been tested and meets indicated requirements.
  - D. Maintenance Instructions: Submit manufacturer's recommended maintenance practices for each type of resilient flooring and accessory required.
- 1.5 JOB CONDITIONS:
- A. Maintain minimum temperature of 65 deg. F (18 deg. C) in spaces to receive resilient flooring for at least 48 hours prior to installation, during installation, and for not less than 48 hours after installation. Store resilient flooring materials in spaces where they will be installed for at least 48 hours before beginning installation. Subsequently, maintain minimum temperature of 55 deg. F (13 deg. C) in areas where work is completed.
  - B. Install resilient flooring and accessories after other finishing operations, including painting, have been completed. Do not install resilient flooring over concrete slabs until the latter have

been cured and are sufficiently dry to achieve bond with adhesive as determined by manufacturer's recommended bond and moisture test.

## PART 2 - PRODUCTS

### 2.1 MATERIALS:

- A. Colors and Patterns: As shown or scheduled, or as selected by Architect from manufacturer's full range of standard and custom colors and patterns.
- B. VCT 1:
  1. Product: Premium 12 x12 x 1/8 Vinyl Composition Tile.
  2. Product: Armstrong "Stonetex".
- C. VCT 2:
  1. Product: 12 x12 x 1/8 Vinyl Composition Tile.
  2. Product: Armstrong "Standard Exelon".
- D. Accessories:
  1. Resilient Edge Strips: 1/8" thick, homogeneous vinyl or rubber composition, tapered or bullnose edge, color to match flooring, or as selected by Architect from standard or custom colors available; not less than 1" wide.
  2. Adhesives (Cements): Waterproof, stabilized type as recommended by flooring manufacturer to suit material and substrate conditions.
  3. Concrete Slab Primer: Non-staining type as recommended by flooring manufacturer.
  4. Leveling Compound: Latex type as recommended by flooring manufacturer.
  5. Resilient Transition Strips: 1/4" x 1 1/4" vinyl or rubber composition, tapered. Color as selected Architect from manufacturer's standard or custom colors available.
  6. Vinyl Base: Johnsonite 6" Black

## PART 3 - EXECUTION

### 3.1 PREPARATION:

- A. For the removal of existing resilient flooring and reinstallation of VCT flooring, follow the recommendations of the manufacturer. In the event the manufacturer has no literature regarding this issue, follow Armstrong World Industries installation and removal recommendations, current edition.
- B. Remove existing tile adhesive as required to permit proper installation of new flooring.
- C. Broom clean or vacuum surfaces to be covered, and inspect subfloor. Start of flooring installation indicates acceptance of subfloor conditions and full responsibility for completed work.
  1. Use leveling compound as recommended by flooring manufacturer for filling small cracks and depressions in subfloors.
  2. Perform bond and moisture tests on concrete slabs to determine that concrete surfaces are sufficiently cured, dried and ready to receive flooring.
  3. Apply concrete slab primer, if recommended by flooring manufacturer, prior to application of adhesive. Apply in compliance with manufacturer's directions.

## 3.2 INSTALLATION:

## A. General:

1. Install flooring using method indicated in strict compliance with manufacturer's recommendations. Extend flooring into toe spaces, door reveals, and into closets and similar openings.
2. Maintain reference markers, holes, or openings that are in place or plainly marked for future cutting by repeating on finish flooring as marked on subfloor. Use chalk or other non-permanent marking device.
3. Install flooring on covers for telephone and electrical ducts, and other such items as occur within finished floor areas. Maintain overall continuity of color and pattern with pieces of flooring installed on these covers. Tightly cement edges to perimeter of floor around covers and to covers.
4. Tightly cement flooring to subbase without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, or other surface imperfections. Hand roll flooring at perimeter of each covered area to assure adhesion.

## B. Tile Floors:

1. Lay tile from center marks established with principal walls, discounting minor offsets, so that tile at opposite edges of room area are of equal width. Adjust as necessary to avoid use of cut widths less than 1/2 tile at room perimeters. Lay tile square to room axis, unless otherwise shown.
2. Match tiles for color and pattern by using tile from cartons in same sequence as manufactured and packaged if so numbered. Cut tile neatly around all fixtures. Broken, cracked, chipped, or deformed tiles are not acceptable.
  - a. Lay tile in "checkerboard" fashion with grain reversed in adjacent tiles.
3. Adhere tile flooring to substrates using full spread of adhesive applied in compliance with flooring manufacturer's directions.

## C. Sheet Flooring:

1. Lay flooring to provide minimum number of seams. Avoid cross seams, filler pieces, and strips. Match edges for color shading and pattern at seams in compliance with manufacturer's recommendations.
2. Install flooring with adhesives, tools, and procedures in strict accordance with manufacturer's written instructions.
3. Adhesive Application: Apply adhesive(s) following flooring manufacturer's instructions. Observe the recommended trowel notching, spread rates, and open times.
4. Prepare chemically bonded seams by applying extra adhesive into seams. Use tools, materials, methods, and sequence of work in conformance with the written instructions of the flooring manufacturer.
5. Prepare heat-welded seams with special routing tool supplied for this purpose and heat weld with vinyl welding bead in seams. Use methods and sequence of work in conformance with written instructions of flooring manufacturer.
6. Provide integral flash cove base where shown on drawings, including cove fillet support strip and top edge cap trim. Construct coved base in accordance with manufacturer's instructions.

## D. Accessories:

1. Apply wall base to walls, columns, pilasters, casework and other permanent fixtures in rooms or areas where base is required. Install base in lengths as long as practicable,

with corners fabricated from base materials and with mitered or coped inside corners. Tightly bond base to substrate throughout length of each piece, with continuous contact at horizontal and vertical surfaces.

- a. On masonry surfaces, or other similar irregular substrates, fill voids along top edge of resilient wall base with manufacturer's recommended adhesive filler material.
2. Place resilient edge strips tightly butted to flooring and secure with adhesive. Install edging strips at edges of flooring which would otherwise be exposed.

3.3 CLEANING AND PROTECTION:

- A. Remove any excess adhesive or other surface blemishes, using neutral type cleaners as recommended by flooring manufacturer. Protect installed flooring with heavy Kraft paper or other covering.
- B. Finishing: After completion of project and just prior to final inspection of work, thoroughly clean floors and accessories.
- C. Do not apply any polish or wax to resilient flooring.

END OF SECTION 09 65 00

## SECTION 09 68 00

## CARPETING

## 1. GENERAL

1.01 GENERAL CONDITIONS The General Conditions, Supplementary General Conditions and all Sections of Division 1 shall apply to each and every contract and contractor, person or persons supplying material, labor or entering into the work directly or indirectly.

1.02 SCOPE This section includes all labor, materials, equipment and related services necessary for the fabrication, delivery and installation of the work shown on the drawings and or specified herein, including but not limited to the following:

- A. Carpeting as scheduled.
- B. Carpet adhesives, seaming, anchorage edge treatment and other accessories.

1.04 SUBMITTALS:

- A. Prior to installation submit to the Architect two copies of the manufacturer's current recommendations for installation of the materials specified.
- B. Also prior to installation, submit to the Architect a sketch showing location of all seams proposed to be made in the carpeting.
- C. Prior to ordering carpet submit a full range of samples for color selection.
- D. Laboratory test reports as required.

1.05 QUALITY ASSURANCE

- A. For cutting, laying and trimming of carpeting, use only thoroughly trained and experienced carpet installers who are completely familiar with the materials specified, the manufacturer's recommended methods of installation, and the requirements of this work.
- B. The manufacturer's recommended methods of installation shall be the basis for acceptance or rejection of methods of installation used in this work.

## 2. PRODUCTS

2.01 CARPET TYPE 1:

- A. Product: "Raffia" by Mannington. Carpet tile quick-ship product.
- B. Color: "Broom" #42332.
- C. Installation: Ashlar, staggered.

2.02 ACCESSORIES

- A. General: Installation materials shall conform with the quality, function, and substance of the products listed below. Architect will be the sole judge of the quality of materials to be used on the project.

- B. Edging: No. 12-1812 universal molding by Roberts Consolidated Industries, Inc., or approved equal. Color of vinyl insert shall be as selected by Architect.
- C. Installation Adhesive: Provide adhesive recommended by carpet manufacturer for adequate adhesion and water resistance at each application, but which will allow removal of carpet/cushion with minimum damage to carpeting materials and substrate, and which complies with requirements for overall flammability rating (if any) for carpeting installation.
- D. Seaming Cement: Hot melt seaming adhesive of type recommended by the carpet manufacturer for taping seams and buttering cut edges of carpet backing (and bottom of face pile) at seams, to form secure seams and eliminate pile loss at seams.
- E. Concrete Sealer: 35% solution of 42° Baume sodium silicate and a non-acid penetrating agent, compatible with adhesive.
- F. Floor Filler: Levelastic or equal.

### 3. EXECUTION

3.01 PRE-INSTALLATION REQUIREMENTS: Installer must examine substrates and conditions which carpeting is to be installed and notify Contractor in writing of conditions detrimental to proper completion of the work. Do not proceed with installation of carpeting until unsatisfactory conditions have been corrected in a manner acceptable to Installer and carpet manufacturer.

3.02 CARPET TYPE 1 Shall be direct cement installation. Adhesive shall be non-toxic, waterproof and latex base formulated particularly for installing carpet and approved or recommended by the carpet manufacturer. This Contractor shall coordinate and verify with General Contractor to insure compatibility of floor topping and curing compound materials with adhesive employed.

### 3.03 INSTALLATION

#### A. General:

1. Comply with manufacturer's instructions and recommendations. Place seams in directions indicated, and as accepted on shop drawings, if any. Maintain direction of pattern and texture, including lay of pile. Do not seam weft to warp, except as specifically indicated for a direction change.
2. Extend carpet under open bottomed and raised bottom obstructions, and under removable flanges of obstructions. Extend carpet into closets and alcoves of rooms indicated for such spaces. Extend carpet under movable furniture and equipment, unless otherwise indicated.
3. Provide cutouts as indicated for removable access devices in substrate. Bind edges as neatly as possible and secure both sides of cuts to the substrate. Use double faced tape on carpet cutouts which must be lifted from substrate to gain access to devices, unless otherwise indicated. Cut only 3 sides where feasible to provide carpet flap in lieu of fully removable cutout.

4. Install carpet edge guard at locations where edge of carpet is exposed to traffic, except where another device, such as expansion joint cover system or threshold, is indicated with integral carpet binder bar or edge guard. Anchor edge guard to substrate.
5. Doors: Where seams relate to doors, center seams under door thickness. Do not place carpet seams in traffic direction in doorways.
6. Expansion Joints: Provide special carpeting treatment as indicated at expansion joints in substrate or, if none is indicate, install carpeting with provisions to accommodate movement without damaging carpet installation.

B. Glue-Down Installation:

1. Treat concrete surfaces with sealer specified. Remove excess sealer promptly. Existing floors shall be clean, wax free and sound.
2. Install a test sample to demonstrate effectiveness of adhesive. With Owner's personnel present, remove sample, demonstrating procedure to minimize damage to carpet. Apply primer to entire substrate where necessary for adequate bond of carpet.
3. Fit sections of carpet into each room or space prior to application of adhesive. Trim off mill edges unless carpet has been pre-trimmed. Maintain straight seams, true with lines of building.
4. Apply seaming cement on cut edges of carpet at seams, without being in evidence on face of carpet but securing base of pile at cut.
5. Apply adhesive to substrate in accordance with manufacturer's instructions. Butt carpet edges tightly together to form seams without gaps. Roll lightly to eliminate air pockets and ensure uniform total area bond of carpet to substrate. Remove adhesive (if any appears) promptly from face of installed carpet.
6. Coordinate with installation of base materials. Unless otherwise indicated or instructed by Architect, apply glue-down carpet before installation of resilient or wood base materials.

3.04 RESTRETCHING: Included in this contract is the provision that the carpet contractor shall:

- A. Restretch the carpet, repair seams, joints and edges, if required, after the original installation is completed. The exact time for this work shall be left to the discretion of the Owner but shall be within 12 months after final approval of finished installation. Fourteen (14) days notice for this restretch shall be given so that the Contractor can make necessary arrangements for same.
- B. Further, the Contractor shall provide a 1 year unconditional guarantee against defective work covering further restretching, repair of seams, puckering and/or any other defects which could be caused by defective workmanship.

3.05 CLEANING, PROTECTION, FOLLOW-UP SERVICE

- A. Remove debris from installation, carefully sorting pieces to be saved from scraps to be disposed of.

- B. Vacuum carpet with a commercial machine, with rotating agitator or beater in nozzle. Remove spots and replace carpet where spots cannot be removed.
- C. Advise Contractor of areas which should be protected during remainder of construction period, so that carpet will be in undamaged and unsoiled condition at time of acceptance. Recommend type of non-staining cover material that should be used for protective cover.
- D. Follow-up Service: Return to installation at mutually agreeable time(s), within 6 months following substantial completion of Project (or portion thereof), unless otherwise directed or approved by Owner.

END OF SECTION 09 68 00

SECTION 09 91 00

PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes surface preparation and the application of paint systems on the following exterior substrates:
  - 1. Exterior panels and trim.
- B. This Section includes exposed exterior items and surfaces with low VOC coatings complying with ME DEP regulations.
- C. Related Sections include the following:
  - 1. Division 06 Sections for shop priming carpentry with primers specified in this Section.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
- B. Product List: For each product indicated, include the following:
  - 1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
  - 2. VOC content.

1.4 QUALITY ASSURANCE

- A. Applicator Qualifications: Engage an experienced Applicator who has completed painting system applications similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
- B. Source Limitations: Obtain primers and undercoat materials for each coating system from the same manufacturer as the finish coats.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
  - 1. Maintain containers in clean condition, free of foreign materials and residue.
  - 2. Remove rags and waste from storage areas daily.

1.6 PROJECT CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.
- B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

1.7 EXTRA MATERIALS

- A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.
  - 1. Quantity: Furnish an additional 5 percent, but not less than 1 gal. of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include the following:
  - 1. Benjamin Moore & Co.
  - 2. Sherwin Williams
  - 3. ICI Paints

2.2 PAINT, GENERAL

- A. Material Compatibility:
  - 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  - 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- B. VOC Compliance for Exterior Paints and Coatings: Provide the manufacturer's formulation for the products specified below that are VOC compliant with the State of Maine Department of

Environmental Protection Regulation, "Chapter 151: Architectural and Industrial Maintenance (AIM) Coatings" and the following chemical restrictions expressed in grams per liter:

1. Flat Paints and Coatings: VOC content of not more than 100 g/L.
2. Non-Flat Paints and Coatings: VOC content of not more than 150 g/L.
3. Non-Flat Paints and Coatings - High Gloss: VOC content of not more than 250 g/L.
4. Anticorrosive (Rust Preventative) Coatings: VOC content of not more than 400 g/L.
5. Fire Resistive Coatings: VOC content of not more than 350 g/L.
6. Industrial Maintenance Coatings (IMC): VOC content of not more than 340 g/L.
7. Primers, Sealers, and Undercoaters: VOC content of not more than 200 g/L.
8. Quick-Dry Enamels: VOC content of not more than 250 g/L.
9. Quick-Dry Primers, Sealers, and Undercoaters: VOC content of not more than 200 g/L.
10. Specialty Primers, Sealers, and Undercoaters: VOC content of not more than 350 g/L.
11. Wood Preservatives: VOC content of not more than 350 g/L.

- C. Colors: Provide color selections made by the Architect. Allow for up to 5 different color selections.

### 2.3 WOOD PRIMERS

- A. Exterior Latex Wood Primer: Factory-formulated acrylic wood primer for exterior application.
1. Benjamin Moore; Super Spec Latex Exterior Primer #169.
- B. Wood-Knot Sealer: Sealer recommended in writing by topcoat manufacturer for use in paint system indicated.

### 2.4 INTERIOR PAINT, GENERAL

- A. Material Compatibility:
1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- B. VOC Content of Field-Applied Interior Paints and Coatings: Provide products that comply with the following limits for VOC content, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24); these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:
1. Flat Paints, Coatings, and Primers: VOC content of not more than 50 g/L.
  2. Nonflat Paints, Coatings, and Primers: VOC content of not more than 150 g/L.
  3. Anti-Corrosive and Anti-Rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
  4. Floor Coatings: VOC not more than 100 g/L.
  5. Shellacs, Clear: VOC not more than 730 g/L.
  6. Shellacs, Pigmented: VOC not more than 550 g/L.
  7. Flat Topcoat Paints: VOC content of not more than 50 g/L.

8. Nonflat Topcoat Paints: VOC content of not more than 150 g/L.
9. Anti-Corrosive and Anti-Rust Paints Applied to Ferrous Metals: VOC not more than 250 g/L.
10. Floor Coatings: VOC not more than 100 g/L.
11. Shellacs, Clear: VOC not more than 730 g/L.
12. Shellacs, Pigmented: VOC not more than 550 g/L.
13. Primers, Sealers, and Undercoaters: VOC content of not more than 200 g/L.
14. Dry-Fog Coatings: VOC content of not more than 400 g/L.
15. Zinc-Rich Industrial Maintenance Primers: VOC content of not more than 340 g/L.
16. Pre-Treatment Wash Primers: VOC content of not more than 420 g/L.

C. Chemical Components of Field-Applied Interior Paints and Coatings: Provide topcoat paints and anti-corrosive and anti-rust paints applied to ferrous metals that comply with the following chemical restrictions; these requirements do not apply to paints and coatings that are applied in a fabrication or finishing shop:

1. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
2. Restricted Components: Paints and coatings shall not contain any of the following:
  - a. Acrolein.
  - b. Acrylonitrile.
  - c. Antimony.
  - d. Benzene.
  - e. Butyl benzyl phthalate.
  - f. Cadmium.
  - g. Di (2-ethylhexyl) phthalate.
  - h. Di-n-butyl phthalate.
  - i. Di-n-octyl phthalate.
  - j. 1,2-dichlorobenzene.
  - k. Diethyl phthalate.
  - l. Dimethyl phthalate.
  - m. Ethylbenzene.
  - n. Formaldehyde.
  - o. Hexavalent chromium.
  - p. Isophorone.
  - q. Lead.
  - r. Mercury.
  - s. Methyl ethyl ketone.
  - t. Methyl isobutyl ketone.
  - u. Methylene chloride.
  - v. Naphthalene.
  - w. Toluene (methylbenzene).
  - x. 1,1,1-trichloroethane.
  - y. Vinyl chloride.

## 2.5 INTERIOR PRIMERS/SEALERS

A. Low-VOC Latex Primer/Sealer:

1. Moore: Pristine Eco Spec Interior Latex Primer Sealer, No. 231
- B. Wood-Knot Sealer: Sealer recommended in writing by topcoat manufacturer for use in paint systems indicated.

## 2.6 INTERIOR LATEX PAINTS

- A. Low-VOC Latex (Flat):
  1. Moore: Pristine Eco Spec Interior Latex Flat, No. 219.
- B. Low-VOC Latex (Low Luster):
  1. Moore: Pristine Eco Spec Interior Latex Eggshell, No. 223

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
  1. Wood: 15 percent.
  2. Gypsum Board: 12 percent
- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- D. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
  1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
  1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

2. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- C. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.
1. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.
- D. Steel Substrates: Remove rust and loose mill scale. Clean using methods recommended in writing by paint manufacturer.
- E. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints. Uniformly abrade galvanized surfaces with a palm sander and 60 grit aluminum oxide so surface is free of oil and surface contaminants.
- F. Wood Substrates:
1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
  2. Sand surfaces that will be exposed to view, and dust off.
  3. Prime edges, ends, faces, undersides, and backsides of wood.
  4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

### 3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions.
1. Use applicators and techniques suited for paint and substrate indicated.
  2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
  3. Apply an additional coat of primer on metal surfaces that have been shop primed.
- B. Tinting: Tint primer of colors such as reds, yellows, and oranges with a gray basecoat system designed to help provide color coverage.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces. When using colors such as red, yellow or orange, an extra coat of finish may be necessary. Notify Architect when additional coats do not fix the problem.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

## 3.4 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

## 3.5 INTERIOR PAINTING SCHEDULE

- A. VOC Compliance, General: Provide the manufacturers' formulations for the products specified below that comply with the VOC requirements for the State of Maine Department of Environmental Protection in paragraph 2.2 of this Section.
- B. Wood For Painted Finish: Including windows standing and running trim.
  - 1. Low-VOC Latex System:
    - a. Prime Coat: Interior latex-based wood primer.
    - b. Intermediate Coat: Low-VOC latex paint matching topcoat.
    - c. Topcoat: Low-VOC latex (semi-gloss) paint.
- C. Gypsum Board and Plaster Substrates:
  - 1. Low-VOC Latex System:
    - a. Prime Coat: Low-VOC latex primer/sealer.
    - b. Intermediate Coat: Low-VOC latex paint matching topcoat.
    - c. Topcoat: Low-VOC latex eggshell paint.
    - d. Omit prime coat at existing painted plaster.

END OF SECTION 09 91 00



SECTION 10 55 00  
POSTAL SPECIALTIES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Letter drop with liner sleeve.

1.2 SUBMITTALS

A. Product Data: For each type of postal specialty specified. Include details of construction relative to materials, dimensions of individual components, profiles, and finishes.

1. Provide manufacturer's certification that equipment proposed complies with USPS regulations and has been approved by the Postmaster General.

B. Shop Drawings: For each type of postal specialty specified. Show details of fabrication and installation. Include plans, elevations, sections, and attachments to other work.

C. Samples for Verification: Full-size units of each type of exposed color and finish required for each type of postal specialty specified. Where finishes involve normal color and texture variations, include Sample sets showing the full range of variations expected.

1.3 QUALITY ASSURANCE

A. Source Limitations: Obtain mail chutes and receiving and collection boxes through one source from a single manufacturer to ensure that mail will flow without restriction from the chute into the box.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Letter Drop:
  - a. Bommer Industries.
  - b. Equal by Auth-Florence.

2.2 METALS

- A. Aluminum: Alloy and temper best suited for the intended use and finish indicated.
  - 1. Plate and Sheet: ASTM B 209 (ASTM B 209M), mill finish, where not exposed.
  - 2. Extruded Bars and Shapes: ASTM B 221 (ASTM B 221M).

2.3 LETTER DROP

- A. General: Provide unit shown for installation in a private mail collection/delivery system. USPS requirements shall not apply.
- B. Product: Letter Drop With Liner #403.
- C. Compartment Doors and Trim: Fabricate doors and trim from extruded aluminum to suit type of installation and loading method.
  - 1. Identification: Standard engraved letters as follows: U. S. MAIL
- D. Aluminum Finish: Finish exposed-to-view surfaces as follows:
  - 1. Satin aluminum, clear anodized.

2.4 METAL FINISHES

- A. Exposed Aluminum Finish: Manufacturer's standard matching the following BHMA finish code number, complying with ANSI/BHMA A156.18:
  - 1. Satin Aluminum, Clear Anodized: BHMA Finish Code No. 628.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install postal specialties level and plumb, according to manufacturer's written instructions, roughing-in drawings, original design, and referenced standards.
  - 1. Final acceptance depends on compliance with USPS requirements.

3.2 PROTECTION

- A. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure postal specialties are without damage or deterioration at the time of Substantial Completion.

END OF SECTION 10 55 00

SECTION 21 10 00

FIRE SPRINKLERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Modify the existing automatic sprinkler system in the interior spaces of the building affected by proposed renovations.
- B. Arrange properly protect the building and shall meet NFPA 13 and Maine State Fire Marshall requirements.
- C. The Sprinkler Contractor shall place the sprinkler system in service and hand over the sprinkler system to the General Contractor for care and maintenance.
- D. Performance and Design Criteria: Provide products and systems complying with specific performance and design criteria indicated.

1.3 DEFINITIONS

- A. Reviewed equal: Shall mean that the Engineer, not the contractor, shall make final determination whether materials are an equal to that which is specified.
- B. Equal: Shall mean essentially the same as that product specified, but a model of a different manufacturer.
- C. Concealed: Shall mean in walls, in chases, above ceilings, within enclosed cabinets, otherwise enclosed.
- D. Exposed: Shall mean in finished spaces, in closets, under counters, behind and/or under equipment and/or otherwise visible.
- E. Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe and duct shafts, unheated spaces immediately below roof, spaces above ceilings, unexcavated spaces, crawl spaces, and tunnels.
- F. Others: Shall mean provided by sections other than this section. If not purposely assumed by another section, shall be provided by the Contractor.
- G. Materials: Shall mean any product used in the construction, including but not limited

to: fixtures, equipment, piping and supplies.

- H. Piping: Shall mean pipe, fittings, hangers and valves.
- I. Provide: Shall mean the furnishing and installing of materials.
- J. Substitution: Shall mean materials of significantly different physical, structural or electrical requirements, performance, dimensions, function, maintenance, quality or cost, than that specified.

### 1.3 DESCRIPTION OF WORK

#### A. Work Included:

Provide all design services, construction documents, labor, transportation, equipment, permits, materials, tools, inspections, incidentals, tests and perform all operations in connection with the installation of a complete new Hydraulically Designed Wet Pipe Sprinkler System in all heated areas of the buildings. The existing system must remain active until the new system is operational. Comply with requirements of all Authorities Having Jurisdiction. Comply with Local Sprinkler Ordinances. Include aesthetic considerations into the design. Coordinate with interfacing trades. Submit equipment and components for review. Prepare Shop and Record Drawings and Owner's Manuals. Assure quality of workmanship. Provide guarantees and warranties.

1. Automatic Sprinkler System shall meet the standards of the most recent edition of the National Fire Protection Association's (NFPA) NFPA 13 Standard for the Installation of Sprinkler Systems.
2. A Manual Dry Class 1 Standpipe system shall be provided in the stairwells of the building and shall meet the requirements of the National Fire Protection Association's (NFPA) NFPA 14 Standard for the Installation of Standpipe, Private Hydrant and Hose Systems.

### 1.4 SYSTEM PERFORMANCE REQUIREMENTS

- A. Design sprinklers and secure approval from authorities having jurisdiction. The design of the automatic sprinkler system shall be complete with all necessary accessories for proper operation.
- B. The system shall be hydraulically calculated in accordance with all provisions of the Contract Documents and any authority having jurisdiction.
- C. Sprinkler Occupancy Hazard Classifications:
  1. Light Hazard:
    - a. Office and Public Areas
  2. Ordinary Hazard, Group 1:
    - a. General Storage Areas

- D. Minimum Density for Automatic-Sprinkler Piping Design shall be in accordance with NFPA 13. Maximum Protection Area per Sprinkler shall be in accordance with NFPA 13.

1.4 GENERAL REQUIREMENTS

- A. Components and Installation: Capable of producing piping systems with 175-psig minimum working-pressure rating, unless otherwise indicated.
- B. Bundled/Grouped wired in concealed spaces: Non-combustible spaces having 15 or more non-plenum-rated wires grouped together shall be fully sprinklered.
- C. Seismic Performance: If required by the authority with jurisdiction, fire-suppression piping shall be capable of withstanding the effects of earthquake motions determined according to NFPA 13.
- D. Contractor shall obtain and pay for required permits.

1.5 SUBMITTALS

- A. Shop Drawings: Submit working plans, prepared according to NFPA 13, and hydraulic calculations with cross reference to applicable drawings, water supply data, and equipment schedule with ratings for the system to the Owner's Representative, and other authorities having jurisdiction. Drawings shall include, but not be limited to:
  - 1. Name of Owner and Occupant.
  - 2. Name and address of Contractor.
  - 3. Physical Location.
  - 4. Plan view of system.
  - 5. Full height cross section or schematic diagram including ceiling construction and spray obstructions.
  - 6. Locations of all partitions, with fire partitions noted.
  - 7. Occupancy class for each area and minimum density of water application.
  - 8. Locations of concealed spaces.
  - 9. Make, model and nominal K factor of sprinkler heads.
  - 10. Pipe sizes.
- B. Product Data: Catalog sheets, specifications, and installation instructions. Indicate UL or FM approval for each product. Include the following additional information:
  - 1. Pipe and fitting materials and methods of joining for sprinkler piping.
  - 2. Pipe hangers, supports and accessories.
  - 3. Piping seismic restraints.
  - 3. Sprinkler heads and escutcheon plates.
  - 4. Valves, including specialty valves, accessories, and devices.
  - 5.
- C. Design Data: The portions of the sprinkler system not sized on the Contract Drawings shall be sized in accordance with NFPA requirements for Hydraulically Designed Systems. Submit drawings and hydraulic calculations for approval.

- D. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit three copies of a statement, signed and sealed by the responsible sprinkler system design professional. Indicate that products and systems comply with performance and design criteria in the Contract Documents.
- E. Field Test Reports and Certificates: Indicate and interpret test results for compliance with performance requirements and as described in NFPA 13. Include "Contractor's Material and Test Certificate for Aboveground Piping".
- F. Maintenance Data: For each type of sprinkler specialty to include in maintenance manuals specified in Division 1.
- G. Procedure: As soon as possible after award of Contract, before any material or equipment is purchased, this Contractor shall submit to the Engineer no less than six (6) copies for approval. Shop drawings shall be properly identified and shall describe in detail the material and equipment shall be provided, including all dimensional data, performance data, curves, computer selection print-outs, etc.
- H. Approval Status: Corrections or comments made on the submittals do not relieve the contractor from compliance with requirements of the specification. Shop drawing review is only for review of general conformance with the design concept of the project and general compliance with the information given in the contract documents. The contractor is responsible for confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades and performing his work in a safe and satisfactory manner.

## 1.6 QUALITY ASSURANCE

### A. Sprinkler Contractor

- 1. Installer Qualifications: An experienced installer who has designed and installed fire-suppression piping similar to that indicated for this Project and obtained design approval and inspection approval from authorities having jurisdiction.
- 2. Contractor shall be a licensed fire sprinkler contractor.

### B. Manufacturer Qualifications:

- 1. Firms whose equipment, specialties, and accessories are listed by product name and manufacturer in UL's "Fire Protection Equipment Directory" and FM's "Fire Protection Approval Guide" and that comply with other requirements indicated.
- 2. Sprinkler Components: Listing/approval stamp, label, or other marking by a testing agency acceptable to authorities having jurisdiction.
- 3. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.
- 4. Factory Mutual Engineering Corporation (FM) Approval Guide

### C. NFPA Requirements:

- 1. NFPA#1 Fire Prevention Code, 2007 edition.
- 2. NFPA #13 "Standard for the Installation of Sprinkler Systems" 2007 edition.

## 1.7 COORDINATION

- A. Arrange for pipe spaces, chases, slots, and openings in building structure during progress of construction, to allow for fire-suppression installations.
- B. Coordinate installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are constructed.

## 1.8 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents. Sprinkler Cabinets: Finished, wall-mounting steel cabinet and hinged cover, with space for a minimum of six spare sprinklers plus sprinkler wrench. Include the number of sprinklers required by NFPA 13 and wrench for sprinklers. Include separate cabinet with sprinklers and wrench for each type of sprinkler on Project.

## 1.9 MAINTENANCE MANUAL

On completion of this portion of the work, and as a condition of its acceptance, submit for review two copies of a manual describing the system. Prepare manuals in durable 3-ring binders approximately 8.1/2" by 11" in size with at least the following:

- A. Project name on the spine and front cover, and identification on the front cover stating the project name, general nature of the manual, and name, address and telephone number of the General and Sprinkler Contractors.
- B. Neatly typewritten index.
- C. Complete instructions regarding operation and maintenance of all equipment involved.
- D. Complete nomenclature of all frequently replaceable parts and supplies, their part numbers, and name, address and telephone number of the vendor.
- E. Copy of all guarantees and warranties issued, and dates of expiration.
- F. Shop drawings and equipment/fixtures manufacturer's catalog pages.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. PIPING: Pipe and fittings shall conform to the requirements of NFPA 13. Pipe shall be listed by UL and be FM approved, and installed per its listing and approval.
  - 1. Outside Building, Underground: Connect where the site piping ends. Match materials and methods until inside the building.
  - 2. Inside building: Shall be schedule 40 black steel, standard weight welded, threaded or Victaulic fittings for sizes 2-1/2" and under. Install flanged fitting and flanges at valves and where required. Threadable light wall pipe (schedule 10) shall be

permitted only for sizes 3” and over.

- B. SUPPORTS: System piping shall be substantially supported to the building structure. The installation of hangers and supports shall adhere to the requirements set forth in N.F.P.A. 13. Materials used in the installation or construction of hangers and supports shall be listed and approved for such application.
  - 1. Provide seismic protection unless specifically exempt by the Authority Having Jurisdiction.
  - 2. Hang from building structure, not piping of other trades.
  
- C. SPRINKLER HEADS: Fire sprinklers shall be of one manufacturer throughout the building. No mixing of sprinkler brands shall be permitted. Sprinklers shall be of all brass frame construction with a quick response frangible bulb type fusible element.
  - 1. Temperature Classification:
    - a. Finished area shall be ordinary temperature rating.
    - b. Boiler /mechanical room shall be Intermediate temperature rating 175 degrees F to 225 degrees.
  - 2. All shall be Quick Response bulb type head.
  - 3. Type:
    - a. Generally shall be white, concealed pendant.
    - b. Concealed spaces shall be the type best suited for the configuration of the individual space.
    - c. Any minor unheated spaces shall be dry type.
  - 4. Provide and install a spare head case per NFPA requirements. The case shall contain not less than 12 heads total, no less than two of each style of heads and one wrench for each style of head. Locate case in the sprinkler room near the check valve assemblies.
  
- D. SLEEVES:
  - 1. Pipes Through Floors: Form with Schedule 40 (galvanized) steel pipe and extend 1” above surrounding floor.
  - 2. Pipes Through Interior Fire-rated or Sound-rated Partitions: Form with steel pipe or 16 gauge galvanized steel.
  - 3. Pipes through Exterior Building Walls, Concrete Walls or Footing: Form with Schedule 40 (galvanized) steel pipe.
  - 4. Size: The minimum sleeve diameter shall be either 2 pipe sizes or 2” in diameter larger than the outside diameter of the pipe.
  - 5. Fire caulk all penetrations through floors and fire rated partitions.
  
- E. VALVES:
  - 1. Riser Control Valve: OS&Y cast iron construction.
  - 2. Sectionalizing Valves: OS&Y cast iron body.
  - 3. Drain and Test Valves: Bronze body, gate type or ball type, capable of being padlocked in either open or closed position.
  
- F. ACCESSORIES: Provide all miscellaneous items required for a complete system, such as: paint, signs, valve tags, pipe markers, chains and locks, relief valves, and water additives.

## PART 3 - EXECUTION

## 3.1 PREPARATION

- A. The nature of the work requires coordination with other trades. Shop fabrication shall be done at the Contractor's risk. Relocation of piping and components to avoid obstructions may be necessary. Relocation, if required, shall be done at the Contractor's expense. The installation shall be performed in a workmanlike manner as determined by the Owner's Representative and in accordance with the Contract Documents, manufacturer's printed installation instructions, and submitted and Owner's Representative reviewed drawings.
- B. Existing Sprinkler System Shutdown:
  - 1. Follow NFPA 13 recommendations.
  - 2. Before shutting down the sprinkler system to perform the Work, notify the Owner's Representative in writing, and the local fire department that the system is to be shut down temporarily. Give schedule which states date and time of proposed shut down and the approximate length of time that the system will be out of service. Request instructions for precautions that should be taken during the shut down period.
  - 3. Do not shut down the system until schedule is approved by the Owner's Representative.
  - 4. Return the existing system to pre-shutdown operation immediately after the Work has been completed. Give written notice to the Director's Representative that the system has been returned to pre-shutdown operation.

## 3.2 SPRINKLER APPLICATIONS

- A. General: Use sprinklers according to the following applications:
  - 1. Rooms/spaces without Ceilings: Upright sprinklers.
  - 2. All occupied rooms with Finished Ceilings: Recessed Pendent.
- B. Finishes
  - 1. Unfinished spaces not exposed to view: rough bronze.
  - 2. Recessed Sprinklers: White
  - 3. Provide escutcheons with matching color for finished spaces.

## 3.3 SYSTEM INSTALLATIONS

- A. Earthquake Protection: Install piping according to NFPA 13 to protect from earthquake damage.
- B. Water supply control valves shall be electrically supervised and mechanically locked for proper position. Water flow and supervisory circuits shall be in accordance with the requirements of electrical specifications. Electric connections to sprinkler system shall be by Division 26. Furnish wiring diagrams for all equipment.
- C. A sprinkler head wrench of each style and model installed shall be provided to the owner at the completion of the project. A representative sampling of each sprinkler head style and model shall be provided to the owner and housed in a sprinkler head cabinet at or near the

sprinkler riser. The number of sprinkler heads provided to the owner shall be in accordance with NFPA 13.

3.4 SPRINKLER INSTALLATION

- A. Install sprinklers in suspended ceiling in center of all ceiling tiles.
- B. Install sprinkler piping with drains for complete system drainage.
- C. Hangers and Supports: Comply with NFPA 13 for hanger materials.

3.5 LABELING AND IDENTIFICATION

- A. Install labeling and pipe markers on equipment and piping according to requirements in NFPA 13.

3.6 FIELD QUALITY CONTROL

- A. Flush, test, and inspect sprinkler piping according to NFPA 13, "System Acceptance" Chapter.
- B. Verify that specialty valves, trim, fittings, controls, and accessories are installed and operate correctly.
- C. Verify that specified tests of piping are complete.
- D. Verify that sprinklers are correct types, have correct finishes and temperature ratings, and have guards as required for each application.
- E. Replace piping system components that do not pass test procedures and retest to demonstrate compliance. Repeat procedure until satisfactory results are obtained.
- F. Fill wet-pipe sprinkler piping with water.
- G. Coordinate with fire alarm tests. Operate as required.

3.7 CLEANING

- A. Clean dirt and debris from sprinklers. Remove and replace sprinklers having paint other than factory finish.

3.8 PROTECTION

- A. Protect sprinklers from damage until Substantial Completion.

END OF SECTION 21 00 00

SECTION 23 00 00

DUCTWORK MODIFICATIONS

1.01 SCOPE OF WORK: All labor, materials, equipment and services necessary to completely furnish and install heating, ventilating and air conditioning (HVAC) work as shown on the drawings and as specified herein, in general as follows:

A. Modifications to existing ductwork.

1.04 CODES, STANDARDS AND PERMITS

A. All work under this Section shall be performed in strict accordance with all rules, regulations, standards, codes, ordinances, and laws of local, state and Federal governments, or other authorities having lawful jurisdiction.

B. The Plumbing Subcontractor shall give all required notices, and secure and pay for all necessary permits, licenses, testing and certificates of approval required by regulations for all work under this Section.

2.01 MATERIALS

A. Duct Work: All duct work shall be constructed in accordance with the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) standards and shall comply with all applicable codes. Materials shall be galvanized sheet metal as specified by the SMACNA Manual. Add duct work shall be exterior wrapped with foil backed insulation 1" thick and 1-1/2 pound density. Duct work shall be of the following gauges:

0-12"	26 ga.
13-30"	24 ga.
31-54"	22 ga.

B. Grilles and Registers: "Titus" Type CTH-16, with mounting frame Type 6 at floor locations, extruded aluminum, clear anodized finish as manufactured by Titus Products or approved equal. Supply registers shall be complete with opposed blade dampers operable with a removable key from the diffuser face.

2.02 BALANCING AND TESTING

A. After installation of all work under this Section is completed, the HVAC Subcontractor shall balance, adjust and test all HVAC systems.

END OF SECTION



## SECTION 26 00 00

## GENERAL ELECTRICAL REQUIREMENTS

## 1. GENERAL

1.01 GENERAL CONDITIONS The General Conditions, Supplementary General Conditions and all Sections of Division 1 shall apply to each and every contract and contractor, person or persons supplying material, labor or entering into the work directly or indirectly.

1.02 SCOPE

- A. The work described herein shall be interpreted as work to be done by the Electrical Subcontractor. Work to be performed by other trades will be specifically referenced to a particular Contractor or Subcontractor.
- B. This section includes all labor, materials, equipment and related services necessary for the fabrication, delivery and installation of the work shown on the drawings and/or herein specified, including but not limited to the following:
1. Wiring devices, boxes and plates
  2. Lighting fixtures
  3. Equipment power connections
  4. Fire alarm system renovations
  5. Wiremold raceways and boxes for power and data
- C. The following work shall be provided under separate contract by the Owner:
1. Data wiring and terminations

1.03 GENERAL:

- A. This Contractor is hereby advised to visit the proposed building site to acquaint himself with general conditions of the terrain. No concession will be made in favor of the Contractor for difficulties incurred as a result of failure to visit the site.
- B. This Contractor shall coordinate his work with the progress of the building and other trades such that he shall complete his work as soon as conditions permit and so that interruptions of building functions will be at a minimum. Any overtime hours worked or additional costs incurred due to lack of or improper coordination with other trades or the Owners by this Contractor shall be assumed by this Contractor without any additional cost to the Owner.
- C. Waste material shall be removed promptly from the premises. All material and equipment stored on the premises shall be kept in a neat and orderly fashion. No material shall be stored where exposed to adverse weather conditions.
- D. This Contractor shall erect and maintain at all times necessary safeguards for the protection of life and property of Owners, workmen, staff, and public.

- E. The Contractor shall guarantee in writing all workmanship, materials and equipment to be free from defects for period of one year from date of acceptance of the project, and shall make good any and all defects within that period without cost to the Owner.
- F. No change shall be made from the work, equipment or materials as called for by the Specification and the accompanying drawings, except on a written order of the Owner. When such changes reduce the Contractor's materials, labor, equipment or expense, the saving thus affected shall be used in full to reduce the contract price. No charge for extra work will be allowed unless such extra work has been authorized by a written order of the Owner, stating the change to be made for such work.

#### 1.04 CODES AND STANDARDS

- A. Unless otherwise indicated in writing by the Architect or Engineer, the materials furnished under this specification shall be the standard products of manufacturers regularly engaged in the production of such equipment and shall be the manufacturer's latest standard design and shall also conform to such standards as to their quality and fabrication as have been established by the following:
  1. National Electrical Code (current edition)
  2. State Department of Public Safety
  3. Standards of the Underwriter's Laboratories (UL)
  4. National Electric Safety Code, American National Standards Institute
  5. Institute of Electrical and Electronic Engineers (IEEE)
  6. National Electrical Manufacturer's Association (NEMA)
  7. American Society for Testing and Materials (ASTM)
  8. Local Codes
- B. Where the contract documents indicate more stringent requirements than the above codes and ordinances, the contract documents shall take precedence.
- C. The installation shall comply with all local laws applying to the electrical installation in effect with regulations or any other governmental body or agency having jurisdiction, and with the regulations of the National Electrical Code where such regulations do not conflict with those laws.
- D. This Contractor shall obtain and pay for all permits required by local ordinances. After completion of the work, this Contractor shall furnish to the Architect, for the Owner, a certificate of final inspection and approval from the Inspection Bureau having jurisdiction.

#### 1.05 DRAWINGS

- A. The Contract drawings indicate the extent and schematic arrangement of the conduit and wiring systems. If any departure from the drawings are deemed necessary by the Contractor, details of such departures shall be submitted as soon as practical and within 30 days after award of contract, to the Architect for approval. No such departures shall be made without the prior written approval of the Architect.
- B. These specifications are accompanied by floor plans of the building showing the location of outlets, switch controls devices, panels, service and feeder distribution, telephone outlets, power apparatus, and equipment. The drawings, except the structure, are intended to indicate only diagrammatically the extent, general character and approximate

locations of the work included. Work indicated but having minor details obviously omitted, shall be furnished complete to perform the function intended without additional costs to the Owners.

- C. The Architectural, Structural, and Mechanical Drawings should be followed and this section of the work fitted thereto. If any departures from the contract drawings are deemed necessary by this Contractor, details of such departures and the reasons therefore shall be submitted, as soon as practical and within 30 days after award of the contract, to the Architect for approval. No departures shall be made without the prior written approval of the Architect or his authorized agent.
- D. The drawings and these specifications are complementary each to the other and any items specified but not shown or vice versa shall be referred to the Architect for clarification and shall consequently be furnished and installed as if both shown and specified.
- E. Record drawings of all changes to the contract plans shall be kept during construction, and one clean set of prints neatly marked in red ink shall be turned over to the Architect upon completion of the project, for the Owner's use.

## 2. PRODUCTS

### 2.01 MATERIALS AND WORKMANSHIP

- A. The materials and workmanship shall be the best of their kinds and in full accord with the most modern electrical construction. All materials shall be new.
- B. Defective equipment or equipment damaged in the course of installation or test shall be replaced or repaired in a manner meeting the approval of the Architect.
- C. In cases where equipment and materials are specifically specified, equal substitute material will be permitted only upon specific approval in writing by the Architect before the installation is made or material ordered.
- D. This Contractor shall submit detailed shop drawings (cuts, brochures, drawings including custom schematics of systems, etc.) in sextuplets (6) within 30 days after award of Contract to the Architect for review. Submittals to include but not be limited to the following:
  - 1. Wiring devices including switches and receptacles
  - 2. Wires and cables
  - 3. Fire alarm system
  - 4. Light fixtures

### 2.02 WIRING DEVICES

- A. This Contractor shall furnish and install receptacles and switches equal to the following:
  - 1. Devices: Gray, heavy duty.
  - 2. Device Plates: Stainless steel, heavy duty with brushed finish.
  - 3. Provide blank covers where needed.
  - 4. Light Switches: Hubbell "H-Moss" Sensors with Adaptive Technology, No exceptions.

- B. All switches and receptacles shall be flush mounted in all areas.
- C. All receptacles shall be labeled with panel ID and circuit number with Label Maker.

### 2.03 ALARM AND DETECTION

- A. This Contractor shall furnish and install devices as shown to extend the existing system to the proposed room configuration.

## 3. EXECUTION

### 3.01 RACEWAYS AND FITTING

- A. Outlets shall be installed in the locations shown on the drawings. The Contractor shall study the general building plans in relation to the spaces surrounding each outlet in order that his work may fit the other work required by these specifications.
- B. The Contractor shall relocate outlets so that, when fixtures or other fittings are installed they will be symmetrically located according to room layout and will not interfere with other work or equipment. Cast metal or cadmium plated sheet steel boxes, of a class to satisfy the conditions for each outlet, shall be used. Boxes shall be installed in a rigid and satisfactory manner, either by wood screws on wood work, (wall mounted boxes in wood construction may be nailed) expansion shields on masonry, or machine screws on steel work. Fixture outlet boxes at ceilings shall be of the 4" octagonal concrete type. Fire alarm and telephone outlet boxes shall be not less than 4" square fitted with appropriate covers where necessary, to set flush mounted. One piece gang boxes not less than 2" deep shall be utilized where necessary.
- C. Pull boxes shall be constructed of code gauge galvanized sheet metal of not less than the minimum size recommended by the National Electrical Code. Boxes shall be furnished through a common pull box, they shall be tagged to indicate clearly their electrical characteristics, circuit number, and panel designation.
- D. Conduit systems shall be installed in accordance with the applicable provisions of the National Electrical Code. Rigid steel conduit shall be zinc coated. Electric metallic tubing shall be installed in accordance with provisions of the National Electrical Code.
- E. Conduits shall be kept at least 8 inches from parallel runs of flues, steam pipes or hot water pipes. Exposed runs of conduit shall have supports spaced not more than 6 feet apart and shall be installed with runs parallel or perpendicular to walls, structural members or intersections of vertical planes and ceilings, with right angle turns consisting of cast metal fittings of symmetrical bonds. Bends and offsets shall be avoided where possible, but where necessary, shall be made with an approved hickey or conduit bending machine. The use of a pipe tee or vise for bending conduit will not be permitted. Conduit which has been crushed or deformed in any way shall not be installed. Expansion fittings or other approved devices shall be used to provide for expansion and contraction where conduit crosses expansion joints.
- F. Wooden plugs inserted in masonry or concrete shall not be used as a base to fasten conduit supports. Conduits shall be supported on approved types of galvanized wall brackets, ceiling trapeze, strap hangers, or pipe straps, secured by means of toggle bolts

on hollow masonry units or expansion bolts in concrete or brick and machine screws on metal surfaces. Nails shall not be used as means of fastening boxes or conduits.

- G. Conduit shall be installed in such manner as to insure against trouble from the collection of trapped condensation, and all runs of conduit shall be arranged so as to be devoid of traps wherever possible. The Contractor shall exercise the necessary precautions to prevent the lodgement of dirt, plaster, or trash in conduit, fittings, and boxes during the course of installation. A run of conduit which has become clogged shall be entirely freed of these accumulations, or shall be replaced.
- H. Conduit shall be securely fastened to all cast or sheet metal outlet, junction and pull boxes with galvanized locknuts and bushings, care being observed to see that the full number of threads project through to permit the bushing to pull tight against the end of conduit, after which the locknut shall be made up sufficiently tight to draw the bushing onto firm electrical contact with the box. Wiring shall be installed in telephone system conduits unless otherwise specified.
- I. Exposed surface wiring in finished areas shall not be allowed.

### 3.02 CONDUCTORS

- A. Home runs may be combined in one conduit, provided all connections are in accordance with National Electrical Code requirements, and the maximum unbalanced current in the neutral does not exceed the capacity of the conductor. Conductors shall be continuous from outlet to outlet, and no splices shall be made except within outlet of junction boxes. Junction boxes may be utilized wherever required or as shown on the drawings.
- B. Wire connectors, insulating material or solderless pressure connectors, properly taped, shall be utilized for all splices in wiring.
- C. Use Type THHN/THWN or XHHW. Wire shall not be smaller than 12 AWG for power and lighting circuits, or 18 AWG for control circuits

### 3.03 CIRCUIT IDENTIFICATION

- A. Neatly maintain a set of drawings showing circuits for existing and proposed devices. Turn copies over to the Owner and Architect at substantial completion. Provide a revised list of areas served at the breaker panel(s) serving the work area.

END OF SECTION



## SECTION 28 10 00

## DOOR ACCESS CONTROL AND INTRUSION DETECTION

## PART 1 - GENERAL

## 1.1 SECTION INCLUDES

- A. The Access Control system shall be an extension of the existing *Honeywell Enterprise Building Integrator System* with host computer located in the Cross Office Building. Provide system compatible card readers, door sensors and request to exit devices.
- B. *Honeywell* shall be the only acceptable supplier for this project, and shall provide installation supervision and instruction of State of Maine representatives on maintenance and operation of BMS, and system warranty.
- C. Work included under Division 28 shall include:
  - 1. Control wiring for all door access devices.
  - 2. Card readers, door position switches, and request-to-exit devices.
  - 3. System programming, data entry, testing, and start-up.
  - 4. Modifications as required to the existing door control panel.
  - 5. Motion detectors.
  - 6. Duress alarm push buttons.
  - 7. As-built documentation.

## 1.2 COORDINATION OF WORK PROVIDED UNDER OTHER DIVISIONS

- A. Work provided under other divisions shall include:
  - 1. Door-locking hardware will be provided under Division 8.
  - 2. 120VAC power circuit wiring, raceways, and electrical boxes for door locking hardware wiring will be provided under Division 26.
  - 3. Control wiring for door locking hardware shall be provided under Division 28.
  - 4. Card readers, door position switches, and request-to-exit devices shall be provided under Division 28.

## 1.3 QUALITY ASSURANCE

- A. Codes and Approvals:
  - 1. The complete Access Control installation shall be in strict accordance to the national and local electrical codes and the electrical section of these specifications. All devices designed for or used in line voltage applications shall be UL Listed.
  - 2. Access Control equipment shall be listed under the appropriate following UL standards:
    - a. UL294 (Access Control System)
    - b. UL1076 (Proprietary Alarm Monitoring System)
    - c. CE Mark

## 1.4 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Division 1.
- B. Shop Drawings and Product Data:

1. Submit complete and at one time. Provide manufacturer's catalog information showing dimensions, colors, and configurations. Isolated items will not be considered for approval, except by prior authorization.
2. A technical data sheet from the manufacturer should be included with the response for each product proposed. This data sheet shall include the physical specifications as well as the electrical characteristic.
3. The following is required for approval, prior to fabrication and installation:
  - a. Catalog Data Sheets of all manufactured items, including manufacturer and model number.
  - b. Wiring diagrams indicating proposed connections of all equipment and indicating equipment types and model numbers.

## PART 2 - PRODUCTS

### 2.1 BMS CENTRAL HARDWARE

- A. General: The central BMS facility shall be the existing Enterprise Building Integrator workstation located in the Cross Office Building.

### 2.2 EXISTING LOGICAL PROCESSING CONTROLLER

- A. Provide necessary programming to accommodate new devices being installed under this contract.

### 2.3 CARD READERS – *HID ProxPro® Access Control Reader*

- A. The card reader shall be a *ProxPro* proximity card reader, Model Number 5355, and shall be manufactured by *HID Corporation*.
- B. The card reader shall read encoded data from the access card and/or transponder and transmit the data back to the host panel, giving an audible and visual indication of a properly read card.
- C. The card reader shall be no larger than 5.0" x 5.0" x 1.0"
- D. The card reader shall have a typical read range of 5.5" to 8"
- E. The card reader shall be provided with an internal tamper switch that will indicate an alarm condition if an unauthorized attempt is made to disassemble the unit.
- F. The card reader shall be a single unit with a three-piece housing, and with properly sized mounting holes that allow it to be attached directly to a US single gang electrical box.
- G. The card reader shall be sealed to a NEMA rating of 4X, and all internal electronics will have conformal coating to provide a high degree of environmental protection.
- H. The card reader shall be listed under UL 294 as an access control system accessory, and shall have the following certifications: Canada/UL 294, Canada/UL 1604 (Hazardous Location Model only) FCC, Canada Radio, EU and CB Scheme Electrical Safety, EU – R&TTE Directive, CE Mark, Australia C-Tick, New Zealand, Taiwan.

- I. The card reader shall have separate terminal control points for the green LED, the red LED, and the audible indicator.
- J. The card reader shall have a hold line that will buffer a card read until the panel has asserted that the information can be sent up line.
- K. The card reader shall have a re-present mode in which the card must be taken from the reader field for one second before being read again. This feature is required to prevent multiple reads from a single card presentation.
- L. The card reader shall be fully weatherized, and shall have an operating temperature of -22 to 150 degrees Fahrenheit (-30 to 65 degrees Celsius), and shall have an operating humidity of 5-95% noncondensing.
- M. The reader shall have a lifetime warranty.
- N. The card reader shall be made from polycarbonate material, and shall be charcoal gray.
- O. The card reader shall transmit at a 125 kHz frequency.
- P. The cable requirements of the card reader shall be a minimum five (5) conductor, 22 AWG, stranded cable with overall shield (for a Wiegand protocol interface). A six (6)-conductor cable is required when controlling the red and green LED individually. A seven (7)-conductor cable is required when the Host controls both the red and green LED's. A 22 AWG twisted pair, shielded, stranded cable is required for use of the tamper switch.
- Q. The card reader shall have the following reader configuration options which are user selectable by dip switch settings:
  - 1. Reader beeps and flashes green on a card read, LED normally red, single line control of LED.
  - 2. Reader flashes green on a card read, LED normally red, single line control of LED.
  - 3. Reader beeps on a card read, LED normally red, single line control of LED.
  - 4. Beeper and LED are controlled by host only, LED normally red, single line control of LED.
  - 5. Reader beeps and flashes green on a card read, LED normally off, red and green LED's controlled individually.
  - 6. Reader flashes green on a card read, LED normally off, red and green LED's controlled individually.
- R. Reader beeps on a card read, LED normally off, red and green LED's controlled individually.
- S. Beeper and LED are controlled by host only, LED normally off, red and green LED controlled individually.
- T. The card reader shall communicate in a Wiegand protocol interface, and be compatible with all standard access control systems.
- U. The card reader shall also be available in optional Clock and Data, RS232 and RS422 serial interfaces.
- V. The voltage requirements of the card reader shall be 10-28.5 VDC.

## 2.4 DEVICES

## A. Request-to-Exit Devices

1. Provide DS150i and DS151i Passive Infrared (PIR) detectors specifically designed for Request-to-Exit (REX) applications. They detect motion in their coverage area and signal an access control system or door control device. Relay latch time adjustable to 60 seconds. Programmable retrigger or non-retrigger mode. Programmable Fail Safe or Fail Secure modes. Externally visible activation LED.

## B. Supervisory Switches

1. *Sentrol 1078C Series Concealed Mount* - The contact shall contain a hermetically sealed magnetic reed switch. The reed shall be potted in the contact housing with a polyurethane based compound. Contact and magnet housing shall snap-lock into a 3/4" or 1" dia. hole. Housings shall be molded of flame retardant ABS plastic. Color of housings shall be off-white, grey or mahogany brown. The magnet shall be made of Alnico V. Rare Earth Magnet shall be made of neodymium iron boron.

## 2.5 INTRUSION DETECTION

## A. Motion Detectors

1. Provide Owner Standard units.
  - a. Manufacturer: Bosch "TriTech Motion Detector."
  - b. Model: 1SC-PL1-W18G
2. Power Supply: Connect to existing unit nearest the proposed installation.

## PART 3 - EXECUTION

## 3.1 GENERAL

- A. The supplier shall perform system testing to ensure it is operable to the manufacturer's specifications. The test report shall be submitted to the customer for approval and signoff.

## 3.2 INSTALLATION

- A. Control signal, communications, and data transmission lines grounding shall be installed as necessary to preclude ground loops, noise, and surges from adversely affecting system operation. Provide mounting hardware as required.
- B. All low voltage wiring outside the control console, cabinets, boxes and similar enclosures, shall be plenum rated where required by code. Cable not pulled through conduits or placed in raceways, outlet boxes, junction boxes, or similar fittings with other building wiring.
- C. Provide all necessary wiring and connections between power operated doors and door card access system. Include wiring between a control relay, the entry actuator button, and the door operator. Also provide wiring between the door operator and the SI point on the *Honeywell IQ* panel. Also provide wiring between the door lock and the control relay.
  1. Provide a control relay as recommended by the door operator supplier/installer. The control relay coil voltage shall match the electric lock voltage .

## 3.3 MANUALS

- A. The following manuals shall be provided:
  - 1. A manual including revised As Built documents of all materials required under the paragraph "SUBMITTALS" on this specification.
  - 2. Two Operators Manuals, two Programmers, and two As Built Manuals shall be provided to the owner.

3.4 WARRANTY

- A. The new access control system components and wiring shall be warranted for a period of one (1) year from the date of acceptance.

END OF SECTION 28 13 16