ROOF REPLACEMENT AND ASSOCIATED WORK
AT THE DOROTHEA DIX PSYCHIATRIC CENTER
BANGOR, MAINE

October 20, 2022

Prepared For:

Dorothea Dix Psychiatric Center
656 State Street
Bangor, ME 04402

Prepared By:

Gale Associates, Inc.
5 Moulton Street
Portland, ME 04101
Gale JN 838010

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AT THE DOROTHEA DIX PSYCHIATRIC CENTER
BANGOR, MAINE

GALE JN 838010
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00 11 13
Notice to Contractors

Roof Replacement and Associated Work at the Dorothea Dix Psychiatric Center
656 State Street, Bangor, Maine 04402

BGS project number 3263

Roof replacement of eight (8) existing roof systems with new elastomeric roofing including throughwall and reglet flashing installation at rising masonry walls. Removal and replacement of existing transite roof deck with new corrugated metal roof deck.

The cost of the work is approximately $ 1,861,900. The work to be performed under this contract shall be completed on or before the Final Completion date of *29 September 2023*.

1. Submit bids on a completed Contractor Bid Form, plus bid security when required, all scanned and included as an attachment to an email with the subject line marked "**Bid for *Roof Replacement and Associated Work at the Dorothea Dix Psychiatric Center***" and addressed to the Bid Administrator at: Mark.faulkner@maine.gov and copied to BGS.Architect@Maine.gov, so as to be received no later than **2:00:00 p.m.** on ***November 30, 2022***.

   Bid submissions will be opened and read aloud at the time and date noted above at the Dorothea Dix Psychiatric Center, accessible as a video conference call. Those who wish to participate in the call must submit a request for access to BGS.Architect@Maine.gov.

   Any bid received after the noted time will not be considered a valid bid and will remain unopened. Any bid submitted by any other means will not be considered a valid bid. The Bid Administrator may require the Bidder to surrender a valid paper copy of the bid form or the bid security document in certain circumstances.

   Questions on the bid opening process shall be addressed to the Bid Administrator: Joseph H. Ostwald, Director, Division of Planning, Design & Construction, Bureau of General Services, 77 State House Station, Augusta, Maine 04333-0077, BGS.Architect@Maine.gov.

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.
   If noted above as required, the Bidder shall include a satisfactory Bid Bond (section 00 43 13) or a certified or cashier's check for 5% of the bid amount with the completed bid form submitted to the Owner. The Bid Bond form is available on the BGS website.

4. Performance and Payment Bonds *are required* on this project.
   If noted above as required, the selected Contractor shall furnish a 100% contract Performance Bond (section 00 61 13.13) and a 100% contract Payment Bond (section 00 61 13.16) in the contract amount to cover the execution of the Work. Bond forms are available on the BGS website.

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

00 11 13
Notice to Contractors

6. There *are no* Pre-qualified General Contractors on this project.
   If Pre-qualified General Contractors are identified for this project, the name of each company, with their city and state, are listed below.

7. An on-site pre-bid conference *will* be conducted for this project.
   If a pre-bid conference is scheduled, it is *optional* for General Contractors and optional for Subcontractors and suppliers. Contractors who arrive late or leave early for a mandatory meeting may be prohibited from participating in this meeting and bidding. *The pre-bid conference will be held at the project site at 656 State Street, Bangor, ME on November 8, 2022 at 10:00am.*

8. Bid Documents - full sets only - will be available on or about *Ocotber 24, 2022* and may be obtained *at no cost for electronic copies or at a cost of $50.00 for printed copies* from:
   Gale Associates, Inc.
   6 Bedford Farms Drive, Suite 101
   Bedford, NH 03110
   (603) 471-1887 jvl@gainc.com

9. Bid Documents may be examined at:
   AGC Maine
   188 Whitten Road
   Augusta, ME 04330
   Phone 207-622-4741 Fax 207-622-1625

   Construction Summary
   734 Chestnut Street
   Manchester, NH 03104
   Phone 603-627-8856 Fax 603-627-4524

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

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

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

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

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

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

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

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

2. Authority of Owner

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

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

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

3. Submitting Bids and Bid Requirements

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

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

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

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

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

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

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

3.8 A bid may be withdrawn without penalty if a written request by the bidder is presented to the Owner prior to the bid closing time. Such written withdrawal requests are subject to verification as required by the Bureau. 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 In the event State of Maine Offices unexpectedly close on the published date of a public bid opening in the location of that bid opening, prior to the time of the scheduled deadline, the new deadline for the public bid opening will be the following business day at the originally scheduled hour of the day, at the original location. Official closings are posted on the State of Maine government website.

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

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

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

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

00 41 13
Contractor Bid Form

Roof Replacement and Associated Work at the Dorothea Dix Psychiatric Center

BGS project number 3263

Bid Form submitted by: *email only to email address below*

Bid Administrator:

Mark Faulkner
Director of Facilities
Dorothea Dix Psychiatric Center
P.O. Box 926
Bangor, Maine 04402

Mark.Faulkner@Maine.gov
CC: BGS.Architect@Maine.gov

Bidder:

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: _____

The Bidder agrees, if the Owner offers to award the contract, to provide any and all bonds and certificates of insurance, as well as Schedule of Values, Project Schedule, and List of Subcontractors and Suppliers if required by the Owner, and to sign the designated Construction Contract 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, or a Saturday, or a Sunday, in which case the aforementioned documents must be received before 12:00 noon on the first available business day following the holiday, 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.

00 41 13
Contractor Bid Form

1. The Bidder, having carefully examined the *Roof Replacement and Associated Work at the Dorothea Dix Psychiatric Center* Project Manual dated *September 12, 2022*, prepared by *Gale Associates, Inc.*, as well as Specifications, Drawings, and any Addenda, the form of contract, and 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:

   $ _____.00

2. Allowances *are not included* on this project.
   No Allowances

   $ *0*.00

3. Alternate Bids *are included* on this project.
   Alternate Bids are as shown below
   Any dollar amount line below that is left blank by the Bidder shall be read as a bid of **$0.00**.

   1 Alternate Number One $ _____.00

   2 Alternate Number Two $ _____.00

   3 Alternate Number Three $ _____.00

   4 Not Used $ _____.00

4. Bid security *is required* on this project.
   If noted above as required, or if the Base Bid amount exceeds $125,000.00, the Bidder shall include with this bid form a satisfactory Bid Bond (section 00 43 13) or a certified or cashier's check for 5% of the bid amount with this completed bid form submitted to the Owner.

5. Filed Sub-bids *are not required* on this project.
   If noted above as required, the Bidder shall include with this bid form a list of each Filed Sub-bidder selected by the Bidder on the form provided (section 00 41 13F).

00 43 13
Contractor Bid Bond

Bond No.: **insert bond number**

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

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

Now therefore:

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

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

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

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

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

00 43 13
Contractor Bid Bond

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

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

Contractor

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

Surety

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

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

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

00 43 16
Subcontractor Bid Bond

Bond No.: **insert bond number**

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

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

Now therefore:

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

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

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

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

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

00 43 16
Subcontractor Bid Bond

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

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

Subcontractor

_____

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

Surety

_____

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

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

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

AdvantageME CT# _____

State of Maine
CONSTRUCTION CONTRACT

Large Construction Project

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

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

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

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

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

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

ARTICLE 1 COMPENSATION AND PAYMENTS

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

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

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

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

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

ARTICLE 2 COMMENCEMENT AND COMPLETION DATES

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

2.2 The Substantial Completion Date shall be ***15 December 2023***.

2.3 The Work of this Contract shall be completed on or before the Contract Final Completion Date of ***31 December 2023***.

2.4 The Contract Expiration Date shall be ***29 February 2024***. (This date is the Owner's deadline for internal management of contract accounts. The Contract Expiration Date does not directly relate to any contract obligation of the Contractor.)

ARTICLE 3 INELIGIBLE BIDDER

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

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

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

ARTICLE 4 CONTRACTOR'S RESPONSIBILITIES

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

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

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

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

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

ARTICLE 5 OWNER'S RESPONSIBILITIES

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

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

ARTICLE 6 INSTRUMENTS OF SERVICE

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

ARTICLE 7 MISCELLANEOUS PROVISIONS

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

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

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

ARTICLE 8 CONTRACT DOCUMENTS

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

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

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

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

BGS Project No.: _____

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

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

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

select proper approval authority	
Reviewed by:	**Approved by:**
Signature *Date* *insert name*	*Signature* *Date* *Joseph H. Ostwald*
Project Manager/ Contract Administrator	*Director, Planning, Design & Construction*

00 61 13.13
Contractor Performance Bond

Bond No.: **insert bond number**

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

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

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

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

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

00 61 13.13
Contractor Performance Bond

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

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

Contractor

_____

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

Surety

_____

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

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

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

00 61 13.16
Contractor Payment Bond

Bond No.: **insert bond number**

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

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

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

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

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

00 61 13.16
Contractor Payment Bond

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

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

Contractor

_____

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

Surety

_____

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

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

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

00 61 13.23
Subcontractor Performance Bond

Bond No.: **insert bond number**

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

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

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

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

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

00 61 13.23
Subcontractor Performance Bond

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

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

Subcontractor

_____

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

Surety

_____

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

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

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

00 61 13.26
Subcontractor Payment Bond

Bond No.: **insert bond number**

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

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

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

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

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

00 61 13.26
Subcontractor Payment Bond

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

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

Subcontractor

_____

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

Surety

_____

(Signature)

insert name and title

insert company name

insert address
insert city state zip code

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

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

revised 05 April 2021

AdvantageME CT# 00000000000000000000

State of Maine
CONSTRUCTION CONTRACT
Application for Payment

Project name
location / school / campus

Contractor Company name
address
city state zip code

Application Number: 1
Period Start Date: 1-Jul-2021
Period End Date: 31-Jul-2021
BGS Project No.: n
Other Project No.: x

1	Original Contract Amount			$0
2	Net of Change Orders to Date	(from table below)		$0
3	Contract Sum to Date	(line 1 plus or minus line 2)		$0
4	Total Completed and Stored to Date	(column G on Continuation Sheet)		$0
5a	5% Retainage of Completed Work	(columns D + E x 5%)	$0	
5b	5% Retainage of Stored Materials	(column F x 5%)	$0	
5c	Total Retainage	(column I)		$0
6	Total Earned Less Retainage	(line 4 minus line 5c)		$0
7	Less Previous Approved Applications for Payment	(line 6 from previous Application)		$0
8	Current Payment Due	(line 6 minus line 7)		**$0**
9	Balance to Finish, Including Retainage	(line 3 minus line 6)	$0	

Change Order Summary	Additions	Deductions	
Total Changes Approved in Previous Months	$0	$0	
Total Changes Approved this Month	$0	$0	
Subtotals	$0	$0	
Net of Change Orders to Date			$0

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

Contractor
Type company name here
Type person's name, title here

signature date

In accordance with the Contract Documents, based on on-site observations and the data comprising this Application, the Consultant certifies to the Owner that to the best of the Consultant's knowledge, information, and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the Amount Certified. **Amount Certified:**

Consultant (Architect or Engineer)
Type firm name here
Type person's name, title here

signature date

Owner
Type contracting entity name here
Type person's name, title here

signature date

Owner's Rep / other - clear text if not used
Type entity name here
Type person's name, title here

signature date

Bureau of General Services

Type person's name, title here

signature date

revised 05 April 2021

State of Maine
CONSTRUCTION CONTRACT
Application for Payment - Continuation Sheet

Application Number: **1**
Period Start Date: 1-Jul-2021
Period End Date: 31-Jul-2021
BGS Project No.: n
Other Project No.: x

Project name

Contractor Company name

page 1 of 2

A	B	C	D	E	F	G		H	I
			Work Completed						
			From Previous Application	This Period		Total Completed and Stored to Date			
Item No.	Description of Work	Scheduled Value	(Previous D + E)	Work in Place	Stored Materials (Not in D or E)	(D + E + F)	% (G ÷ C)	Balance to Finish (C - G)	Retainage 5%
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0
		$0	0	0	0	0	0.0%	$0	0

	Total	$0	$0	$0	$0	$0	0.0%	$0	$0

revised 05 April 2021

AdvantageME CT# 0000

State of Maine
CONSTRUCTION CONTRACT
Change Order

Project name
location / school / campus

Change Order Number: **1**

Issue Date of this Document: 31-Dec-2022

Contractor Company name
address
city state zip code

BGS Project No.: n
Other Project No.: x

Cost Change

Show Deduct as a negative number, e.g.: "-$850".

	Add	Deduct	Total
Net Amount of this Change Order	$0	$0	
Net Amount of Previous Change Orders	$0	$0	
Net of Change Orders to Date	$0	$0	$0
Original Contract Amount			$0
		Revised Contract Amount	**$0**

Time Change

Show Deduct as a negative number, e.g.: "-8".

	Add	Deduct	Total
Net Calendar Days Adjusted by this Change Order	0	0	
Net Calendar Days Adjusted by Previous Change Orders	0	0	
Net of Change Orders to Date	0	0	0
Original Contract Final Completion Date			31-Dec-2023
		Revised Contract Final Completion Date*	**31-Dec-2023**

Consultant (Architect or Engineer)
Type firm name here
Type person's name, title here

signature date

Contractor
Type company name here
Type person's name, title here

signature date

Owner
Type contracting entity name here
Type person's name, title here

signature date

Type Entity, such as "Owner's Rep", or "not used"
Type entity name here
Type person's name, title here

signature date

Bureau of General Services
Division of Planning, Design & Construction
Type person's name, title here

signature date

Attach the "List of Change Order Items" sheet, plus all supporting documentation for each Change Order Item.

Substantial Completion Date: the deadline for first beneficial use by Owner, as certified by Consultant.	*1-Dec-2023*
**** Contract Final Completion Date**: the Contractor's final completion deadline for contract work.*	*31-Dec-2023*
Contract Expiration Date: the Owner's deadline for internal management of contract accounts; Contract Expiration Date does not directly relate to any contract obligation of the Contractor.	*29-Feb-2024*

List of Change Order Items

Project name
Contractor Company name

C. O. Number: 1

CO Item No.	CP No.	Item Name	Reason Code	Calendar Days*	Cost
1	1	Type brief name of Change Order Item here		0	$0
				0	$0
				0	$0
				0	$0
				0	$0
				0	$0
				0	$0
				0	$0
				0	$0
				0	$0
				0	$0
				0	$0
				0	$0
				0	$0
				0	$0
			Totals	**0**	**$0**

Reason Codes

EO Error or omission of Consultant
UC Unforeseen job site condition
OC Owner-generated change
RC Regulatory authority-generated change
CC Contractor-generated change

** Calendar Days shows Contract Final Completion Date impact only.*

Attach this sheet to the BGS "Change Order" cover sheet (with cost and time summaries, and signatures). Attach a "Details" sheet, and other supporting documentation, for each Change Order Item listed above.

revised 05 April 2021

State of Maine Change Order

Details of Change Order Item

Project name
location / school / campus

Contractor Company name
address
city state zip code

Change Order Item Number **1**
CP (Change Proposal) Number 1
Issue Date of this Document: 31-Oct-2021

BGS Project No.: n
Other Project No.: x

Change Order Item	Type name of Change Order Item here			
Description of Work	Type brief description here of work scope here.			
Reason or Necessity of Work	Type brief justification for change here.			
Cost Breakdown	Work by Subcontractor only	Work by Sub *and* Contractor	Work by Contractor only	
Subcontractor base cost	$0	$0		
Subcontractor markup	$0	$0		
Contractor base cost		$0	$0	
Contractor markup	$0	$0	$0	
Subtotal	$0	$0	$0	
Compensation	lump sum		**Total Cost**	**$0**
Initiated by	Consultant		**Calendar Days***	0
Reason Code	CC		**Supporting Documentation**	is attached

EO	*UC*	*OC*	*RC*	*CC*
Error or omission of Consultant	*Unforeseen job site condition*	*Owner-generated change*	*Regulatory authority-generated change*	*Contractor-generated change*

** Calendar Days shows Contract Final Completion Date impact only.*

Consultant
(Architect or Engineer)
Type firm name here
Type person's name, title here
signature date

Contractor
Type company name here
Type person's name, title here
signature date

Owner
Type contracting entity name here
Type person's name, title here
signature date

Owner's Rep
Type entity name here
Type person's name, title here
signature date

Bureau of
General Services

Division of Planning, Design & Construction
Type person's name, title here

---
signature date

00 71 00
Definitions

1. Definitions

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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General Conditions

Table of Contents of this General Conditions Section

1. Preconstruction Conference

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

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

1.1.2 Review the responsibilities of each party;

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

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

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

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

1.1.7 discuss jobsite issues;

1.1.8 Discuss Project close-out procedures;

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

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

2. Intent and Correlation of Contract Documents

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

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

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

3. Additional Drawings and Specifications

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

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

4. Ownership of Contract Documents

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

5. Permits, Laws, and Regulations

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

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

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

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

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

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

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

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

6. Taxes

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

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

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

7. Labor and Wages

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

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

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

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

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

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

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

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

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

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

8. Indemnification

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

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

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

9. Insurance Requirements

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

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

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

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

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

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

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

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

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

Any one accident or loss.....$500,000

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

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

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

10. Contract Bonds

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

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

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

11. Patents and Royalties

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

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

12. Surveys, Layout of Work

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

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

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

13. Record of Documents

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

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

14. Allowances

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

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

15. Shop Drawings

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

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

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

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

16. Samples

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

17. Substitutions

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

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

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

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

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

18. Assignment of Contract

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

19. Separate Contracts

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

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

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

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

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

20. Subcontracts

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

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

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

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

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

21. Contractor-Subcontractor Relationship

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

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

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

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

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

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

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

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

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

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

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

22. Supervision of the Work

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

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

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

23. Observation of the Work

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

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

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

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

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

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

24. Consultant's Status

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

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

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

25. Management of the Premises

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

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

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

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

26. Safety and Security of the Premises

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

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

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

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

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

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

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

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

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

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

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

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

27. Changes in the Work

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

28. Correction of the Work

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

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

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

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

29. Owner's Right to do Work

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

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

30. Termination of Contract and Stop Work Action

30.1 The Owner may, owing to a certificate of the Consultant indicating that sufficient cause exists to justify such action, without prejudice to any other right or remedy and after giving the Contractor and the Contractor's surety seven days written notice, terminate the employment of the Contractor. At that time the Owner may take possession of the premises and of all materials, tools and appliances on the premises and finish the work by whatever method the Owner may deem expedient. Cause for such action by the Owner includes:

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

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

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

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

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

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

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

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

31. Delays and Extension of Time

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

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

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

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

32. Payments to the Contractor

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

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

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

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

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

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

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

32.8 Certified Requisitions for Payment, payments made to the Contractor, or partial or entire occupancy of the project by the Owner shall not constitute an acceptance of any work that does not conform to the Contract Documents. The making and acceptance of the final payment constitutes a waiver of all claims by the Owner, other than those arising from unsettled liens, from faulty work or materials appearing within one year from final payment or from requirements of the Drawings and Specifications, and of all claims by the Contractor, except those previously made and still unsettled.

33. Payments Withheld

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

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

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

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

34. Liens

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

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

35. Workmanship

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

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

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

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

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

36. Close-out of the Work

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

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

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

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

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

37. Date of Completion and Liquidated Damages

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

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

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

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

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

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

38. Dispute Resolution

38.1 Mediation

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

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

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

38.2 Arbitration

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

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

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

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

00 73 46
Wage Determination Schedule

PART 1- GENERAL

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

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

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

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION (not used)

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

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

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

2022 Fair Minimum Wage Rates
Building 2 Penobscot County
(other than 1 or 2 family homes)

Occupational Title	Minimum Wage	Minimum Benefit	Total
Brickmasons And Blockmasons	$35.00	$0.00	$35.00
Carpenter	$26.40	$12.38	$38.78
Carpet Installers	$20.50	$0.72	$21.22
Cement Masons And Concrete Finisher	$20.00	$4.44	$24.44
Construction And Maintenance Painters	$34.61	$2.65	$37.26
Construction Laborer	$18.00	$1.39	$19.39
Control And Valve Installers And Repairers - Except Mechanical Door	$26.00	$5.49	$31.49
Crane And Tower Operators	$25.75	$6.29	$32.04
Drywall And Ceiling Tile Installers	$25.49	$0.00	$25.49
Earth Drillers - Except Oil And Gas	$23.25	$5.53	$28.78
Electricians	$30.68	$6.37	$37.05
Elevator Installers And Repairers	$56.69	$42.31	$99.00
Excavating And Loading Machine And Dragline Operators	$25.25	$0.00	$25.25
Fence Erectors	$23.00	$5.43	$28.43
Floor Layers - Except Carpet/Wood/Hard Tiles	$22.00	$5.25	$27.25
Glaziers	$26.00	$1.90	$27.90
Hazardous Materials Removal Workers	$20.38	$2.17	$22.55
Heating And Air Conditioning And Refrigeration Mechanics And Installers	$28.00	$4.26	$32.26
Heavy And Tractor - Trailer Truck Drivers	$20.75	$0.20	$20.95
Industrial Machinery Mechanics	$26.00	$5.82	$31.82
Industrial Truck And Tractor Operators	$24.00	$5.61	$29.61
Insulation Workers - Floor Ceiling And Wall	$26.25	$1.43	$27.68
Ironworker - Ornamental	$25.00	$3.32	$28.32
Light Truck Or Delivery Services Drivers	$20.00	$2.30	$22.30
Mobile Heavy Equipment Mechanics - Except Engines	$24.88	$4.09	$28.97
Operating Engineers And Other Equipment Operators	$26.00	$2.15	$28.15
Paving Surfacing And Tamping Equipment Operators	$33.12	$0.00	$33.12
Pipelayers	$28.00	$7.20	$35.20
Plumbers Pipe Fitters And Steamfitters	$26.00	$4.15	$30.15
Reinforcing Iron And Rebar Workers	$21.00	$5.69	$26.69
Roofers	$20.00	$0.46	$20.46
Sheet Metal Workers	$22.75	$6.53	$29.28
Sider	$18.00	$2.44	$20.44
Structural Iron And Steel Workers	$27.98	$4.69	$32.67
Tapers	$25.00	$1.13	$26.13
Telecommunications Equipment Installers And Repairers - Except Line Installers	$33.25	$10.78	$44.03
Tile And Marble Setters	$25.50	$5.30	$30.80

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

Apprentices – The minimum wage 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.

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

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

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

A true copy

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

Expiration Date: 12-31-2022

End of Section 00 73 46

SUMMARY OF WORK

SECTION 01 10 00

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

In general, the Contractor shall supply all labor, materials, equipment, temporary protection, tools, and appliances necessary for the proper completion of the work, as required in the Specifications, in accordance with good construction practice, and as required by the materials manufacturer. The work includes, but is not limited to, the following items:

A. Supply all temporary shoring, lighting, barricades, signage, and protection necessary to protect the building areas, building systems, and building patrons and public. Maintain such protection for the complete duration of the project.

B. Supply all disposal facilities, transportation and labor necessary to dispose of all demolished materials, dirt, and debris off-site in a legal dumping area. The Contractor shall obtain all permits necessary to transport and dispose of all materials, rubbish, and debris.

C. Provide temporary fencing around set-up and storage locations. Set-up and lay down areas should be sufficient for all sub-trades to have adequate area to store materials and equipment. Set-up and lay down areas must be within areas designated by the Owner.

D. Complete all associated work in accordance with the project specifications and Contract Drawings. Coordinate the work with the Owner.

E. The Contractor shall provide all lifts, cranes, and equipment necessary to access and perform the work.

F. Coordinate the disconnection, removal, relocation, and reinstallation of mechanical units, conduits, ductwork, equipment, etc. Provide new sleepers under the mechanical units.

G. Remove and dispose of existing roofing materials, including but not limited to, roof membrane, coverboard, insulation, and baseboard down to the existing deck to remain at locations as indicated on the Contract Documents.

H. Remove and dispose of associated roof flashings and components, as indicated in the Contract Drawings.

I. Remove existing Transite roof deck at Roof Areas D and E and replace with new corrugated metal decking. Existing Transite roof deck has been found to contain asbestos. Refer to Section 01 23 00 – Alternates.

J. Install new adhered single-ply elastomeric roof system including, but not limited to, elastomeric roof membrane, coverboard, insulation, air/vapor retarder, and baseboard over existing metal or wood decks at Roof Areas as indicated on the Contract Drawings.

K. Install new adhered single-ply elastomeric roof system including, but not limited to, elastomeric roof membrane, coverboard, insulation and air/vapor retarder over existing concrete decks at Roof Areas as indicated on the Contract Drawings.

L. Install tapered insulation at locations and as indicated in the Contract Documents. Crickets are to be provided at mechanical units, sleepers, and as required to shed water towards roof drains.

M. Install wood blocking, plywood sheathing, and sheet metal flashings at locations and as indicated in the Contract Documents and as required to properly terminate the roof membrane and flashings.

N. Install new metal wall panels at the stucco rising walls at Roof Area H including, but not limited to, plywood sheathing, air barrier, and metal wall panels.

O. Install new vent-pipe flashing and associated components. Provide no-hub connections and cast-iron extensions at required vent pipes to meet Code required 18” minimum height off of new finished roof elevation.

P. Remove existing roof drain bowl assembly and install new strainer, clamping rings, clamps, extenders, and any other accessories at locations and as indicated in the Contract Documents.

Q. Remove existing roof access ladders and replace with new wall mounted roof access ladders at locations as indicated in the Contract Documents.

R. Remove existing brick masonry as required to install new throughwall flashing at locations as indicated in the Contract Documents.

S. Install new sheet metal reglet flashing at granite stone veneer rising walls at locations as indicated in the Contract Documents.

T. Remove and replace damaged, cracked, or spalled brick masonry units at locations as indicated on the Contract Drawings.

U. Cut and repoint masonry mortar joints at locations as indicated on the Contract Drawings.

V. Remove and replaced failed sealants at locations as indicated on the Contract Drawings.

W. Scrape, prime, and paint existing windows and curtain walls at locations as indicated on the Contract Drawings.

X. Install new gutters, downspouts and overflow scuppers at locations as indicated on the Contract Drawings.

Y. Provide membrane manufacturer's walkway pads at locations and as designated in the Contract Documents.

Z. Clean and restore all areas affected by the work, including the site, to the satisfaction of the Owner.

AA. This project includes alternates. Please refer to Section 01 23 00 – Alternates for additional information.

1.2 SPECIAL PROJECT CONDITIONS

A. The existing Transite roof deck at Roof Areas D and E, asphaltic coating at the CMU backup wall at Roof Area D, perimeter sealant at the curtain wall at Roof Area D, and perimeter window sealant at Roof Area F were found to contain asbestos. The Contractor is to comply with State and Local guidelines regarding hazardous material removal and disposal.

1. If encountered during construction, for asbestos removal, the Contractor shall comply with the National Emission Standard for Hazardous Air Pollutants (NESHAP) regulation published in the Federal Register under 40 CFR part 61, sub-part M. In addition to these regulations, the Contractor shall comply with OSHA Regulations (29 CFR Parts 1910 et. al - Occupational Exposure to Asbestos; Final Rule), and all other State and Local guidelines regarding asbestos-containing material removal and disposal.

2. The Contractor will be required to notify the Department of Environmental Protection (DEP) of asbestos and lead removal at the site a minimum of ten (10) working days prior to performing the removal operations. Copies of this notification must be submitted to the Owner and Engineer and posted at the site prior to performing any work.

3. The Contractor shall provide approved containers and hauling for disposal of hazardous materials. The Contractor shall properly dispose of hazardous materials in these approved containers.

1.3 PROJECT CONDITIONS

A. Contractor to coordinate and strictly follow the Owner's requirements for construction, including interior access and protection requirements. Contractor to obtain a copy from the Owner.

B. The building will be occupied during the construction period. The Contractor shall take all necessary precautions required to minimize disruption to the building, site occupants and users during the course of the work hereunder. No loud noise, loud radios, etc. will be allowed on the job site(s). The Contractor's full agreement and cooperation in this regard are essential elements to the successful performance of

the work under this Contract. The Owner shall have the right, at his/her sole discretion to require removal of any of the Contractor's employees, Subcontractors, agents or personnel that are found in violation of standards of conduct.

C. The Contractor will be required to provide their own fall arrest system as required to access and work on the building, as no arrest systems are currently in place.

D. Provide walk through overhead protection where work areas are above doors, walkways, or sidewalks in accordance with OSHA.

E. The Contractor shall comply with all requirements of the Owner regarding temporary protection, staging and use of the site.

F. All existing items including windows, doors, building, plant life and site features, including but not limited to, pavement, lawns, sidewalks, frames, glazing, flashings, sealants, and trim shall be protected from the effects of all new work. Any damages to existing to remain items resulting from construction will be repaired/replaced by the Contractor at no additional cost to the Owner.

G. All temporary protection shall be properly secured and able to withstand all perils of weather and use. The contractor to protect the building and grounds.

H. The Contractor shall supply, install and maintain all barriers; protection or warning lines; lights and lighting; and personnel as required to support the structure, fixtures and facilities affected by the work, and to segregate the work area(s) from pedestrian and/or vehicular traffic, as applicable, as well as to prevent damage to the building, its occupants and the surrounding site elements as required. All applicable OSHA and D.L.I. requirement shall be strictly followed by the Contractor at all times during the performance of the work under this Contract. Refer to Section 01 50 00 - Temporary Facilities for additional information.

I. The Contractor shall schedule and execute all work without exposing the interior of the buildings to the effects of weather. Protect the buildings and their occupants and users against such risks, at all times during the course of the work hereunder. All work/weather related damage shall be repaired/replaced to the satisfaction of the Owner at no additional cost to the Owner.

J. The Contractor shall conform to all requirements of this Specification as well as those of all manufacturers of materials used in performing the work hereunder.

K. All materials and workmanship shall be of the best quality and the highest standard of construction practice. Refer to the requirements of materials manufacturers and the specifications for handling and installation of all materials used in the work under this Contract.

L. Protect the buildings and site and any other areas not included in the scope of work. The Contractor shall replace or repair all damage to the buildings or site elements because of the performance of the work hereunder to the satisfaction of the Owner at no additional cost to the Owner.

M. The contractor shall provide protection for existing roof membrane and other roof top equipment, fenestration, penetrations, and similar items to protect from damage. Items damaged as a result of the work shall be repaired or replaced by the Contractor to the satisfaction of, and at no additional cost to, the Owner.

N. Supply all labor, vacuums, tools, appliances, shoring, supports or other items required to properly support, elevate and protect fixtures, equipment, and facilities affected by the work and to properly install the work.

O. At the end of each workday, the Contractor shall confirm and make the site safe and secure to all public access to the building's interior.

P. The Contractor shall notify the Owner a minimum of 72 hours in advance of doing any interior work so that the Owner may provide entry into the required areas.

Q. Remove only as much existing construction as can be completely replaced and made weathertight by the end of each workday including all flashing work. Install temporary barriers during all work breaks as required to protect the public and the work.

R. A disposal plan, materials delivery and storage plan shall be submitted by the Contractor (for Owner and Engineer review and approval) outlining all methods and techniques to be used in the transportation, storage and delivery of debris and materials at the site.

S. Supply all necessary disposal facilities, transportation and labor in connection therewith as necessary to legally dispose of all demolished materials, dirt and debris off-site. The Contractor shall obtain all permits required to transport and dispose of all materials rubbish and debris in strict compliance with all legal requirements.

T. Any open ducts, grills, thermostats, electric boxes or similar fixtures and/or items which could be soiled or adversely affected by the work shall be masked, protected and cleaned as necessary by the Contractor at no additional cost to the Owner.

U. Provide an adequate number of skilled workers who are trained and experienced in the necessary crafts and are completely familiar with the specified requirements and the methods needed for proper performance of the work of each trade.

V. The Contractor shall cooperate, coordinate, and work in harmony with all Contractors working at the site during the course of work hereunder.

W. The Contractor is to obtain the Owners approval to store construction materials on the roof.

X. Upon completion of the work, all temporary protection installed by the Contractor shall be removed and areas shall be cleaned to the satisfaction of the Owner.

1.4 SUBMITTALS

A. Emergency Response Contacts
B. Project Contact Directory
C. Construction Schedule
D. Schedule of Values
E. Safety Plan
F. Material Data Sheets (MDS)
G. Safety Data Sheets (SDS)
H. Refer to technical specification sections for material submittals.

1.5 PRE-CONSTRUCTION CONFERENCE

A. A Preconstruction Conference will be held with the Owner, Engineer, Contractor and all involved trades to discuss all aspects of the project. The Contractor's foreman or field representative will attend this Conference. The foreman must be English-speaking. The conference will not be held until all shop drawings and submittals have been received and reviewed by the Owner.

B. The Owner shall reserve the right to require an alternate Superintendent and/or Foreman.

C. Delivery of materials and commencement of construction shall not proceed until the preconstruction conference is held. Delays in obtaining a complete set of submittals shall not extend the Contracted completion date.

1.6 REFERENCES

A. Applicable publications: Publications listed herein form a part of the Specification to the extent referenced and are indicated in the text by basic designation only. Applicable publications referenced shall be those that were issued and in use at the time of the Bid Submission.

1.7 EMERGENCY RESPONSE

A. The Contractor shall provide the Owner with after-hours (twenty-four (24) hour), emergency telephone numbers of the Contractor's Superintendent and Foreman.

B. The Contractor must respond to emergency situations or calls within two (2) hours.

1.8 CONSTRUCTION SCHEDULE

A. The Contractor shall be responsible for coordinating and scheduling all applicable trades as well as the erection of all staging, delivery of materials and disposal of existing materials scheduled to be removed within the time constraints established in the Contract.

1.	Mobilization Start	April 3, 2023
2.	Substantial Completion	September 15, 2023
3.	Final Completion	September 29, 2023

B. The Contractor's Construction Schedule shall clearly identify the on-site crew foreman and the size of the crew to be utilized. The crew size shall remain consistent, and work shall be continuous throughout the project, from start-up to completion.

C. The Owner shall review the Contractor's Construction Schedule prior to the start of any work. It shall be the responsibility of the Contractor to supply the Owner with written notice, seventy-two (72) hours in advance, if his work location(s) for a workday is different from the schedule. The Contractor shall update his Construction Schedule weekly and submit a copy to the Owner for review.

1.9 DIMENSIONS AND QUANTITIES

A. The Contractor is solely responsible for compliance with the project specifications, plans and drawings. Make necessary investigations and take necessary precautions to properly supply, fabricate, and install work.

1.10 SCHEDULE OF VALUES

A. Provide a line-item breakdown of construction labor and materials costs for each Specification Section included in these Contract Documents. Itemize units of work, as they will be shown on the Application for Payment (use AIA Form G703). A value of work shall be itemized for each technical section within the Specification.

B. Utilize AIA Forms G703 and G703A to prepare and submit the Schedule of Values.

C. Schedule of Values to include all unit costs and allowances within the final construction amount.

1.11 WORK RESTRICTIONS

A. Contractor shall maintain public driveway access at all times. On-Site Work Hours: Work shall be generally performed during normal business working hours of 7:00 a.m. to 6:00 p.m., Monday through Friday, except otherwise indicated by the Owner.

B. Contractor shall maintain work areas in an orderly condition and will be responsible for cleanup and removal of debris to the Contractors dumpster on a daily basis. If, in the opinion of the Owner, cleanup is not being performed satisfactorily, the Owner shall, after twenty-four (24) hours of having notified the Contractor of the same, have the work performed by others and all charges incurred thereby deducted from the next progress payment of the Contractor.

C. Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas where work is directly being performed. Do not disturb portions of the site beyond the areas in which the Work is indicated.

D. Site Enclosure Fence: Required around perimeter of dumpster and storage/staging areas to enclose and prevent the general public from access.

1.12 PROGRESS MEETINGS

The Owner shall establish a time and date for reoccurring weekly meetings throughout the duration of the construction period, in which the contractor's representative is required to attend. The Owner reserves the right to schedule additional meetings as deemed necessary, and/or change the reoccurring meeting and time.

1.13 MATERIAL SAFETY DATA SHEETS

Material safety data sheets (MSDS) shall be submitted in complete sets for all products to be used prior to any work being performed.

1.14 GUARANTEES

A. Refer to specific Sections of this specification for systems and product warranty requirements. Verify with Manufacturer of proposed systems and products that specified warranty requirements are acceptable, without exception, prior to selecting materials for use on this project.

B. Submit a full Contractor Warranty of the Work to be free from defect in materials and workmanship upon Substantial Completion, and prior to final payment. This Warranty shall be for a period of two (2) years from the date of Substantial Completion and shall be signed by a Principal of the Contractor's firm and sealed if a Corporation. Warranty shall include all work performed by sub-contractors. Separate two (2) year subcontractor warranties shall be provided.

1.15 INDEMNIFICATION AND WAIVER OF LIENS

Beginning with the first Application for Payment and thereafter, the Contractor, Sub-Contractor(s) and suppliers shall submit an Indemnification and Waiver of Liens for the construction period covered by the previous application on the form attached as part of the required documentation in any application for payment.

1.16 DUST AND ODOR CONTROL

A. Contractor to coordinate and strictly follow the Owner's requirements for construction and temporary protection to mitigate dust and odor contamination within the interior of the facility.

B. The Contractor shall coordinate with the Owner the shutdown of HVAC intake units in the work areas, which may be affected by construction dust, fumes, odors or air borne debris at minimum of seventy-two (72) hours in advance. If the Owner cannot shut down or cannot permit shut down of the air intakes, it shall be the responsibility of the Contractor to provide control of dusts, odors or fumes as required by the Owner and as necessary to protect the health and safety of the building's occupants.

C. The Contractor will install clear plastic secured with duct tape over all air intake vents at the beginning of each workday to reduce any construction related odors and dust from entering the building. The Contractor will remove the plastic at the end of each workday.

D. During removal operations, the Contractor shall be responsible for the containment of all dust, dirt, debris, overspray and/or run-off resulting from the performance of the work. The Contractor shall collect and contain all materials and repair any resulting damage to adjacent materials, building and/or site elements and personal property. Specific attention is drawn to the use of chemicals and cleaners that must be used

responsibly in strict compliance with manufacturer's requirements and all applicable regulatory guidelines.

1.17 WORK INSIDE THE BUILDING

A. Contractor to coordinate and strictly follow the Owner's requirements for construction and temporary protection inside the building.

B. The Contractor shall not leave or store any tools, equipment, materials, debris or other items on or within the building unless permission is given by Owner.

C. Contractor shall not use building's dumpster for debris associated with this project.

D. The Contractor is not to be inside the building unless required to perform work and must provide the Owner minimum seventy-two (72) hour notice.

1.18 CLEANUP

Restore property of the Owner to its original condition prior to the completion of construction. Refer to Section 01 50 00 – Temporary Facilities. General cleanup of the site shall be performed on a daily basis.

A. Clean, restore and/or replace items stained, dirtied, discolored or otherwise damaged due to the Work, as required by the Owner.

B. Clean roof, building (interior and exterior), landscaped and parking areas so they are free of trash, debris and dirt caused by, or associated with the Work.

C. Sweep paved areas clean.

D. Site cleanup shall be performed daily.

1.19 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.

B. Separate Contract: The Owner reserves the right to perform construction operations at the site. Those operations may be conducted simultaneously with work under this Contract. No specific projects are planned at this time.

1.20 USE OF PREMISES

A. General: Contractor shall have full use of the rooftop for construction operations, including limited use of Project site as defined by the Owner, during construction period.

B. The Contractor is responsible for safety on the job site at all times. The Contractor shall take the appropriate actions to assure the areas of construction are secured from the public. The Contractor shall construct and/or install temporary fencing, signs and barricades as required assuring a safe and secure environment.

C. Contractor's staging/lay down areas is to be coordinated through an Owner representative. Contractor is responsible for repairing any damage to staging/lay down area. Contractor shall not place trailers, equipment, lay down, storage facilities outside of project site after normal working hours. Contractor shall have no vehicles, trailers, storage containers in any fire lanes or prohibited areas.

D. Contractor shall not restrict the owner's access to the building’s entrances area. If, the Contractor should need to temporarily restrict the owner's access to any areas, the Contractor shall submit a written notice to the Owner seventy-two (72) hours in advance of access restriction.

E. Contractor to supply temporary facilities (toilets).

F. The Contractor must provide safe assisted means to access the roof from the exterior. Access must be maintained and secure at all times. The access must be locked or restricted during off work hours.

1. Accessing the work areas by climbing or scaling existing obstacles or structures will not be allowed.

2. Accessing the work areas through the interior of the building will not be allowed, there will be exterior access only.

PART 2 – PRODUCTS

NOT USED.

PART 3 – EXECUTION

NOT USED.

END OF SECTION

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ALTERNATES

SECTION 01 23 00

1.1 GENERAL

A. The Bidders shall submit with their Bids, prices for the performance of the Alternate scopes of Work as defined within this section.

B. The successful Bidder shall coordinate related work and modify or adjust adjacent work as necessary to ensure that work is complete and fully integrated into the project.

1.2 DESCRIPTION OF WORK

A. The Bidders shall submit with their Bids, prices for the performance of Alternate Scopes of Work. The scopes of the Alternate Work are defined within this Section.

B. The Bidder shall coordinate related work and modify or adjust adjacent work as necessary to ensure that work affected by the Alternate is complete and fully integrated into the project.

C. Alternate Bid amount shall include the work of each Technical Specification section, including related drawings, shown for the Base Bid except those sections indicated with an Alternate section.

D. Alternate Bid amount shall include costs associated with furnishing, erecting and maintaining temporary constructions including overhead sidewalk protection, scaffolding, shoring and temporary barrier construction, waterproofing and dust proofing the interior of the building, as well as all overhead and profit associated.

1.3 SCHEDULE OF ALTERNATES

Alternate Number One (1): shall include the cost for all labor, equipment, materials, overhead, and profit to furnish and install new adhered single-ply elastomeric roof at Roof Area D and perform associated masonry and rising wall repairs. Replacement roofing system including, but not limited to, elastomeric roof membrane, coverboard, insulation, air/vapor retarder, and baseboard over new metal deck shall be installed as indicated in the Contract Documents.

The existing Transite deck shall be removed and replaced with new corrugated metal decking. The existing Transite roof deck at Roof Area D, asphaltic coating at the CMU backup wall, and perimeter sealant at the curtain wall were found to contain asbestos. The Contractor is to comply with State and Local guidelines regarding hazardous material removal and disposal.

Alternate Number Two (2): shall include the cost for all labor, equipment, materials, overhead, and profit to furnish and install new adhered single-ply elastomeric roof at Roof Area E and perform associated masonry and rising wall repairs. Replacement roofing system including, but not limited to, elastomeric roof membrane, coverboard, insulation, air/vapor retarder, and baseboard over new metal deck shall be installed as indicated in the Contract Documents.

The existing Transite deck shall be removed and replaced with new corrugated metal decking. The existing Transite roof deck at Roof Area E was found to contain asbestos. The Contractor is to comply with State and Local guidelines regarding hazardous material removal and disposal.

Alternate Number Three (3): shall include the cost for all labor, equipment, materials, overhead, and profit to furnish and install new adhered single-ply elastomeric roof at Roof Area I and perform associated masonry repairs at rising walls. Replacement roof system including, but not limited to, elastomeric roof membrane, coverboard, insulation, air/vapor retarder, and baseboard over existing wood deck shall be installed as indicated in the Contract Documents.

PART 2 – PRODUCTS

NOT USED.

PART 3 – EXECUTION

NOT USED.

END OF SECTION

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SHOP DRAWINGS AND SUBMITTALS

SECTION 01 33 00

1.1 IN GENERAL

This section contains instructions for submittals and shop drawings required at various stages of the project. The following submittals will be required of all construction materials and systems:

A. List of materials stating manufacturer's name and address, as well as material trade name and manufacturer's designation.
B. Shop Drawings.
C. Samples (as specified in the Technical Sections).
D. Manufacturer’s Catalog Data.
E. Material Data Sheets (MDS).
F. Safety Data Sheets (SDS).
G. Manufacturer's Installation Instructions.
H. Construction Photographs.
I. Contractor's Schedule as it affects the contracted completion date and sequence of construction.

1.2 SUBMITTALS

The following submittals are required during the various phases of the Contract. Each submittal item shall have the technical section and paragraph number clearly indicated. All submittal items without the proper designations will be returned and will not be reviewed.

A. Contract Submissions: The Contractor shall provide electronic copies of the following submittals to the Architect/Engineer:

1. Proposed Construction Schedule for completion of the Work specified in this project manual.
2. List of Manufacturers for each product proposed. Include manufacturer's literature with system designations and a sample of the product guarantee.
3. Shop Drawings.
4. Complete Materials List.
5. Manufacturer's Technical Literature as selected.
6. Manufacturer's Instructions.
7. Catalog Data ("SPEC-DATA" Sheets).
8. Material Safety Data Sheets (MDS).
9. Safety Data Sheets (SDS).
10. Samples of materials of construction.
11. Certificates as approved Applicator by Manufacturer.
12. List of proposed storage facilities and their location(s).
13. Proposed location(s) of dumpsters.
14. Schedule of Values.

15. Emergency Response Contacts.
16. Disposal Plan and Methods of removal of materials.
17. Temporary protection procedures.
18. Staging/set-up procedures.

B. Weekly Submissions: At the end of each weekly period during construction, the Contractor shall submit an updated construction schedule which will show the status of the work with respect to the schedule, anticipated completion date, and a list of all completed work.

C. Resubmittals: All resubmittals required from the Contractor shall be submitted within five (5) working days of return of original submittals.

D. Permits: Prior to start of construction, the Contractor is to provide the Owner with copies of all building permits, licenses, and other documents required by the General Conditions.

E. Close-Out Submission: See Section 01 70 00 – Project Closeout for required Submittals.

F. OSHA Requirements: All employees to be employed at the worksite must have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least ten (10) hours in duration at the time the employee begins work.

G. Hazardous Material Requirements: Asbestos containing materials were found at various sealant materials. Removal and disposal of the materials will be required to install new roofing and flashing systems. A removal and disposal plan must be submitted which includes anticipated approved locations for disposal.

1.3 SHOP DRAWINGS

A. Original Submittal: An electronic copy of all shop drawings shall be submitted for approval within five (5) days of Award of Contract.

B. Shop drawings for all aspects of this project shall be submitted. The shop drawings shall include existing conditions, all applicable dimensions, new products to be installed, locations, etc.

C. Resubmittal: When a resubmittal is required, the original transparency so indicating will be returned to the Contractor. After revision of the original, one (1) new reproducible and one (1) print shall be submitted for review.

D. Review: The above procedure shall be repeated until approval is obtained. The original reproducible copy of the reviewed shop drawing will be returned to the Contractor, at which time the Contractor shall make prints in sufficient numbers for the Engineer (four copies), as well as sufficient copies for his use.

E. Shop drawings of an engineering nature shall be sent directly to the Engineer for review, with a copy of the transmittal and one (1) print sent to the Owner.

F. Transmittal: All reproducibles shall be transmitted rolled in mailing tubes and not folded.

G. Changes on the submitted shop drawings that deviate from the Design Drawings must be brought to the Owners and Designers attention in writing prior to review. Changes must be clearly visible on the shop drawings in the form of written notation, ballooning or highlighting the intended change. A written description for the proposed change must also be included and submitted on company letterhead. Changes to drawings and details not submitted in accordance with these requirements will not be recognized as an approved deviation from the Design of Record. Construction repairs, renovations or replacements required as a result of shop drawing and submittal deviations that are not documented in accordance with these requirements are subject to removal and/or replacement by the Contractor, at the sole cost of the Contractor.

1.4 RECORD DRAWINGS

The Contractor shall provide a copy of all Contract Drawings showing as-built conditions and any Contract changes to the Owner at the completion of the project.

1.5 SAMPLES

A. Original Submittal: Four (4) samples, unless otherwise specified, of each item for which samples are required shall be furnished for approval. Approval shall be obtained prior to delivery of the materials to the project site. Such samples shall be representative of the actual material proposed for use in the project and of sufficient size to demonstrate design, color, texture and finish when these attributes will be exposed to view in the finished work.

B. Resubmittal: All rejected samples will be returned upon request, and any or all resubmittals shall consist of four (4) new samples.

C. Review: Upon approval by the Engineer, one sample so noted will be returned and the remainder will be retained by the Engineer until completion of the work. When requested, all approved samples will be returned for installation, provided their identity is maintained in an approved manner until final acceptance of the project.

D. Important specific samples are specified in Technical Sections of the Specifications. The Contractor is cautioned to quickly provide specified samples.

E. Each submittal item shall have the technical section and paragraph number clearly indicated. All submittal items without the proper designations will be returned and will not be reviewed.

1.6 CATALOG DATA

A. Submittals: Four (4) copies of catalog data are required for the original submittal and each subsequent resubmittal along with shop drawings. Following review, one (1) copy will be returned with its status noted. If approved, such additional copies may be requested by the Engineer and shall be furnished without additional cost.

B. Data: Each submittal shall have all pertinent data contained therein that is applicable to the item submitted for review, adequately and permanently designated.

1.7 CERTIFICATES AND GUARANTEES

A. Certificates of performance, treatment and conformance to specified standards (four (4) printed copies) shall be submitted prior to initiating work on the project.

B. Copies of all guarantees (four (4) printed copies) required on the project shall be submitted for review and acceptance as to form.

1.8 IDENTIFICATION

A. Data: All submittals for review shall have the following identification data, as applicable, contained thereon or permanently adhered thereto:

1. Project name and location.
2. Engineer's name.
3. Subcontractor's, Vendor's and/or Manufacturer's name and address.
4. Product Identification. (It is important that the specific product intended for use is indicated on manufacturer's literature).
5. Shop drawing title, drawing number, revision number and date of drawing and revision.
6. Applicable Contract Drawings and Specification Section numbers.

B. Catalog Data: Each separate catalog, brochure or single page submitted shall have the identification required hereinbefore.

1. Catalogs or brochures submitted containing multiple items for approval need the identification on the exterior and on each specific item clearly circled, flagged or otherwise identified.

2. In the event that one or more of the multiple items are not approved in any submittal, the additional copies required will not be requested until all items are approved.

3. Do not commence work until every submittal is accepted.

C. Space: Vacant space approximately two and one-half inches wide by four inches high shall be provided adjacent to the identification data to receive the Engineer's status stamp.

1.9 CONTRACTOR'S RESPONSIBILITY

A. Representation: By his submittal of any shop drawing or catalog data, the Contractor thereby represents that he has determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data, or will do so, and that he has checked and coordinated each item with other applicable approved shop drawings and the Contract requirements. Certification shall appear on each shop drawing stating that the Contractor has made this check. All drawings without this certification will be returned without examination.

B. Deviations: Changes on the submitted shop drawings that deviate from the Design Drawings must be brought to the Owners and Designers attention in writing prior to review. Changes must be clearly visible on the shop drawings in the form of written notation, ballooning or highlighting the intended change. A written description for the proposed change must also be included and submitted on company letterhead. Changes to drawings and details not submitted in accordance with these requirements will not be recognized as an approved deviation from the Design of Record. Construction repairs, renovations, or replacements required as a result of shop drawing and submittal deviations that are not documented in accordance with these requirements are subject to removal and/or replacement by the Contractor, at the sole cost of the Contractor.

C. Prohibitions: No portion of the work requiring a shop drawing, sample or catalog data shall be started, nor shall any materials be fabricated or installed, prior to the approval of such item.

D. Review: Project work, materials, fabrication and installation shall conform with approved shop drawings, applicable samples and catalog data.

E. Failure to submit shop drawings in ample time for review, approval and resubmission (if required) prior to the commencement of construction shall not affect the completion date of the Contract.

F. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Designer’s receipt of submittal.

1. Initial Review: Allow **ten** (**10)** workdays for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. The Engineer will advise the Contractor when a submittal being processed must be delayed for coordination.

2. Concurrent Review: Where concurrent review of submittals by the Engineer's consultants, or other parties is required, allow **ten** (**10)** workdays for initial review of each submittal.

3. Direct Transmittal to Consultant: Where the Contract Documents indicate that submittals may be transmitted directly to Engineer's consultants, provide duplicate copy of the transmittal to the Engineer. The submittal will be returned to Engineer before being returned to Contractor.

4. If intermediate submittal is necessary, process it in same manner as initial submittal.

5. Allow **ten (10)** workdays for processing each re-submittal.

6. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.

7. The engineer will schedule one working day for submittal review for this project, typically on a Wednesday of each week. Unless a time critical submittal requires immediate attention, all individual, or partial submittal packages will be retained, and not reviewed until multiple items are provided until said designated day. The contractor shall take this into account when scheduling and coordinating submittal and construction activities to prevent delays in their work activities.

8. Multiple individual submittal reviews or incomplete packages are subject to potential back charges to the contractor due to unreasonable review times which may be required. The contractor is to provide complete submittal packages for technical section.

1.10 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Procedures: Comply with procedures required by the Owner.

B. Time Frame: Extend schedule from date established for commencement of the Work or the Notice to proceed to date of Final Completion.

1. Contractor shall indicate specific dates which may require the Designer's attention to proceed on a critical path.

C. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than sixty (60) days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.

D. Submittal Review Time: Include review and resubmittal times and coordinate with Contractor's Construction Schedule with Submittals Schedule.

E. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Owner, OPM, Designer's and administrative procedures necessary for certification of Substantial Completion.

F. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, interim milestones**,** Substantial Completion, and Final Completion.

G. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis to demonstrate the effect of the proposed change on the overall project schedule.

1.11 PRELIMINARY CONSTRUCTION SCHEDULE

A. Bar-Chart Schedule: Within twenty (20) days of written notice to proceed or contract award, submit preliminary horizontal bar-chart-type construction schedule prior to the Preconstruction conference.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for the duration of construction.

1.12 CONTRACTOR'S CONSTRUCTION SCHEDULE, GANTT CHART

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal Gantt-chart-type, Contractor's Construction Schedule within twenty (20) days of the Preconstruction meeting. Base schedule on the Preliminary Construction Schedule and any updates and feedback received since the start of Project.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

1. For construction activities that require three (3) months or longer to complete, indicate an estimated completion percentage in twenty percent (20%) increments within time bar.

PART 2 – PRODUCTS

NOT USED.

PART 3 – EXECUTION

NOT USED.

END OF SECTION

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TEMPORARY FACILITIES

SECTION 01 50 00

1.1 GENERAL

This Section contains instructions and requirements for the provision and utilization of temporary facilities to protect the Owner's property, the site and construction materials; and daily maintenance and cleanup of the site during the project.

1.2 STORAGE FACILITIES

See Section 01 63 00 – Weather Protection and Materials Storage

1.3 CONTRACTOR'S USE OF EXISTING FACILITIES

A. The building will be occupied and in use during construction. The Contractor shall provide all protection, guards and barriers necessary to segregate the work area and adjacent or below areas from pedestrian and vehicular traffic. Protect existing building, building finishes, landscaping and paved areas from damage.

B. Limit use of the premises to the work indicated, so as to allow for the Owner's uninterrupted occupancy and use. Confine operations to the areas indicated under the Contract. Conformance to the regulations set forth by the Owner, regarding use of existing facilities is mandatory.

C. Take precautions necessary and provide equipment, materials and labor to adequately protect previous construction, the building, its contents and occupants, and surrounding landscaped areas from damage due to construction as well as from inclement weather during construction.

D. Clean interior and exterior areas affected by the construction on a daily basis. Do not allow construction debris, waste materials, tools, excess packaging materials or other construction related materials to accumulate on the roof, in the facility, or at the exterior grounds and pavements.

E. Coordinate with the Owner for additional interior cleaning and protections required for the work.

F. See Section 01 63 00 – Weather Protection and Materials Storage for product storage facilities and requirements.

1.4 SANITARY FACILITIES

The Contractor will furnish portable toilets. Temporary toilets shall be kept in a sanitary condition at all times and properly supplied at appropriate locations by the Owner until completion of the project. Use of the sanitary facilities within the building is not permitted.

1.5 BARRIERS

A. The Contractor shall install temporary fencing, warning lines, barriers and the like, as required, to segregate the construction areas from existing facilities, occupants and the public.

B. All Contractors are required to conform to OSHA requirements and all local, state and federal safety regulations.

C. The Contractor shall provide guard lights on all barriers and all lighting necessary to prevent vandalism of work and storage areas. The Owner is not responsible for Contractor's losses due to damage or theft by vandals.

1.6 CRANES AND HOISTING EQUIPMENT

All hoisting equipment and machinery required for the proper and expeditious prosecution and progress of the work shall be furnished, installed, operated and maintained in a safe condition by the Contractor. All costs for hoisting operating services shall be borne by the Contractor including street permits and police details.

1.7 ACCESS

A. Provide ladders, scaffolding, staging and hoists as required to access the project area(s) in accordance with OSHA and D.L.W.D. guidelines. Should damage to the building and/or grounds occur, restore damaged areas to the original condition and clean up debris.

B. Where scaffolding and staging is required for the proper installation of the work it shall be erected to provide a minimal impact on the site.

C. All barriers and warning lines shall be installed at the base of any scaffolding or staging and around ground areas below elevated staging.

D. Provide walk through overhead protection where work areas are above doors, walkways, or sidewalks in accordance with OSHA.

E. All scaffolding and staging shall be erected in conformance with all applicable state, federal and local codes. The Contractor shall follow all applicable local, state, and federal requirements regarding the construction of scaffolding and staging and the protection of public safety. Specific reference shall be made to the OSHA Construction Safety Regulations and all requirements of the State of Maine Department of Labor.

1.8 SETUP AREAS AND USE OF THE SITE

A. The Owner shall determine the locations of the Contractor’s designated setup areas. The Contractor may not utilize any other locations unless permission is obtained from the Owner.

B. The Contractor shall permit the Owner and Engineer access to the staging, work areas and test areas at any time, as required to perform inspections and review mock-ups. The Contractor shall not move or remove staging or access to the work areas until instructed by the Owner and Engineer to do so. Any staging or access to the work areas removed by the Contractor without approval of Owner and Engineer, shall be reinstalled and setup at the request of the Owner and/or Engineer at no additional cost to the Owner.

C. Other specific requirements of the Owner will be addressed and outlined at the Pre-Construction meeting to be held prior to the start of work.

D. Take precautions necessary and provide equipment, materials and labor to adequately protect previous construction, the building, its contents and occupants, and surrounding landscaped areas from damage due to construction as well as from inclement weather during construction.

1.9 UTILITIES

A. The Owner, through exterior electrical outlets, if operable, will provide electrical service to the Contractor free of charge. Use shall be limited to construction hours. The Contractor and/or subcontractors shall provide their own electrical generator for welding equipment, HEPA vacuum, and grinding equipment. The Owner reserves the right to charge the Contractor(s) for excessive electrical service usage (i.e., wasteful usage). Should charges be considered, the Owner will notify the Contractor in writing of his intent forty-eight (48) hours in advance.

B. Owner will provide water for construction purposes free of charge through exterior water spigots, if operable. The Owner reserves the right to charge the Contractor for excessive or wasteful use. Should charges be considered, the Owner will notify the Contractor in writing of his intent forty-eight (48) hours in advance. The Contractor shall provide drinking water.

C. Contractor shall provide all other utilities required by the work.

D. Electrical work, including reinstallation of equipment and other work to be performed by the Contractor, shall be carried out without interference to the building's normal operation. Where work requires interruption of service, the Contractor shall make advance arrangements with the Owner for dealing with such interruption.

E. Ensure proper and safe operation and maintenance of utility systems within the construction limits, whether these are supplied by the Owner's distribution system or otherwise, until the Owner accepts the work. Maintain and operate appurtenances within the construction area that serve the distribution system, subject to periodic inspection by the Owner's operating personnel. Inspection by any representative or personnel of the Owner shall not relieve the Contractor of his responsibilities in connection with operation and maintenance of these facilities and equipment.

1.10 TEMPORARY PROTECTION

A. Provide suitable Owner-approved temporary protection to prevent the entrance of debris, obstructions, and water infiltration into the building. Provide warning signs to reroute personnel around areas of dangerous work. Place warning barriers at roof perimeters and at deck openings. Clearly label temporary covers over deck openings. Do not permit openings to remain unprotected overnight. Schedule operations to allow for completion of new roofing over a predetermined area of roof within a day's work. Use special care to avoid damaging existing roofing and flashing when working on the roof of the building.

B. Provide temporary tie-ins between existing and new roof systems as specified and detailed. Tie-in construction shall completely prevent interior leaks, migration of moisture from existing to new construction and damage of any type to the facilities. Provide necessary quality control at tie-ins on a daily basis to prevent leaks.

C. Avoid traffic on completed roof areas. Coordinate work to prevent this situation. Should temporary access be required, provide temporary substrate protection for trafficked areas.

D. Protect materials scheduled for reuse from damage by placing them in labeled containers or wrappings stored in a weathertight trailer.

E. Provide temporary protection such as plywood and tarps for streets, drives, curbs, sidewalks, landscaping and existing exterior improvements during all phases of the project.

1.11 DEBRIS REMOVAL

A. The Owner shall designate crane and refuse container locations. This area shall be sectioned off with proper warning lines.

B. Removed materials shall not be thrown freely from the roof but shall be discarded in an enclosed chute, in order to reduce the spread of dust and other debris.

C. Supply adequate covered receptacles for waste, debris and rubbish. One receptacle will be allowed on site at a time, and must be immediately removed from the site when full. Clean the project area daily and prior to moving the receptacle to another location on the site. Locations shall be as permitted by the Owner. Disposal shall be off-site in a legal dump authorized to accept construction demolition solid wastes. The Contractor shall be responsible for receptacle-related damage to site grounds.

D. Receptacles shall be removed from the site daily. Should, for any reason, receptacle removal is not possible on any given day, the Contractor shall move the receptacle a minimum of fifty (50) feet from the building or as required by local fire officials.

1.12 NOTIFICATION

Notify the Owner at least seventy-two (72) hours in advance of the desire to extend, connect, disconnect, or turn on or off HVAC, steam, electric, water or other service from the Owner's supply systems. Authorized representatives of the Owner shall witness the actual operation.

Plumbing, heating and electrical work, including installation of equipment and any other work to be performed by the Contractor, shall be carried out without interference with the Owner's normal operation. Where work requires interruption of a service, make advance arrangements with the Owner for dealing with such interruption. All disconnections, extensions and reconnections of HVAC, steam, electric, water or other service shall be performed by a licensed and certified technician capable of completing the work.

1.13 ACCESS TO THE WORK

The Contractor is responsible for providing access to all roof areas included within the project's scope of work. Contractor is required to maintain, clean and keep clear all exterior pathways utilized to access roof. Contractor shall be prohibited from entering office space, laboratory space, etc. without written authorization from the Owner. Tools, materials or equipment will not be permitted within the building unless it is specifically required to complete the work. Failure to comply with Owner's requirements will result in the Contractor providing their own access to the roof at no additional cost to the Owner. A Contractor's staging and/ or laydown area will be designated by the Owner adjacent to the building.

1.14 ACCESS TO THE INTERIOR

A. The Contractor must secure and coordinate access with the Owner prior to entering building or performing work at the building interior. All access to the roof shall be provided by the Contractor from the exterior of the facility. All roof access locations/methods shall be located at an Owner approved location for this purpose, and shall be made secure at the end of each work day to prevent un-authorized access onto the unit. As an alternative, an extension ladder erected and removed daily will be permitted.

B. The Owner will designate which portions of the site the Contractor may utilize and access for the performances of the work. The Contractor must submit a site plan indicating his locations of set up, material storage, and parking. Parking at other locations throughout the lot, without prior authorization, is subject to vehicle removal at no cost to the Owner.

C. All hoisting of equipment and materials must be done on the exterior of the building. No tools will be permitted inside the building unless they are specific to perform the required work.

D. The Contractors will be required to provide a clean change of clothes, and shall be responsible for any damages or stained interior components should access to the interior be required.

E. The Contractor will be required to provide access to the designer and manufacturer's representatives at no additional cost, to review the work operations, and to perform final observations.

1.15 VEHICLES

Contractor to park vehicles in the designated storage/laydown location or at locations designated by the Owner.

1.16 TRAFFIC CONTROL

The Contractor shall arrange and pay for all police details required to control traffic affected by any part of the work, if required.

1.17 CLEANUP

A. Site cleanup shall be complete and to the satisfaction of the Owner. Site cleanup shall be performed daily.

B. All building (interior and exterior), landscape and parking areas shall be cleaned of all trash, debris, and dirt caused by or associated with the work.

C. All landscape areas damaged or littered due to the work shall be raked clean and reseeded if required.

D. All paved areas shall be swept clean of debris daily. All paved areas shall be washed clean at the completion of work.

E. All areas stained, dirtied, discolored or otherwise damaged due to the work shall be cleaned, restored or replaced as required.

1.18 SIGNS

A. If requested by Owner, the Contractor shall conspicuously post a project sign at ground level. This sign shall designate the project entrance. Only one (1) entry may be used by the Contractor. The entry location shall be as directed by the Owner.

B. The Contractor shall install adequate signage to inform facility users of any changes to existing conditions or construction areas.

C. The Contractor shall also construct a project sign must be at least 4’ tall x 8’ wide or as designated by the Owner. Contractor to provide small scale graphic illustration of the sign for review and approval prior to final construction.

PART 2 – PRODUCTS

NOT USED.

PART 3 – EXECUTION

NOT USED.

END OF SECTION

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WEATHER PROTECTION AND MATERIALS STORAGE

SECTION 01 63 00

PART 1 – GENERAL

1.1 GENERAL

A. The Contractor shall take the necessary precautions and provide all equipment, materials and labor necessary to adequately protect the Contract Area, previous construction, the building and its contents and occupants, and surrounding landscape areas from damage due to the construction or inclement weather during construction.

B. No storage on or within the building will be allowed without prior authorization from the Owner and Engineer.

C. The Contractor shall provide all access to the work. Staging and other access shall be provided until new work has been accepted by the Owner.

D. Refer to the “Roofing Superintendent’s Workbook” by the National Roofing Contractors Association and the Brick Industry Association (BIA) manual for additional information.

1.2 WEATHER PROTECTION

A. Weather protection shall mean the temporary protection of that work adversely affected by moisture, wind, heat and cold by covering, patching, sealing, enclosing, ventilating, cooling and/or heating. This protection shall be provided for all work areas, the building and its contents, trafficked adjacent areas, and all construction materials and accessories.

B. The Contractor shall be responsible for protecting the Work form moisture in order to prevent the growth of fungus, bacteria, and other biological contaminates. Remove and replace work that has been wet for twenty-four (24) hours or more, or that shows evidence of biological growth due to the presence of moisture.

C. The cost of heat, fuel and power necessary for proper weather protection shall be the responsibility of the Contractor.

D. Installation of weather protection shall comply with all safety regulations, including provisions for adequate ventilation and fire protection devices.

1.3 FIRE PROTECTION

A. The Contractor shall provide all necessary temporary fire protection for the building, building contents and materials during construction. The Contractor shall provide incombustible protective blankets where necessary to protect surfaces or building contents from damage.

B. At no time shall any combustibles be stored inside the building. All adhesives, caulks and cleaning solvents shall be stored well away from the building in a method approved by local fire officials.

C. Should any cutting, burning or welding be necessary, the Contractor shall provide a fire watch. This watch will continue during the operations and for four hours minimum after completion.

D. At no time shall open flames be present around adhesives, caulks or cleaning solvents as they will readily ignite. Rags soaked with cleaning solvents shall not be discarded in the dumpsters but shall be stored in a metal receptacle and removed from the site daily.

E. The Contractor shall be required to comply with all local fire codes and shall obtain all permits necessary from the local fire department and provide one (1) copy to the Engineer.

F. The Contractor shall provide recently tested, fully charged fire extinguishers around the storage area, rubbish receptacle and two (2) within one hundred (100) feet of the work area or as specifically required by local fire officials.

G. Provide necessary temporary fire protection for the buildings, their contents and materials during construction. Do not store combustibles inside the buildings or on the roofs. Store adhesives, caulks and cleaning solvents away from the building using a method approved by local fire officials. Should cutting, burning or welding be necessary, provide a fire watch during operations and for four (4) hours minimum after completion of the operations.

H. Comply with local fire codes and obtain permits necessary from the local fire department. Provide a copy to the Owner. Provide recently tested, fully charged fire extinguishers around the storage area, rubbish receptacle and two fire extinguishers on the roof within fifty (50) feet of the Work.

1.4 MATERIALS STORAGE

A. In the event that materials are exposed to the elements, they shall be marked as unacceptable and immediately removed from the site. They may not be used.

B. On-site storage of materials is the responsibility of the Contractor. The Owner is not responsible for Contractor’s losses due to damage or vandalism.

1.5 ROOF PROTECTION

A. The existing and newly-installed roof systems shall be totally protected in the work areas by installation of a layer of rigid insulation followed by a layer of plywood. Plywood shall be adequately ballasted to prevent wind blow off of the plywood and roof system.

B. All existing and newly-installed roof areas, trafficked during construction, shall be protected as noted above.

C. The Contractor and all Sub-Contractors are responsible for the prompt repair of any damage to the existing roof systems resulting from the work at the project.

1.6 NOTIFICATION

If, during the Contract period, the Contractor is notified of insufficient weather protection, he shall, immediately, properly restore the weather protection and repair or replace any damaged unprotected materials and systems. Should the Contractor not effect immediate repair or replacement when notified, the Owner shall have the proper protection installed at the Contractor's expense.

1.7 MANUFACTURER'S INFORMATION

A. The manufacturers of all the materials shall supply written instructions concerning the storage and handling of all supplied materials, including sealants, and accessories. The manufacturer shall also provide information concerning storage and handling of flammable or volatile materials.

B. Storage facilities shall be acceptable to the manufacturer and conform to his written requirements concerning temperature, humidity, ventilation and the like.

C. The "shelf-life" of materials shall be provided with the date of manufacture of all perishables, including volatiles, caulkings and mastics.

D. The Contractor shall supply a copy of all manufacturer's written instructions to the Owner and the Engineer as outlined in Section 01 33 00 - Shop Drawings and Submittals. The Contractor shall comply with all storage and handling requests and instructions of the manufacturer.

1.8 VOLATILE MATERIALS

A. The Contractor is reminded that the adhesives, solvents, bitumens, etc., are highly volatile and flammable materials. Do not store these materials, contaminated tools, applicators or rags, on or within the buildings. No overnight storage on the roofs will be allowed. Do not transport materials through the building. Take precautions and closely follow the Specification requirements for fire protection on site during construction.

B. Locate and use flame-heated equipment so as not to endanger the structure, other materials on site, or adjacent property. Do not place flame-heated equipment on the roof. Locate and use flame-heated equipment in specific areas approved by the Owner. Do not relocate flame-heated equipment without prior approval from the Owner.

C. The use of flame-heated equipment or torches on the roof is prohibited unless specifically approved in writing by the Owner.

PART 2 – PRODUCTS

NOT USED.

PART 3 – EXECUTION

NOT USED.

END OF SECTION

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PROJECT CLOSEOUT

SECTION 01 70 00

1.1 GENERAL

When the project is established to be substantially complete, preparations will be made to close out the project prior to Owner's final acceptance. The preparations are as follows:

1.2 SUBSTANTIAL COMPLETION

Substantial completion for this project is defined as the date when the Owner and Owner's Representative mutually agree and certify that all project related work has been properly installed and completed in a manner conforming to the Contract Documents. Work specified within the Contract Documents which has not been performed or has been performed in a manner which does not conform with the Contract Documents shall be deemed as not achieving substantial completion.

1.3 PUNCH LIST

A. After the project is determined to be substantially complete the Engineer and a representative of the Owner will tour the project and compile a "punch list" of minor unsatisfactory conditions. A copy of this list will be sent to the Contractor and will be used by the Contractor. He shall then correct the unsatisfactory conditions. When all items on the list have been corrected, the Contractor shall notify the Engineer and the Owner representative, and a reinspection will be made by that representative.

B. Minor "punch list" items shall be only those items, which have been installed and are functional, requiring cosmetic repair or cleaning which does not affect the integrity of the system. Any work specified within the Contract Documents, which has not been performed or has been performed in a non-conforming manner to the Contract Documents shall not be defined as minor "punch-list" items, and must be performed or corrected as appropriate in order to achieve substantial completion.

C. Should additional re-inspections be required due to punch list items which are reported to be complete but are not completed or improperly completed, the costs of these re-inspections will be assessed to the General Contractor.

1.4 PUNCH LIST RE-INSPECTIONS

A. After providing written notification to Owner and the Engineer that the punch list work has been completed, the Owner and the Engineer will perform one final inspection.

B. Should additional re-inspections be required due to punch list items which are not completed or improperly completed, the costs of these re-inspections will be assessed to the Contractor as liquidated damages.

1.5 MANUFACTURER'S INSPECTION

A. After the re-inspection by the Owner's representative, the Materials Manufacturer's representative will be required to tour the site. The representative shall determine if the materials have been installed as required by the Manufacturer.

B. Any items the representative determines were not so installed shall be reinstalled so as to comply with the Manufacturer's intended use. The Manufacturer shall forward a copy of the list of all items determined to be not installed as intended by the Manufacturer to the Engineer.

C. Costs associated with all manufacturer inspections shall be the responsibility of the General Contractor.

1.6 GUARANTEES

A. When both the Owner's representative and the Manufacturer's representative agree that the Contractor has performed according to the Specifications and has installed the materials to the satisfaction of the Manufacturer, the Contractor shall petition the Manufacturer for the materials guarantee. He shall forward this guarantee to the Owner and provide a copy for the Engineer.

B. The Contractor will be required to provide lien releases for their work. The Contractor shall then forward his guarantee covering the construction to the Owner and provide one (1) copy for the Engineer.

1.7 RETAINAGE RELEASE

When all guarantees, certifications, close out documents and requested lien releases have been received, the Owner shall release to the Contractor the project retainage and any other monies retained by the Owner to guarantee project completion. Except with the Owner's prior approval, payments to the Contractor shall be subject to retention of ten percent (10%).

1.8 DOCUMENTS REQUIRED FROM THE CONTRACTOR PRIOR TO FINAL PAYMENT

A. Documents will be submitted to the Engineer in triplicate, each set-in individual binders for submission to the Owner. These items include, but are not limited to, the following:

1. All applicable manufacturer's warranties.
2. Contractor and Sub-Contractor's two (2) year guarantee.
3. Manufacturer's twenty (20) year NDL roof system warranty.
4. Executed Punch List Inspection letter(s).
5. Consent of Surety Company to Final Payment (AIA Form G707).
6. Lien Releases from Contractor, subcontractor and suppliers (AIA Forms G706, G706A).
7. Contractor's Affidavit of Payment of Debts and Claims.

8. Final Application and Certificate for Payment.
9. Completed waste shipment records and dumping manifests.
10. As Built Drawings.
11. Other documents which may be specifically required by the Owner or the Engineer.

PART 2 – PRODUCTS

NOT USED.

PART 3 – EXECUTION

NOT USED.

END OF SECTION

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MASONRY

SECTION 04 50 00

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. The General Conditions and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

B. Refer to all sections within Division 1 for additional information.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 06 10 00 – Rough Carpentry
B. Section 07 53 00 – Elastomeric Roofing and Flashing
C. Section 07 62 00 – Sheet Metal Flashing and Trim

1.3 SCOPE OF WORK

A. In general, the Contractor shall supply all labor, materials, equipment, temporary protection, tools, and appliances necessary for the proper completion of the work in this Section, as required in the Specifications and in accordance with good construction practice and as required by the material manufacturer, as amended. The work under this Section generally includes the following:

1. Remove and replace damaged, cracked, or spalled brick masonry units at locations indicated in the Contract Drawings.

2. Carefully remove existing brick masonry as required to install new throughwall at locations as indicated in the Contract Drawings. Install new through wall flashings as shown and where indicated in the Contract Documents. Coordinate with Section 07 53 00 – Elastomeric Roofing and Flashing.

   a. Existing brick masonry units that are removed for new throughwall flashing and found to be in good/sound condition are to be salvaged for reuse.

3. Install new reglet flashing at granite stone veneer rising walls at locations as indicated in the Contract Drawings.

4. Cut and repoint masonry mortar joints at locations and as indicated in the Contract Documents.

5. Rebuild locations of displaced/bulging masonry at locations as indicated on the Contract Drawings.

6. Remove and replace locations of failed sealant at locations as indicated on the Contract Drawings.

7. Remove abandoned anchors/fasteners and infill with new brick or mortar at locations as indicated on the Contract Drawings.

8. Scrape, prime, and paint rusted lintels at locations as indicated on the Contract Drawings.

9. Clean all surfaces at work locations and adjacent to where masonry renovations are performed.

10. This project includes alternates. Please refer to Section 01 23 00 – Alternates for additional information.

1.4 DIMENSIONS AND QUANTITIES

All dimensions and quantities shall be determined or verified by the Contractor. Quantities to be carried under the base bid work have been shown on the Contract Drawings. The Contract Drawings have been compiled from various sources and may not reflect the actual condition at the moment of construction. The Contractor is cautioned to take all precautions and make all investigations necessary to install the proposed work. The Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.

1.5 JOB CONDITIONS

A. The Contractor shall utilize skilled and experience specialty workers having a minimum of five (5) years' experience in masonry renovation to perform the work. Experienced trade workers shall be utilized for all aspects of the masonry work.

B. Do not leave partially completed sections exposed to the elements overnight. Provide all devices necessary to maintain areas at the correct temperature and humidity for proper curing of mortar.

C. To prevent staining of adjacent construction during the work, immediately remove mortar or coating which comes into contact with exterior surfaces. Protect all building components from damage or staining during construction.

D. Prepare, install, and cure all materials in accordance with these Specifications, the Brick Industry Association (B.I.A.) Technical Notes, and the Manufacturer's Printed Instructions. In the case of a discrepancy, the Specifications will prevail.

E. The Contractor shall supply, install and maintain all shoring, supports, barriers, protection, warning lines, lighting and personnel required to support the structure, fixtures and facilities affected by his work and segregate the work area(s) from pedestrian or vehicular traffic, as well as to prevent damage to the building, occupants, and the surrounding landscaped and paved areas.

F. Coordinate the work in this section with the work by other trades to ensure the orderly progress of the work. No brick masonry work shall be installed until it has been reviewed and approved by the Architect/Engineer for acceptability and by the Owner for acceptability as to appearance, color, and texture match.

G. Repoint mortar joints and repair masonry only when air temperature is between 40°F and 90°F (4°C and 32°C) and is predicted remain so for at least 7 days after completion of work.

H. Cold Weather Application – (Applies to rebuilding, no repointing shall be completed when air temperature is less than 40°F) The Contractor shall comply with the following cold weather masonry construction requirements at no change in contract price:

1. The cold weather construction and protection requirements shall be closely followed.
2. Construction materials shall be received, stored, and protected in ways that prevent water from entering the materials.
3. If climatic conditions warrant, temperatures of construction materials should be measured. Frozen sand and wet masonry units must be thawed. Masonry units below 20^{o}F must be heated above 20^{o}F without overheating.
4. Sufficient mortar ingredients should be heated to produce mortar temperatures between 40^{o}F and 120^{o}F. Every effort should be made to produce consecutive batches of mortar with the same temperatures falling within this range. The mortar temperature after mixing and before use should be above 40^{o}F, maintainable either by auxiliary heaters under the mortarboard or by more frequent mixing of mortar batches. Heated mortar on mortarboards should not become excessively hot (greater than 120^{o}F).
5. At the end of the day, the top surface of all masonry should be protected to prevent moisture, as rain, snow, or sleet, from entering the masonry. This protection must cover the top surface and should extend a minimum of 2 feet down all sides of the masonry.

WORK DAY TEMPERATURE	CONSTRUCTION REQUIREMENT	PROTECTION REQUIREMENT
Above 40ºF	**Normal masonry procedures.**	*Cover walls with plastic or canvas with no open seams at end of work day to prevent water entering masonry.*
40ºF – 32ºF	**Heat mixing water to produce mortar temperatures between 40ºF – 120ºF.**	*Cover walls and materials to prevent wetting and freezing. Covers should be plastic or canvas.*
32ºF – 25ºF	**Heat mixing water and sand to produce mortar temperatures between 40ºF – 120ºF.**	*With wind velocities over 15 mph, provide windbreaks during day and cover walls and materials at the end of the work day to prevent wetting and freezing.*
25ºF – 20ºF	**Mortar on boards should be maintained above 40ºF.**	*Maintain masonry above freezing for 16 hours using auxiliary heat or insulated blankets.*
20ºF – 0ºF and below	**Heat mixing water and sand to produce mortar temperatures between 40ºF – 120ºF.**	*Provide enclosures and supply sufficient heat to maintain masonry enclosure above 32 F for 24 hours.*

Note: Construction requirements, while work is in progress, are based on *ambient* temperatures.

Protection's requirements, after masonry is placed, are based on *mean* daily temperatures.

I. Hot Weather Application – The Contractor shall keep the areas being built sufficiently moist at all times during the operations. Mortar mixed and ready for application shall be used within one hour's time and continually remixed to prevent excessive evaporation of moisture from the mortar. Discard all mortar, which has begun to set or is not used within two (2) hours' time. Water for tempering shall be available at all times.

J. Under no circumstances shall the Contractor remove existing materials and systems to the ground in an uncontrolled manner. Machinery or devices used shall be manufactured for this purpose. Adjacent building and property areas shall be protected from airborne debris.

K. All areas of existing brick masonry or flashings removed shall be replaced or made secure and weathertight during the same day. No building interiors, whether new or existing shall be left exposed to the weather at the end of each workday.

L. During removal operations, the Contractor is responsible for the containment of all dust, dirt, debris, overspray, and run-off resulting from the work. The Contractor shall collect and contain all materials and repair any resulting damage to adjacent surfaces, site fixtures, or personal property. Specific attention is drawn to the use of chemicals and cleaners.

M. No brick masonry shall be installed until it has been reviewed and approved by the Owner for acceptability as to appearance and color match.

N. Fully charged, inspected, and approved fire extinguishers shall be on site at all times. No cutting, grinding, or welding of any kind shall proceed without an approved fully charged fire extinguisher.

O. The general nature, approximate quantity, and surface area of the various work items are shown on the Contract Drawings.

1.6 ROOF, GROUNDS, AND BUILDING PROTECTION

A. The existing roof, grounds and building systems shall be totally protected during the renovations. The Contractor is responsible for any damages to the existing building systems.

B. Install canvas over all wall penetrations and over roof systems during brick masonry repair work and cleaning.

C. The Contractor is responsible for the prompt repair of any damage to the building systems resulting from the work at the project at no additional cost to the Owner.

D. Masonry work shall be performed prior to roof replacement.

1.7 SUBMITTALS

A. Submittals shall be made in accordance with the General Conditions and Section 01 33 00, Shop Drawings and Submittals.

B. The Contractor shall submit the following items with their submittal package:

1. Methods of removal of materials
2. Temporary protection procedures
3. Staging/set-up procedures
4. Program for containment of cleaning chemicals

C. Submit certificates attesting compliance with the applicable specifications for the grades, types, and classes of brick masonry.

D. Submit a range of brick masonry units and mortar samples to match the existing color, size, and texture.

E. Proposed method for providing shoring during the installation of new throughwall flashing.

F. Proposed method of providing a dust proof site (dust removal) during masonry demolition work.

G. Proposed method of protection for adjacent building, landscaping, pavement, walkways, site plantings, and related sitework from damage.

1.8 QUALITY ASSURANCE

The Contractor shall utilize skilled and experienced specialty workers having a minimum of five (5) years' experience in **masonry repairs** to perform the work. Experienced trade workers shall be utilized for all aspects of the masonry work.

1.9 REFERENCE STANDARDS

A. ASTM C144-04 Specification for Aggregate for Masonry Mortar

B. ASTM C150-09 Specification for Portland Cement

C. ASTM C207-06 Specification for Hydrated Lime for Masonry Purposes

D. ASTM C270-10 Standard Specification for Mortar for Unit Masonry

E. ASTM C67-09 Test Methods of Sampling and Testing Brick and Structural Clay Tile

F. ASTM C114-10a Test Methods for Chemical Analysis of Hydraulic Cement

G. ASTM C216-10 Specification for Facing Brick (Solid Masonry Units made from Clay or Shale)

H. BIA (Brick Industry Association) Technical Notes

I. National Park Service (NPS) Technical Preservation Briefs

1.10 TEST AREAS

A. Prior to commencement of demolition operations, the Contractor shall be required to perform on-site procedure mock ups for masonry removal and reinstallation to ensure that dust and debris containment is acceptable. No brick masonry work can commence until the means and methods have been approved.

B. Brick masonry and mortar mockups shall be installed within the wall and allowed to cure prior to being reviewed.

C. Before full-scale work is commenced, execute the following work for trial work areas to be reviewed by the Owner as to acceptability of color, texture, and appearance match with the existing construction. Test areas shall be performed at each building location and be subject to approval.

1. Two (2) linear feet of through wall flashing with solder end dam
2. Two (2) linear feet of copper fabric flashing

3. One (1) square foot of mortar repointing

D. Prepare, install, and cure all materials in accordance with these specifications and the manufacturer's instructions.

E. Trial areas shall be repeated until acceptable results are obtained. The accepted work shall be a standard for all subsequent work. Areas of masonry replacement shall be allowed to weather for seven (7) days prior to Owner acceptance.

1.11 EXISTING CONDITIONS

Any item which does not match with the original profile may be subject to removal at no additional cost to the Owner.

1.12 CLEANUP

A. Site cleanup shall be complete and performed daily to the satisfaction of the Owner.

B. All roof, building (interior and exterior), landscape, and parking areas shall be cleaned of all trash, debris and dirt caused by, or associated with, the work.

C. All trash and debris shall be completely removed from the site daily during the work and at the completion of the work. All debris shall be legally disposed of off-site.

1.13 GUARANTEES

Upon completion of the work and prior to final payment, the Contractor shall submit a guarantee of his work as free from defect in materials and workmanship. The guarantee shall be for a period of two (2) years. The guarantee shall be signed by an officer of the Contractor's firm and sealed if a corporation.

PART 2 – MATERIALS

2.1 SALVAGED MATERIALS AND ITEMS

All building materials, equipment, and debris of whatever nature from the portions of the existing structure removed under this project and not designated to be reused or reinstalled shall become the property of the Contractor and legally disposed of offsite. The Contractor will be required to place all discarded materials in the appropriate rubbish receptacles for legal disposal by the Contractor.

2.2 BRICK MASONRY

A. Replacement brick masonry shall conform to ASTM C 216, Grade SW, Type FBS specifications. Brick shall match existing in size, configuration, color, and texture. These units vary and will require confirmation prior to ordering.

1. The exterior finish brick appears to be a standard size brick, 2-1/4" x 3-5/8" x 8". Contractor to field verify all brick masonry unit dimensions.

B. All brick shall be submitted to the Owner for acceptability as to color and appearance to match with the existing brick. The Contractor may be required to submit additional brick samples for approval. No brick shall be purchased or installed until approval by the Owner is obtained. As such the Contractor is requested to provide the Owner with brick samples for review within 10 days upon receipt of contract award.

2.3 MORTAR

A. Mortar for rebuilding brick masonry shall be Type N, conforming to ASTM C270 specifications, and shall match the existing in color, texture, and appearance. Mortar shall conform to Parts 8 and 11 E of the BIA Technical Notes.

B. Mortar for repointing shall be Type N, conforming to ASTM C270 specifications and shall match the existing in color, texture, and appearance. Mortar shall be pre-hydrated and conform to Part 7 of the BIA Technical notes.

C. Portland cement shall be Type II (Type III may be used only if previously approved) conforming to ASTM C150, specifications.

D. Hydrated lime shall conform to ASTM C207, Type S specifications.

E. Sand shall conform to ASTM C144, amended as follows:

Sieve Size	**% Passing (By Weight)**
#4	100
#8	95-100
#16	70-100
#30	40-75
#50	20-40
#100	10-25
#200	0-10

F. Tinting or coloring agent shall be added to the sand, lime cement to color the fully-cured, in-place mortar to match the physical and chemical characteristics and specified requirements of the Type N mortar.

G. Admixtures - No admixtures shall be allowed.

H. Water shall be clean, potable tap water.

2.4 THROUGHWALL FLASHING AND ACCESSORIES

A. Copper Tin-Zinc alloy coated copper shall be cold rolled sheet copper conforming to ASTM B-101-78, 16 oz. Tin-Zinc coating shall be applied by hot dip process to achieve a coating approximately 0.5 mils thick. Sheet length shall be 8' maximum.

B. Copper fabric flashing shall consist of a full 5 oz. copper sheet permanently bonded between two (2) layers of textured, woven high tensile strength glass fabric with asphalt compound or epoxy-based coating. Primers and mastic adhesive required for the proper installation of the fabric flashing shall be as specifically recommended by the fabric flashing manufacturer. Fabric flashings shall be as manufactured by York Manufacturing, Inc., Advanced Building Products, Inc., Sandell Manufacturing Company, Inc. or approved equal.

C. All accessories, including but not limited to nails, screws, and clip strips shall be copper or brass and completely compatible with the surrounding metal to prevent galvanic reaction.

D. Concealed sealant for metal-to-metal connections, or for seating termination bars: ASTM C1085, single component, butyl (polyisobutylene) rubber sealant, heavy bodied for joints with limited movement.

E. Termination bar shall be 1/8" x 1" copper bar with pre-punched holes spaced at 8" on center.

F. Fasteners for securing termination bar at top of through wall flashing, blind nailers, and cladding at decorative masonry columns shall be 1" to 1-1/2" long drive pins with zinc alloy sheaths as manufactured by Star, Rawl, or approved equal.

G. Rivets shall be 3/16" diameter copper.

H. Solder for copper shall be pure tin conforming to ASTM B32 or lead-free, high-tin.

1. Flux for copper solder shall be in accordance with the requirements of ASTM B813.

I. Sheet metal flashings shall be shop fabricated. All breaks, bends, and hems shall be uniform, clean, straight lines.

1. Drip edges shall extend a minimum of ½" beyond the finish face of brick masonry, be hemmed 3/4" wide and break at a 30^{o} angle.
2. All copper joints shall be soldered.

3. Seams shall be overlapped 6” minimum, riveted, and soldered completely enveloping the rivets in solder. The contractor is to confirm seam spacing with the approved manufacturer to prevent deforming of the metal such as oil canning.

2.5 FABRICATION SCHEDULE

A. The Contractor shall coordinate the use of compatible metals to prevent galvanic corrosion.

1. 16 oz. Tin-Zinc Copper
   a. Throughwall Flashing
   b. Reglet Flashing
   c. End Dams
   d. Blind Nailers
   e. Clips

2. 24 oz. Tin-Zinc Copper
   a. Hook Strip

2.6 MASONRY TIES

A. Anchors for use at new through wall flashing locations shall be dual leg adjustable pintel, ¼” diameter stainless steel tie such as Series 316 as manufactured by Heckman, D/A 5213 as manufactured by Dur-O-Wall, or approved equal.

B. Anchors for tie back at new masonry walls shall be 12-gauge hot dip galvanized weldable tie with 3/16” pintel such as VBT series in combination with 359-FH tie as manufactured by Dur-O-Wall, or approved equal.

2.7 MASONRY CLEANERS

A. Cleaner for newly rebuilt brick masonry shall be a cleaner specifically designed for removing excess mortar stains and new efflorescence from masonry. Cleaner shall be Sure-Kleen 101 lime solvent by Pro-So-Co, Inc., Hydroclean HT455 Excess Mortar Remover by Hydrochemical Techniques, Inc., 200 lime solvent as manufactured by Diedrich Technologies, or approved equal.

B. The cleaner shall be specifically recommended by the manufacturers for the removal of stains and efflorescence from brick masonry, Radonseal Efflorescence cleaner, or approved equal. Cleaners with harsh chemicals and/or strong acids are not recommended but may be considered. Windows should be protected when using cleaners.

C. Cleaner for removal of biological growth, such as moss, algae, lichens, etc., shall be EnviroKlean BioWash by Pro-so-co, Inc., D/2 Biological Solution by Cathedral Stone Products, or approved equal.

D. Cleaner for removal of atmospheric staining shall be Safe Restore Restoration Detergent by EaCo Chem, EnviroKlean SafRestorer by Pro-so-co, Inc., EnviroKlean EK Restoration Cleaner by Pro-so-co, Inc., Envirestore 100 by Diedrich Technologies Inc., KEIM Stone Cleaner N by KEIM Mineral Products of America or approved equal. If these cleaners do not provide acceptable results, the Contractor may provide alternative cleaners such as SureKlean Light Duty Restoration Cleaner (-NE) by Pro-So-Co, Inc., SureKlean Heavy Duty Restoration Cleaner by Pro-So Co, Inc., Hydroclean HT-626 Brick, Granite, Sandstone or Terra Cotta Cleaner by Hydrochemical Techniques, Inc., 101G-Granite, Terra Cotta and Brick Cleaner by Diedrich Technologies Inc., or approved equal.

E. Masking materials shall be commercially available masking or duct tape of appropriate width. Self-adhesive materials shall be completely strippable, leaving no adhesive residue when removed.

F. Plastic sheet for masking tape areas shall be 4 mil. thick minimum, polyethylene sheet of appropriate size to cover the required areas.

2.8 WEEPS

Baffles to be installed in full head joint weeps of brick masonry shall be 3/8” x 2-1/2” x 3-3/8” baffle comprised of a bonded cellular material such as Wire Bond - Cell Vent, No. 3601 as manufactured by Masonry Reinforcing Corporation of America, Quadro-Vent by Hohmann & Barnard, Inc., Cell Vent by Dur-O-Wall, Inc., or approved equal.

2.9 PAINTS AND COATINGS FOR EXISTING STEEL LINTELS

A. All paint materials shall be products of a recognized reliable manufacturer and shall be of the best quality and grade (1st line) for each type. To establish a standard of quality, painting materials shall be supplied from the following manufacturers. Only top-quality materials are to be used on the project. Where a question of quality occurs, the Contractor will submit an affidavit from the materials manufacturer stating the quality range of the product to be used, as compared to other top-quality products made by that manufacturer.
   1. Tnemec Co., Inc.
      a. Primer: ST Typoxy Series N27
      b. Paint: Endure Shield Series 73
   2. Rust Oleum
      a. Primer: 9100 Rust-O-Poxy
      b. Paint: 9700 Rust-O-Thane
   3. Dupont Coatings:
      a. Primer: Corlar 25P Epoxy Mastic
      b. Paint: Impron 333 Polyurethane Enamel
   4. Or approved equal.

B. Final color for steel to be painted shall be selected by the Owner.
C. Number of paint coats:
   1. Primer: One coat, dry film thickness, 5-8 mils

2. Paint: Two coats, dry film thickness 2 mils

2.10 SEALANT AND ACCESSORIES

A. Sealant for exposed locations shall be a one-part polyurethane conforming to ASTM C920-87, Type S, Grade NS, Class 25, Uses NT, M, A, and O such as manufactured by Tremco, BASF-Sonneborn, Sika Corp., or approved equal.

B. Mastic shall be cold-applied, polymeric, single-component sealant compound.

C. Color(s) shall be selected by the Owner from the approved manufacturer's color chart. Colors shall be the manufacturer's available premium colors.

D. Primer shall be non-staining type as manufactured or recommended by the sealant manufacturer for each substrate.

E. Substrate cleaner shall be non-corrosive and non-staining as recommended by the sealant manufacturer. Cleaner shall be totally compatible with the sealant for each substrate.

F. Bond breaker tape shall be pressure-sensitive tape as recommended by the sealant manufacturer.

G. Masking material shall be commercially available masking tape of appropriate width or other material recommended by the sealant manufacturer. Self-adhesive masking materials shall be of low tack and completely strippable, leaving no adhesive residue behind when removed.

PART 3 – EXECUTION

3.1 GENERAL WORKMANSHIP

A. Follow all applicable local, state, and federal requirements regarding construction of scaffolding and protection of the public safety. Specific reference should be made to OSHA Construction Safety Regulations.

B. Set up of scaffolding or similar access and location of on-site storage areas shall be subject to review and approval by the Owner.

C. Do not leave any partially completed sections exposed to the elements overnight. Provide all devices (including heaters and insulation) necessary to maintain areas at the correct temperature and humidity for proper curing of mortar.

D. During freezing weather, the Contractor shall protect all masonry with tarpaulins or other approved material. Masonry materials shall be stacked on platforms and covered, or stored in a manner acceptable to the Owner, to protect them from contact with soil and weather exposure. Materials with stained faces will not be used in the walls.

E. No masonry work shall be executed when the temperature in the work area has dropped below 40 degrees F unless it is rising. The Contractor shall provide heat and maintain the temperature of masonry materials and protect the completed work from freezing. Protection shall consist of heating and maintaining the temperature of masonry materials to at least 40 degrees F, but not more than 100 degrees F, and maintain an air temperature above 40 degrees F on both sides of completed masonry for a period of at least 72 hours.

F. Keep covers tightly sealed on all evaporative products to prevent premature curing.

G. Masonry work, including cleaning, shall be performed prior to replacement of the roofing beneath. The entire roof adjacent to masonry work must be protected with 1/2" minimum rigid insulation with plywood atop.

H. All debris shall be transported to dumpsters, in locations approved by the Owner, at ground level by enclosed chute or crane and scaling bucket. Uncontrolled dropping of debris to ground level will not be permitted.

I. During the removal of any existing component, the Contractor shall report to the Owner any areas of damaged, deteriorated or otherwise unsuitable framing, wood blocking, or wall materials uncovered during the work. Do not cover unacceptable areas until reviewed by the Owner and Engineer. Provide temporary protection to the area in question.

J. Any wall areas opened for replacement shall receive the new system that day and shall be enclosed with masonry. Should rebuilding of masonry not be completed, temporary weather protection and shoring for the wall shall be provided by the Masonry Contractor at no additional charge to the Owner.

K. If needed, the Contractor shall lay-up replacement brick masonry units plumb, level, and true to the lines and dimensions at the existing walls. Chipped or broken units shall not be used. If any such units are placed in the finished wall, they shall be removed and replaced with new units conforming to the specifications at no additional cost to the Owner.

L. Refer to Brick Industry Association (BIA) technical notes for standard practice for masonry repointing, rebuilding, and repair.

M. Adjacent bricks damaged or removed as a result of the repointing work or brick removal will be removed and replaced at no cost to the Owner.

3.2 MASONRY STORAGE

Storage of all masonry shall be in the area designated by the Owner. All stored masonry units shall be covered.

3.3 REMOVAL OF BRICK MASONRY

A. Coordinate the elevation height of the finished roof surface with that of Section 07 53 00 – Elastomeric Roofing and Flashing, and the Contract Drawings to confirm the location of the new throughwall flashing heights.

B. Remove brick masonry units in the locations shown on the Contract Drawings. Use hand and power tools to remove masonry. Pneumatic demolition tools are not permitted.

C. Remove maximum four (4) linear foot sections of masonry walls at a time, or as required to prevent deflection or displacement of the existing masonry to remain. Shore the sections as required to prevent displacement.

D. Saw-cut surrounding mortar joints to remove the designated masonry units. Remove adjacent units as required. Provide temporary shoring and protection as necessary.

E. Remove masonry units in a manner so as not to damage sound materials designated to remain.

F. All throughwall flashings shall extend a minimum of 8” above the limits of the roof edges and shall be terminated with an end dam.

3.4 TEMPORARY SHORING

A. It is the responsibility of the Contractor to design, erect, and maintain all necessary shoring procedures sufficient to comply with applicable regulations, securely support all masonry or other elements left unsupported by the required removals and permit the work of other trades to proceed.

1. If cracks occur in mortar joints of brick intended to remain, completely stabilize the area with additional shoring or new construction, cut out the damaged joint area and repoint it after removal of shoring. Secure the Engineer’s approval of repair.

2. Solidly patch all holes (with new mortar) left in mortar by withdrawal of shore fastenings.

3. Completely remove shoring system when no longer needed.

4. Notify the Owner 48 hours in advance of installation of shoring.

5. The maximum spacing of temporary shoring vertical supports shall be twelve (12’’) inch on center.

6. The addition of temporary lateral bracing or blocking between vertical shoring elements is required.

7. A sequenced shoring scheme is recommended at all shoring applications. The minimum length of remaining solid masonry wall located between each removed masonry section shall be four (4) feet.

8. Masonry and flashing replacement work must be completed in the same day that existing components are removed, unless adequate temporary weather protection is provided to the satisfaction of the Owner and Engineer. Submit the intended demolition, shoring, and construction sequencing to accommodate this requirement. Submit the means and methods of temporary weather protection to include materials and methods of fastening or securing.

9. Submit the means and methods of temporary protection to low roof areas and their components.

10. Submit the means and methods of temporary covering or masking of wall and roof penetrations, grills, vents, and mechanical units.

11. All temporary shoring of the brick masonry components to complete the masonry and flashing repairs will be the sole responsibility of the masonry Contractor. The Contractor must supply, install, and maintain all temporary shoring for the duration of the project.

3.5 SOLDERING OF SHEET METAL

A. Refer to the publication, "Copper and Common Sense" by Revere Copper and Brass and all recommendations of the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) concerning methods and materials to be used in the fabrication and construction of sheet metal flashings.

B. It is the intent of this Specification to utilize the most effective joint configuration possible to properly install strong, weathertight, metal flashings. Comply with the following standards unless otherwise specified when fabricating metal components to be joined:

1. Whenever one-piece construction is not possible, solderable metals shall utilize interlocked, crimped, and fully soldered seams and joints.

2. Seams and joints of non-solderable metals shall be interlocked, riveted, and completely filled with sealant.

C. Comply with Military Specification MIL-S-6872B entitled, "General Specifications for Soldering Process" when forming soldered joints. Use conduction soldering methods. Clean areas to be joined of oil, grease, pencil marks, paint, dirt, or other foreign substances. Remove burrs using files, grinding stones, or other methods. Hold parts in place using clamps, jigs, and supports or by self-fixturing. If parts are tack-soldered to hold them in place, the area of tack-soldering shall be reworked

into the final soldering. Parts cannot be allowed to move during the soldering process.

D. Apply flux to surfaces that are to receive solder. Do not use flux-cored solder. Flux shall be fluid when heated and effective in removing and excluding oxides and other impurities from the joint. The molten solder should readily displace flux.

E. Heat areas to be joined above the liquidous temperature of the solder. To deliver maximum heat, apply the copper bit of the soldering iron at the right angle so that the flat side of the iron's bit provides maximum contact area. Apply solder to the joint and not the bit of the iron. Allow solder to flow in place to provide a minimum 1-inch final width of solder over the joint. Do not disturb the joint until it has been allowed to completely cool. After soldering, completely remove flux and acid by washing and scrubbing with a neutralizing agent.

F. Shop fabricate sheet metal flashings to the fullest extent possible. Fabricate all breaks, bends, and hems with uniform, clean, straight lines.

G. Sheet metal flashings shall be as specified herein and as required to match the existing sheet metal systems. Refer to the publication, "Copper and Common Sense" by Revere Copper and Brass and all recommendations of the Sheet Metal and Air Conditioning Contractors National Association concerning methods and materials to be used in the fabrication and construction of sheet metal flashings.

3.6 THROUGHWALL FLASHING INSTALLATION

A. Fabricate and install new flashings a minimum of 8” above the finished roof surface and as shown on the Contract Drawings. Maintain step flashing so flashing heights stay above the finished roof or curtain wall 8” minimum. Refer to Contract Drawings for configuration of step flashings and end dams.

B. Fabricate new flashing and extend rear leg of flashing 3-inches minimum up the back of the wall or as shown on the Contract Drawings. Secure the rear leg of the flashing to the back-up masonry wall with the specified fasteners and termination bar. Provide a full bead of sealant behind the flashing.

C. Secure rear leg of flashing to substrate with the specified fasteners and termination bar at 8” on center.

D. Provide the finish profile for the exposed portion of the flashing as shown on the Contract Drawings, with hemmed edge formed drip extending ½” beyond finish face of masonry.

E. Overlaps in flashing shall be 6” minimum and soldered. Rivet overlaps and solder watertight completely enveloping rivets in solder.

F. Form the flashing to shed water. Provide 2” high end dams at limits of throughwall flashings. Provide completely watertight seams and overlaps. Rivet and solder end dam connections. End damns shall be 2” high minimum.

G. Install copper fabric flashing in a full bed of mastic over the vertical surface of the existing concrete masonry back-up wall and flashing. All seams shall be lapped 6” minimum and set in full bed of sealant. Secure copper fabric to masonry backup wall with pre-punched termination bar at 8” on center. Extend fabric ½” minimum beyond the exterior face of the brick masonry wall face, 8” minimum up the back of wall and lap onto metal flashings as indicated in the Contract Drawings. Provide a bead of sealant at the top of the reglet / termination bar, tooled to shed water.

H. Note: provide field confirmation of all dimensions prior to fabricating the flashings. Where irregularities in the surface occur, backer rod and filler material can be used to provide positive support for the fabric coated copper flashings. Unsupported flashing will not be acceptable.

3.7 BRICK MASONRY REPLACEMENT

A. Ensure that proper installation of new throughwall flashings has been performed. Install weeps at base of new throughwall flashing at 24” on center, maximum. Weeps are to be set directly on the through wall flashings without a bed of mortar. Should the weeps be set in the mortar bed, they shall be spaced at 16” on center, max.

B. Reconstruct brickwork with new brick to follow the existing profile and configuration. All brick masonry shall be plumb, level, and true to the lines and dimensions of existing wall. Chipped or broken units shall not be used. If any such units are placed in the finished wall, they shall be removed and replaced with new units at no additional cost to the Owner.

C. Provide supplemental anchors into the back-up wall at 16” on center both horizontally and vertically. Where anchors penetrate throughwall flashings, seal fastener heads with mastic to provide a watertight assembly.

D. The Contractor shall supply all jacks, shoring, and temporary supports necessary to support brickwork above and adjacent to any area to assure proper installation of the work. The Contractor will be responsible to remove and reinstall this shoring as required for the Roofing Contractor to install the new flashings.

E. Wet all new and existing masonry units in the work area. Masonry shall be kept damp but without standing water.

F. Utilize rotary mixers when fabricating all mortar. Be sure to maintain relative proportions of mortar materials to provide the texture and color to match the existing mortar. No anti-freeze compounds or other substances shall be added to the mortar. Mix all mortar for at least three (3) minutes and not more than five (5) minutes with the minimum amount of water to produce a workable consistency. The maximum

allowable air content of cured mortar shall be 12% by volume. Retempering of mortars that have stiffened because of evaporation of water will be allowed in order to provide the proper consistency provided all mortar in a batch is utilized within two (2) hours of initial mixing.

G. Set each brick in a full bed of mortar and build upward. Tool all joints to a concave profile. Fully butter all heads.

H. Exercise extreme caution to avoid damaging the existing flashing.

I. Work mortar into joints for complete width and depth. Consolidate and tool into joint using concave tooling equipment to completely fill the joint cavity to match the existing joint profile. Tool exposed joints slightly concave with a round or other suitable jointer when the mortar is thumbprint hard. For horizontal joints, jointers shall be at least 12 inches long for brickwork. Jointers shall be slightly larger than the width of the joint so that complete contact is made along the edges of the units, compressing and sealing the surface of the joint. Strike flush joints that will not be exposed. Tool vertical joints first. Brush joints to remove all loose and excess mortar. Horizontal joints shall be level; vertical joints shall be plumb and in alignment from top to bottom of wall.

J. Set new masonry unit in full beds of mortar, top, bottom, and sides. Utilize slate wedges as required to maintain mortar joint width. Masonry above throughwall flashings shall be set in full beds of mortar. Should new masonry set in mortar require removal due to un-level/plumb conditions, that masonry unit shall be removed from the work area, cleaned and allowed to dry prior to reinstallation.

K. Provide full joint depth of new mortar. Strike off and tool joints to match existing joint configuration. Allow areas to fully cure prior to cleaning.

L. Extreme care shall be taken not to spill mortar into the wall cavity blocking wall drainage, while laying mortar bed for brick work. Any mortar spilled mortar shall be removed from the throughwall flashing prior to closing the opening.

M. Totally clean the areas of masonry rebuilding only after the rebuilding is completed and the mortar has been allowed to cure for 8 days minimum. Clean surfaces free of all dust, dirt, and mortar stains as described in this section.

3.8 REPOINTING

A. Any masonry unit damaged during the repointing process shall be replaced by the Contractor at no additional cost to the Owner. Repoint the deteriorated brick masonry mortar joints as designated on the Contract Drawings.

B. Cut and point all brick masonry mortar joints designated to be repointed.

C. Refer to Technical Notes, Section 7 of the Brick Industry Association concerning methods and materials for tuck pointing repairs.

D. Remove existing mortar to a depth of at least ¾" in the areas to be repointed. Removal shall be accomplished using hand and power tools so as not to damage the existing brick. Remove both horizontal and vertical joints. Brush the joint clean of all loose mortar and dust and wet the exposed surface down with a light water spray. Keep exposed surface damp throughout procedure.

E. Utilize rotary mixers when fabricating mortar. Be sure to maintain relative proportions of mortar materials to provide the texture and color to match the existing mortar. No antifreeze compounds or other substances shall be added to the mortar. Mix dry ingredients before adding water. Mix all mortar for at least 3 minutes and not more than 5 minutes with the minimum amount of water to produce a workable consistency. The maximum allowable air content of cured mortar shall be 12% by volume. Retempering of mortars that have stiffened because of evaporation of water will be allowed in order to provide the proper consistency, provided all mortar in a batch is utilized within 2 hours of initial mixing.

F. Pre-hydrated mortar shall be used for tuck pointing of masonry. Add only a sufficient amount of water to produce a damp mass of such a consistency that it would retain its form when pressed into a ball with hands, but will not flow under a trowel. Allow mortar to stand for not less than 1 hour nor more than 2 hours. Be sure that the color and texture sample of the cured mortar has been viewed and approved by the Owner.

G. Work mortar into prepared joints for complete width and depth. Consolidate and tool into joint using concave tooling equipment to completely fill the joint cavity and to match the existing joint profile. Repoint rebuilt masonry areas along with the existing. Repointed masonry shall be raked or concave as required to match the existing wall mortar joints.

H. Protect areas of repointing from inclement weather during cure.

I. Allow repointing areas to fully cure prior to masonry cleaning as described in this section.

3.9 MASONRY CLEANING

A. Totally clean all rebuilt masonry areas of all construction stains and excess mortar. Do not perform any cleaning until mortar joints and adjacent sealants are fully cured.

B. Test the specified cleaners on a small area of masonry wall to determine compatibility with the masonry, window units, sealants, etc. Evidence of discoloration, metallic salts, or other detritus shall be grounds for requiring the use of a substitute cleaner.

C. The Contractor will be required to clean the masonry units with the minimum cleaning solution mix ratios as recommended by the cleaner manufacturer. Should the minimum dilution ratios not clean the masonry, the Contractor will be required to slightly decrease the dilution rates to clean the surfaces. It is recommended that the

Contractor use care when performing the masonry repairs to prevent increasing the mixing solutions.

D. Apply the cleaner at the manufacturer's recommended dilution rate and dwell duration. Pre-wet the wall if the manufacturer so recommends.

E. Allow the cleaner to stand for the manufacturer's recommended dwell period while monitoring to ensure that the surface does not dry. Steel bristle wire brushes are not to be used.

F. Rinse all cleaner from the wall with water applied at the manufacturer's recommended flow and pressure. High pressure washing equipment may be required. Any acid neutralizing agent required by the manufacturer shall be applied as part of this rinse. Ensure that effluent does not accumulate at ground level, and fully rinse all effluent from sidewalks, streets, and landscaping each day.

G. The Contractor must provide sufficient site protection to prevent the cleaning effluent from draining into the adjacent storm drains. The Contractor will provide a narrative as to how the site protection will be performed.

3.10 PAINTING OF STEEL LINTELS

A. Surfaces to be painted shall be cleaned before applying paint or surface treatment. Oil and grease shall be removed with clean cloths and cleaning solvents prior to mechanical cleaning. Cleaning solvents shall be of low toxicity with a flashpoint in excess of 100°F. Cleaning shall be programmed so that dust and other contaminants will not fall on wet, newly painted surfaces.

B. All surfaces shall be properly smoothed. All surfaces shall be properly prepared, clean and dry when a coating is applied. Any bare or abraded spots in base coats shall be touched up before next coat is applied.

C. Carry water required to mixing area and dump all water materials outside the building in a refuse receptacle provided by the Contractor. Be accountable for any and all damage resulting from failure to observe the provisions of this Specification. Protection against fire shall be taken and all oil rags or waste must be removed from the building each day.

D. Finishing materials shall be free from skins, lumps or any foreign matter when used, and shall be kept well stirred while being applied.

E. Each coat of finish shall be evenly brushed out and allowed to dry before any subsequent coat is applied. Each coat shall be a different tint from that of the preceding coat and may be reviewed by the Owner before the next coat is applied. Finish coats shall be the exact shade and textures selected. The finished work shall be free from runs, sags, defective brushing and clogging of lines or angles. Drying time between coats of paint shall be in accordance with the manufacturer's labeled

instructions. Spray painting will not be allowed. All materials shall be applied in accordance with manufacturer's recommendations.

F. Repair brush marks, scratches, abrasions, and minor surface defects in coatings finish in accordance with manufacturer's printed instructions. Finish of repaired surfaces shall be uniform and free from blemishes and variations in color and surface texture.

3.11 SEALANT INSTALLATION

A. Install sealant at termination bars where shown on the Contract Drawings and as required for the proper completion of the work.

B. Ensure all existing sealants and other materials have been removed down to clean sound original substrates. Saw-cut, wire brush, chip, or grind as required to achieve suitable substrates for sealant installation.

C. Clean and prime substrates in strict accordance with sealant manufacturer's requirements.

D. Precondition sealants to a temperature between 60- and 70-degrees F or as required by the manufacturer. Apply sealant to clean dry surfaces only when the ambient temperature is between 60- and 85-degrees F.

E. Joint primer shall be applied to all properly prepared, cleaned, and dry substrates. Primer shall be approved by the sealant manufacturer for each substrate and shall be completely compatible with the existing materials and proposed sealants and accessories.

F. Sealant shall have a minimum application life of three (3) hours after mixing.

G. Unless otherwise required by the sealant manufacturer, the sealant shall be mixed for a period of 6 minutes minimum with a slow speed electrical drill and mixing paddle. The sides of the container shall be repeatedly scraped to ensure adequate mixing.

H. Sealant shall be applied to clean, dry, joints by knife, trowel, manual or air pressure caulking guns using proper nozzle sizes.

I. All joint sealant shall be immediately tooled to assure full adhesion. Sealant shall be dry tooled, straight, uniform, smooth, and neatly finished to the profiles detailed. No soaps, wetting of slicking agents will be allowed.

3.12 CLEANUP

Prior to acceptance of the masonry work covered in this section, the Contractor shall perform a thorough cleanup of the work site, building surfaces, landscaping, etc. Any plantings or other items damaged shall be repaired or replaced to the satisfaction of and at no additional cost to the Owner.

END OF SECTION

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METAL DECK REPLACEMENT

SECTION 05 31 00

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. The General Conditions, and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

B. Refer to Division 1 for additional information.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 07 53 00 – Elastomeric Roofing and Flashing
B. Section 22 30 00 – Plumbing
C. Section 26 10 00 – Temporary Mechanical/ Electrical Disconnects

1.3 SCOPE OF WORK

A. In general, the Contractor shall supply all labor, materials, equipment, temporary protection, tools, and appliances necessary for the proper completion of the work in this Section, as required in the Specifications, in accordance with good construction practice, and as required by the materials manufacturer, as amended. The work under this Section generally includes the following:

1. Supply all shoring and protection necessary to protect the building areas, building systems and landscape areas.
2. Remove existing Transite roof deck at Roof Area D and replace with new corrugated metal roof deck as included in **Alternate Number 1**. The existing Transite deck has been found to contain asbestos. Refer to Section 01 23 00 – Alternates for additional information.
3. Remove existing Transite roof deck at Roof Area E and replaced with new corrugated metal roof deck as included in **Alternate Number 2**. The existing Transite deck has been found to contain asbestos. Refer to Section 01 23 00 – Alternates for additional information.
4. Keep the building and areas below and around the construction area clean with as little accumulation of dust and debris as possible on a daily basis.
5. Supply all shoring, supports, ramps, walkways, and other items or materials necessary to brace and support the structure, fixtures, and facilities affected by the work. This includes, but is not limited to, heating ducts and lighting, and any item presently supported by or suspended from the metal deck, and the structural members.
6. Clean all surfaces and areas affected by the work.

1.4 JOB CONDITIONS

A. Schedule and execute all work without exposing the interior building areas to the effects of inclement weather. Protect the existing building and its contents against all risks, and repair or replace all damage to the Owner's satisfaction at no additional cost.

B. The Contractor shall utilize skilled and experienced specialty workers to install the work. Experienced trade workers shall be utilized for all aspects of the work.

C. The Contractor is cautioned that the areas below the metal deck include storage locations, equipment, and work areas. All temporary protection required to prevent dust and water infiltration in these areas must be included. Temporary protection should also be included for adjacent electrical, fire sprinkler and HVAC conduits should they be encountered.

D. The Contractor is cautioned that electrical conduits and other utilities are in close proximity to the underside of the roof deck. The Contractor will be responsible for all disconnects/reconnects associated with removal of deteriorated sections of roof deck and the installation of new roof deck.

E. All new areas of decking installed, and existing deck exposed and repaired each day shall receive the new insulation and roof membranes, including flashing membranes, in the same day’s operation. No decking, whether new or existing, shall be left exposed to the weather at the end of each workday.

F. Fully charged, inspected, and approved fire extinguishers shall be on site at all times. No cutting, grinding, or welding of any kind shall proceed without an approved fully charged fire extinguisher and a hot works permit.

G. No deck replacement shall be done without the prior approval of the Owner and the Designer to be sure areas below have been prepared for the demolition work.

H. The Contractor shall be responsible for correctness of detailing, fabrication, and for the correct fitting of structural members. Substitution of sections or modification of connection details will not be accepted unless approved by the Designer. Welding shall be in accordance with AWS D1.1. Mechanical fastening shall be in accordance with Factory Mutual Data Sheets 1-28 and 1-49.

1.5 REFERENCES

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

1. AISC Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings, (AISC Specifications)
2. AISC M011 Manual of Steel Construction Allowable Stress Design
3. AISC M013 Detailing for Steel Construction
4. AISC S303 Code of Standard Practice for Steel Buildings and Bridges

5. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
6. ASTM A36/A36M (2012) Standard Specification for Carbon Structural Steel
7. ASTM A123/A Standard Spec. for Zinc Coatings on Iron and Steel Products.
8. ASTM A307 (2010) Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength
9. ASTM F 436 (2011) Hardened Steel Washers
10. ASTM A563 Standard Specification for Carbon and Alloy Steel Nuts
11. ASTM A992/A992M (2011) Standard Specification for Structural Steel Shapes
12. AMERICAN WELDING SOCIETY (AWS– Latest Edition)
13. AWS A2.4 (2007) Standard Symbols for Welding, Brazing and Nondestructive Examination
14. AWS D1.1/D1.1M (2010; Errata 2011) Structural Welding Code – Steel
15. Factory Mutual Data Sheets.

1.6 SUBMITTALS

A. Shop Drawings and Submittals shall be made in accordance with the General Conditions and Section 01 33 00 – Submittals Requirements.

B. Submit certified copies of welder qualifications test records showing qualification in accordance with AWS D1.1.

C. Product Certificates signed by steel deck manufacturers certifying that products furnished comply with requirements.

D. Product Test Reports from a qualified testing agency indicating that each of the following complies with requirements, based on comprehensive testing of current products:

1. Mechanical Fasteners.

E. Contractor to provide site safety plan and Job Hazard Analysis.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed steel deck similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM E 329 to conduct the testing indicated, as documented according to ASTM E 548.

C. Welding: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code - Steel," and AWS D1.3, "Structural Welding Code - Sheet Steel."

D. AISI Specifications: Calculate structural characteristics of steel deck according to AISI's "Specification for the Design of Cold-Formed Steel Structural Members."

1.8 GUARANTEES

A. Upon completion of the work and prior to final payment, the Contractor shall submit a guarantee of their work as free from defect in materials and workmanship. The guarantee shall be for a period of two (2) years. The guarantee shall be signed by an officer of the Contractor's firm and sealed if a corporation.

PART 2 - PRODUCTS

2.1 METAL DECK AND ACCESSORIES

A. Replacement metal decking shall be Type B 1-1/2-inch-deep galvanized steel roof deck, 18-gage minimum decking with integral laps. Note, a comparable match to the existing deck profile may be a special order. The Contractor shall field verify existing deck configuration prior to performing the roof renovations and shall provide sufficient scheduling for delivery of materials.

B. Metal decking shall be certified by the Steel Deck Institute and manufactured by United Steel Deck, Inc., Wheeling Corrugated Co., Roll Form Products, Inc., or Designer approved equal.

C. Metal decking shall be Factory Mutual (FM), and Underwriter's Laboratories (UL) approved for non-combustible roof deck construction.

D. Metal decking and sheet steel shall be fabricated of galvanized sheet material. Galvanized sheet materials shall conform to ASTM A653 Specifications with G-90 galvanizing.

E. Fasteners to secure new metal decking panels to framing shall be 1-inch-long No. 12 self-drilling, self-tapping screws such as TEKS Fasteners, as manufactured by Buildex Division, Illinois Tool Works, Inc., or approved equal.

F. Galvanizing Repair: Where galvanized surfaces are damaged, prepare surfaces and repair in accordance with procedures specified in ASTM A780.

G. Flexible Closure Strips: Manufacturer's standard vulcanized, closed-cell, synthetic rubber, profiled to fit tight to the decking.

2.2 ADJUSTING PLATES

A. Adjusting plates or segments of deck units shall be provided in locations too narrow to accommodate full-size units. As far as practical, the plates shall be the same thickness and configuration as the deck units.

2.3 CLOSURE PLATES

A. Voids above interior walls shall be closed with sheet metal where shown. Open deck cells at parapets, end walls, eaves, and openings through roofs shall be closed with sheet metal. Sheet metal shall be same thickness as deck units.

B. Cover plates to close panel edge and end conditions and where panels change direction or abut. Butt joints in composite steel deck may receive a tape joint cover.

C. Accessories shall include but not be limited to saddles, cant strips, butt cover plates, underlapping sleeves, and ridge and valley plates.

PART 3 - EXECUTION

3.1 IN GENERAL

A. The Contractor shall coordinate all work in this Section with the work in other sections as required for the work to proceed in an orderly fashion. Removal and replacement shall be performed in the specified, controlled manner so as to provide a watertight building at the end of each day's work, free of excessive build-up of trash, dust, dirt, and debris. The general procedure for this is listed below, and all items shall be done on a daily basis.

B. All deteriorated existing roof deck areas, as determined by the Designer or Owner's representative, shall be replaced. The roof deck surface shall be carefully inspected following removal of the existing roof system. Any deck areas found damaged, excessively deflected, or otherwise unsuitable shall be replaced. No decking shall be replaced until it is viewed by the Owner and the Designer and replacement is authorized. The Contractor shall protect exposed roof areas until viewed by the Designer and renovated with the new system.

C. Disconnect and/or support the electrical power and mechanical equipment fastened below the metal deck area to be replaced prior to the start of demolition.

D. Securement of metal deck shall be completed in accordance with Factory Mutual (FM) guidelines. Refer to FM Data Sheet 1-29 for additional information.

3.2 DELIVERY, STORAGE, AND HANDLING

A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.

B. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.

3.3 METAL DECK REPLACEMENT

A. Supply all tarps, warning lines and other means necessary to protect the building interior from damage, as well as the occupants.

B. Provide a fire watch as required by the local fire department within the building to prevent sparks from igniting and causing damage to the building.

C. In locations designated on the Contract Drawings, install new metal deck in preparation for installation of the new roof assembly.

D. Wire brush and prime all areas of exposed metal joists and framing which are experiencing surficial rust. More severely rusted or otherwise deteriorated members shall be removed and replaced as determined by the Owner and Designer.

E. Position replacement metal decking over existing steel framing and adjust to final position with ends accurately aligned and bearing on supporting members before permanently fastened. New metal deck panels shall be sized to bear upon a minimum of four (4) supports. Deck span must be 3 span continuous minimum.

F. Decking units shall be applied only over supports which have accurately been aligned and secured in position.

G. Align deck units for entire length of run of cells and with close alignment between cells at ends of abutting units. Place deck units flat and square, secured to adjacent framing without warp or deflection.

H. Do not use deck units for storage or working platforms until permanently and completely secured in its final location.

I. Deck closures shall be provided at all deck edges.

J. Construction loads shall be distributed on plywood or planking and shall not rest directly on steel deck.

K. Fastening Metal Roof Deck Units:

1. Fasten roof deck units to steel supporting member in accordance with the fastening table in the construction drawings. Minimum roof deck fastening shall be no less than 5/8-inch diameter puddle welds or elongated welds of equal strength, spaced not more than 12 inches on center at interior supports, 6 inches on center at roof edges, and closer spacing where indicated. In addition, secure deck to each supporting member in ribs where side laps occur.

2. Comply with AWS Requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used in

correcting welding work. Use welding washers where recommended by the deck manufacturer.

3. Mechanically fasten side laps of adjacent deck units between supports, at intervals not exceeding 36 inches on center unless closer spacing is indicated on drawings. Use self-tapping No. 10 or larger self-tapping machine screws.

L. Cutting and Fitting: Cut and neatly fit deck units and accessories around other work projecting through or adjacent to decking.

M. Holes and Openings:

1. All holes and openings required shall be coordinated with the drawings, Specifications, and other trades. Holes and openings shall be drilled or cut, reinforced and framed as indicated on the drawings or described in the Specifications and as required for rigidity and load capacity.

2. Holes and openings less than 6 inches across require no reinforcement. Holes and openings 6 to 12 inches across shall be reinforced by 0.0474-inch-thick steel sheet at least 12 inches wider and longer than the opening and be fastened to the steel deck at each corner of the sheet and at a maximum of 6 inches on center. Holes and openings larger than 12 inches shall be reinforced by steel angles installed perpendicular to the beams and supported by the adjacent beams.

3. Steel angles shall be installed perpendicular to the deck ribs and shall be fastened to the angles perpendicular to the beams.

N. Closure Strips: Provide metal closure strips at open, uncovered ends and edges or roof decking, and in voids between decking and other construction. Weld into position to provide a complete decking installation.

1. Provide flexible closure strips instead of metal closures, at Contractor's option, wherever their use will ensure complete closure. Install with adhesive in accordance with manufacturer's instructions.

O. Touch-Up Painting: After decking installation, wire brush, clean, and paint scarred areas, welds, and rust spots on top and bottom of surfaces of decking units and supporting steel members. Touch up galvanized surfaces with galvanizing repair paint applied in accordance with manufacturer's instructions.

P. Holes and similar defects will not be acceptable.

Q. Deck ends shall be lapped a minimum of 2 inches. All partial or segments of deck units shall be attached to structural supports in accordance with Section 2.5 of SDI MOC3 and FM. Laps shall be centered on supporting steel.

3.4 CLEANING

A. Protect deck system from damage and wear.

B. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

C. Refer to close-out procedures described in Division one of these Specifications for additional information.

END OF SECTION

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METAL ROOF LADDERS

SECTION 05 51 33

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. The General Conditions and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

B. Refer to all sections within Division 1 for additional information.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 04 50 00 – Masonry
B. Section 07 53 00 – Elastomeric Roofing and Flashing

1.3 SCOPE OF WORK

A. In general, the Contractor shall supply all labor, transportation, materials, equipment, temporary protection, tools and appliances necessary for the proper completion of the work, as required in the Specifications, in accordance with good construction practice, and as required by the materials manufacturer. The work includes, but is not limited to, the following items:

1. Install new aluminum ladders, anchors, and bolts as shown at locations indicated on the Contract Drawings, in conformance with the State of Maine Code and the Contract Documents.

2. Ladders shall be painted to match the existing ladder color.

3. Provide all lifts, hoists, manpower, and equipment necessary to complete the work.

4. Clean and restore all areas affected by the work to the satisfaction of the Owner.

1.4 JOB CONDITIONS

A. Provide site specific work/safety plan for the Owner's review and files. Plans shall include, but not be limited to, fall arrest, handling of materials, lead work plans for removal of the existing metals, etc.

B. The building and site will be occupied and in use during the time of construction. The Contractor shall take all precautions to create as little disruption as possible during the course of the work.

C. Coordinate the work in this Section with the work of other trades to ensure the orderly

progress of the work.

D. The Contractor shall utilize skilled and experienced specialty workers to install the work. Experienced trade workers shall be utilized for all aspects of the work.

1.5 REFERENCES

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

1. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

2. ANSI A14.3 Ladders - Fixed - Safety Requirements

3. ANSI H35 Aluminum and Aluminum Alloys

4. OCCUPATIONAL HEALTH AND SAFETY ASSOCIATION (OSHA)

5. OSHA 1910.27 – Fixed Ladders.

6. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

7. ASTM A 325 Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength

8. ASTM E94 Standard Guide for Radiographic Testing

9. AMERICAN WELDING SOCIETY (AWS)

10. AWS A2.4 Standard Symbols for Welding, Brazing and Nondestructive Examination

11. ALUMINUM ASSOCIATION

12. Aluminum Design Manual

1.6 GENERAL REQUIREMENTS

A. Aluminum fabrication and erection shall be performed by an organization experienced in aluminum work of equivalent magnitude.

B. The Contractor shall be responsible for correctness of detailing, fabrication, and for the correct fitting of structural members. Connections, for any part of the structure not shown on the Contract Drawings, shall be considered simple shear connections and shall be designed and detailed in accordance with pertinent provisions of AISC. Substitution of sections or modification of connection details will not be accepted unless approved by the Engineer. Welding shall be in accordance with AWS D1.1. High-strength bolting shall be in accordance with AISC S329.

1.7 SUBMITTALS

A. The following shall be submitted in accordance with Section 01 33 00 – Shop Drawings and Submittals:

1. Drawings: Shop and erection details including members (with their connections) not shown on the contract drawings. Welds shall be indicated by standard welding symbols in accordance with AWS A2.4.

2. Certificates: Certified copies of mill test reports for structural steel, structural bolts, nuts, washers and other related structural steel items.

3. Certified copies of hot-dip galvanizing applicator's coatings meet or exceed the specified requirements of ASTM A123 and A153, as applicable.

4. Certified copies of welder qualifications test records showing qualification in accordance with AWS D1.1.

5. A copy of the AISC certificate indicating that the fabrication plant meets the specified structural steelwork category.

1.8 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Material shall be stored out of contact with the ground in such manner and location as will minimize deterioration.

1.9 DISSIMILAR MATERIALS

A. Where dissimilar metals are in contact, or where aluminum is in contact with concrete, mortar, masonry, wet or pressure-treated wood, or absorptive materials subject to wetting, the surfaces shall be protected with a coat of bituminous paint or asphalt varnish, or a neoprene gasket.

1.10 WORKMANSHIP

A. Metal work shall be well formed to shape and size, with sharp lines and angles and true curves. Drilling and punching shall produce clean true lines and surfaces.

B. Welding shall be continuous along the entire area of contact except where tack welding is permitted.

C. Exposed connections of work in place shall not be tack welded. Exposed welds shall be ground smooth. Exposed surfaces of work in place shall have a smooth finish, and unless otherwise approved, exposed riveting shall be flush. Where tight fits are required, joints shall be milled. Corner joints shall be coped or mitered, well formed, and in true alignment.

D. Work shall be accurately set to established lines and elevations and securely fastened in place.

E. Installation shall be in accordance with manufacturer's installation instructions and approved drawings, cuts, and details.

1.11 ANCHORAGE

A. Anchorage shall be provided where necessary for fastening miscellaneous metal items securely in place.

B. Anchorage not otherwise specified or indicated shall include slotted inserts made to engage with the anchors and expansion shields when approved for concrete; toggle bolts and through bolts for masonry; machine and carriage bolts for steel; and lag bolts and screws for wood.

PART 2 - PRODUCTS

2.1 ALUMINUM LADDERS

A. Aluminum alloy products shall conform to ASTM B 209 for sheet plate, ASTM B 221 for extrusions, and ASTM B 26/B 26 M or ASTM B 108/B 108 M for castings. Provide aluminum extrusions at least 1/8” thick and aluminum plate or sheet at least 0.050 inch thick. Aluminum shall be milled finished.

B. All accessories such as corners, pipe joints, wall plates, etc. shall be as recommended and supplied by the manufacturer.

C. Rungs are to be Aluminum tube with serrated top not to be less than 18 inches wide, spaced one foot apart, plug welded or shouldered and headed into stringers

D. Fixed ladders must be able to support at least two loads of 250 pounds each, concentrated between any two consecutive attachments.

E. Provide aluminum channel rails. Provide intermediate bent plates not over 36 inches on center for attachment to wall mounting brackets as indicated on the Contract documents.

2.2 WELDED CONNECTIONS

A. All aluminum connections shall be welded in accordance with the AWS D1.2. Standards

B. Welds exposed to view in the finished work shall be uniformly made and shall be ground smooth.

C. Welding rods and bare electrodes shall be selected in accordance with AWS specifications for the metal alloy to be welded.

D. Size and shape welds to develop the full design strength of the parts connected by welds and to transmit imposed stresses without permanent deformation or failure when subject to service loadings.

2.3 EXTERIOR PAINTS

A. All paint materials shall be products of a recognizable reliable manufacturer and shall be of the best quality and grade (1st line) for each type. All paint materials shall be lead free.

B. Paint to be used for coating shall be a 100% acrylic emulsion, water borne, corrosion resistant coating specifically manufactured for use on exterior metal surfaces such as RD Elastometal as manufactured by RD Coatings. Equal materials manufactured by the Tnemec Company or LPL Industries will be considered should they meet the performance requirements. Colors shall be as selected by the Owner to match existing coated surfaces, and as described within this Section.

C. Primer for use over existing paint coatings and bare metal surfaces, shall be rust inhibitive in nature and as required by the paint manufacturer of existing surfaces encountered and shall be specifically manufactured and recommended by the paint manufacturer for the surface being painted.

D. Paint thinner shall be as recommended by the paint manufacturer.

E. Unspecified materials: All unspecified materials such as shellac, turpentine, or linseed oils shall be of the "best grade" or "first line" made by reputable, recognized manufacturers and shall bear the labels and be approved by the Designer.

F. Coatings to be applied in properly prepared members shall be as recommended by the paint manufacturer.

2.4 FASTENERS AND ANCHORS

A. Use methods for fastening or anchoring metal fabrications to building construction as shown or specified.

B. Where fasteners and anchors are not shown, design the type, size, location and spacing to resist the loads imposed without deformation of the members or causing failure of the anchor of fastener, and suite the sequence of installation.

C. Use material and finish of the fasteners compatible with the kinds of materials which are fastened together and their location in the finished work.

D. Fasteners for securing stairway framework to wood supports shall be stainless steel, hex head, self-drilling 5/8" diameter screws of sufficient length to penetrate wood blocking 2" minimum.

PART 3 - EXECUTION

3.1 FABRICATION

A. Codes and Standards: Comply with the latest provisions of the following:

1. AWS Structural Welding Code-Aluminum D1.2/D1.2M.

B. Connections:

1. Weld all shop connections, unless otherwise noted on the drawings. Size the connections for 50 percent of the total uniform load capacity of the member as listed in the beam tables of the AISC "Manual of Steel Construction", unless otherwise noted on the construction documents.

C. Shop Fabrication and Assembly: Fabricate and assemble structural assemblies in shop to greatest extent possible.

D. Properly mark and match-mark materials for field assembly. Fabricate for delivery sequence which will expedite erection and minimize field handling of materials.

E. Where finishing is required, complete assembly, including welding of units, before start of finishing operations. Provide finish surfaces of members exposed in final structure free of markings, welding splatter, burrs and other defects.

F. Bolt field connections, except where welded connections or other connections are indicated.

G. Welded Construction: Comply with AWS Code for procedures, appearance and quality of welds, and methods used in correcting welding work.

H. Cut, drill or punch holes perpendicular to metal surfaces. Do not flame-cut holes or enlarge holes by burning.

3.2 LADDER INSTALLATION

A. Secure to the adjacent construction with the bent plates attached to the stringer.

B. Secure through brick and concrete masonry walls with not less than two (2) 1/2” HILTI HIT HY 20 anchors with a 10” minimum embedment at each support bracket.

C. Install support brackets not more than 36” on center.

D. Install brackets as required for securing of ladders.

E. The base of the ladder shall be a maximum of 12” off the finished roof system.

END OF SECTION

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ROUGH CARPENTRY

SECTION 06 10 00

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. The General Conditions and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

B. Refer to all sections within Division 1 for additional information.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 07 53 00 – Elastomeric Roofing and Flashing
B. Section 07 62 00 – Sheet Metal Flashing and Trim
C. Section 26 10 00 – Temporary Mechanical/Electrical Disconnects

1.3 SCOPE OF WORK

A. In general, the Contractor shall supply all labor, materials, equipment, temporary protection, tools, and appliances necessary for the proper completion of the work in this Section, as required in the Specifications and in accordance with good construction practice and as required by the material manufacturer, as amended. The work under this Section generally includes the following:

1. Coordinate this work with all trades to provide orderly progress of the tasks.
2. Install new wood blocking at roof penetrations, roof perimeters, roof to wall locations, and as required to properly terminate the new roofing and flashing systems. Coordinate the final wood blocking heights with the insulation configuration to provide a uniform height around the perimeter of each roof – refer to Section 07 53 00 – Elastomeric Roofing and Flashing for additional information.
3. Remove and replace any deteriorated wood blocking designated to remain.
4. Install wood curb extensions at rooftop mechanical equipment at locations as required to provide minimum 8-inch (8”) flashing height. Coordinate with Section 26 10 00 – Temporary Mechanical/Electrical Disconnects for additional information.
5. Remove and replace interior finishes as necessary to access roof drains.
6. Clean and restore all areas affected by the work.
7. This project includes alternates. Please refer to Section 01 23 00 – Alternates for additional information.

1.4 SPECIAL JOB CONDITIONS

A. The building occupants are highly sensitive to fumes, odors, noise, and disturbances. The Contractor shall submit a detailed sequence schedule for the roof area prior to the start of work and coordinate daily schedules with the Owner.

1.5 JOB CONDITIONS

A. All surfaces to receive the new wood blocking shall be thoroughly dry. Should surface moisture such as dew exist, the Contractor shall provide the necessary equipment to dry the surface prior to application. Do not dry with open flames.

B. Coordinate this work with the work described in other Sections of this Specification.

C. Do not leave any newly installed wood blocking exposed. Cover and protect all newly installed wood daily with the new flashing system.

D. Protect all existing and new wood stored on site to prevent moisture absorption. Use tarps over the wood pile (top, sides, and bottom) elevated on pallets (one side lower to shed water).

E. Verify condition and securement of existing wood blocking designated to remain. Verify that existing wood blocking fasteners to deck are specified fasteners spaced 24-inches on center maximum.

F. If delays in the project exceeding one (1) week are anticipated due to inclement weather (or due to any other condition), all wood shall be stored in weatherproof box trailers or storage sheds in locations to be designated by the Owner.

1.6 REFERENCE STANDARDS

A. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

B. APA – THE ENGINEERED WOOD ASSOCIATION

C. NATIONAL DESIGN SPECIFICATION (NDS)

D. AMERICAN FOREST AND PAPER ASSOCIATION (AFPA)

E. AWPA – AMERICAN WOOD PROTECTION ASSOCIATION

1.7 SUBMITTALS

A. Submittals shall be made in accordance with the General Conditions and Section 01 33 00 – Shop Drawings and Submittals.

B. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used, net amount of preservative retained, and chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials, both before and after exposure to elevated temperatures when tested according to ASTM D 5516 and ASTM D 5664.
3. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
4. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

C. Contractor to provide site safety plan and Job Hazard Analysis.

1.8 QUALITY ASSURANCE

A. Forest Certification: Provide rough carpentry produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC's "Principles and Criteria for Forest Stewardship."

1.9 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.

1.10 GUARANTEE

A. The Contractor shall supply the Owner with a minimum two (2) year workmanship warranty for their work. In the event any work related to this section is found to be defective within two (2) years of substantial completion, the Contractor shall remove and replace such at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 DIMENSIONAL LUMBER

A. All dimensional lumber for roofs and walls shall be construction grade Douglas Fir, Hem-Fir or Southern Yellow Pine, formed to the dimensions shown on the Detail Drawings and as required for proper installation of the new work. All new exterior perimeter woodwork, nailers, and wood blocking used on the building shall be minimum 6-inch wide, except where otherwise detailed. Wood furring/blocking shall be permitted to be minimum 4-inch wide at expansion joints and wall locations.

B. All woodwork shall have a maximum moisture content of 19% by weight on a dry weight basis. Kiln drying may be required to conform to maximum 19% moisture content.

C. Pressure treated wood blocking/sleepers will only be permitted when wood furring or blocking is in direct contact with concrete, masonry, or exposed to the exterior.

D. Shims for roof edge blocking shall be continuous cedar of the size required to provide a sloped surface for the roof edge detail as shown in the Contract Drawings.

2.2 PLYWOOD

A. Plywood shall be APA Grade CD, Exterior, minimum ½-inch thick for wall systems, unless designated otherwise on the detail drawings. Pressure treated plywood will not be permitted.

2.3 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. Nailers.
4. Treated wood for furring.

B. For items of dimension lumber size, provide Construction, Stud, or No. 2 grade lumber with 15 percent moisture content.

2.4 FASTENERS

A. In general, all fasteners, anchors, nails, straps, and other accessories shall be of stainless steel, galvanized steel, or fluorocarbon coated steel. Galvanizing shall be hot dip in accordance with ASTM A153 Specifications. Electro-galvanized items shall not be used.

B. Fasteners for securing wood blocking to wood blocking shall be galvanized annular threaded ring shank nails. Fasteners shall be of sufficient length to penetrate the receiving member 1-1/2-inch minimum, except full depth into plywood.

C. Fasteners for securing wood blocking to wood decking shall be #14 self-drilling, self-tapping, fluorocarbon coated screws of sufficient length to penetrate the decking 1” minimum, 1-1/4” maximum.

D. Fasteners for securing wood blocking and plywood to steel shall be Number 12 minimum coated steel deck screws, with a minimum 1-inch embedment.

E. Fasteners for securing wood blocking to concrete substrates shall be one-piece fluorocarbon coated, 1/4’’ diameter flat head anchors such as Rawl drives by the

Rawl Plug Company or approved equal, with a minimum 2-inch' embedment into the substrate.

F. Fasteners for securing plywood to concrete and masonry surfaces shall be ¼-inch diameter hammer drive anchors with zinc-alloy sheaths and stainless-steel inserts as manufactured by Star Fasteners, Rawl, OMG or approved equal. Anchors shall be of sufficient length to penetrate the receiving substrate 1-1/4-inch minimum.

G. Fasteners for securing wood blocking to CMU blocks and brick masonry units shall be Kwik-Con II+Torx Hex Screw Anchor as manufactured by Hilti or approved equal. Fasteners shall be of sufficient length to penetrate the receiving substrate 1-3/4" minimum.

2.5 INTERIOR GYPSUM BOARD

A. Gypsum wallboard shall be 5/8" thick, paper face with a tapered edge. Gypsum board shall meet ASTM C1396 Standard Specification for Gypsum Wallboard.

B. Joint compound shall be premixed conforming to ASTM C475 Specifications. Compound shall be asbestos free.

C. Corner beads shall be DUR-A-BEAD No. 103 1-¼" x 1-¼", or approved equal.

D. Metal Trims shall be No. 200A-J shaped channel 5/8" in size. Plastic tear away trim will be considered.

2.6 PAINT MATERIALS

A. Primer for new gypsum board substrates shall be latex undercoat as manufactured by Benjamin Moore, California Products, Inc., Tnemec Company, Inc., Popcorn Interior Texture Paint as manufactured by Behr, or approved equal.

B. Paint for new gypsum board at ceiling locations shall be as manufactured by Benjamin Moore, California Products, Inc., Tnemec Company, Inc., or approved equal. Color and finish shall be required to match existing, or as selected by the Owner.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Discard units of material with defects that impair quality of carpentry and that are too small to use with minimum number of joints or optimum joint arrangement.

B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

C. Apply field treatment complying with AWPA M4 to cut surfaces of preservative-treated lumber and plywood.

D. Securely attach carpentry work as indicated and according to applicable codes and recognized standards.

E. Countersink fastener heads on exposed carpentry work and fill holes with wood filler.

F. Use fasteners of appropriate type and length. Predrill members when necessary to avoid splitting wood.

3.2 REMOVAL OF WOOD BLOCKING

A. Remove and dispose of all deteriorated wood blocking and all blocking scheduled to be removed and replaced in accordance with the Contract Drawings and this Specification.

3.3 PERIMETER WOOD BLOCKING INSTALLATION

A. Refer to FM Data Sheet 1-49 concerning spacing requirements for perimeter blocking anchorage. All anchors and fasteners that attach wood blocking to the structure shall have their spacing halved for an 8-foot length away from all exterior corners of the perimeter.

B. The perimeter wood blocking shall be installed at a consistent, even height throughout that roof area to provide a flush transition from insulation to blocking and provide an even and continuous line for metal fascia installation.

C. All butt joints in woodwork shall be flush to provide a smooth, uniform line with no irregularities. Built-up blocking shall have butt joints staggered 4-feet minimum layer to layer. The minimum length of any individual piece of woodwork shall be 2-feet. All lengths of woodwork shall have a minimum of 2 fasteners. Layers of wood blocking at corners shall be interlocked to provide additional stability.

D. At roof perimeters, the wood blocking and plywood shall be installed as detailed. Provide 8-inch nominal wide blocking at roof perimeters unless otherwise detailed.

E. Existing wood blocking and curbs may be required to be cut back or trimmed to provide an even flush assembly as shown on the Detail Drawings. This shall be accomplished with power or hand tools. Should cutting of existing components reduce or eliminate securement of their components, the Contractor shall re-secure with the appropriate fasteners.

3.4 FASTENING OF WOODWORK

A. All new woodwork shall be secured with the specified fasteners spaced 12-inches on center maximum, or unless otherwise specified by Factory Mutual Global’s Data Sheet FM 1-49.

B. All existing woodwork to be reused shall be re-secured with the specified fasteners spaced 12-inches on center maximum, to the roof deck. The Contractor shall be made aware that the re-securement fasteners may need to penetrate multiple layers of existing wood blocking before penetrating the roof deck and shall provide proper length fasteners.

C. Wood blocking shall be fastened directly to the roof deck with the specified fasteners spaced 12-inches on center maximum, staggered off the centerline of the woodwork being secured. Predrilling of fastener holes shall be completed prior to installing fasteners. Should the wood blocking be greater than a nominal 2x6, fasteners shall be spaced 12-inches on center maximum in pairs.

D. Wood blocking to wood blocking connections shall be made using the specified fasteners spaced 12-inches on center maximum and staggered off the centerline of the woodwork being secured. Nails shall be of sufficient length to penetrate the receiving member 1-1/2-inches minimum.

E. Plywood shall be fastened to vertical concrete, CMU, and masonry surfaces with the specified fasteners spaced 8-inches on center both vertically and horizontally.

F. Plywood shall be fastened to vertical stud framing with the specified fasteners spaced 6-inches on center maximum vertically.

G. Spacing of fasteners should not exceed 12-inches, 8-feet each way from outside corners. Withdrawal resistance should be 100 lbs. per nail minimum.

3.5 CURB EXTENSIONS

A. Coordinate final roof flashing heights with Section 07 53 00 – Elastomeric Roofing and Flashing.

B. Coordinate temporary disconnection of existing rooftop mechanical units with Section 26 10 00 – Temporary Mechanical/Electrical Disconnects.

C. New wood blocking shall be secured to the existing curb with approved fasteners.

3.6 PLYWOOD SHEATHING INSTALLATION

A. Coordinate this work with that of the other trades to provide the orderly progress of construction and a watertight condition. It is the intent of these specifications to install plywood sheathing at designated parapet walls and where designated on the Contract Drawings.

B. Secure new plywood sheathing over the substrate accepting the new elastomeric flashings. Where practical, the plywood assembly can be sized to allow the plywood surface to be flush with the wood blocking around the perimeter of the roof system. Coordinate with Sections 07 53 00 – Elastomeric Roofing and Flashing and 07 62 00 – Sheet Metal Flashing and Trim.

3.7 PROTECTING AND CLEANING

A. New wood blocking and plywood shall be kept dry before, during and after installation.

B. Clean adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

C. Refer to close-out procedures described in Division One of these Specifications for additional information.

END OF SECTION

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METAL WALL PANELS

SECTION 07 42 13

PART 1 - GENERAL

1.1 IN GENERAL

A. The General Conditions, and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

B. Refer to all sections within Division 1 for additional information.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 05 51 33 – Metal Roof Ladders
B. Section 07 53 00 – Elastomeric Roofing and Flashing

1.3 SCOPE OF WORK

In general, the Contractor shall supply all labor, materials, equipment, temporary protection, tools and appliances necessary for the proper completion of the work in this Section, as required in the Specifications, in accordance with good roofing practice, and as required by the materials manufacturer, as amended. The work under this Section generally includes the following:

A. The Contractor shall provide all scaffolding, lifts, cranes, and equipment necessary to perform the work.

B. The Contractor is to coordinate work within this section with all other associated trades to perform work in an orderly fashion and to minimize temporary supports and weather protection.

C. Install air barrier, plywood, metal wall panels, closure panels, blind nailers, and associated flashings where indicated in the Contract Drawings.

D. Install flashings to properly terminate roof membrane at metal panel locations. Coordinate with Section 07 53 00 – Elastomeric Roofing and Flashing.

E. Metal panels are to have staggered seams and are to be centered along wall runs. Refer to Contract Drawings for locations of windows, penetrations, and ladders that affect panel work.

F. Install blind nailers at limits of wall cladding.

G. Install backer rod and sealant at locations indicated on Contract Drawings.

H. Clean and restore all areas affected by the work.

1.4 QUALITY ASSURANCE

Installer Qualifications: Engage an experienced installer who has completed metal wall panel projects similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance for a minimum of 5 years.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver panels and other components so they will not be damaged or deformed. Package panels for protection against damage during transportation or handling.

B. Exercise care in unloading, storing, and erecting wall panels to prevent bending, warping, twisting, and surface damage.

C. Stack materials on platforms or pallets, covered with tarpaulins or other suitable weathertight and ventilated covering. Store panels to ensure dryness. Do not store panels in contact with other materials that might cause staining, denting, or other surface damage.

D. Field cutting sheet metal by torch is not permitted. All field cuts shall be de-burred.

E. Immediately remove all strippable films from panel surfaces if exposed in direct sunlight.

1.6 PROJECT CONDITIONS

A. Verify locations of structural members and openings in substrates by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the work.

1.7 WARRANTY/GUARANTEES

A. Special Finish Warranty: Submit a written warranty, signed by manufacturer, covering failure of the factory-applied exterior finish on metal wall panels within the specified warranty period and agreeing to repair finish or replace wall panels that show evidence of finish deterioration. Deterioration of finish includes, but is not limited to, color fade, chalking, cracking, peeling, and loss of film integrity.

B. Finish Warranty Period: 15 years from date of Substantial Completion.

C. Upon completion of the work and prior to final payment, the Contractor shall submit a guarantee of his work as free from defect in materials and workmanship. The guarantee shall be for a period of two (2) years. The guarantee shall be signed by an officer of the Contractor's firm and sealed if a corporation.

PART 2 - MATERIALS

2.1 METAL PANELS AND PRE-FORMED FLASHINGS

A. Aluminum for construction of all sheet metal wall panels, closures, corners and associated flashings shall be of 3004 aluminum alloy, H36 temper or equivalent, 0.040" and 0.050" thick factory painted aluminum with a stucco embossed texture to match color and finish of existing stucco finish. Wall panels to be manufactured by ATAS International, Designer Series by MBCI or CF Architectural Vertical Wall Panel by Metlspan or approved equal. Finish for all exposed painted aluminum flashings shall be as described in paragraph 2.6 of this Section.

B. Exterior wall panels shall have one 12" wide (visible surface) raised rib with a minimum depth of 1". Panels shall have interlocking side laps to conceal securements.

C. Termination bars shall be 1/8" x 1" aluminum bar with pre-punched holes at 8" on center.

D. All accessories, including but not limited to nails, screws and clip strips shall be aluminum, stainless steel or galvanized steel and completely compatible with the surrounding metal to prevent galvanic reaction.

E. Rivets shall be 3/16" diameter aluminum or stainless steel as required by the metal being fastened.

F. Sheet metal panel, closures, corners and flashings shall be shop fabricated. All breaks, bends and hems shall be uniform, clean, straight lines.

1. Inside and outside corners shall be 4" wide (visible surface)
2. Drips shall be hemmed 3/4" wide and break at a 30^{o} angle.
3. Clips shall be 2" wide.
4. All flashing joints shall have 6" wide cover and backer plates.

Fabrication Schedule:

a. Aluminum, painted finish (.050)
   1) Wall Panels
   2) Clips
   3) Inside Corners
   4) Outside Corners
   5) Jamb Closure
b. Aluminum, painted finish (.040)

1) Cover Plates
2) Blind Nailers
3) Drip Edge

c. Aluminum mill finish (.050)
1) Continuous Hook strip
2) Cleat

2.2 FASTENERS

A. In general, fasteners, straps and other hardware shall be stainless steel or hot-dip galvanized steel. Galvanizing shall be per ASTM A 153 specifications. Electro-galvanizing will not be accepted.

B. Fasteners for securing sheet metal flashings to stucco wall shall be No. 12 self-drilling, self-tapping screws with a minimum 1-inch embedment into the substrate.

2.3 AIR BARRIERS AND ACCESSORIES

A. Provide self-adhered, vapor-permeable sheet membrane air barrier and accessory products from a single manufacturer. Provide high temperature air barrier membrane(s) when subject to higher temperatures behind metal flashings and wall components. Subject to compliance with the requirements of this Section, the following manufacturers are acceptable:

1. Henry Products, Inc.:
   a. Air Barrier Membrane: Blueskin VP™ 160.
   b. Accessories: membrane for windowsill pan flashings shall be Blueskin® SA, LT, or HT manufactured by Henry; an SBS modified bitumen, self-adhering sheet membrane which is integrally laminated to a blue polyethylene film.
   c. Self-adhering membrane for all window jambs, headers, inside and outside corners, and other transitions shall be pre-cut BlueskinVP™ 160 manufactured by Henry; a self-adhering sheet air barrier membrane with an engineered film specifically designed to be water resistant and vapor permeable.
   d. Through-wall flashing membrane (Self-Adhering) shall be Blueskin® TWF manufactured by Henry; an SBS modified bitumen, self-adhering (Yellow) sheet membrane complete with a cross-laminated polyethylene film.
2. Grace Construction Products:
   a. Air Barrier Membrane: Perm-A-Barrier VPS.
   b. Water-Based Primer: Perm-A-Barrier WB Primer.
   c. Solvent-Based primer: Bituthene Primer B-2
   d. Transition and Detail Membrane: Perm-A-Barrier Flashing.
   e. Mastics, Adhesives and Tapes: as recommended by manufacturer.
3. VaproShield:
   a. Air Barrier Membrane: WrapShield SA.

b. Window flashing: VaproLiqui-Flash
c. Solvent-based Primer:
d. Transition Membrane: VaproFlashing
e. Mastics, Adhesives and Tapes: As recommended by manufacturer.

B. Provide fluid-applied, low VOC, vapor-permeable membrane air barrier and accessory products from a single manufacturer. Subject to compliance with the requirements of this Section, the following manufacturers are acceptable:

1. Grace Construction Products:
   a. Air Barrier Membrane: Perm-A-Barrier VPL.
   b. Transition and Detail Membrane: Perm-A-Barrier Flashing.
   c. Mastics, Adhesives and Tapes: as recommended by manufacturer.

2. Sto Corporation Products:
   a. Air Barrier Membrane: Sto EmeraldCoat.
   b. Transition and Detail Membrane: as recommended by manufacturer.
   c. Mastics, Adhesives and Tapes: as recommended by manufacturer.

C. Joint Sealant: Shall conform to ASTM C 920 Type 1 or 2, single-component, neutral-curing silicone; Grade NS, Use NT, O. Class as recommended by air barrier manufacturer (low modulus).

D. Spray Foam Insulation for filling voids and joints; single component, closed cell spray polyurethane, class 1, low expansive foam (Class A). Approved by Manufacturer for compatibility with air barrier products and accessories.

E. Pre-formed Foam Joint Sealant: Manufacturer's standard pre-formed, pre-compressed, open-cell foam sealant manufactured from urethane foam with minimum density of 10 lb./cu. ft. and impregnated with a non-drying, water-repellent agent. Factory produce in pre-compressed sizes in roll or stick form to fit joints widths indicated; coated on one side with a pressure-sensitive adhesive and covered with protective wrapping.

1. Products: subject to compliance with requirements, provide the following:
   a. EMSEAL Joint System, Ltd.; Colorseal or approved equal.

2.4 SEALANT AND ACCESSORIES

A. Exterior sealant shall be two-part polyurethane base conforming to ASTM C920, Type M, Grade NS, Class 25, uses NT, M, A and O as manufactured by Tremco, Sonneborne or Pecora. Color shall match the metal panel color.

B. Sealant required for incidental sheet metal and flashing work where sealant will not be exposed, shall be one part acrylic conforming to Fed. Spec. TT-S-230 such as "Mono" by Tremco or approved equal.

C. Cleaners and primers shall be as recommended by the manufacturer of the sealant.

D. Bond breaker tape shall be self-adhesive polyethylene tape as recommended by the sealant manufacturer.

E. Backer rod shall be continuous length, closed cell polyethylene foam, as recommended by the sealant manufacturer. Backer rod shall be compressible, resilient, non-waxing, non-extruding and non-staining. Backer rod shall be of sufficient size to be compressed 30% of maximum joint width and shall be totally compatible with the sealant, primer and substrates. Backers shall conform to the requirements of ASTM C 962 - Type A, ASTM D 1622, ASTM D 1623 and ASTM D 5249 such as Green Rod by Nomaco, Sonofoam by Sonneborn, ITP soft type backer rod or approved equal.

2.5 FINISH

A. Finish for all exposed aluminum surfaces shall be a Resin-Based Coating- Hylar 5000, or Kynar 500. Paint dry film thickness shall be not less than 1.0 mils +/- 0.2 mils. Surface preparation and coating shall conform to AAMA 2605 Specifications. Durability: Provide coating field tested under normal range of weather conditions for a minimum of 15 years without significant peel, blister, flake, chip, crack, or check in finish; without chalking in excess of a chalk rating of 8 according to ASTM D 4214; and without fading in excess of 5 Hunter units.

B. Aluminum color shall be selected by the Owner and shall match the color of the existing stucco finish.

PART 3 - EXECUTION

3.1 PREPARATION

A. Examine substrates and conditions for compliance with requirements indicated for conditions affecting performance of metal panel walls.

B. Do not proceed with wall panel installation until unsatisfactory conditions have been corrected.

C. Promptly remove protective film, if any, from exposed surfaces of metal panels. Strip with care to avoid damage to finish.

3.2 SHEET AIR BARRIER MEMBRANE INSTALLATION

A. Install a bead of sealant at the foundation level between the concrete and existing metal sill plate to provide a smooth transition.

B. Fill rough gaps around pipe, conduit and similar penetrations with mortar, non-shrink grout or Polyurethane Foam.

C. Treat sheathing joints with any method below:

1. Mesh Tape centered over joint and adhered to surface, with Product filling joint and covering Mesh Tape.
2. Four-inch width DCH Reinforcing Fabric encapsulated in Product and centered over joint.
3. Fill with Joint Sealant and strike flush.

D. Prepare areas to receive Transition Membrane with Contact Adhesive. Contact Adhesive shall be provided at recommended coverage rate and visible for 1-inch minimum beyond edge of installed Transition Membrane.

E. Install Transition Membrane according to Manufacturer's instructions and drawings.

F. Apply Transition Membrane or Reinforcing Fabric encapsulated in Roller-Grade Product according to Manufacturer's instructions and drawings in the following areas: Joints, changes in plane, changes in substrate, window openings, and transitions to different systems.

G. Transition membrane or Reinforcing Fabric shall bear 3 inches minimum onto dissimilar substrates.

H. Allow materials used in surface preparation to cure fully before applying Product.

I. Apply Product according to Manufacturer's instructions.

J. Apply over sheathing joint details.

K. Provide complete coverage without fishmouths, wrinkles or tears.

L. Seal penetrations made through installed Product according to Manufacturer's instructions and drawings.

M. Fenestration installed before or after Product: provide air and water seal between fenestration and opaque wall according to Manufacturer's instructions and drawings.

N. Roof vapor barrier: Join to Product according to Manufacturer's instructions and drawings.

3.3 FLUID-APPLIED AIR BARRIER INSTALLATION

A. Install a bead of sealant at the foundation level between the concrete and existing metal sill plate to provide a smooth transition.

B. Surface irregularities greater than 1/4" across and/or 1/8" in depth should be pre-treated with liquid membrane or with mortar, non-shrink grout or polyurethane foam.

C. Treat expansion sealant joints and cracks in the concrete with any method below:

1. Cutout and remove existing sealant joint and backing material(s).
2. Install new expansion sealant joint with backer rod and allow to cure prior
3. Mesh Tape centered over joint or crack and adhered to surface, with Product filling joint and covering Mesh Tape.
4. Four-inch width DCH Reinforcing Fabric encapsulated in Product and centered over joint.
5. Fill with Joint Sealant and strike flush.

D. Prepare areas to receive Transition Membrane with Contact Adhesive. Contact Adhesive shall be provided at recommended coverage rate and visible for 1-inch minimum beyond edge of installed Transition Membrane.

E. Install Transition Membrane according to Manufacturer's instructions and drawings.

F. Apply Transition Membrane or Reinforcing Fabric encapsulated in Roller-Grade Product according to Manufacturer's instructions and drawings in the following areas: Joints, changes in plane, changes in substrate, window openings, and transitions to different systems.

G. Transition membrane or Reinforcing Fabric shall bear 3 inches minimum onto dissimilar substrates. Provide complete coverage without fishmouths, wrinkles or tears.

H. Allow materials used in surface preparation to cure fully before applying Product.

I. Apply Product according to Manufacturer's instructions.

J. Apply over joint details.

K. Seal penetrations made through installed Product according to Manufacturer's instructions and drawings.

L. Fenestration installed before or after Product: provide air and water seal between fenestration and opaque wall according to Manufacturer's instructions and drawings.

M. Roof vapor barrier: Join to Product according to Manufacturer's instructions and drawings.

N. Installation of Preformed Foam Sealants: Install each length of sealant immediately after removing protective wrapping. Do not pull or stretch material. Produce seal continuity at ends, turns and intersections of joints. For applications at low temperatures, apply heat to sealant in compliance with sealant manufacturer's written instructions.

3.4 PANEL INSTALLATION

A. Prior to performing panel installation ensure that all mechanical/electrical disconnections have been performed in accordance with the Owners requirements.

B. Anchor panels and other components of the work securely in place, with provisions for thermal and structural movement. Secure panels to the stucco wall with the specified fasteners through the folded leg of the panel sheet at each sub-girt location.

C. Provide full bed of sealant in the fold of the metal panel prior to inserting the flange of the corresponding sheet. Sealant shall run the full height of the vertical panel. Provide drops of sealant at all fasteners heads.

D. Install all components required for a complete wall panel assembly including pan flashings, sill flashings, trim, inside and outside corner units, clips, cleats, flashings and similar items as required.

E. Backer plates shall be installed at the splice of all horizontal flashings. Set flashing over backer plate in a full bed of sealant. Install cover plates at each flashing joint with a full bed of sealant flashing and cover plate surfaces.

F. Shim and align panel units within installed tolerance of 1/4 inch in 20 feet on level, plumb, and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles. Panel shall be installed in a manner that will allow for thermal movement without deforming the face of the panel or adjacent panels and trim. The open edges of panel seams shall face away from main entrances or prominent elevations.

G. To make a cut parallel to the ribs, score the panel deeply with a sharp utility knife and bend back-and-forth along the score, breaking the metal off cleanly. For cuts across the ribs, use straight-cut snips, electric or pneumatic shears, a portable profile shear, or an electric nibbler. Circular saw cutting may be performed with a metal cutting blade (a finetooth hardwood blade, or a standard combination blade reversed in the saw). Light oil or soap on the blade should be added to aid cutting.

3.5 COUNTERFLASHING INSTALLATION

A. Fabricate new counterflashing to the dimensions and shapes shown on the Contract Drawings and as specified herein.

B. Secure counter flashing with the membrane flashing with termination bars secured at 8” on center.

C. Secure the counterflashings with clips spaced 8” on center

3.6 SEALANT INSTALLATION

A. Install sealant at all window perimeters of wall areas receiving new metal wall panels. Perimeter sealants are to be installed at wood and aluminum window frames.

B. Clean and prime substrates in strict accordance with sealant manufacturer's requirements.

C. Precondition sealants to a temperature between 60 and 70 degrees or as required by the manufacturer. Apply sealant to clean dry surfaces only when the ambient temperature is between 60- and 85-degrees F.

D. Ensure all work by others occurring at sealant joint locations has been completed prior to the start of sealant installation.

E. Clean all substrates to receive the joint sealant using the manufacturers recommended cleaners and surface preparation techniques.

F. Ensure all existing sealants and other materials have been removed down to clean sound original substrates. Saw-cut, wire brush, chip, or grind as required to achieve suitable substrates for sealant installation.

G. All bonding surfaces shall be cleaned with a minimum of two applications of solvent followed by wiping with clean white rags. Solvent shall be applied with brushes and wiped from substrate with rags while it is still wet. Additional application shall be performed if dirt remains after two applications until all dirt is removed.

H. Joint primer shall be applied to all properly prepared, cleaned and dry substrates. Primer shall be approved by the sealant manufacturer for each substrate and shall be completely compatible with the existing materials and proposed sealants and accessories.

I. Primer shall be applied prior to application of joint backer, bond breaker or sealant.

J. Joint backer shall be installed in all joints as detailed. Joint backing shall be installed with approximately 30% compression at 70 degrees F. Do not stretch, twist, tear or puncture joint backing. Butt joint backings tightly at intersections.

K. Joint backing shall be installed at the required depth so as not to exceed the joint width/depth ratio recommended for the sealant.

L. Bond breaker tape shall be installed at locations where backer rod cannot be utilized to achieve the designated joint depth and where shown on the Contract Drawings. Sealant shall adhere only to the sides of the joint and not to the back so as to eliminate three- sided adhesion.

M. Two-part polyurethane sealant shall be thoroughly mixed including tinting agent in accordance with the manufacturer's printed instructions. Sealant shall have a minimum application life of three (3) hours after mixing.

N. Unless otherwise required by the sealant manufacturer, the sealant shall be mixed for a period of 6 minutes minimum with a slow speed electrical drill and mixing paddle. The sides of the container shall be repeatedly scraped to ensure adequate mixing.

O. Sealant shall be applied to clean, dry, joints by knife, trowel, manual or air pressure caulking guns using proper nozzle sizes.

P. Sealant shall be forced into the joint to completely fill the void and achieve full "wet-out" of the bonding surfaces. Force sealant into the joint and against the sides of the joint. Avoid pulling sealant from sides. All joint sealant shall be immediately tooled to assure full adhesion. Sealant shall be dry tooled, straight, uniform, smooth and neatly finished to the profiles detailed. No soaps, wetting of slicking agents will be allowed.

Q. Provide weep holes at sill locations spaced 24" on center.

3.7 BLIND NAILER

A. Fabricate and install blind nailer flashing with a 2" minimum leg inserted behind the metal. Fasten flashing through leg of blind nailer.

B. Fold blind nailer with ½" hemmed edge over metal and fastener.

C. Provide continuous beads of sealant at back and leading edges. Refer to the detail for additional information.

3.8 CLEANING AND PROTECTING

A. Damaged Units: Replace panels and other components of the work that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures. Repaired panels must be accepted by the Owner.

B. Cleaning: Remove temporary protective coverings and strippable films, if any, as soon as each panel is installed. On completion of panel installation, clean finished surfaces as recommended by panel manufacturer and maintain in a clean condition during construction.

END OF SECTION

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ELASTOMERIC ROOFING AND FLASHING

SECTION 07 53 00

PART 1 – GENERAL

1.1 GENERAL PROVISIONS

A. The General Conditions, and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

B. Refer to all sections within Division 1 for additional information.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 04 50 00 – Masonry
B. Section 05 31 00 – Metal Deck Replacement
C. Section 05 51 33 – Metal Roof Ladders
D. Section 06 10 00 – Rough Carpentry
E. Section 07 42 13 – Metal Wall Panels
F. Section 07 62 00 – Sheet Metal Flashing and Trim
G. Section 22 30 00 – Plumbing
H. Section 23 00 00 – Temporary Mechanical/Electrical Disconnects

1.3 SCOPE OF WORK

A. In general, the Contractor shall supply all labor, materials, equipment, temporary protection, tools, and appliances necessary for the proper completion of the work in this Section, as required in the Specifications and in accordance with good construction practice and as required by the material manufacturer, as amended. The work under this Section generally includes the following:

1. Coordinate this work with all other trades to provide orderly progress of work.

2. Supply all shoring and protection necessary to protect the building areas, building systems and landscape areas.

3. Coordinate the disconnection, removal, relocation, and reinstallation of mechanical units, conduits, ductwork, equipment, etc.

4. Supply all necessary chutes, disposal facilities, transportation and labor necessary to dispose of all demolished materials, dirt, and debris off-site in a legal dumping area. The Contractor shall obtain all permits necessary to transport and dispose of all materials, rubbish and debris.

5. Remove and dispose of existing roofing materials, including but not limited, to roof membrane, membrane flashings, sheet metal flashings, insulations

and associated components down to the existing asphaltic coating and concrete deck to remain. Prepare surfaces to receive new roofing assembly.

6. Remove all existing base flashings. Remove other existing flashings such as unit curbs, pitch pockets, sheet metals, and other components as required to properly complete the work.

7. Clear roof surfaces of debris by sweeping and vacuuming methods as required to remove all debris from the metal roof deck surface.

8. Remove, protect and/or store all materials and assemblies to be reinstalled.

9. Coordinate the complete roof system installation with the raising of mechanical equipment as well as all other work identified with Section 26 10 00 – Temporary Mechanical/Electrical Disconnects.

10. Coordinate with Section 06 10 00 – Rough Carpentry for the installation of wood blocking and plywood sheathing required to provide a minimum 8-inch flashing height and properly terminate the roof membrane and flashings as indicated on the Contract Drawings.

11. Remove existing Transite roof deck at Roof Areas D and E and install new metal roof deck and framing. The existing Transite roof deck was found to contain asbestos. Coordinate with Section 05 31 00 – Metal Deck Replacement.

12. Furnish and install a new adhered single-ply elastomeric roofing assembly including, but not limited to, elastomeric membrane, coverboard, tapered insulation, air/vapor retarder, and baseboard over metal or wood deck at Roof Areas D, E, F, G, H and I.

13. Furnish and install a new adhered single-ply elastomeric roofing assembly including, but not limited to, elastomeric membrane, coverboard, tapered insulation, and air/vapor retarder over existing concrete deck at Roof Areas A and B.

14. Install tapered insulation as indicated on the Contract Documents and as required to shed water toward the drainage systems.

15. Install sheet metal flashings, including but not limited to, edge metals, counter flashings, skirt flashings, hook strips and clips to properly terminate the roofing membrane and shed water from walls and mechanical units. Coordinate with Section 07 62 00 – Sheet Metal Flashing and Trim.

16. Install new scuppers, gutter, downspout and splash blocks where indicated on the contract documents. Splash blocks to be installed at all downspout

discharge location. Coordinate with Section 04 50 00 – Masonry and Section 07 62 00 Sheet Metal Flashing and Trim.

17. Install new overflow scuppers at the rising brick masonry parapet wall at Roof Area A. Coordinate with Section 04 50 00 – Masonry and Section 07 62 00 – Sheet Metal Flashing and Trim.

18. Clean and restore all areas affected by the work to the satisfaction of the Owner.

19. This project includes alternates. Please refer to Section 01 23 00 – Alternates for additional information.

1.4 SPECIAL JOB CONDITIONS

A. Schedule and execute all work without exposing the building interiors to inclement weather. Protect all new and existing roof work, the building, and its contents from staining and damages. Segregate all work areas from the building occupants.

B. The Contractor shall utilize skilled and experienced specialty workers to install the work. Experienced trade workers shall be utilized for all aspects of the work.

C. The building shall be occupied during construction. The Contractor shall provide all protection, barriers, and guards necessary to segregate their work area, and the areas below, from pedestrian and vehicular traffic. Also protect existing roof areas, equipment, landscaping, and paved areas from damage.

D. All surfaces to receive new insulation, membrane or flashings shall be thoroughly dry. Should surface moisture such as dew exist, the Contractor shall provide the necessary equipment to dry the surface prior to application. No open flames shall be permitted on the roof at any time.

E. Remove only as much existing roofing as can be replaced and made weather tight each day, including all flashing work.

F. Roofing shall not be applied when ambient temperature is less than 40 degrees F unless approved in writing by the Engineer and membrane manufacturer.

G. Temporary waterstops shall be installed at the end of each day's work and shall be removed before proceeding with the next day's work. Waterstops shall be compatible with all materials and shall not emit dangerous or incompatible fumes. Waterstops must be installed to permit proper roof drainage. Waterstops shall not be installed to impede roof surface drainage.

H. Cover sidewall areas with canvas tarps where existing roof system is discarded into refuse containers via trash chutes. Plastic or "poly" tarps shall not be used at these locations.

I. All new and temporary construction, including equipment and accessories, shall be secured from wind damage or blow-off.

J. Equipment required to hoist materials to the roof and remove debris from the roof shall be supplied, maintained, and operated by the Contractor.

K. The Contractor shall provide protection for sitework, plantings, landscaping, building surfaces, interior spaces, and similar items to protect from damage. Items damaged as a result of the work in this section shall be repaired or replaced by the Contractor to the satisfaction of and at no additional cost to the Owner.

L. The Contractor shall clean all debris which may infiltrate through the roof decking into the interior prior to demobilization from the site. This shall include, but not be limited to, floors, cabinets, and drop ceilings.

M. The Contractor shall notify the Owner at least 72 hours in advance of doing any interior demolition work so that the Owner may provide entry into required areas.

N. No removal, replacement, repair or covering of potentially deteriorated roof deck shall be performed without authorization from both the Engineer and Owner.

O. The Contractor is cautioned to take all necessary precautions and make all investigations necessary to install the work. The Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.

1.5 SUBMITTALS

A. Submittals shall be made in accordance with the General Conditions and Section 01 33 00 – Shop Drawings and Submittals.

B. A sample roofing system warrantee and letter of confirmation from the roof membrane manufacturer stating that the Contract Documents have been reviewed and that there are no exceptions to the Specifications and Contract Drawings shall be submitted. The roofing system must meet the intent of UL 790, Class A and Factory Mutual Class **1-90** in the field, FM **1-105** in the Perimeters, and FM **1-135** in the Corners, be in conformance with all local and state building codes, and is accepted by the manufacturer for the required warranty.

C. The Contractor shall provide adequate staging and protection of the interior building as required to perform the work. Provide submittals for site protection and staging as specified in Section 01 33 00 – Shop Drawings and Submittals.

D. Provide a letter of approval from the insulation manufacturer and membrane manufacturer that the proposed insulation system is compatible with the cold adhesive system and will achieve the specified warranty.

E. Provide the manufacturer’s product and installation literature for each item listed in Part 2 for approval. Shop drawings are required indicating any anticipated changes.

F. Submit a full-size (24" x 36") roof area plan showing proposed flat stock, tapered, and cricket insulation layout and attachment requirements with slopes to drains and scuppers/downspouts.

G. Provide attachment layout and spacing for cricket insulation layout. Contractor to confirm adhesion testing during the roof renovations to meet the intent of **FM Global 1-90** system requirements.

H. Submit evidence that the cold adhesive manufacturer's representative had observed the insulation installation and that the system appears to be installed in accordance with the manufacturer's instructions.

1.6 QUALITY CONTROL

A. Roofing Contractor's Experience Requirements:

The Roofing Contractor shall be experienced, to the satisfaction of the Owner and Engineer, in the installation of warranted, cold-process, multiple-ply, roofing systems. Minimum required experience involves the successful installation of at least five (5) projects of similar scope, size and complexity where the Roofing Contractor has installed the Manufacturer's cold-process, modified-bitumen roofing assemblies, within the past three (3) years. All such references must be available for inspection by the Owner and Engineer, as may be requested. Provide the following submittal information:

1. Name, address and contact person of each of the five (5) projects being used as a reference.

2. Copies of Roofing Material Manufacturer's warranties, showing dates and square footage for each of the five (5) referenced projects.

3. Written letter of "Certification" or "Approval" from the Roofing Materials Manufacturer showing that the Roofing Contractor has been "Certified" or "Approved" by the Roofing Materials Manufacturer for a minimum of three (3) years.

1.7 TESTING PROCEDURES

A. During the course of the work, the Owner (or designated representative) may secure samples, in accordance with testing guidelines defined within ASTM D140, of materials and completed roofing being installed at the job site and submit them to an independent laboratory for comparison to the material performance requirements listed in these specifications.

B. Should test results prove that materials and/or completed roofing do not meet-or – exceed the performance requirements listed within these specifications:

1. Contractor shall pay for all testing.

2. Construction installed and found not to comply with the specifications shall be removed and replaced at no change to the contract price.

1.8 WARRANTY AND GUARANTEE

A. Roofing Contractor's Guarantee: Upon completion of the work, and prior to final payment, the Contractor shall submit a Guarantee of his work to be free from defect in materials and workmanship. This Guarantee shall be for a period of two (2) years, and shall be signed by a Principal of the Contractor's firm, and sealed if a corporation. In the event any work related to the roofing, flashing, or metal work is found to be defective within two years of substantial completion, the roofing contractor shall remove and replace such at no additional cost to the Owner. The roofing Contractor's warranty obligation shall run directly to the building Owner, and a copy of the roofing signed warranty shall be sent to the roofing system's manufacturer.

1. The duration of the Roofing Contractor's two-year warranty shall run concurrent with the roofing system's manufacturer's 20-year warranty.

B. Roofing Systems Manufacturer's Warranty: The roofing manufacturer shall guarantee roof areas to be in a watertight condition and free from seam separation and the delamination of the roofing system components, for a period of 20 years, from the date of final acceptance of the roofing system. The warranty shall be a 20-year no dollar limit, non-prorated total system labor, and material warranty, for wind speeds up to 75 miles per hour. The total system warranty shall include all roofing materials, related components, and accessories including, but not limited to the baseboard, vapor retarder, insulation board, cover board, roofing membrane, membrane flashings, fasteners, adhesives and termination metals and roof drain assemblies. The manufacturer shall repair leaks and defects, in materials and workmanship as promptly after observation as weather and site conditions permit.

PART 2 – MATERIALS

2.1 ROOFING AND FLASHING MEMBRANES

A. Roofing membrane shall be 0.060 mil thick non-reinforced compounded rubber sheet elastomer (EPDM), as manufactured by Firestone, Carlisle SynTec Systems, Inc., or Versico Incorporated or approved equal.

B. Stripping shall be 6" or 9" wide semi-cured EPDM self-adhering seam cover strips (minimum thickness: 60 mils.) as manufactured by Carlisle SynTec Systems, Inc., Firestone or Versico Incorporated.

C. The elastomeric sheet membrane shall have the following minimum properties:

PHYSICAL PROPERTY	TEST METHOD	SPECIFICATIONS
Tolerance on Nominal Thickness, %	ASTM D 412	+/- 10
Tensile Strength, min, psi	ASTM D 412	1600
Elongation, Ultimate, min, %	ASTM D 412	465
Tear Resistance, min, lbs./in	ASTM D 624 (Die C)	200
Factory Seam Strength, min	Modified ASTM D 816	Membrane Rupture
PHYSICAL PROPERTY	**TEST METHOD**	**SPECIFICATIONS**
Resistance to Heat Aging Properties after 4 weeks @ 240°F		
Tensile Strength, min, psi	ASTM D 412	1450
Elongation, Ultimate, min, %	ASTM D 412	280
Tear Resistance, min, lb./in	ASTM D 624	215
Linear Dimensional Change, max, %	ASTM D 1204	-0.5
Ozone Resistance Condition after exposure to 100 pphm Ozone in air for 168 hours @ 104°F (40°C) Specimen is at 50% strain	ASTM D 1149	No Cracks
Brittleness Temp., max deg. F	ASTM D 746	-49
Resistance to Water Absorption After 7 days immersion @ 158°F (70°C) Change in mass, max %	ASTM D 471	2.0
Water Vapor Permeability max, perm-mils	ASTM E 96 (Proc. B or BW)	0.03
Resistance to Outdoor (Ultraviolet) Weathering Xenon-Arc, 4000 hours exposure, 176°F (80°C) black panel temperature	ASTM D 26	No Cracks No Crazing
Sheet Composition	ASTM D 297	
Weight percent of polymer that is EPDM, min, %		100
Weight percent of sheet that is EPDM polymer, min, %		30

D. Factory fabricated membrane seams shall be step tapered to achieve a smooth transition across the seam. Seams shall be vulcanized.

E. Flashing membrane to be used at corners of walls or penetrations shall be of the same manufacturer as the roof membrane and shall be 0.060" thick uncured elastomer completely compatible with all other components used in the new roofing system. Cured membrane specified in 2.1B shall be used at straight flashing runs. Seams shall be stripped-in with uncured membrane.

F. All materials and accessories used to install the roofing and flashing membrane systems shall be of the same manufacturer as the sheet membrane. These materials include, but are not limited to, the following:

1. Surface cleaners and primers
2. Bonding adhesive
3 Splicing cement
4. Lap Sealant
5. Mastics
6. Caulkings and sealants
7. Pourable sealer
8. Pipe seals
9. Walkway Pad
10. Membrane termination strips, bars, plates and fasteners.

G. All membrane manufacturer's required details shall be considered a part of this project and incorporated into the project details by the Contractor.

2.2 ROOF INSULATION

A. All roof insulations proposed for this project shall be approved in writing by the membrane manufacturer for use with their membrane and as required to achieve the required roofing warranty.

B. Tapered and flat stock isocyanurate insulation shall be skinned with factory-applied fiberglass bituminous felt as manufactured by Celotex, Johns Manville, Firestone, or as supplied by the membrane manufacturer as required to meet membrane manufacturer's requirements and warranty. The isocyanurate insulation board shall conform to ASTM Specification C 1289, Type II, Class 1, Grade 3 (25 psi minimum).

1. The isocyanurate insulation shall have an area weighted aged R-Value of 30 at as required to meet the Long-Term Thermal Resistance (LTTR) value in accordance with ASTM C518 and the 2015 International Building Code (IBC) standards as adopted by the Bureau of General Services (BGS). Note that tapered insulation more than 1" above the thinnest spot is not allowed to be factored into the average insulation value. (Not including drain sump areas).

2. Tapered insulation shall be as required to provide a minimum 1/8" per foot slope to drainage system, and 1/2" per foot at crickets, drain sumps and around mechanical rooftop units; and meet the required LTTR value in accordance with ASTM C518 as described above.

3. The isocyanurate insulation board size shall be a min of 2'x2' if close to roof edge or 4'x4' if located in field of roof square and of uniform dimension.

4. Isocyanurate insulation shall be approved in writing by the insulation and membrane manufacturer that the methods of attachment are covered under the membrane manufacturer's labor and material warranty. Copies of the written acceptance shall be forwarded to the Engineer.

C. Tapered edge strips:

1. Tapered edge strips shall be 18" wide and 1-5/8" thick, tapering to a feathered edge.

2. Tapered edge strips shall consist of either wood fiberboard or isocyanurate insulation.

a. Wood fiberboard shall be high density, non-asphalt impregnated and conform to ASTM C208 specifications.
b. Isocyanurate insulation tapered edge strips shall meet ASTM C1289, Type II, Class 1, Grade 3 specifications.

3. Fiberboard insulation shall be approved in writing by the membrane manufacturer. A copy of the written acceptance shall be forwarded to the Engineer.

2.3 COVERBOARD

A. Coverboard insulation shall be 1/2" minimum thick high density isocyanurate insulation board as required by the roofing manufacturer. The boards shall be a maximum of 4' x 4' in size and approved in writing by the membrane manufacturer. A copy of the written acceptance shall be forwarded to the Engineer. Coverboard insulation shall conform to ASTM C1289 Type II specifications. Compressive strength shall be greater than 100 psi in accordance with ASTM D2126. Water absorption shall be 3.0% or less in accordance with ASTM C209.

2.4 COLD ADHESIVE FOR COVERBOARD AND INSULATION BOARD SECUREMENT

A. Adhesive to adhere the insulation boards and cover board systems shall be considered low volatile compounds (VOC), two component, cold-process, asbestos free, low-rise polyurethane foam adhesive conforming to ASTM D276, D2556, D1875, D429, D816, D1876, D412. Adhesive shall meet the required FM Global rating and shall be approved in writing by the membrane manufacturer and included as part of the warranty coverage. Adhesive shall be I.S.O. stick as

manufactured by Firestone, Insta-Stik Professional Roofing Adhesive as manufactured by Insta-Foam Products, Inc., Olybond by Olympic or an approved equal.

2.5 AIR/VAPOR RETARDER

A. Self-adhering air/vapor retarder shall be thirty-two (32) mil minimum composite consisting of rubberized asphalt and polyethylene, polypropylene, or polyester sheet as require by the membrane manufacturer such as V-Force Vapor Barrier Membrane as manufactured by Firestone, 725TR as manufactured by Carlisle Syntec, Versico 725 as manufactured by Versico, or approved equal. Utilize compatible primer with asphaltic coating.

2.6 FASTENERS AND ACCESSORIES

A. In general, fasteners, straps and other hardware shall be copper, brass, stainless steel or hot-dip galvanized steel. Galvanizing shall be per ASTM A 153-82 specifications.

B. All accessories, including, but not limited to nails, screws, clips, fastening strips, etc. shall be completely compatible with the material being fastened to prevent galvanic reaction and premature deterioration.

C. Nails for membrane and flashing terminations shall be No. 12 Stubbs gauge, large head, threaded shank, hot dip galvanized roofing nails of sufficient length to penetrate the wood blocking 1-1/4” minimum

D. Fasteners for terminating roof membrane and flashing at concrete or masonry substrates shall be minimum 1-1/2” long drive pins in zinc sheaths as manufactured by Star, Rawl or approved equal. Embedment into masonry shall be 1-1/4”, minimum.

E. Sheet metal to wood blocking connections and mechanical unit securement (exposed securement): Self-drilling, self-tapping, Number 10, stainless steel hex-head screws, 1-1/2-inch long, equipped with metal capped EPDM washers.

F. Fasteners for securement of flashings, and hook strips to wood blocking and plywood substrates shall be galvanized annular threaded ring shank nails. Fasteners shall be of sufficient length to penetrate the substrate 1-1/4” minimum, except full depth of plywood.

2.7 SEALANTS AND ACCESSORIES

A. Sealant for sheet metal flashings and other exposed locations shall be a one-part polyurethane conforming to ASTM C920-87, Type S, Grade NS, Class 25, Uses NT, M, A, and O such as manufactured by Tremco, BASF-Sonneborn, Sika Corp., or approved equal.

B. Color(s) shall be selected by the Owner from the approved manufacturer's color chart. Colors shall be the manufacturer's available premium colors such as "Color Pak" by Tremco or approved equal.

C. Primer shall be non-staining type as manufactured or recommended by the sealant manufacturer for each substrate.

D. Substrate cleaner shall be non-corrosive and non-staining as recommended by the sealant manufacturer. Cleaner shall be totally compatible with the sealant for each substrate.

E. Bond breaker tape shall be pressure-sensitive tape as recommended by the sealant manufacturer.

F. Masking material shall be commercially available masking tape of appropriate width or other material recommended by the sealant manufacturer. Self-adhesive masking materials shall be of low tack and completely strippable, leaving no adhesive residue behind when removed.

2.8 WALKWAY PADS

A. Walkway pads shall be a black, molded rubber walkway pad with slip resistant surface and factory rounded corners. Size shall be 30" by 30" and 3/16" in thickness.

B. Adhesive and primers shall be as recommended by the manufacturer.

2.9 SLEEPERS

A. Provide a pre-fabricated support system with galvanized cover to secure all above roof conduit piping and ductwork support legs a minimum of 4-inches above roof. Support system to be weighted, exterior grade, UV-resistant, non-penetrating, ASTM tested, for low-sloped roof applications, shall be capable of supporting 50 lbs. loads, and designed to shed water from the sleeper. Such as Dura-Blok Rooftop Supports, MIFAB C-Port Supports, or approved equal.

PART 3 - EXECUTION

3.1 GENERAL WORKMANSHIP

A. Do not deliver to site or install any material or system that has not been approved by the Engineer or Owner. Materials installed without approval may be required to be removed at no additional cost to the Owner.

B. The prepared roof deck surface must be dry, clean and smooth. Provide dryers, if necessary, to dry deck surfaces prior to installing new work. Open flame devices shall not be used.

C. Maintain temporary protection of the new and existing roof system throughout the duration of the project. The roof system will be cleaned to the satisfaction of the Owner and Engineer prior to final payment. All areas of stained membrane will be cut out and replaced by the Contractor at no additional cost to the Owner. Multiple patches in close proximity will not be acceptable and will require one large patch.

D. Comply with the manufacturer's written instructions and these specifications for all roof repairs and associated work. Flashing shall be installed along with the membrane to assure weather tight termination.

E. Do not cut any material with a solvent or dilutant unless specifically instructed by the manufacturer in writing.

F. Keep covers tightly sealed on all canned and evaporative products to prevent premature curing.

G. Partial or unmarked cans or rolls of materials cannot be used.

H. Do not store rolls of membrane or flashings on the roof without the written consent of the Engineer and Owner.

I. Refer to the publication, "Copper and Common Sense" by Revere Copper and Brass and all recommendations of the Sheet Metal and Air Conditioning Contractors National Association concerning methods and materials to be used in the fabrication and construction of sheet metal flashings.

3.2 REMOVAL OF EXISTING SYSTEM

A. Remove all existing roofing materials and flashings down to the existing asphaltic coating. Scrape and sweep clean loose asphaltic coating material. Notify the Engineer of any areas of unsuitable asphaltic coating, roof deck, or associated components.

B. Remove existing elastomeric roof membrane, base flashings, termination bars, and associated components in their entirety down to existing masonry wall or blocking.

C. Scrape and clean the existing roof deck, walls and penetration surfaces. Notify the Owner and Engineer of any areas of unsuitable roof deck or associated components.

D. Sequence work to minimize building exposure between demolition and new roof materials installation. Install temporary roofing and flashing as necessary to maintain a watertight condition throughout the course of the work. Remove temporary work prior to installation of permanent roof system materials. Only remove as much roofing and flashings as can be made weathertight the same day with the new work. Arrange each day's termination point to prevent interruption of roof top drainage.

E. Remove existing strainers, clamping rings, and drain bowls from the existing drain assemblies.

F. Temporarily support exposed duct work.

G. Remove, disconnect, store, and reinstall existing rooftop mechanical equipment in preparation for new roof system. Removals, lengthening/shortening, and reinstallations of mechanical equipment including mechanical/electrical connections are to be performed by licensed tradesmen. Costs for mechanical/electrical work shall be included in the Contractor's bid price. Coordinate with Section 26 10 00 – Temporary Mechanical/Electrical Disconnects for limits and work activities.

H. Remove existing mechanical equipment support curbs in preparation for installing new curbs at unit locations as indicated.

3.3 DECK PREPARATION

A. Allow moist deck sections to dry prior to application of roof insulation. Open flames are strictly prohibited from the roof areas.

B. Ensure that deck surface and joints are clean of all debris and roofing materials.

C. Tape cracks and joints in deck to prevent adhesive seepage into building interior.

D. Perform adhesion testing of existing asphaltic coating over concrete roof deck in accordance with ASTM D7234 or as required by the air/vapor retarder membrane manufacturer. Areas of asphaltic coating that do not meet the air/vapor retarder membrane manufacturer's adhesion requirements are to be removed prior to the installation of the air/vapor retarder membrane.

3.4 INSTALLATION OF SELF-ADHERED AIR/VAPOR RETARDER

A. Adhered Vapor Retarder: Apply adhesive over substrate as required by manufacturer. Install vapor retarder over area to receive vapor retarder, side, and end lapping each sheet a minimum of 3-1/2 inches and 6 inches, respectively. Seal laps by rolling.

B. Extend vapor barrier up vertical surfaces. Completely seal vapor barrier at terminations, obstructions, and penetrations to prevent air movement into roofing system.

3.5 INSTALLATION OF ADHERED INSULATION SYSTEM

A. The multi-layer insulation system shall be installed on properly prepared, clean, dry surfaces. Finished system will be capable of providing a minimum of 60 PSF field uplift resistance, with prescriptive perimeter and corner enhancements as required. compliance for installation of the specified assembly over the roof deck(s).

B. Insulation boards shall be free of defects including but not limited to, broken corners, improperly adhered facers, excessive moisture, dimensional irregularities and the like. Defective insulation boards shall be marked and immediately removed from the site.

C. Adhere insulation on the roof areas with the Manufacturer's cold adhesive applied in strict accordance with the adhesive manufacturer's printed installation instructions to achieve the required warranty. Install the insulation boards and immediately "walk" the system into place to spread the adhesive for maximum contact. Stagger all joints. Continue to "walk" the insulation board every 5 to 7 minutes until firm adhesion is achieved. Ballast the boards to prevent cupping. Redistribute ballast to ensure full bonding of the system. Ensure that boards are totally adhered prior to application of coverboard.

D. Coordinate installation of the manufacturer's approved vapor barrier and adhere all remaining insulation boards as designated in this section.

E. Install subsequent insulation layers in full applications of the manufacturer approved adhesive at the adhesive manufacturer's application rate. Stagger joints of the insulation at the midpoint in the long dimension. Stagger joints between insulation layers 12 inches minimum. Gaps between boards shall not exceed 1/8 inch.

F. The minimum dimension on cut insulation boards shall be 12" with a minimum surface area of 2 square feet. Only full-sized insulation boards shall be used at roof perimeters and corners.

G. Utilize tapered edge strips and fiberboard fillers at drain location. Step taper the surrounding insulation system down to the drain bowl location. Provide maximum sumps in conjunction with the tapered insulation system.

H. Utilize tapered edge strips along curb units and large roof penetrations.

I. All insulation boards shall be installed tightly butted to adjacent insulation or wood blocking. If gaps greater than 1/8" exist between boards the board shall be cut out and replaced.

J. Insulation boards set in cold-process adhesive shall immediately be "walked-in" to assure full embedment. Poorly adhered boards shall be removed and replaced at no additional cost to the Owner.

K. Install specified fiberboard cants at all rising wall locations.

3.6 COVERBOARD INSTALLATION

A. Install coverboard in cold adhesive applied in strict accordance with the adhesive manufacturer's printed installation instructions to achieve the required warranty.

B. Install the coverboard and immediately “walk” the system into place to spread the adhesive for maximum contact. Stagger all end joints to the middle of the long dimension of adjacent boards, 24” minimum. Continue to “walk” the coverboard every 5 to 7 minutes until firm adhesion is achieved. Ballast the boards to prevent cupping. Redistribute ballast to ensure full bonding of the system.

C. Ensure that boards are totally adhered prior to application of roof membrane.

3.7 FULLY-ADHERED MEMBRANE INSTALLATION

It is the intent of this Specification Section to provide the Owner with a new, fully adhered membrane, 100% bonded to the insulation, of sufficient bond strength to resist **FM 1-90** uplift pressures as defined in FM Data Sheet 1-28, current edition.

A. Refer to Section 06 10 00 – Rough Carpentry, regarding the installation of wood blocking and similar accessory woodwork. Be sure all loose or deteriorated bituminous substances are removed with the original system. Clean any items designated to remain of all remaining bitumen.

B. Inspect surface of insulation prior to installation of roof membrane. Insulation surface shall be clean and smooth with no excessive surface roughness. Contaminated surfaces or unsound surfaces such as broken or delaminated boards or insulation voids shall be removed and disposed. Cover boards shall be swept and blown clean of all dust prior to applying bonding adhesives.

C. Install fully adhered elastomeric roofing on all roof areas designated to receive such. Install membrane system in accordance with the recommendations and requirements of the membrane material’s manufacturer, as amended in these Specifications. Follow manufacturer requirements concerning application rates for cleaners, solvents, adhesives and similar materials. The application rates for these items given in these Specifications are to be considered nominal and the actual rates will vary from manufacturer to manufacturer.

D. Position roofing membrane without stretching over the insulation. Lay sheets in a shingle fashion. Allow the membrane to relax for minimum one-half hour before bonding. Fold the sheet back onto itself so that one-half of the underside of the sheet is exposed. It is essential that the fold in the sheet be smooth, with no wrinkles or buckles, because these could cause wrinkles in the sheet during installation. Apply the bonding adhesive in accordance with the manufacturer’s published instructions to both the sheet and the substrate, using a 9” plastic core paint roller. Apply the bonding adhesive evenly avoiding globs and puddles. Correct application of the bonding adhesive will render approximately 60 square feet per gallon of finished surface coverage. This is a contact type adhesive and includes coating for the membrane and coating on the substrate. Allow the adhesive to dry until tacky; the adhesive must not string or stick to a dry-finger touch. Roll the coated membrane into the adhesive, being careful to avoid wrinkles. Brush down the bonded half of the sheet with a push broom to achieve maximum contact. Fold back the unbonded half of the sheet and repeat the

bonding procedure. No wrinkles shall be allowed in the completed application. Wrinkled sheets shall immediately be removed and replaced and not patched. Do not apply bonding adhesive in areas that are to be spliced to flashings or adjacent sheets. Apply all sheets in the same manner, lapping adjacent sheet a minimum of 6".

E. Splice adjacent sheets in accordance with the manufacturer's written instructions using the manufacturer's double sided seam tapes (minimum 6" tape). Totally clean areas to be spliced of all talc, dirt and other foreign substances using clean rags with manufacturer's splice wash cleaner or other manufacturer's recommended cleaner. Clean all seam areas at least twice in two separate applications with new rags and cleaner each time. Change the rags and cleaner frequently. It is imperative that these seam areas be totally clean. Install manufacturer's in-seam sealant to cleaned seams as recommended by the membrane manufacturer. Apply seam tape for the full width (minimum 6") of the lap splice. Totally clean the completed splice for a distance of 1" on either side of the edge of the top sheet using clean rags and cleaner. Apply a continuous bead of lap sealant to the edge of the spliced sheet and feather out bead using preformed trowel. Lap sealant must be set daily as the work progresses.

F. Nail off membrane, after relaxing, adhering and splicing, along all perimeters and around all flashing units. Membrane shall be nailed off with the hook strip flange or termination bar along perimeters as detailed. The membrane at all flashing locations shall be nailed off 6" on center maximum with the specified roofing nails through tin discs. In areas where no metal flanges are installed (such as at roof to wall details), the nailing shall be reduced to 4" on center maximum. All nailing shall be held back 2" from the edge of the membrane. Vertical nailers, when used, shall be fastened 8" on center. Extend membrane behind vertical nailers and secure through it.

G. Temporary waterstops shall be constructed to provide a 100% watertight seal utilizing a raised temporary waterstop at the end of each day's work. Sweep back and totally clean the gravel and flood coat from the existing roof and set a 2" x 4" stud atop the prepared area in sealant or materials recommended by the membrane manufacturer. Where stopping work on the new system, maintain the stagger of the insulation joints by installing partial fillers. Carry the new membrane up and over 2" x 4" waterstop. Seal the edge of the new membrane onto the old membrane in a continuous heavy application of sealant or materials recommended by the membrane manufacturer. Weight the membrane down in the sealant with a 2" x 10" wood member with ballast on top. Ballast should be approximately 20 pounds per linear foot. When work is resumed, remove all sealant, membrane, insulation fillers, etc. from the area of the waterstop. Do not reuse any of the materials in the new work. If inclement weather occurs while a temporary waterstop is in place, the Contractor shall provide the labor necessary to monitor the situation in order to maintain a watertight condition.

3.8 PEEL STOPS

A. Install continuous peel stop (1”x 1/8” aluminum bar) 4’-0” offset at perimeter of roof or as required by the roof manufacturer. Mechanically fasten 12-inch O.C.

B. Strip-in with manufacturer’s membrane flashing and provide gaps at 8-inch O.C. to allow drainage.

3.09 WATERSTOPS

A. All flashings shall be installed concurrently with the roof membrane in order to achieve a watertight condition as the work progresses. When a situation arises where a break in the day's work occurs in the central area of a roof, a temporary waterstop shall be constructed to provide a 100% watertight seal utilizing a raised temporary waterstop. Sweep back and totally clean the existing roof and set a 2" x 4" stud atop the prepared area in roof cement as recommended by the membrane manufacturer. Where stopping work on the new system, maintain the stagger of the insulation joints by installing partial fillers.

B. Carry the new membrane up and over 2" x 4" waterstop. Seal the edge of the membrane in a continuous heavy application of roof cement. Weight the membrane down in the sealant with a 2" x 10" wood member with ballast on top. Ballast should be approximately 20 lb./l.f. When restarting work, remove all sealant, membrane, insulation fillers, etc. from the work area. Do not reuse any of the material in the new work. Cut off contaminated EPDM membrane and dispose of immediately. If inclement weather occurs while a temporary waterstop is in place, the Contractor shall provide the labor necessary to monitor the situation to maintain a watertight condition.

3.10 MEMBRANE FLASHING

All flashings shall be installed concurrently with the roof membrane in order to maintain a watertight condition as the job progresses. The Contractor shall arrange his schedule, as much as practical, to install complete distinct roof areas each which, once flashed, will then be installed completely. No temporary membrane flashings shall be allowed without the prior written approval of the Engineer. Approval will only be for specific locations on specific dates.

A. Ensure that all air intakes and air handling units have been shut off or temporary protected to prevent adhesive fumes from infiltrating the building.

B. Ensure that all substrates are free from contaminates prior to the installation of the new flashing membranes. Install the manufacturers' buffer or protection sheets as required.

C. Cured membrane shall be used for flashing purposes as much as practical. Uncured sheets are to be used at vent pipes, inside and outside corners, seams in flashings or at any other location where forming of membrane flashings is required.

D. Flashing sheet shall be spliced to the membrane first, and then bonded to the mating surface. Totally clean the roof membrane area to receive flashing sheet using new, clean rags and manufacturer's splice wash cleaner. All talc, dirt, excess bonding adhesive and other foreign material shall be totally cleaned from the roof membrane sheet. Clean all seam areas at least twice in two separate applications with new rags and cleaner each time. After cleaning, apply splicing cement to both the underside of the flashing sheet and the prepared roof membrane for a width of minimum 6". Be sure cement is not on bonding adhesive areas.

E. Apply bonding adhesive to surface of wood, metal, masonry or other material or surface to be flashed. Also apply bonding adhesive to flashing membrane making sure bonding adhesive is not applied to splice area of flashing and using longest possible lengths of flashing membrane. Apply bonding adhesive using rollers or brushes 100% to all surfaces at a smooth, uniform rate, free of holidays, light spots, globs or similar irregularities, at the manufacturer's application rate. Allow two surfaces of adhesive to dry to a tacky condition, such that adhesive does not stick or string when touched with a dry finger. After bonding adhesive has set on both surfaces, roll flashing onto surface carefully to prevent wrinkles, fishmouths, bridging or similar flaws. Unless otherwise detailed, top of membrane flashings must be minimum 8" above the surface of the roof membrane, 3" minimum above the bottom of metal counterflashings, and minimum 3" past the limits of nail heads or other fasteners. Membrane flashings shall extend the full width of horizontal metal flashing flanges (i.e., gravel stops). After setting, roll membrane into place using a 2" wide steel roller and heavy hand pressure. Roll 100% of the surface to assure total adhesion with no wrinkles or bridging. After rolling, splice vertical or side laps of flashing sheet using minimum 6" wide splices and splicing cement.

After applying splicing cement to both mating surfaces of the flashing sheet vertical laps and allowing it to become tacky, roll splice in place as described above.

F. Inside and outside corners and other changes in direction of flashing sheets shall not be butt-type splices at the point of direction change. All flashing sheets shall be jointed past the change in direction. Inside vertical corners shall be folded with no cuts in the sheet at the corner. Folds shall be “pig’s ear” type on flashing sheets entering a corner. Splice shall be made 16” minimum away from corner. Outside vertical corners, such as around curb units, shall extend a minimum of 2” around the corner for each flashing sheet. Contour flashing sheets in place with light pressure. Flashing sheet may be heated, if ambient temperature is below 60 degrees F, in order to work them in place. Heating shall be done with heat lamp or air gun. No open flames can be used. All flashings shall be installed in accordance with the approved shop drawings and manufacturer’s instructions, unless amended. Flashings shall be turned up and over the tops of curbs as much as practical.

G. Membrane flashing terminating on a vertical surface shall be mechanically fastened to the substrate.

1. On wood surfaces, termination bars and flashings shall be secured with the specified large head roofing nails spaced 6” on center maximum or as specifically required by the membrane manufacturer.

2. On masonry surfaces, termination bars and flashings shall be secured using the specified drive pins through predrilled holes spaced 8” on center maximum or as specifically required by the membrane manufacturer.

H. Strip in all metal flanges such as gravel stops and vents with EPDM. Two ply stripping to be used by applying a 6” wide strip of flashing over which a 9” wide strip is to be applied. Uncured membrane shall be utilized where required by the manufacturer or by detail conditions. Stripping shall be continuous over the entire flange and extend onto the membrane 6” minimum.

I. Strip in all roof to wall terminations where new membrane will terminate below the existing membrane wall cladding with EPDM. Uncured membrane shall be utilized where required by the manufacturer or by detail conditions. Stripping shall be continuous over the entire flange and extend onto the membrane 3” minimum on each side of the lap.

J. Strip in all field seams with EPDM with a single 6” wide EPDM stripping membrane. Uncured membrane shall be utilized where required by the manufacturer or by detail conditions. Stripping shall be continuous over the entire seam and extend onto the field membrane 4” minimum.

K. The Contractor shall flash all roof drains with the new roof system. Extend membrane 1/2” minimum inside clamping ring with a continuous full bead of water cut-off mastic under the membrane.

L. Lap sealant shall be applied daily along all edges of membranes which terminate on the horizontal, gravel stops and similar locations. After proper installation of membrane flashings, clean the area of the lap with the manufacturer's recommended cleaner and apply continuous bead of lap sealant to all seams, including vertical laps of the flashings. Feather the sealant bead using the preformed trowel. Should uncaulked seams be found to have weathered beneath ponding conditions, the Contractor will be required to strip-in these seams with 6" stripping as required by the Owner.

3.11 WALKWAY PADS

A. Install membrane manufacturer's protection mat on the roof surface in locations designated by the Owner.

3.12 SLEEPERS

A. Pre-manufactured sleepers shall be installed over roofing manufacturer's walkway pads.

3.13 SHEET METAL FLASHINGS

A. Refer to Section 07 62 00 – Sheet Metal Flashing and Trim.

3.14 UNIT CURBS

A. Wood blocking shall be installed to provide curbs to support units as required to raise units 8" minimum above the roof surface as shown on the Detail Drawings. Refer to Section 06 10 00 – Rough Carpentry for additional information.

B. Mechanical and electrical work requiring extension in order to raise and support units shall be completed by a licensed tradesman.

3.15 INSTALLATION OF SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.

3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated, eliminate air pockets, and ensure contact and adhesion of sealant at sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
4. Provide flush joint profile where indicated per Figure 8B in ASTM C 1193.
5. Provide recessed joint configuration of recess depth and at locations indicated per Figure 8C in ASTM C 1193.

a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

3.16 CLEANUP

A. All floor, site and adjacent areas, both interior and exterior, damaged or stained by the installation of the roofing work shall be repaired and cleaned of all dust, debris and any other materials to the Owner's satisfaction.

B. The Contractor shall not demobilize the site until the completed work is toured by the Owner and Engineer. Any unsatisfactory items observed will be reported in "punch-list" form. These items shall be corrected immediately by the Contractor prior to demobilization from the job site. Final payment will not be made until all punch list items are complete and guarantees have been received.

C. All scaffolding, barriers, temporary facilities and the like shall be removed upon completion of the work. Areas damaged as a result of the Contractors equipment shall be restored to their original condition, all to the satisfaction of the Owner.

END OF SECTION

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SHEET METAL FLASHING AND TRIM

SECTION 07 62 00

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. The General Conditions and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

B. Refer to Division 1 for additional information.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 04 50 00 – Masonry
B. Section 06 10 00 – Rough Carpentry
C. Section 07 53 00 – Elastomeric Roofing and Flashing
D. Section 22 30 00 – Plumbing
E. Section 26 10 00 – Temporary Mechanical/Electrical Disconnects

1.3 DESCRIPTION OF WORK

A. In general, the Contractor shall supply all labor, materials, equipment, temporary protection, tools, and appliances necessary for the proper completion of the work in this Section, as required in the Specifications and in accordance with good construction practice and as required by the material manufacturer, as amended. The work under this Section generally includes the following:

1. Supply all necessary chutes, disposal facilities, transportation, and labor necessary to dispose of all demolished materials, dirt, and debris off-site in a legal dumping area. The Contractor shall obtain all permits necessary to transport and dispose of all materials, rubbish, and debris.
2. Provide all necessary underlayment, miscellaneous flashing, attachment clips, and closure members to ensure a weathertight installation.
3. Install new pre-manufactured metal roof fascia system and associated components as shown on the Contract Drawings at designated locations.
4. Install new sheet metal flashings and trim as shown on the Contract Drawings, and as required to properly terminate the membrane.
5. Install counter-flashings at roof membrane terminations.
6. Install skirt flashings around roof top equipment units.
7. Install blind nailers at all vertical roof membrane and sheet metal termination locations.
8. Fabricate and install new downspouts and scupper boxes at designated locations.

9. Complete all associated work.

10. Clean and restore all areas affected by the work.

11. This project includes alternates. Please refer to Section 01 23 00 – Alternates for additional information.

1.4 PERFORMANCE REQUIREMENTS

A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.

B. Install roof edge flashings capable of resisting the Wind Zone forces required by Code according to recommendations in FMG Loss Prevention Data Sheet 1-49.

C. Thermal Movements: Provide sheet metal flashing and trim that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of sheet metal and trim thermal movements. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F material surfaces.

D. Water Infiltration: Provide sheet metal flashing and trim that do not allow water infiltration to building interior.

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.

B. Shop Drawings: Show layouts of sheet metal flashing and trim, including plans and elevations. Distinguish between shop- and field-assembled work. Include the following:

1. Identify material, thickness, weight, and finish for each item and location in Project.
2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
3. Details for fastening, joining, supporting, and anchoring sheet metal flashing and trim, including fasteners, clips, cleats, and attachments to adjoining work.
4. Details of expansion-joint covers, including showing direction of expansion and contraction.

C. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:

1. Sheet Metal Flashing: 12-inches (12”) long. Include fasteners, cleats, clips, closures, and other attachments.
2. Trim: 12-inches (12”) long. Include fasteners and other exposed accessories.
3. Accessories: Full-size Sample.

D. Contractor to provide site safety plan and Job Hazard Analysis.

1.6 MOCK-UP TEST AREAS

A. Before full scale work is commenced, execute the following work for trial work areas to be reviewed by the Owner as to acceptability of color, texture, and appearance match with the existing construction. Test areas will be at locations established by the Owner.

1. Two linear feet (2 LF) of each roof edge metal configuration.

B. Trial areas shall be repeated until acceptable results are obtained, and the accepted areas shall be a standard for all subsequent work. Construction of test areas shall be in conformance with all Contract Documents and shall use only submitted materials.

C. Each mock-up shall be a minimum of two feet by two feet (2’ x 2’) where applicable and shall include all components of the roofing system.

1.7 QUALITY ASSURANCE

A. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.

B. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01.

1. Meet with the Owner, Designer, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects sheet metal flashing and trim including installers of roofing materials, roof accessories, and roof-mounted equipment.
2. Review methods and procedures related to sheet metal flashing and trim.
3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
4. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.

B. Unload, store, and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.

1.9 COORDINATION

A. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leak proof, secure, and noncorrosive installation.

1.10 WARRANTY AND GUARANTEE

A. Upon completion of the work, and prior to final payment, the Contractor shall submit a Guarantee of his work to be free from defect in materials and workmanship. This Guarantee shall be for a period of two (2) years and shall be signed by a Principal of the Contractor's firm and sealed if a corporation.

B. Finish Warranty – 20-years for aluminum sheets.

PART 2 - PRODUCTS

2.1 SHEET METALS

A. Tin-Zinc alloy coated copper shall be cold rolled sheet copper conforming to ASTM B-101-78, 16 oz. Tin-Zinc coating shall be applied by hot dip process to achieve a coating approximately 0.5 mils thick. Sheet length shall be 8' maximum.

B. Aluminum shall be 0.032", 0.040'', 0.050", and 0.063" thick Kynar 500 Fluoropolymer painted aluminum as shown on the Contract Drawings. Color(s) to be selected by the Owner. Aluminum shall have a mill finish for concealed items. Aluminum shall be 3003 alloy, H-14 temper.

C. Pre-manufactured, Fascia System: Pre-formed, architectural metal edge system. Contractor-shop fabricated metal will NOT be accepted for the perimeters of the roofs. Edge coping shall include:
1. Basis of Design: Tremlock by Tremco or Paraguard by Siplast
2. Tested per ANSI/SPRI ES-1 Standard to a design pressure of 290 lbs./ft² to comply with the International Building Code.
3. Factory Mutual 1-150 (Zone 3 - Corner) approved for wind up lift protection.

4. Color(s) to be selected by the Owner.

D. All accessories, including but not limited to nails, screws and clips shall be stainless steel or galvanized steel and completely compatible with the surrounding metal to prevent galvanic reaction. Galvanizing shall be per ASTM A153-09.

E. Termination bars shall be 1/8" x 1" stainless steel, copper, or aluminum bar (as required to prevent galvanic action with the flashings being secured) with pre-punched holes at 8-inches on center, or as required by the membrane manufacturer.

F. Clamps shall be screw adjustable stainless-steel hose clamps with a minimum 3/8" band width.

G. Rivets shall be 3/16" diameter stainless steel as required by the metal being secured.

H. Sheet metal flashings shall be shop fabricated. All breaks, bends, and hems shall be uniform, clean, straight lines.

1. All aluminum joints shall be adequately overlapped, back-sealed, and riveted.
2. Flanges shall be 4" wide minimum.
3. Drip edges shall be hemmed ¾-inch wide and break at a 30° angle.
4. Clips shall be 2-inch wide.
5. All flanges to be covered with roofing or flashing membranes shall have a ¼-inch minimum hem on the edge.
6. All sheet metal joints shall have 6-inch-wide cover and backer plates.
7. Blind nailers shall be 4-inch wide, folded to 2-inch-wide final dimension.
8. Fascia reveals shall not exceed 8-inch. Fascia requiring a greater vertical face than 8-inch shall be fabricated as a two-piece system with each face of equal exposure.
9. Maintain equal fascia height around entire perimeter of each roof area and where fascias abut.

2.2 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.

B. Solder for Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.

C. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, non-staining tape.

D. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

E. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.

F. Mastic for back-sealing sheet metal against non-metal substrates shall be as recommended by the underlayment manufacturer. Concealed sealant for back-sealing metal-to-metal connections shall be single-component, butyl (polyisobutylene) rubber sealant, heavy bodied for joints with limited movement.

G. Self-Adhering Modified Bitumen shall be a 40-mil thick minimum with 4 mil, high-density polyethylene film and release paper backing formulated for high temperature installation in accordance with ASTM D 1970. such as Grace Ultra, Carlisle WIP 300HT, Henry Blueskin PE200HT, or approved equal.

H. Slip sheet shall be 15-pound red rosin paper.

2.3 FABRICATION SCHEDULE

A. Note, similar flashing components have been listed under multiple metal fabrications type and thicknesses. The Contractor shall coordinate the use of compatible metals to prevent galvanic corrosion and coordinate painted finish components at visible locations.

1. 16 oz Tin-Zinc Copper
   a. Counterflashing
   b. 2-inch Wide Clips
   c. Blind Nailers
2. 0.032” Thick Coated Aluminum:
   a. Blind Nailers
3. 0.040” Thick Coated Aluminum:
   a. Pre-Manufactured Coping/Edge Metal
   b. Counterflashing
   c. Skirt Flashing
   d. Scuppers
   e. Scupper Flashing
   f. Downspouts
   g. Gutter
   h. Outlet Tube
   i. Fascia
   j. Drip Edge
   k. Cap Flashing

4. 0.050” Thick Coated Aluminum:
   a. 2-inch Wide Clips
   b. Hook Strips
   c. Cleats
5. 0.063” Thick Coated, or Mill Finished Aluminum:
   a. Continuous Hook Strips

2.4 FASTENERS

A. In general, fasteners, straps and other hardware shall be copper, brass, stainless steel, or hot-dip galvanized steel. Galvanizing shall be per ASTM A 153 specifications. Electro-galvanizing will not be accepted.

B. Fasteners for securement of flashings and hook strips to concrete or masonry shall be ¼-inch diameter hammer drive anchors with zinc sheaths and flat heads such as Zamac Nailins by Rawl, Star Fasteners, Unifast, or approved equal. Anchors shall be of sufficient length to penetrate the substrate 1-1/4-inch minimum.

C. Sheet metal to wood blocking connections and mechanical unit securement (exposed securement): Self-drilling, self-tapping, Number 10, stainless steel hex-head screws, 1-1/2-inch long, equipped with metal capped EPDM washers.

D. Nails for flashing securement at wood substrates shall be No. 12 Stubbs gauge, large head, threaded shank, copper, or galvanized steel nails minimum 1-inch long.

E. Fastens for securement of the pre-engineered edge metal shall be recommended by the manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of work.

1. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Torch cutting of sheet metal flashing and trim is not permitted.

B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by fabricator or manufacturers of dissimilar metals.

1. Coat side of stainless-steel sheet metal flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction.
2. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip-sheet or install a course of polyethylene underlayment.
3. Bed flanges in thick coat of asphalt roofing cement where required for waterproof performance.

C. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.

D. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and elastomeric sealant.

E. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

1. Space cleats not more than 12-inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.

F. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10-feet with no joints allowed within 24-inches of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used, or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1-inch-deep, filled with elastomeric sealant concealed within joints.

G. Fasteners: Use fasteners of sizes that will penetrate substrate not less than 1-1/4-inches for nails and not less than ¾-inch for wood screws.

1. Galvanized or Pre-painted, Metallic-Coated Steel: Use stainless-steel fasteners.
2. Aluminum: Use aluminum or stainless-steel fasteners.
3. Stainless Steel: Use stainless-steel fasteners.

H. Seal joints with elastomeric sealant as required for watertight construction.

1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1-inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F set joint members for 50 percent movement either way. Adjust setting proportionately for installation at

higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.

I. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin edges of sheets to be soldered to a width of 1-1/2-inches except where pre-tinned surface would show in finished Work.

1. Do not solder aluminum sheet.
2. Stainless-Steel Soldering: Pretin edges of uncoated sheets to be soldered using solder recommended for stainless steel and phosphoric acid flux. Promptly wash off acid flux residue from metal after soldering.
3. Do not use open-flame torches for soldering. Heat surfaces to receive solder and flow solder into joints. Fill joints completely. Completely remove flux and spatter from exposed surfaces.

J. Aluminum Flashing: Rivet or weld joints in uncoated aluminum where necessary for strength.

3.3 INSTALLATION OF PERIMETER WOOD BLOCKING

A. Coordinate the installation of the perimeter wood blocking with Section 06 10 00 – Rough Carpentry.

3.4 PRE-MANUFACTURED ROOF FASCIAS

A. Confirm that the roof membrane extends down, beyond the transition of the wood blocking as shown on the contract drawings.

B. Should the new pre-formed metal edge not provide a minimum of 1-1/2-inch coverage over the transition beyond the wood blocking, a two-piece flashing system, of equal dimension, shall be installed around the perimeter of the roof edge to provide a uniform height. Hook strips shall be secured at 3-inches on center, staggered about the center line. Backer plates shall be installed between each seam. The fascia metal shall extend a minimum of two inches below the pre-manufactured metal.

C. Install a sacrificial piece of roof membrane between the finished roof edge membrane, and the sheet metal hook strip. The membrane shall be sealed to both the finished roof surface, and the metal hook strip to prevent water infiltration under the detail.

D. Secure the hook strip per the manufacturer’s recommendations. Confirm a uniform, level reveal around the perimeter of the building.

E. Where the edge metal meets a rising wall, coordinate the installation of a blind nailer at these locations to terminate the roofing system.

3.5 ROOF FLASHING INSTALLATION

A. General: Install sheet metal roof flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight.

B. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing 4-inches over base flashing. Lap counterflashing joints a minimum of 4-inches and bed with elastomeric sealant.

1. Secure in a waterproof manner by means of snap-in installation and sealant.

C. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Install flashing as follows:

1. Seal with elastomeric sealant and clamp flashing to pipes penetrating roof except for flashing on vent piping.

3.6 ROOF DRAIN FLASHING

A. Coordinate all work with Section 07 52 00 – SBS Modified Bituminous Roofing and Flashing and Section 07 53 00 – Elastomeric Roofing and Flashing.

B. Roof drains shall be flashed by coating the entire sump with a full, 1/8” thick trowel application of roof cement.

C. Center the lead sheet over the drain bowl and embed the sheet into the roof cement by tamping with a rubber mallet.

D. Apply membrane flashings as previously described.

E. Extend stripping from within the clamping ring past the limits of the lead sheet by six inches (6”) minimum.

F. Apply the second ply of stripping to extend past the bottom ply four inches (4”) minimum.

G. Allow the lead sheet and felt stripping to extend inside the clamping ring by one-inch (1”) minimum when installing the clamping ring.

3.7 SKIRT FLASHINGS

A. Fabricate skirt flashings to the configurations shown on the Contract Drawings.

B. Insert flashings beneath new counterflashings or skirt flashings as detailed. Overlap adjacent sections a minimum of 3-inch.

C. Secure wall flashing skirt flashing with clips at 12-inches on center and a minimum of two per section. All fasteners shall be concealed.

3.8 COUNTERFLASHINGS

A. Fabricate new counterflashing and receivers to the dimensions and shapes where shown in the Contract Drawings and as specified herein.

B. Secure counter-flashings with clips where indicated. Fabricate and secure clips as previously specified.

C. Clip counterflashings onto new throughwall flashings where indicated.

3.9 BLIND NAILERS

A. Fabricate and install blind nailer with a 2-inch minimum leg inserted behind membrane. Fasten flashing through leg of blind nailer.

B. Fold blind nailer to 2-inch-wide final dimension with ½-inch hemmed edge over fastener.

C. Provide continuous beads of sealant at back and leading edges.

3.10 CONTINUOUS CLEATS AND HOOK STRIPS

A. Form continuous cleats/hook strips with ¾-inch kicks, bent out at a 30° angle to the face or wall. Height of continuous cleats/hook strips shall be as indicated on the Detail Drawings.

B. Secure continuous cleats/hook strips to wood blocking with the specified fasteners spaced at 6-inches on center.

C. Provide 1/8-inch butt joints between hook strip sections.

3.11 SECUREMENT CLIPS

A. Secure clips to substrate with the specified fasteners at minimum 6-inches on center, or as indicated on the Detail Drawings.

B. Bend clips a minimum of 1-inch over bottom drip edge of flashing and crimp tightly.

C. Coordinate with installation of roofing flashing termination bar.

D. The seams of the sheet metal flashing shall be soldered to provide a watertight detail, and where practical, shall extend eight inches above the finished roof

surface. Note that it is the intent of this project to provide pipe wrap details in lieu of pourable sealer boxes when applicable.

E. Seal the lower limits of the penetration prior to the application of the pourable sealer.

F. Provide covers over the pourable sealer boxes, notch around conduits and seal.

3.12 SCUPPER BOX AND DOWNSPOUTS

A. Fabricate and install new scupper boxes and downspouts for designated locations to match the existing opening. The scupper sleeves shall be fabricated with the longitudinal seam located along the top of the cored opening and fit snugly into place. Scupper sleeve shall have hemmed flanges for securement on the inside of the parapet wall as shown. Secure the tube to the parapet wall with the specified fasteners and extend scupper sleeve 1” minimum beyond the exterior wall surface, keeping flush with the interior wall surface. Coordinate with the roof flashing and edge metal installation.

B. Utilize the membrane to flash the scupper opening by adhering the flashing membrane to the scupper sleeve. Coordinate with Section 07 53 00 – Elastomeric Roofing and Flashing.

C. Terminate the flashing at exposed edges with blind nailers secured with the specified fasteners at 6” on center over a full bead of sealant. Secure the scupper sleeve by crimping. Fold back blind nailers over fasteners to conceal all fasteners. Provide continuous bead of sealant along edges of blind nailers and tool to shed water.

D. Scuppers and downspouts shall be sized as the following:

1. Overflow Scupper at Roof Area A: 4” H x 6” W minimum.
2. Downspout at Roof Area A: 7 in^2 minimum.

E. Provide proper venting for downspouts as recommended by SMACNA.

F. Secure downspouts with straps at minimum 5’-0” on center, provide outlet shoe at discharge level. Downspout straps shall be heavy weight aluminum ¼” thick x 1” wide minimum and shall be secured to the wood blocking, fascia or structure. Dogs shall have twist to eliminate drips over the edge.

G. Screws for downspout straps shall be stainless steel and have 1-1/2” embedment minimum into the substrate.

H. Wire ball strainers for downspout assemblies shall be stainless steel wire, 0.018” thick.

I. Owner to select downspout and scupper colors.

J. Provide splash blocks and roof manufacturer's walkway pads where downspouts discharge on the roof surface. Coordinate with Section 07 53 00 – Elastomeric Roofing and Flashing. Splash blocks shall be solid rubber that is UV-resistant and mold-resistant. Blocks to be weighted to not blow or float away after installation.

3.13 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean and neutralize flux materials. Clean off excess solder and sealants.

C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.

D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

PLUMBING

SECTION 22 30 00

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. The General Conditions, and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

B. Refer to Division 1 for additional information.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 05 31 00 – Metal Deck Replacement
B. Section 07 53 00 – Elastomeric Roofing and Flashing

1.3 SCOPE OF WORK

A. In general, the Contractor shall supply all labor, materials, equipment, temporary protection, tools, and appliances necessary for the proper completion of the work in this Section, as required in the Specifications and in accordance with good construction practice and as required by the material manufacturer, as amended. The work under this Section generally includes the following:

1. Clear roof drain systems from roof level to the point where the leaders exit the building to achieve a free-flowing system prior to re-roofing operations and after new roof system is installed. Water test roof drains, pipe connections, and flashings prior to demobilization.

2. Chip out and grout existing concrete substrate around perimeter of existing roof drain bowls as required to remove existing roof drain bowls and install new roof drain bowls.

3. Install new drain bowl assemblies, including bowls, strainers, clamping rings, underdeck clamps, and lead and oakum joints at all existing roof drain locations. Provide vandal-proof drain strainers. Elevate drain assemblies a minimum of 2” above the deck to allow for insulation.

4. Install new vertical and horizontal leader piping at augmenting roof drain.

5. Install drain marker flags at all drain locations.

6. Provide all temporary protection, tools and equipment necessary to remove and replace the existing drains and leaders as specified for the proper installation of the new roof drains.

7. Install vent pipe extensions with no-hub connections.

8. Replace, patch, seal, and repair all existing construction assemblies removed, damaged, or cut to allow for the installation of the new drain bowl assemblies such as suspended or plaster ceilings. Repaired areas shall match the surrounding existing construction.

9. All drains installed shall be completed and flashed in the same day's operation.

10. This project includes alternates. Please refer to Section 01 23 00 – Alternates for additional information.

1.4 JOB CONDITIONS

A. The plumbing work shall be coordinated with the roofing contractor and the roof work in such a manner that drain bowl assemblies are installed prior to or concurrently with the roofing. Limit the number of drains removed and replaced prior to roof replacement to avoid moisture infiltration at drain locations.

B. No interior portions of the building shall be left exposed to the elements at the end of a day's work. The roofing contractor shall provide temporary drain flashings prior to roof replacement where drains are replaced.

C. All plumbing work shall be performed by a licensed plumber in accordance with the Maine State Internal Plumbing Code.

D. Notify the Engineer 48 hours in advance of drain leader cleaning operations in order that Owner representation may occur.

E. Notify Owner 72 hours in advance to acquire Owner's written permission to access interior spaces of the building.

1.5 SUBMITTALS

Manufacturer's literature shall be submitted for all items specified in Part 2 of this Section.

PART 2 - PRODUCTS

2.1 ROOF DRAIN COMPONENTS

A. Replacement roof drains shall be minimum 12" diameter coated cast iron with varying pipe sizes, or as required to match the existing diameter bottom outlet, large sump, extended collar and wide roof flange, as manufactured by Jay R. Smith Manufacturing Co., Series 1010-E-W, Josam, Zurn, Wade, Smith or approved equal. Replacement drain outlet diameters shall match the existing. Drain assemblies shall have non-puncturing cast iron clamping ring with integral gravel stop. All roof drain assemblies shall be installed with underdeck clamps. Drain strainers shall be cast iron, vandal resistant, of suitable size and configuration as provided by the drain manufacturer.

B. All accessories necessary or the proper installation of the new drain bowl assemblies, including but not limited to underdeck clamps, clamping rings with integral gravel stops and strainers, shall be of the same manufacturer as the drain bowls and be completely compatible with the existing piping and surrounding materials. Drain sump caulking shall be as recommended by the supplier.

C. Drain bowl to leader pipe connections shall be pig lead and oakum. Verify in field all connections.

D. Elastomeric joint couplings to be used only at tie-ins from new to existing leader pipes shall conform to the Cast Iron Soil Pipe Institute (CISPI). Couplings shall be made using neoprene sleeves with stainless steel draw band clamp connections, four clamps per sleeve.

E. Insulation for new drain bowl assemblies and drain pipe shall be pre-formed and skinned fibrous glass, minimum 1" thick of sufficient size to fit fixtures and piping, such as fiberglass ASJ/SSL-11 pipe insulation by OCF, with factory-applied jackets, or approved equal. Fittings shall be mitered of the same material. Joints shall be taped as recommended and supplied by the manufacturer of the insulation. Minimum R-value= 3.2 per inch thickness. Minimum thickness shall be two inches.

2.2 CONCRETE PATCHING COMPOUND

A. Repair mortar for patching concrete at drain bowls shall be a polymer modified Portland cement-based patch mortar. Mortar shall be fast-setting, non-sag material such as Sika Top 123 as manufactured by the Sika Corporation, ThoRoc HB2 manufactured by ChemRex, Inc., Mimic by Conproco or approved equal.

2.3 LEADER PIPING

A. Augmenting and replacement leader pipe shall be Schedule 40 coated cast iron, 3-inch diameter, conforming to ASTM A74 Specifications. Pipe and connections shall be sized to tie into the existing leader piping below drains.

B. All required hangers and fittings for cast iron pipe shall conform to Manufacturer's Standardization Society of Valve and Fittings Industry (MCC) SP-58 and SP-59 guidelines. Hangers and strapping material shall be of approved material that will not promote galvanic reaction. Cast iron fittings shall conform to the American Society of Mechanical Engineers (ASME) B16.4 and B16.12.

C. Elastomeric joint couplings to be used only at tie-ins from new to existing leader pipes shall conform to the Cast Iron Soil Pipe Institute (CISPI). Couplings shall be made using neoprene sleeves with stainless steel draw band clamp connections, four clamps per sleeve.

2.4 VENT PIPE EXTENSIONS

A. Vent pipe extensions: Schedule 40-coated cast iron conforming to ASTM A74 sized to match existing pipe diameter. Pipes shall extend 18 inches minimum above completed roof surface.

B. No-hub connections for vent pipe extensions shall consist of neoprene couplings with stainless steel clamps, sized to match the existing pipe diameter.

2.5 ROOF DRAIN MARKERS

A. Roof Drain Marker as manufactured by Roof Drain Marker Co., LLC, of West Bridgewater, MA as supplied by the approved drain bowl manufacturer, or approved equal. Drain dome-mounted vertical fiberglass flag marker secured in aluminum socket in turn secured with pre-punched aluminum bracket configured for through-bolting to roof drain dome, or approved equal.

1. Flag Marker: Pultruded fiber-reinforced polymer rod, ½-inch (12 mm) diameter by 48 inch (1219 mm) long, with reflective dual-colored reversible ends enabling marking of selected drains.
2. Flexural Strength, minimum, ASTM D 790, 700,000 psi (689 MPa).
3. Impact Strength, minimum, ASTM D 256: 40 ft-lb/in.
4. Marker Base: 1 by 1 by 4 inch (25 by 25 by 102 mm) extruded aluminum bar, ASTM B 209 (ASTM B 209M), with milled flag receiver, threaded flag set screw retainer, and threaded base.
5. Flag Bracket: 1 by 11 by 0.063-inch (25 by 25 by 1.60 mm) aluminum plate bracket, ASTM B 221 (ASTM B 221M).
6. Fasteners: Alloy Group 2 (A4) stainless-steel bolts, ASTM F 593 (ASTM F 738M), and nuts, ASTM F 594 (ASTM F 836M).

PART 3 - EXECUTION

3.1 GENERAL

A. The Owner shall be notified at least 72 hours prior to all under deck work. All materials, equipment and daily clean up shall be the responsibility of the Contractor.

B. All work in this Section shall be coordinated with roof replacement work. All required work at drain locations shall be properly protected at all times from equipment and traffic.

C. All flashing-in of the roof drains and membrane repairs as a result of the plumbing work shall be the responsibility of and provided by the Contractor under Section 07 53 00 – Elastomeric Roofing and Flashing.

D. The Contractor is cautioned to investigate all existing conditions and materials of construction. All replacement items, including but not limited to clamps and strainers must be completely compatible and match the existing system.

3.2 CLEANING OF DRAINAGE SYSTEM

A. Prior to re-roofing operations, clear all roof drain leader piping of any debris and clogs such that the system is free-flowing.

B. Once the new replacement roof system has been installed, clear all roof drain leader piping of debris and clogs such that the system is free-flowing.

C. The Contractor shall notify the Engineer and Owner a minimum of 72 hours in advance prior to cleaning drainage system, in order to allow the Engineer and Owner present during the cleaning operations.

D. The Contractor shall clear the existing leader pipe with Roto-rooter type equipment from the roof deck level to the point where the leader pipe exits the building. Flush the drain line with water upon completion of the cleaning.

3.3 REPLACEMENT ROOF DRAINS

A. Install all replacement roof drains such that the bowl flange with clamping ring and integral gravel guard elevated 2-inches above deck level. See detail drawings for assembly position.

B. Should it be required, complete all cuts through the existing deck so as to cause minimum damage to the deck and associated building components. Cut shall be the minimum size possible. Methods of deck removal shall be submitted by the Contractor and approved by the Engineer prior to demolition. The Contractor shall provide all interior and rooftop protection.

C. Make all drain to leader connections watertight and of sufficient strength.

1. Lead and oakum joints: Pack joint tightly with oakum of sufficient size to remain firmly in place.

2. Mechanical joint couplings shall be installed in accordance with the manufacturer’s instructions.

3. Tamp joint tight as required.

D. Check all roof drain and leader pipe joints with a water test once roofing and flashing are complete and prior to installing drain system insulation to check for leaks. Repair all leaks to the satisfaction of the Owner.

3.4 CONCRETE PATCHING COMPUND INSTALLATION

A. Remove areas of spalled, cracked, loose or otherwise unsuitable concrete from the existing roof deck. Define all repair areas with 1/4" deep saw cut. Undercut or "key" in spall repair edges on at least two opposite sides to mechanically retain the repair. Cuts shall not overlap at corners.

B. Completely remove all dust, grease and other impurities via compressed air and wire brushes, chipping, grinding or other methods as required to achieve an acceptable bonding surfaces.

C. Prepare the surface of the existing concrete to receive the repair mortar. Dampen the existing surface area with clean potable water. Provide a 1/8" minimum aggressive surface profile with fractured aggregate. Tool marks should be visible.

D. Apply primer to all bonding surfaces as recommended by the repair mortar manufacturer.

E. Install repair mortar to properly prepared areas. Mix repair mortar in accordance with the materials manufacturer's instructions. At spall repairs with a depth greater than 1", mix in 3/8" aggregate as required by the mortar manufacturer. Utilize the manufacturer's recommended mix rates. **Do not apply spall repair material over corroded reinforcing.**

F. The concrete substrates may require wetting with water prior to installing the repair mortar. Consult with the manufacturer's instructions prior to initiating repairs.

G. Finish the repairs flush with the existing roof surface. Fast setting concrete repair materials shall cure for a minimum of 2 hours prior to the installation of the new roof materials, or as recommended by the materials submitted.

H. The Contractor will be required to provide all temporary protection of the new and existing concrete roof system that will require curing during the installation process. Any damage as a result of improper protection, or the installation of the new roof system prior to the proper cure duration, shall be repaired or replaced at no additional cost to the Owner.

3.5 INSULATION

A. Replacement Drains - Fibrous glass pipe insulation with factory-applied jackets shall be installed on all drain bowl assemblies and leader ties installed under this Contract, in accordance with the manufacturer's written specifications. New pipe insulation shall extend 24" minimum vertically, or 12" beyond the first elbow direction, whichever is greater.

B. All insulation joints shall be taped with materials recommended and supplied by the insulation manufacturer.

C. Drain bowl insulation shall be cut clean and matched to the pipe insulation, with all joints properly taped, mitered and sealed.

D. If any sections of the existing roof drainage system are observed to be uninsulated, this situation shall be reported to the Engineer and Owner.

3.6 CEILING REMOVAL AND REPLACEMENT

A. The Contractor shall not remove any ceiling areas without the prior approval of the Engineer and Owner. The limits of ceiling removal to facilitate installation of the new plumbing work shall be clearly defined. All precautions shall be taken to protect the building occupants during ceiling removal and replacement.

B. The Contractor shall provide all tarps, zip walls, and protection necessary to protect the interior portions of the building.

C. All ceiling sections removed shall be replaced by the Contractor. Any areas damaged during construction or removal and replacement shall be replaced by the Contractor at no extra cost to the Owner.

D. Do not damage or cut any of the ceiling support system without the Engineer's and Owner's approval. Should the support system be damaged or removed to facilitate plumbing work installation, it shall be replaced with a new support system equal to the existing.

E. All floor and adjacent areas, both interior and exterior, damaged or stained by the installation of the plumbing work shall be repaired and cleaned of all dust, debris and any other materials to the Owner's satisfaction.

3.7 VENT PIPE EXTENSION

A. Cut existing vent pipes to be raised to allow for the installation of the no-hub connections. Units shall extend 18” above finished roof surface.

3.8 CLEANUP

A. All floor and adjacent areas, both interior and exterior, damaged or stained by the installation of the plumbing work shall be repaired and cleaned of all dust, debris and any other materials to the Owner's satisfaction.

3.9 WATER TESTS

A. Perform water tests on roof drain assemblies, including leader piping, and on downspout assemblies. Notify the Owner 48-hours minimum prior to water tests in order that the Owner/Owner’s representative may witness testing. Using a ¾-inch garden hose run water into the drainage components for thirty minutes. Inspect all drainage components for leakage and repair as required. Inform Owner of test findings.

END OF SECTION

TEMPORARY MECHANICAL/ELECTRICAL DISCONNECTS

SECTION 26 10 00

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

A. The General Conditions and all parts of the Bid and Contract Documents are made part of this Section as if fully repeated herein.

B. Refer to Division 1 for additional information.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Section 05 31 00 – Metal Deck Replacement
B. Section 06 10 00 – Rough Carpentry
C. Section 07 53 00 – Elastomeric Roofing and Flashing
D. Section 07 62 00 – Sheet Metal Flashing and Trim

1.3 SCOPE OF WORK

A. In general, the Contractor shall supply all labor, materials, equipment, temporary protection, tools and appliances necessary for the proper completion of the work in this Section, as required in the Specifications and in accordance with good construction practice. The work under this Section generally includes the following:

1. Provide all temporary protection, lifts, manpower, and equipment to protect the building and its components.

2. Temporarily disconnect, remove, and support existing roof top fans, vents and mechanical ventilation equipment. Fans and equipment shall be re-installed and reconnected after installation of roofing and flashing of roof curbs. Provide electrical extensions, mechanical ductwork extensions, and roof curb extensions as required to extend the equipment above the new roof surface.

   a. The Contractor is to provide extensions to air-intake locations on mechanical equipment as required by the Owner and to the Owner's satisfaction.

   b. The Contractor will be responsible for replacing the sleepers and conduit straps, which the existing electrical conduits and gas piping are mounted. The contractor shall provide temporarily support for all existing equipment mounted on sleepers, which are being removed during the roof replacement. Any damage to the existing roof top equipment shall be repaired and/or replaced by the contractor at no additional cost to the Owner. This shall include, but not be limited to, damaged piping and conduits, releasing of Freon gas, and/or containment and disposal of

existing cooling agents. The Contractor shall investigate all equipment prior to performing the work and notify the engineer/Owner of potential issues prior to performing the renovations.

3. Clean the existing air plenums and duct work of dust/debris prior to re-installation of fans and roof top equipment. Cleaning will be to a point 2' minimum below the roof line in all ductwork directions.

4. Coordinate the work in this section with the appropriate trades to insure the proper work sequence.

5. The Contractor shall temporarily disconnect existing piping, raise to allow adequate height for new wood blocking, insulation, and roof edge fascia metal and reconnect, where indicated on Contract Drawings. Contractor shall provide required permit(s) and coordinate with Owner to limit disruption to the building and rooftop equipment. Work shall be performed by licensed plumber.

6. Temporarily disconnect equipment support cables to perform re-roofing operations. Reconnect / secure at end of each work day. Provide adequate tension of support cables to eliminate sag in the cables.

7. Coordinate with Section 07 62 00 – Sheet Metal Flashing and Trim for fastener and sheet metal flashing specifications.

8. This project includes alternates. Refer to Section 01 23 00 – Alternates for additional information.

1.4 JOB CONDITIONS

A. Schedule and execute all work without exposing the building interiors to inclement weather. Protect all new and existing roof work, the building and its contents from staining and damages. Segregate all work areas from the building occupants.

B. Notify the Owner at least 72 hours in advance of doing any interior demolition work so that the Owner may remove any portable items, such as furniture, from the area. Fixed items will not be removed and are to be protected by the Contractor.

C. The Contractor shall be responsible for shutting down, removal, temporary support, proper reinstallation with ductwork and electrical extensions as required, and turning on of each mechanical unit by the end of the workday as it relates to the removal and reinstallation of the mechanical equipment. If the mechanical unit is found operational prior to the shutdown procedures, and does not operate upon completion of the work and restarting the equipment, the Contractor will be responsible for repairing/replacing said unit at no additional cost to the Owner.

D. The Contractor is cautioned to take all necessary precautions and make all investigations necessary to install the work. The Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.

E. The Contractor shall provide a minimum of two (2) weeks notice prior to shutting down any mechanical services.

1.5 SUBMITTALS

A. The Contractor shall submit project literature and samples for the items listed in this section in accordance with Section 01 33 00 – Shop Drawings and Submittals.

B. Submit proposed lead times of materials and coordination efforts associated with replacement of units.

C. Submit proposed temporary shoring details and methods of re-attachment.

PART 2 - MATERIALS

NOT USED.

PART 3 - EXECUTION

3.1 GENERAL

A. All work in this Section shall be coordinated with roof replacement work.

B. All flashing-in of the mechanical work shall be the responsibility of and provided by the Roofing Contractor under Section 07 53 00 – Elastomeric Roofing and Flashing.

C. The Contractor is cautioned to investigate all existing conditions and materials of construction.

D. Follow all applicable local, state and federal requirements regarding construction of scaffolding and protection of the public safety for the work items included in this section. Specific reference should be made to OSHA Construction Safety Regulations. Provide warning lines, barricades, and similar items as required to restrict pedestrian access to hazardous areas. Job site safety shall be the Contractor's responsibility.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.

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. Arrange to shut off indicated utilities with utility companies.

2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

   a. Refer to Division 01 Section “Temporary Facilities” for additional information.

3. Protect existing mechanical/plumbing systems and drain lines during the project from freezing temperatures; do not leave exposed to the elements.

4. Partial or whole building shutdowns shall be coordinated so they do not impact occupied spaces during business hours.

3.3 REMOVAL AND REINSTALLATION OF ROOFTOP EQUIPMENT

A. The following is the scope of work required where the existing exhaust fans and mechanical equipment located on the roof must be temporarily disconnected, removed and reconnected.

1. Prior to temporarily lifting of any existing exhaust fans and mechanical equipment, the contractor shall test the exhaust fans and mechanical equipment to ensure they are functioning properly and report any problems to the owner.

2. The Contractor shall coordinate all interruptions of power to existing exhaust fans and mechanical equipment with the Owner prior to any work.

3. The Contractor shall ensure that the power to existing exhaust fans and mechanical equipment is turned off. The Mechanical contractor shall use lockout / tag-out procedures to ensure that the power is not turned on.

4. The Contractor shall temporarily disconnect, remove, and support the existing roof-mounted exhaust fans, mechanical equipment, ductwork and wiring and reconnect the same, as required by job condition, after installation of a new roof and flashing of the roof curbs.

5. The Contractor shall coordinate the heights of the existing mechanical unit curbs and fan curbs with that of the new insulation height to confirm which of the units will require raising and new duct and electrical extensions as required.

6. Extend electrical conduits and wiring, and mechanical systems and ductwork as required due to the increased roof insulation height.

7. Rooftop unit installation shall be coordinated to prevent exposing the interior to inclement weather. Utilize stainless steel capped EPDM washers at all fastener locations.

8. The Contractor shall turn power back on to the exhaust fans and mechanical equipment after work has been completed by all other trades.

9. After the existing exhaust fans and mechanical equipment have been reconnected, the Contractor shall test the exhaust fans and mechanical equipment to ensure they are functioning properly and report any problems to the Owner.

END OF SECTION

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