

**ROOF AREA B ACCESS STAIR DESIGN
AT THE CENTER BUILDING
67 INDEPENDENCE DRIVE
AUGUSTA, MAINE**

June 16, 2025



Prepared For:

State of Maine Bureau of General Services
111 Sewall Street
77 State House Station
Augusta, ME 04333

Prepared By:

Gale Associates, Inc.
5 Moulton Street
Portland, ME 04101
Gale JN 839100

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**GALE JN 839100
TABLE OF CONTENTS**

Title Page
Table of Contents

DIVISION 00

PROCUREMENT REQUIREMENTS

Section 00 11 13 - Notice to Contractors for Email Bid

INSTRUCTIONS FOR PROCUREMENT

Section 00 21 13 - Instructions to Bidders

PROCUREMENT FORMS AND SUPPLEMENTS

Section 00 41 13 - Contractor Bid Form

Section 00 43 13 - Contractor Bid Bond

NOTICE OF AWARD

Section 00 52 13 - Contract Agreement

PROJECT FORMS

Section 00 61 13.13 - Contractor Performance Bond

Section 00 61 13.16 - Contractor Payment Bond

Section 00 62 76 - Application for Payment

Section 00 63 46 - Construction Change Directive

Section 00 63 63 - Change Order

CONDITIONS OF THE CONTRACT

Section 00 71 00 - Definitions

Section 00 73 13 - General Conditions

Section 00 73 46 - Wage Determination Schedule

DIVISION 01 - GENERAL REQUIREMENTS

DIVISION 01

Section 01 10 00 – Summary of Work

Section 01 33 00 – Shop Drawings and Submittals

Section 01 50 00 – Temporary Facilities

Section 01 63 00 – Weather Protection and Materials Storage

Section 01 70 00 – Project Closeout

TECHNICAL REQUIREMENTS

DIVISION 02

NOT USED.

**ROOF AREA B ACCESS STAIR DESIGN
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DIVISION 03

Section 03 10 00 – Concrete Formwork

Section 03 20 00 – Concrete Reinforcement

Section 03 30 00 – CIP Concrete

DIVISION 04

NOT USED.

DIVISION 05

Section 05 51 00 – Metal Stairs and Railings

DIVISION 6 - 31

NOT USED.

DIVISION 32

Section 32 31 13 – Fence and Gates

Division 33 - 42

NOT USED.

CONTRACT DRAWINGS

G100	Cover Sheet
S001	Structural Notes
S100	Roof Access Stair Plans
S301	Roof Access Stair Section
S302	Roof Access Stair Section
S501	Roof Access Stair Details
S502	Roof Access Stair Details

I:\839100\02 Design\05 - Center Building Roof\specs\Roofing Scope\839100 01 01 01 TOC.docx

00 11 13
Notice to Contractors

Center Building: Roof Area B Access Stair Design

BGS#3381

Construction of exterior steel stair for access to Roof Area B at the Center Building.

The contract shall designate the Substantial Completion Date on or before *20 November 2025*, and the Contract Final Completion Date on or before *30 November 2025*.

1. Submit bids on a completed Contractor Bid Form (section 00 41 13), provided in the Bid Documents, include bid security when required, and scan each item as an attachment to an email addressed to: BGS.Architect@Maine.gov, so as to be received no later than **1:30:00 p.m. on 24 July 2025**. The email subject line shall be marked "**Bid for Center Building: Roof Area B Access Stair**".

Bid submissions will be opened and read aloud at **2:00 p.m.** on the date noted above at the Bureau of General Services office, 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. In certain circumstances, the Bureau of General Services may require the Bidder to surrender a valid paper copy of the bid form or the bid security document. The Owner reserves the right to accept or reject any or all bids as may best serve the interest of the Owner.

2. Questions and comments on the *bid opening process* shall be addressed to: Division of Planning, Design & Construction, Bureau of General Services, 77 State House Station, Augusta, Maine 04333-0077, BGS.Architect@Maine.gov.
3. Questions and comments regarding the *project* design specifications or drawings shall be directed in writing to the Consultant during the bid period prior to the question and comment deadline of 5:00 p.m. on *17 July 2025*.

Gale Associates, Inc.
Allison E. O'Neill
aeo@gainc.com

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

00 11 13
Notice to Contractors

5. ☒ Performance and Payment Bonds are required on this project.
If noted above as required, or if any combination of Base Bid and Alternate Bids amounts selected in the award of the contract exceeds \$125,000.00, the selected Contractor shall furnish a 100% contract Performance Bond (section 00 61 13.13) and a 100% contract Payment Bond (section 00 61 13.16) in the contract amount to cover the execution of the Work. Bond forms are available on the BGS website.
or
☐ Performance and Payment Bonds are not required on this project.
6. Filed Sub-bids *are not required* on this project.
7. ☐ Pre-qualified General Contractors are utilized on this project.
insert the company name, city and state for each
or
☒ Pre-qualified General Contractors are not utilized on this project.
8. ☒ An on-site pre-bid conference (☒ *mandatory* or ☐ *optional*) will be conducted for this project. The pre-bid conference is intended for General Contractors. Subcontractors and suppliers are welcome to attend. Contractors who arrive late or leave early for a mandatory meeting may be prohibited from participating in this meeting and bidding.
10:00 A.M. Thursday, July 10, 2025
25 Tyson Drive, Augusta, ME

or
☐ An on-site pre-bid conference will not be conducted for this project.
9. Bid Documents - full sets only - will be available on or about *June 26, 2025* and may be obtained *at no cost* from:
Gale Associates, Inc.
300 Ledgewood Place, Suite 300
Rockland, MA 02370
781-335-6465
aeo@gainc.com
10. Bid Documents may be examined at:
AGC Maine
188 Whitten Road, Augusta, ME 04330
207-622-4741

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

00 11 13
Notice to Contractors

00 21 13
Instructions to Bidders

1. Bidder Requirements

- 1.1 A bidder is a Contractor which is evidently qualified, or has been specifically pre-qualified by the Bureau of General Services, to bid on the proposed project described in the Bid Documents.
- 1.2 Contractors and Subcontractors bidding on projects that utilize Filed Sub-bids shall follow the requirements outlined in these Bid Documents for such projects. See Section 00 22 13 for additional information.
- 1.3 Contractors and Subcontractors are not eligible to bid on the project when their access to project design documents prior to the bid period distribution of documents creates an unfair bidding advantage. Prohibited access includes consultation with the Owner or with design professionals engaged by the Owner regarding cost estimating, constructability review, or project scheduling. This prohibition to bid applies to open, competitive bidding or pre-qualified contractor bidding or Filed Sub-bidding. The Bureau may require additional information to determine if the activities of a Contractor constitute an unfair bidding advantage.
- 1.4 Each bidder is responsible for becoming thoroughly familiar with the Bid Documents prior to submitting a bid. The failure of a bidder to review evident site conditions, to attend available pre-bid conferences, or to receive, examine, or act on addenda to the Bid Documents shall not relieve that bidder from any obligation with respect to their bid or the execution of the work as a Contractor.
- 1.5 Prior to the award of the contract, General Contractor bidders or Filed Sub-bidders may be required to provide documented evidence to the Owner or the Bureau showing compliance with the provisions of this section, their business experience, financial capability, or performance on previous projects.
- 1.6 The selected General Contractor bidder will be required to provide proof of insurance before a contract can be executed.
- 1.7 Contracts developed from this bid shall not be assigned, sublet or transferred without the written consent of the Owner.
- 1.8 By submitting a bid the Contractor attests that it has not been declared ineligible to bid on State of Maine projects. The Director of the Bureau of General Services may disallow award of this contract to any Contractor if there is evidence that the Contractor or any of its Subcontractors, through their own fault, have been terminated, suspended for cause, debarred from bidding, agreed to refrain from bidding as part of a settlement, have defaulted on a contract, or had a contract completed by another party.
- 1.9 The Contractor attests that it is not presently indicted for or otherwise criminally or civilly charged by a Federal, State or local government entity with commission of any of the following offenses and has not within a three-year period preceding this bid been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction, or contract under a public transaction, violation of Federal or State anti-trust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

00 21 13
Instructions to Bidders

- 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.

00 21 13
Instructions to Bidders

- 3.6 Bidders may modify bids in writing, by the same means as the original bid submission, prior to the bid closing time. Such written amendments shall not disclose the amount of the initial bid. If so disclosed, the entire bid is considered invalid.
- 3.7 Bidders implicitly acknowledge all Addenda issued when they submit the bid form. By usual practice the Consultant shall not issue Addenda less than 72 hours prior to the bid closing time, to allow ample time for bidders to incorporate the information. However, some information, such as extending the bid due date and time, may be issued with shorter notice. Addenda shall be issued to all companies who are registered holders of Bid Documents.
- 3.8 A bid may be withdrawn without penalty if a written request by the bidder is presented to the Owner prior to the bid closing time. Such written withdrawal requests are subject to verification as required by the Bureau.
- A bid may be withdrawn without penalty after the bid closing time if, in the determination of the Bureau, evidence provided by the Contractor shows an apparent unintended error such as a miscalculation, or an erroneous number on estimating documents, was the cause of an inaccurate bid. The Bureau may allow withdrawal in consideration of the bid bond or, without utilizing a bid bond, if the Bureau considers documented evidence provided by the Contractor shows factual errors had been made on the bid form.
- 3.9 In the event State of Maine Offices unexpectedly close on the published date of a public bid opening in the location of that bid opening, prior to the time of the scheduled deadline, the new deadline for the public bid opening will be the following business day at the originally scheduled hour of the day, at the original location. Official closings are posted on the State of Maine government website.
- 3.10 The Owner may require, in a Notice of Intent to Award letter to the apparent low bidder, a Schedule of Values, Project Schedule, and List of Subcontractors and Suppliers as both a demonstration of capability of the Bidder and as a condition of award.
- 3.11 Projects which require a State of Maine wage determination will include that schedule as part of the Bid Documents. See section 00 73 46, if such rates are required.
- 3.12 Projects which require compliance with the Davis-Bacon Act are subject to the regulations contained the Code for Federal Regulations and the federal wage determination which is made a part of the Bid Documents. See section 00 73 46, if such rates are required.
- 3.13 The Owner is exempt from the payment of Maine State sales and use taxes as provided in 36 M.R.S. §1760 (1). The Contractor and Subcontractors shall not include taxes on exempt items in the construction contract.

00 41 13
Contractor Bid Form

Center Building: Roof Area B Access Stair Design

BGS#3381

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

Bid Administrator:

Desiree Snow

Desiree.Snow@maine.gov

Bureau of General Services

111 Sewall Street, Cross State Office Building, 4th Floor

77 State House Station

Augusta, Maine 04333-0077

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 Center Building: Roof Area B Access Stair Design Project Manual dated June 16, 2025, 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

Not Used

\$ 0.00

3. Alternate Bids *are not included* on this project.

No Alternate Bids

Any dollar amount line below that is left blank by the Bidder shall be read as a bid of **\$0.00**.

1 Not Used

\$ _____ .00

2 Not Used

\$ _____ .00

3 Not Used

\$ _____ .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.

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.

State of Maine CONSTRUCTION CONTRACT

Large Construction Project

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

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

BGS Project No.: number assigned by BGS

Other Project No.: _____

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

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

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

ARTICLE 1 COMPENSATION AND PAYMENTS

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

Base Bid	<u>\$0.00</u>
<u>Alternate Bid number and name or "no Alternates"</u>	<u>\$0.00</u>
<u>Alternate Bid number and name or "no Alternates"</u>	<u>\$0.00</u>
<u>Alternate Bid number and name or "no Alternates"</u>	<u>\$0.00</u>
<u>Alternate Bid number and name or "no Alternates"</u>	<u>\$0.00</u>
<u>Alternate Bid number and name or "no Alternates"</u>	<u>\$0.00</u>
Total Contract Amount	<u>\$0.00</u>

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

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

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

ARTICLE 2 COMMENCEMENT AND COMPLETION DATES

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

2.2 The Substantial Completion Date shall be _____.

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

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

ARTICLE 3 INELIGIBLE BIDDER

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

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

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

ARTICLE 4 CONTRACTOR'S RESPONSIBILITIES

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

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

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

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

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

ARTICLE 5 OWNER'S RESPONSIBILITIES

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

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

ARTICLE 6 INSTRUMENTS OF SERVICE

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

ARTICLE 7 MISCELLANEOUS PROVISIONS

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

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

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

ARTICLE 8 CONTRACT DOCUMENTS

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

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

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

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

BGS Project No.: _____

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

OWNER**CONTRACTOR**

Signature *Date*
name and title
name of contracting entity
address
telephone
email address

Signature *Date*
name and title
name of contractor company
address
telephone
email address
Vendor Number

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

select proper approval authority			
Reviewed by:		Approved by:	
<hr/> <i>Signature</i>	<hr/> <i>Date</i>	<hr/> <i>Signature</i>	<hr/> <i>Date</i>
<i>insert name</i>			
<i>Project Manager/ Contract Administrator</i>		<i>Director, Planning, Design & Construction</i>	

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.

00 61 13.13
Contractor Performance Bond

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

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

Contractor

(Signature)

insert name and title

insert company name

insert address

insert city state zip code

Surety

(Signature)

insert name and title

insert company name

insert address

insert city state zip code

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

00 61 13.16
Contractor Payment Bond

Bond No.: insert bond number

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

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

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

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

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.

State of Maine
CONSTRUCTION CONTRACT
Application for Payment

Project name

location / school / campus

Application Number: **1****Contractor Company name**

address

city state zip code

Period Start Date:

Period End Date:

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 this 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

State of Maine
CONSTRUCTION CONTRACT
Application for Payment - Continuation Sheet

Application Number: **1**

Period Start Date:

Period End Date:

BGS Project No.: n

Other Project No.: X

Project name

Contractor Company name

page 1

of 2

[illegible]

	Total	\$0	\$0	\$0	\$0	\$0	0.0%	\$0	\$0
--	-------	-----	-----	-----	-----	-----	------	-----	-----

State of Maine
CONSTRUCTION CONTRACT
Construction Change Directive

Project name
 location / school / campus

C. C. D. Number: **1**
 CP (Change Proposal) Number **1**
 Issue Date of this Document:

Contractor Company name
 address
 city state zip code

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

CCD Item	Type name of CCD item here		
Description of Work	Type brief description here of work scope here.		
Reason or Necessity of Work	Type brief justification for change here.		
Method of Compensation	Select from drop down box...	Projected Total Cost	\$0
Supporting Documentation	is attached	Projected Calendar Days*	0

* Calendar Days refers to Contract Final Completion Date only.

Fully describe the scope of work of the CCD item in the table above and on attached drawings and specifications as necessary.

Indicate the reason for the work, and the estimated schedule and cost impacts.

This CCD records the order to do the work. The documented actual final time and cost changes are subject to approval in a subsequent Change Order process.

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

State of Maine
CONSTRUCTION CONTRACT
Change Order

Project name
 location / school / campus

Change Order Number: **1**

Contractor Company name
 address
 city state zip code

Issue Date of this Document:

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			
Revised Contract Final Completion Date*			

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.

** **Contract Final Completion Date** : the Contractor's final completion deadline for contract work.*

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.

List of Change Order Items

Project name

C. O. Number: 1

Contractor Company name

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
				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.

Details of Change Order Item

Project name

location / school / campus

Change Order Item Number

1

CP (Change Proposal) Number

1

Issue Date of this Document:

Contractor Company name

address

BGS Project No.:

n

city state zip code

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
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.

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.

00 71 00
Definitions

- 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*.

00 71 00
Definitions

- 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

00 71 00
Definitions

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;

00 71 00
Definitions

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.

00 71 00
Definitions

- 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.

00 72 13
General Conditions

Table of Contents of this General Conditions Section

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

00 72 13
General Conditions

1. Preconstruction Conference

- 1.1 The Contractor shall, upon acceptance of a contract and prior to commencing work, schedule a preconstruction conference with the Owner and 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.

00 72 13
General Conditions

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).

00 72 13
General Conditions

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

00 72 13
General Conditions

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

00 72 13
General Conditions

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
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- 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

00 72 13
General Conditions

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.

00 72 13
General Conditions

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

00 72 13
General Conditions

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.

00 72 13
General Conditions

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.

00 72 13
General Conditions

- 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.

00 72 13
General Conditions

- 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.

00 72 13
General Conditions

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.

00 72 13
General Conditions

- 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

00 72 13
General Conditions

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.

00 72 13
General Conditions

- 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,

00 72 13
General Conditions

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

00 72 13
General Conditions

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

00 72 13
General Conditions

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.

00 72 13
General Conditions

- 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.

00 72 13
General Conditions

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.

00 72 13
General Conditions

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.

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.

2024 Fair Minimum Wage Rates -- Building 2 Kennebec County (other than 1 or 2 family homes)

Occupational Title	Minimum Wage	Minimum Benefit	Total
Brickmasons And Blockmasons	\$42.55	\$28.02	\$70.57
Bulldozer Operator	\$31.50	\$7.53	\$39.03
Carpenter	\$29.68	\$12.51	\$42.19
Cement Masons And Concrete Finisher	\$24.13	\$4.15	\$28.28
Commercial Divers	\$30.00	\$4.62	\$34.62
Construction And Maintenance Painters	\$24.00	\$0.00	\$24.00
Construction Laborer	\$22.67	\$2.80	\$25.47
Crane And Tower Operators	\$38.50	\$10.43	\$48.93
Crushing Grinding And Polishing Machine Operators	\$23.00	\$4.94	\$27.94
Drywall And Ceiling Tile Installers	\$26.20	\$10.62	\$36.82
Earth Drillers - Except Oil And Gas	\$21.61	\$5.53	\$27.14
Electrical Power - Line Installer And Repairers	\$38.93	\$8.91	\$47.84
Electricians	\$38.51	\$6.00	\$44.51
Elevator Installers And Repairers	\$68.38	\$45.29	\$113.67
Excavating And Loading Machine And Dragline Operators	\$54.28	\$34.31	\$88.59
Excavator Operator	\$28.00	\$1.67	\$29.67
Fence Erectors	\$26.75	\$4.05	\$30.80
Flaggers	\$20.00	\$0.38	\$20.38
Floor Layers - Except Carpet/Wood/Hard Tiles	\$27.25	\$6.59	\$33.84
Glaziers	\$37.00	\$6.60	\$43.60
Grader/Scraper Operator	\$23.00	\$1.99	\$24.99
Hazardous Materials Removal Workers	\$21.00	\$1.99	\$22.99
Heating And Air Conditioning And Refrigeration Mechanics And Installers	\$32.00	\$5.60	\$37.60
Heavy And Tractor - Trailer Truck Drivers	\$22.75	\$1.04	\$23.79
Highway Maintenance Workers	\$20.00	\$0.00	\$20.00
Industrial Machinery Mechanics	\$31.25	\$1.01	\$32.26
Industrial Truck And Tractor Operators	\$29.25	\$4.06	\$33.31
Insulation Worker - Mechanical	\$23.00	\$3.59	\$26.59
Ironworker - Ornamental	\$30.83	\$24.97	\$55.80
Light Truck Or Delivery Services Drivers	\$23.34	\$1.67	\$25.01
Millwrights	\$33.75	\$8.78	\$42.53
Mobile Heavy Equipment Mechanics - Except Engines	\$27.75	\$4.89	\$32.64
Operating Engineers And Other Equipment Operators	\$24.00	\$2.38	\$26.38
Paver Operator	\$27.03	\$6.49	\$33.52
Pile-Driver Operators	\$32.75	\$1.95	\$34.70
Pipelayers	\$28.50	\$4.89	\$33.39
Plumbers Pipe Fitters And Steamfitters	\$29.50	\$5.48	\$34.98
Pump Operators - Except Wellhead Pumpers	\$31.49	\$32.08	\$63.57
Radio Cellular And Tower Equipment Installers	\$26.00	\$3.77	\$29.77
Reclaimer Operator	\$27.03	\$7.68	\$34.71
Reinforcing Iron And Rebar Workers	\$30.83	\$24.97	\$55.80
Riggers	\$29.25	\$7.79	\$37.04
Roofers	\$23.75	\$3.11	\$26.86
Screed/Wheelman	\$29.25	\$4.94	\$34.19
Sheet Metal Workers	\$25.00	\$5.35	\$30.35
Structural Iron And Steel Workers	\$30.08	\$7.61	\$37.69
Tapers	\$32.63	\$0.00	\$32.63
Telecommunications Equipment Installers And Repairers - Except Line Installers	\$28.00	\$6.35	\$34.35
Telecommunications Line Installers And Repairers	\$31.03	\$18.73	\$49.76
Tile And Marble Setters	\$27.75	\$6.73	\$34.48

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

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

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

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

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

A true copy

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

00 73 46
Wage Determination Schedule

PART 1- GENERAL

1.1 Related Documents

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

1.2 Summary

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

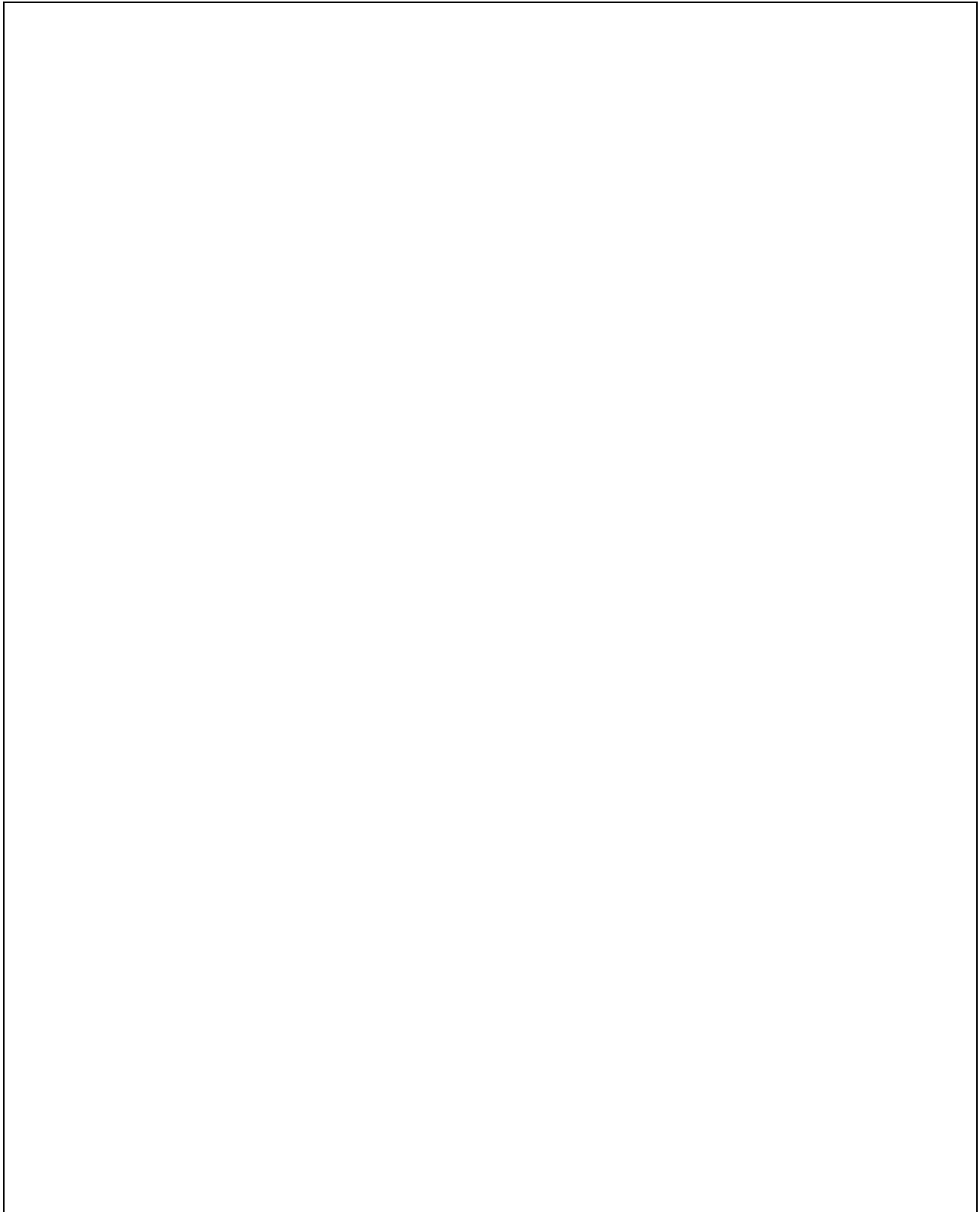
1.3 Requirements

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

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION (not used)

00 73 46
Wage Determination Schedule



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. This building is listed on the National Register of Historic Places. The contractor is to install the roof access stairs and related accessory construction in accordance with the Contract Documents. Any deviations from the Contract Documents are to be reviewed with the Owner and Engineer.
- B. The building is currently partially abandoned and vacant with most utilities removed, capped or shut down. Refer to Temporary Facilities – Section 01 50 00 for additional information.
- C. The building is monitored by security and requires key card access. The contractors' employees and sub-contractors require access must apply for a access card which will require a background check.
- D. 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.
- E. 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.
- F. 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.
- G. Complete all associated work in accordance with the project specifications and Contract Drawings. Coordinate the work with the Owner.
- H. The Contractor shall provide all lifts, cranes, and equipment necessary to access and perform the work.
- I. Install exterior Roof Area B access stair, fence, and associated components, as indicated in the Contract Documents.

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

1.2 PROJECT CONDITIONS

- A. Contractor to coordinate and strictly follow the Owner's requirements for construction, including mockup installation, interior access and protection requirements. Contractor to obtain a copy from the Owner.
- B. 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.
- C. Provide walk through overhead protection where work areas are above doors, walkways, or sidewalks in accordance with OSHA.
- D. The Contractor shall comply with all requirements of the Owner regarding temporary protection, staging and use of the site.
- E. 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.
- F. 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.
- G. 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.
- H. 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.
- I. 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.
- J. 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.

- K. 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.
- L. 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.
- M. 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.
- N. 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.
- O. The Contractor shall notify the Owner a minimum of seventy-two hours (72 hrs.) in advance of doing any interior work so that the Owner may provide entry into the required areas.
- P. 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.
- Q. 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.
- R. 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.
- S. 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.
- T. 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.
- U. The Contractor shall cooperate, coordinate, and work in harmony with all Contractors working at the site during the course of work hereunder.

- V. 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.

1.3 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.

1.4 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.

1.5 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.

1.6 EMERGENCY RESPONSE

- A. The Contractor shall provide the Owner with after-hours (twenty-four hour [24 hr.]), emergency telephone numbers of the Contractor's Superintendent and Foreman.
- B. The Contractor must respond to emergency situations or calls within two hours (2 hrs.).

1.7 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 | October 20, 2025 |
| 2. Substantial Completion | November 20, 2025 |
| 3. Final Completion | November 30, 2025 |
- 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 hours (72 hrs.) 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.

1.8 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.

1.9 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 the State of Maine Construction Contract Application for Payment Continuation Sheet to prepare and submit the Schedule of Values.
- C. Schedule of Values to include all unit costs and allowances within the final construction amount.

1.10 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 hours (24 hrs.) 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.

1.11 PROGRESS MEETINGS

- A. 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.

1.12 MATERIAL SAFETY DATA SHEETS

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

1.13 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 years (2 yrs.) 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-year (2-yr.) subcontractor warranties shall be provided.

1.14 INDEMNIFICATION AND WAIVER OF LIENS

- A. 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.

1.15 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 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 the project.
- C. 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.

1.16 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.

1.17 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.

1.18 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.

1.19 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 hours (72 hrs.) 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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SHOP DRAWINGS AND SUBMITTALS

SECTION 01 33 00

PART 1 – GENERAL

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. Scaffolding plans.
 - 5. Complete Materials List.
 - 6. Manufacturer's Technical Literature as selected.
 - 7. Manufacturer's Instructions.
 - 8. Catalog Data ("SPEC-DATA" Sheets).
 - 9. Material Safety Data Sheets (MDS).
 - 10. Safety Data Sheets (SDS).
 - 11. Samples of materials of construction.

12. Certificates as approved Applicator by Manufacturer.
 13. List of proposed storage facilities and their location(s).
 14. Proposed location(s) of dumpsters.
 15. Schedule of Values.
 16. Emergency Response Contacts.
 17. Disposal Plan and Methods of removal of materials.
 18. Temporary protection procedures.
 19. 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 hours (10 hrs.) in duration at the time the employee begins work.

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.

SHOP DRAWINGS AND SUBMITTALS

- 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

- A. 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 (2-½" W x 4" H) 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 months (3 mo.) 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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Roof Area B Access Stair Design
at the Center Building
67 Independence Drive
Augusta, ME
Gale JN 839100

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TEMPORARY FACILITIES

SECTION 01 50 00

PART 1 - GENERAL

1.1 GENERAL

- A. 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

- A. See Section 01 63 00 – Weather Protection and Materials Storage

1.3 CONTRACTOR'S USE OF EXISTING FACILITIES

- A. 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

- A. 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

- A. 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 building is currently abandoned and vacant. Most utilities have been shut-off, removed, capped or are no longer in service. The Contractor should anticipate providing their own utilities assuming what is there is not working.
- B. 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 hours (48 hrs.) in advance.
- C. 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 hours (48 hrs.) in advance. The Contractor shall provide drinking water.
- D. Contractor shall provide all other utilities required by the work.
- 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 (1) 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 feet (50') from the building or as required by local fire officials.

1.13 ACCESS TO THE WORK

- A. 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. 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

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

1.16 TRAFFIC CONTROL

- A. 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 four feet (4') tall by eight feet (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

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 from moisture in order to prevent the growth of fungus, bacteria, and other biological contaminants. Remove and replace work that has been wet for twenty-four hours (24 hrs.) 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 feet (100') 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 hours (4 hrs.) 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 feet (50') 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 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

- A. 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, caulking 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.

Roof Area B Access Stair Design
at the Center Building
67 Independence Drive
Augusta, ME
Gale JN 839100

PART 2 – PRODUCTS

NOT USED.

PART 3 – EXECUTION

NOT USED.

END OF SECTION

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PROJECT CLOSEOUT

SECTION 01 70 00

PART 1 - GENERAL

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

- A. 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 (1) 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

- A. 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-year (2-yr.) guarantee.

Roof Area B Access Stair Design
at the Center Building
67 Independence Drive
Augusta, ME
Gale JN 839100

3. Executed Punch List Inspection letter(s).
4. Consent of Surety Company to Final Payment (AIA Form G707).
5. Lien Releases from Contractor, subcontractor and suppliers (AIA Forms G706, G706A).
6. Contractor's Affidavit of Payment of Debts and Claims.
7. Final Application and Certificate for Payment.
8. Completed waste shipment records and dumping manifests.
9. As Built Drawings.
10. 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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at the Center Building
67 Independence Drive
Augusta, ME
Gale JN 839100

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CONCRETE FORMWORK

SECTION 03 10 00

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS (PCR), which are hereby made a part of this Section of the Specifications.

1.2 RELATED WORK

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
 - 1. Section 03 20 00 – Concrete Reinforcement
 - 2. Section 03 30 00 – Cast-In-Place Concrete
 - 3. Section 05 51 00 – Metal Stairs and Railings
 - 4. Section 32 31 13 – Fence and Gates

1.3 WORK INCLUDED

- A. 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. Furnish, erect, and remove after use, all concrete formwork and accessories, as required for cast-in-place concrete work.

1.4 REFERENCES

- A. Comply with applicable requirements of the following standards (current edition). Where these standards conflict with other requirements, the most restrictive requirements shall govern.
 - 1. AMERICAN CONCRETE INSTITUTE (ACI)
 - 2. ACI 301 Specifications for Structural Concrete
 - 3. ACI 318/318R Building Code Requirements for Structural Concrete and Commentary
 - 4. ACI 347R Guide to Formwork for Concrete
 - 5. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

6. ASTM C578 Rigid, Cellular Polystyrene Thermal Insulation
7. AMERICAN HARDBOARD ASSOCIATION (AHA)
8. AHA A135.4 Basic Hardboard
9. DEPARTMENT OF COMMERCE (DOC)
10. DOC PS 1 Construction and Industrial Plywood
11. Maine Uniform Building and Energy Code

1.5 SUBMITTALS

- A. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:
1. Data: Design analysis and calculations for form design and methodology used in the design.
 2. Manufacturer's data, including literature describing form materials, accessories, and form releasing agents.
 3. Drawings: Drawings showing details of formwork including, joints, supports, studding and shoring and the sequence of form and shoring removal.
 4. Instructions: Manufacturer's recommendation on method and rate of application of form releasing agents.

1.6 DESIGN

- A. Formwork shall be designed in accordance with methodology of ACI 347R for anticipated loads, lateral pressures and stresses.
- B. Forms shall be capable of producing a surface which meets the requirements of the class of finish specified in Section 03 30 00 CAST-IN-PLACE CONCRETE.
- C. Forms shall be capable of withstanding the pressures resulting from the placement and vibration of concrete, in addition to applicable and anticipated construction loads.

1.7 QUALITY CONTROL

- A. Unless otherwise specified herein, or indicated on the drawings, concrete formwork construction and materials shall conform to ACI 301, 318, and 347, and the following tolerances:

TABLE 1: TOLERANCES FOR FORMED SURFACES			
1.	Variations from the plumb.	In any 10 feet of length.	¼ inch

a.	In the lines and surfaces of piers, walls.	Maximum for entire length and in arises.	1 inch
2.	Variation from the level or from the grades indicated on the drawings.	In any 10 feet of length. In any bay or in any 20 feet of length.	$\frac{1}{4}$ inch $\frac{3}{8}$ inch
3.	Variation in the thickness of slabs and walls.	Minus. Plus.	$\frac{1}{4}$ inch $\frac{1}{2}$ inch
4.	Footings.		
a.	Variation of dimensions in plan. When formed: When placed against unformed excavation:	Minus. Plus. Plus.	$\frac{1}{2}$ inch 2 inches 3 inches
b.	Misplacement of the eccentricity.	2 percent of the footing width in direction of misplacement. But not more than	2 inches
c.	Reduction in thickness.	Minus.	5 percent of specified thickness

- B. The maximum deflection of form facing materials at concrete surfaces exposed to view shall be $L/240$ of span.

PART 2 - PRODUCTS

2.1 FORM MATERIALS

- A. Forms for Class A and Class B finished surfaces shall be plywood panels conforming to DOC PS 1, Grade B-B concrete form panels, Class I or II. Other form materials or liners may be used, provided the smoothness and appearance of the concrete produced will be equivalent to that produced by the plywood concrete form panels.
- B. Forms for Class C finished surfaces shall be shiplap lumber; plywood conforming to DOC PS 1, Grade B-B concrete form panels, Class I or II; tempered concrete form hardboard, conforming to AHA A135.4; other approved concrete form material; or steel, except that steel lining on wood sheathing shall not be used.
- C. Forms for Class D finished surfaces, except where concrete is placed against earth, shall be wood or steel or other approved concrete form material.

- D. Form ties shall be factory-fabricated metal ties, shall be of the removable or internal disconnecting or snap-off type, and shall be of a design that will not permit form deflection and will not spall concrete upon removal. Solid backing shall be provided for each tie. Except where removable tie rods are used, ties shall not leave holes in the concrete surface less than ¼ inch, nor more than 1 inch deep and not more than 1 inch in diameter. Removable tie rods shall not be more than 1-½ inches in diameter.
- E. Form releasing agents shall be commercial formulations that will not bond with, stain or adversely affect concrete surfaces. Agents shall not impair subsequent treatment of concrete surfaces, depending upon bond or adhesion, nor impede the wetting of surfaces to be cured with water or curing compounds.
- F. Form release agents shall be fully compatible with project specified foundation waterproofing, damp-proofing, vapor barriers and sealants.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Forms shall be mortar tight, properly aligned, and adequately supported to produce concrete surfaces meeting the surface requirements specified in Section 03 3000 CAST-IN-PLACE CONCRETE. Forms shall conform to construction tolerances given in TABLE 1, "Tolerances for Formed Surfaces", of this Section, Part 1.
- B. Where concrete surfaces are to have a Class A or Class B finish, joints in form panels shall be arranged as approved. Where forms for continuous surfaces are placed in successive units, care shall be taken to fit the forms over the completed surface so as to obtain accurate alignment of the surface and to prevent leakage of mortar.
- C. Forms shall not be reused if there is any evidence of surface wear and tear, or defects which would impair the quality of the surface. Surfaces of forms to be reused shall be cleaned of mortar from previous concreting and of all other foreign material before reuse.
- D. Form ties that are to be completely withdrawn shall be coated with a non-staining bond breaker.
- E. Formwork and form ties shall not be placed in a location or manner which would cause interference with or impede the performance of reinforcing, embedded items or water stops.

3.2 CHAMFERING

- A. Except as otherwise shown, external corners that will be exposed shall be chamfered, beveled or rounded by moldings placed in the forms.

3.3 COATING

- A. Forms for Class A and Class B finished surfaces shall be coated with a form releasing agent before the form or reinforcement is placed in final position. The coating shall be used as recommended in the manufacturer's printed or written instructions.
- B. Forms for Class C and D finished surfaces may be wet with water, in lieu of coating immediately, before placing concrete; except that in cold weather with probable freezing temperatures, coating shall be mandatory.
- C. Surplus coating on form surfaces and coating on reinforcing steel and construction joints shall be completely removed before placing concrete. Insofar as practical, form release agents shall be applied to form surfaces prior to placing the forms into position.

3.4 REMOVAL OF FORMS

- A. Forms shall be removed in a manner that will prevent damage to the concrete and will ensure the complete safety of the structure. Formwork for footings, walls and other parts not supporting the weight of concrete may be removed when the concrete has attained sufficient strength to resist damage from the removal operation, but not before at least 24 hours has elapsed since concrete placement.
- B. Supporting forms and shores shall not be removed from walls until the structural units are strong enough to carry their own weight and any other construction or natural loads.
- C. In no case will supporting forms or shores be removed before the concrete strength has reached 70 percent of design strengths, as determined by field cured cylinders or other approved methods. This strength shall be demonstrated by job-cured test specimens and by a structural analysis, considering the proposed loads in relation to these test strengths and the strength of the forming and shoring system.
- D. The job-cured test specimens for form removal purposes shall be provided in numbers as directed and shall be in addition to those required for concrete quality control. The specimens shall be removed from molds at the age of 24 hours and shall receive, insofar as possible, the same curing and protection as the structures they represent.

END OF SECTION

Roof Area B Access Stair Design
at the Center Building
67 Independence Drive
Augusta, ME
Gale JN 839100

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CONCRETE REINFORCEMENT

SECTION 03 20 00

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 00 – PROCUREMENT AND CONTRACT REQUIREMENTS, which are hereby made a part of this Section of the Specifications.

1.2 RELATED WORK

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
1. Section 03 10 00 – Concrete Formwork
 2. Section 03 30 00 – Cast-in-Place Concrete
 3. Section 05 51 00 – Metal Stairs and Railings
 4. Section 32 31 13 – Fence and Gates

1.3 WORK INCLUDED

- 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. Furnish and install reinforcing bars, tie wires and supports, as required.
 2. Furnish and install welded wire fabric, as required.
 3. All reinforcing must be grounded in accordance with the National Electric Code and Maine Uniform Building and Energy Code. Coordinate with electrical engineer and contractor.
 4. Clean all areas affected by the work.

1.4 REFERENCES

- A. Comply with applicable requirements of the following standards (latest edition). Where these standards conflict with other requirements, the most restrictive requirements shall govern.
1. American Concrete Institute Standards (ACI), Latest Edition.

- a. 117- Specifications for Tolerances for Concrete Construction and Materials and Commentary
- b. 301- Specifications for Structural Concrete
- c. 318 - Building Code Requirements for Structural Concrete
- d. 315 - Details and Detailing of Concrete Reinforcement.
- e. 315R Manual of Engineering and Placing Drawings for Reinforced Concrete Structures
- 2. American Society for Testing and Materials (ASTM)
 - a. A615 Deformed and Plain Billet Steel Bars for Concrete Reinforcement
- 3. Concrete Reinforcing Steel Institute (CRSI)
 - a. Manual of Standard Practice, Latest Edition
 - b. Placing Reinforcing Bars, Latest Edition

1.5 SUBMITTALS

- A. The following shall be submitted in accordance with Section 01 3300 SUBMITTAL REQUIREMENTS:
- B. Shop Drawings:
 - 1. Show sizes and dimensions for fabrication and placing of reinforcing steel and bar supports. Indicate bar schedules, stirrup spacing and diagrams of bent bars, including all accessories.
 - 2. Reinforcement in foundation walls, piers and footings shall be shown in elevation of at least $\frac{1}{4}" = 1'-0"$.
 - 3. Detail reinforcing in accordance with ACI 215.
- C. Certificates:
 - 1. Mill test certificates; identifying the chemical and physical analysis of each load of reinforcing steel delivered.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver reinforcement to project site, in bundles, marked with metal tags indicating bar size and length.
- B. Handle and store materials to prevent contamination and contact with the ground. Store reinforcing steel under cover and protect from rusting, oil, grease and/or distortion.
- C. Remove from storage only those materials needed for immediate use.

1.7 QUALITY CONTROL

- A. Reinforcing steel shall be fabricated to conform to the required shapes, dimensions and tolerances specified in the CRSI Manual.

B. Allowable Tolerances:

1. Fabrication Tolerances: Sheared Length: Plus or minus 1 inch for bends. Stirrups, ties, and spirals: Plus or minus ½ inch.
2. Placement Tolerances:
 - a. When member depth (or thickness) is 4 in. or less: Plus or minus ¼ in.
 - b. When member depth (or thickness) is over 4 in. and not over 12 in.: Plus or minus 3/8 in.
 - c. When member depth (or thickness) is over 12 in.: Plus or minus ½ in.
3. Minimum spacing between bars: The greater of the bar diameter or 1 in. for unbundled bars.
4. Top bars in slabs and beams: Members 8 inches deep or less: Plus or minus ¼ in.; Members between 8 inches and 2 feet: Plus or minus ½ inch; Members 2 feet deep or greater: Plus or minus 1 inch.
5. Crosswise of members: Spaced evenly within 2 inches.
6. Lengthwise of members: Plus or minus 1 inch.
7. Maximum bar movement, to avoid interference with other reinforcing steel, conduits or embedded items: 2 bar diameters.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Reinforcing Bars; Ties and Stirrups:

1. Deformed billet steel: ASTM A615, Grade 60.
2. Bend test: Meet 90° bend test at 60° F minimum temperature, around a 10 bar diameter bend, without cracking.

B. Welded Wire Mesh:

1. Size per plans, conform to ASTM A884, Epoxy Coated.
2. All welded wire mesh to be provided in flat sheets.
3. All supplied welded wire mesh shall meet the current test criteria from the following four (4) ASTM Standards: A82, A496, A185 and A497.

C. Tie Wire:

1. Annealed Steel - Federal Specification QQ-W-461, 16 gage minimum.

D. Bar Supports; Accessories:

1. Conform to "Bar Support Specifications", CRSI Manual of Standard
2. Practice, Class B – Pre-galvanized Cold-Drawn Wire.
3. All necessary spacers, ties, chains, bolsters and other devices required to properly support and fasten reinforcing shall be galvanized or plastic, in accordance with ACI 315. Legs or other parts in contact with forms of exposed surfaces shall be plastic coated.

2.2 FABRICATION

- A. In accordance with CRSI Manual of Standard Practice.
- B. Fabricate and mark reinforcing bars, in accordance with ACI 315 and ACI 318.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Remove all mud, oil, loose rust or mill scale and other foreign materials that may reduce bond prior to placing concrete. "Tight" rust or mill scale will be permissible without cleaning or brushing, provided weights and dimensions are not less than the minimum required by referenced specifications.
- B. Form oils shall be placed prior to erecting around reinforcement; or, if applied in the vicinity of reinforcement, adequate masking shall be temporarily placed to avoid coating the reinforcing steel with form release agents.
- C. All bars shall be cold bent to the required shapes before they are placed in the forms. Reinforcement shall not be straightened or re-bent in a manner that will injure, damage or weaken the material.
- D. Bars with kinks or bends not required shall not be used.

3.2 INSTALLATION

- A. Reinforcing Bar Placement:
 - 1. Conform to CRSI-WCRSI, "Placing Reinforcing Steel".
 - 2. Position bars in accordance with above tolerances and secure in place.
 - 3. All rods shall be securely wired together at all intersections.
 - 4. Where continuous bars are called for, they shall be run continuously around corners and lapped at necessary splices or booked at discontinuous ends. Laps shall be forty (40) bar diameters, unless otherwise shown.
- B. Notify the Engineer for inspection of the completed installation of reinforcement at least forty-eight (48) hours prior to the scheduled placement of concrete
- C. Welded Wire Mesh Placement:
 - 1. Install in lengths as long as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.
 - 2. Mesh shall be wired or clipped together at laps, at intervals not to exceed 4 feet. Mesh shall be positioned by the use of appropriate supports suitable for application.

3. Welded wire mesh must be adequately supported and placed 2" below the top surface of the slab. Mesh shall lap 6" minimum, or one space, whichever is larger.
 4. Maximum space between chair supports for mesh shall be 18" in each direction.
- D. Bar Supports:
1. Provide minimum number of supports, as required by ACI 315.
 2. Do not use pebbles, pieces of broken stone, brick, concrete, metal pipe or wood blocks to support reinforcement. Do not use bar supports as support for runways for concrete buggies or similar loads. Do not place bars more than 2 inches beyond the last leg at the end of a run of continuous supports.
 3. All reinforcement shall be securely held in place with approved supporting, spacing and tying devices. Concrete supports require the Engineer's approval.
 4. Maximum space between bar supports shall be 24" in each direction.
- E. Concrete Cover:
1. Except as otherwise indicated on the construction drawings; provide the minimum clearance for concrete cover, in accordance with ACI 318.
- F. Reinforcing Adjustment:
1. Move only within allowable tolerances to avoid interference with other reinforcing steel, conduits or embedded items. Do not move bars beyond allowable tolerance without approval of the Engineer.
 2. Do not heat, bend or cut bars without the approval of the Engineer.
- G. Splices:
1. Do not splice bars, except at locations on the details, without the approval of the Engineer.
 2. Minimum lap distance is as shown on the details and as specified in ACI 318. Tie splices securely with wire to prevent displacement during the placing of concrete.

END OF SECTION

Roof Area B Access Stair Design
at the Center Building
67 Independence Drive
Augusta, ME
Gale JN 839100

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CAST-IN-PLACE CONCRETE

SECTION 03 30 00

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS (PCR), which are hereby made a part of this Section of the Specifications.

1.2 RELATED REQUIREMENTS

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
1. Section 03 10 00 – Concrete Formwork
 2. Section 03 20 00 – Concrete Reinforcement
 3. Section 05 51 00 – Metal Stair and Railings
 4. Section 32 31 13 – Fence and Gates

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 includes cast-in-place concrete as shown on the contract documents.
- B. Clean all areas affected by the work to the satisfaction of the Owner.

1.4 JOB CONDITIONS

- A. The Contractor shall provide all protection, barriers, and guards necessary to segregate his work area and the areas below, from pedestrian and vehicular traffic. Also protect existing buildings, landscaping and paved areas from damage.
- B. The Contractor shall be responsible for securing and protecting his/her equipment, materials and tools (as well as partially completed construction) from wind blow-off and vandalism or abuse.

- C. Environmental Requirements: Do not place concrete during rain, sleet or snow unless adequate protection is provided and the Engineer's approval is obtained. Do not allow rainwater to increase the mixing water or damage the surface finish.

D. Cold Weather Concreting:

1. Conform to ACI 306 latest edition, "Recommended Practice for Cold Weather Concreting."
2. Temperature of concrete when placed shall not be less than the following:

Minimum Concrete Temperature °F
Sections with Least Dimension

Air Temp (°F)	Under 12"	12" and Over
30 to 45	60	50
0 to 30	65	55
Below 0	70	60

3. When placed, heated concrete shall not be warmer than 80° F.
4. Prior to placing concrete, all ice, snow, and surface and subsurface frost shall be removed, and the temperature of the surfaces to be in contact with the new concrete shall be raised to the temperature specified above for placing.
5. Protect the concrete from freezing for four (4) days after placement.
6. Heated enclosures shall be strong and windproof to ensure adequate protection of corners, edges and thin sections. Do not permit heating units to locally heat or dry the concrete. Do not use combustion heaters during the first 24 hours unless the concrete is protected from exposure to exhaust gases which contain carbon dioxide.
7. When air temperature gets below 25 degrees F, two (2) additional ASTM C39 cylinders shall be made and located at the site in a location and under conditions which will match the placement that they represent. After seven (7) days of site conditions, the cylinders shall be placed in a steam room for twenty-one (21) days.

E. Hot Weather Concreting:

1. Conform to ACI 305 latest edition, "Recommended Practice for Hot Weather Concreting." Take precautions when the ambient air temperature is 90° or above. Temperature of the concrete when placed shall not exceed 80° F. Cool forms and reinforcing to a maximum of 90° F by spraying with water prior to placing concrete. Do not use cement that has reached temperatures in excess of 170° F.

- F. Prevent plastic shrinkage cracking due to rapid evaporation of moisture. Do not place concrete when the evaporation rate (actual or anticipated) equals or exceeds 0.20 pounds per square foot per hour, as determined by Figure 2.1.4 of ACI 305.

1. Set-retarding admixtures may be used with Engineer's approval when the ambient air temperature is 90° F or above to off-set the accelerating effects of high temperatures.

1.5 QUALITY ASSURANCE

- A. Reference Standards: Except as modified or supplemented herein, all concrete materials, placing, furnishing, curing and all other appurtenant work shall meet the requirements of the latest edition of the following Standard Specifications. Pertinent portions of the reference standards are included herein. Refer to the standards for detailed requirements.
 - 1. AMERICAN CONCRETE INSTITUTE STANDARDS (ACI)
 - a. 301 - Standard Specifications for Structural Concrete for Buildings.
 - b. 304 - Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete.
 - c. 316 - Building Code Requirements for Reinforced Concrete
- B. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
 - 1. ATMS C109 "Test Method for Compressive Strength of Hydraulic Cement Mortars"

1.6 SUBMITTALS

- A. Refer to Section 01 3300 – Submittal Procedures. Supplement with the following:
- B. Test Reports: Perform and submit test reports for the following products in accordance with above general reference standards and specific standards set forth hereafter.
- C. Proposed Mix Design:
 - 1. Prior to commencing concrete work submit and obtain Engineer's approval of certified test report describing proposed concrete mix design, including:
 - a. Fine Aggregates - Source, type, gradation, deleterious substances and saturated surface dry specific gravity (ASTM C128).
 - b. Coarse Aggregates - Source, type, gradation, deleterious substances and saturated surface dry specific gravity (ASTM C127); soundness (ASTM C88).
 - c. Ratio of fine to total aggregates.
 - d. Weight (surface dry) of each aggregate per cubic yard.
 - e. Total water content (gallons) per cubic yard, water/cementitious materials ratio and proposed source.
 - f. Slump on which design is based, ASTM C143.
 - g. Brand, type and quantity of cement.
 - h. 7-day and 28-day compressive strength results from each of two sets of test cylinders for each proposed mix.
 - i. Air Content, ASTM C231 or ASTM C173.
 - j. Certifications of Chloride Content of admixtures.
 - k. Water soluble chloride ion content of concrete, ASTM G1218.
 - l. Proportions of all ingredients including all admixtures added either at time of batching or at job site.
- D. Cylinder Compression Test Reports:

1. Submit two copies of certified test reports to Engineer indicating results of tests required in Part 3 hereof.
- E. Ready-Mix Delivery Tickets:
1. Submit one copy to the Engineer of ready-mix delivery ticket for each load delivered.
 2. Include identification and quantity of concrete supplied.
 3. Include time loaded and time unloaded.
 4. Reading of revolution counter at times initial water added, supplemental water added, and unloading completed.
 5. Amounts of initial and supplemental water added, and name of individual authorizing supplementing water.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store cement in watertight enclosures and protect against dampness, contamination and warehouse set.
- B. Stock pile aggregates to prevent segregation, or contamination with other materials or other sizes of aggregates. Use only one supply source for each aggregate stockpile.
- C. Store admixtures to prevent contamination, evaporation or damage. Protect liquid admixtures from freezing or harmful temperature ranges. Agitate emulsions prior to use.
- D. Store rubber and plastic materials in a cool place away from direct sunlight.

1.8 INSPECTION AND TESTING

- A. The Contractor agrees to accept as final the results of tests, inspection and reports as may be made by the testing laboratory.
- B. Inspection
 1. During the progress of the work, the General Contractor shall provide free and safe access to the work at all times to the Engineer and the Owner's representative. He/she shall cooperate with the Engineer to obtain proper inspection of all work and shall furnish any required samples of concrete for testing.
- C. Laboratory Inspection and Testing
 1. During the progress of the work, a testing laboratory paid for by the Contractor, contacted and coordinated by the Contractor, and approved by the Engineer, shall conduct necessary field tests and make compensation for any variation in water content of the aggregate; and shall further direct that all batches shall be as nearly uniform as possible by the use of selected materials which are accurately measured, thoroughly mixed, and maintained at a constant water-cement ratio and consistency.
 2. Provide the Owner and Engineer with necessary reports covering all of the above.

3. The payment for laboratory inspection and testing will be the responsibility of the Contractor.
4. Coordination and scheduling of tests by the testing lab shall be the responsibility of the Contractor.
5. Testing required because of changes requested by the Owner in materials, sources of materials, or mix proportions; and extra testing of concrete or materials because of failure to meet the Specification requirements are to be paid for by the Owner.

D. Required Testing During Construction:

The following minimum testing shall be performed, and field/ lab- results submitted to the structural Engineer for approval:

1. Air entrainment at placement – ASTM C231
2. Slump – ASTM C143
3. Compressive strength – ASTM C39

Concrete cylinder samples shall be obtained from each concrete delivery truck for compressive strength testing. Five (5) cylinders shall be made from each sample. Each cylinder shall be standard 6" diameter by 12" tall. One (1) cylinder will be tested at 7-day cure, and three (3) cylinders will be tested at 28-day cure to determine compressive strength of the concrete in accordance with ASTM C39. Air entrainment and slump will be tested at each sample as well. Retain the fifth cylinder sample for potential 56 day compressive testing and/ or petrographic examination. Test results which are determined by the Engineer to be deficient or questionable will require that the contractor pay for additional testing and coring of the in-place concrete, including petrographic examination with report as direct by the Engineer. Concrete determined by the Engineer to remain deficient after final testing shall be entirely removed and replaced at no additional cost.

1.9 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 - PRODUCTS

2.1 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II.
- B. Aggregate: ASTM C 33, uniformly graded, from a single source. Maximum aggregate size = 1 ½" at foundations and ¾" at slabs.

- C. Water: ASTM C 94.
- D. Air-Entraining Admixture: ASTM C 260.
- E. Water-Reducing Admixture: ASTM C 494, Type A.
- F. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.
- G. Water-Reducing and Accelerating Admixture: ASTM C 494, Type E.
- H. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.
- I. Coloring pigment shall be a concentrated pigment specially process for mixing into concrete and conforming to ASTM C979. Provide color chart for Owner review. Provide mixed samples of up to four (4) colors for Owner review.

2.2 CONCRETE PRODUCTION

- A. Concrete Mixes, General - Prepare design mixes, proportioned according to ACI 211.1 and ACI 301-05.

Refer to the Contract Drawings for additional information.

- B. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94 and ASTM C 1116, and furnish batch ticket information.
- C. Concrete shall have a minimum compressive strength of 4000 psi for foundations at 28 days with a slump of no more than 4" and air entrainment of 4 ½ to 7 ½%.
- D. Proportioning: Proportion ingredients to produce a well-graded mix of high density and maximum workability consistent with approved mix design and subject to the characteristics as specified in the Contract Drawings.
- E. Mixing:
 - 1. Central Mixed Concrete - 1 minute for mixer capacities one cubic yard or less plus 15 seconds for each cubic yard or fraction thereof of additional capacity.
 - 2. Truck Mixed Concrete - 100 revolutions after the introduction of all ingredients.
- F. Tempering and Control of Mixing Water:
 - 1. Mix concrete only in quantities for immediate use. Do not use concrete which has stiffened due to initial set or concrete which cannot be discharged within 1-1/2 hours or 300 revolutions of the mixer drum after the introduction of the mixing water.

2. Water may be added to concrete arriving at the site, only if neither the maximum slump nor the maximum water cement ratio is exceeded. Provide additional cement if required by the addition of water to maintain water cement ratio within specified limits. Obtain Engineer's approval prior to adding water or cement.
3. Incorporate any added water or cement by additional mixing equal to half the total mixing required.

2.3 CURING MATERIALS

- A. Impervious-sheet materials shall conform to ASTM C 171, type optional, except that polyethylene sheet shall not be used.
- B. Burlap and cotton mat used for curing shall conform to AASHTO M 182, Class 2.
- C. Topically applied and admix curing compounds and/or agents are not allowed due to project required epoxy floor coating and concrete densifier.

2.4 WATER

- A. Water for mixing and curing shall be fresh, clean, potable, and free of injurious amounts of oil, acid, salt, or alkali, except that non-potable water may be used if it meets the requirements of ASTM C94.

2.5 EMBEDDED ITEMS

- A. Embedded items shall be of the size and type indicated or as needed for the application.
- B. All other embedded items shall also be securely anchored, and protected from damage or displacement.

2.6 JOINT MATERIALS

- A. Expansion joint fillers shall be preformed materials conforming to ASTM D 1751.
- B. Sawable type contraction joint inserts shall conform to COE CRD-C 540. Nonsawable joint inserts shall have sufficient stiffness to permit placement in plastic concrete without undue deviation from a straight line and shall conform to the physical requirements of COE CRD-C 540, with the exception of Section 3.4 "Resistance to Sawing". Plastic inserts shall be polyvinyl chloride conforming to the materials requirements of COE CRD-C 572.

- C. Expansion joint fillers shall be a closed-cell, non-absorbent, synthetic foam, and as recommended by the sealant manufacturer. Filler shall be totally compatible with sealant, primer, and substrates. Backers shall conform to the requirements of ASTM C 962, Type A, such as Ceramar as manufactured by W.R. Meadows, Expansion Joint Filler as manufactured by BASF-Sonneborn, or approved equal.

PART 3 - EXECUTION

3.1 PREPARATION FOR PLACING

- A. Before commencing concrete placement, the following shall be performed:
- B. Surface Preparation:
 - 1. Surfaces to receive concrete shall be clean and free from frost, ice, mud, and water.
 - 2. Earth (subgrade, base, or subbase courses) surfaces upon which concrete is to be placed shall be clean, damp, and free from debris, frost, ice, and standing or running water. The foundation shall be well drained and shall be satisfactorily graded and uniformly compacted.
 - 3. Rock surfaces upon which concrete is to be placed shall be free from oil, standing or running water, ice, mud, drummy rock, coating, debris, and loose, semi-detached or unsound fragments. Joints in rock shall be cleaned to a satisfactory depth, as determined by the Engineer, and to firm rock on the sides. Immediately before the concrete is placed, rock surfaces shall be cleaned thoroughly by the use of air-water jets or sandblasting as specified below for Previously Placed Concrete. Rock surfaces shall be kept continuously moist for at least 24 hours immediately prior to placing concrete thereon. All horizontal and approximately horizontal surfaces shall be covered, immediately before the concrete is placed, with a layer of mortar proportioned similar to that in the concrete mixture. Concrete shall be placed before the mortar stiffens.
 - 4. Concrete surfaces to which other concrete is to be bonded shall be abraded in an approved manner that will expose sound aggregate uniformly without damaging the concrete. Laitance and loose particles shall be removed. Surfaces shall be thoroughly washed and shall be moist but without free water when concrete is placed.
- C. Equipment:
 - 1. Transporting and conveying equipment shall be in-place, ready for use, clean, and free of hardened concrete and foreign material.
 - 2. Equipment for consolidating concrete shall be at the placing site and in proper working order.
 - 3. Equipment and material for curing and for protecting concrete from weather or mechanical damage shall be at the placing site, in proper working condition, and in sufficient amount for the entire placement.

- D. When hot, windy conditions during concreting appear probable, equipment and material shall be at the placing site to provide windbreaks, shading, fogging, or other action to prevent plastic shrinkage, cracking, or other damaging drying of the concrete.
- E. Before placement of concrete, care shall be taken to determine that all embedded items are firmly and securely fastened in place as indicated on the drawings, or required. Conduit and other embedded items shall be clean and free of oil and other foreign matter such as loose coatings or rust, paint, and scale. The embedding of wood in concrete will be permitted only when specifically authorized or directed. Voids in sleeves, inserts, and anchor slots shall be filled temporarily with readily removable materials to prevent the entry of concrete into voids. Welding shall not be performed on embedded metals within 2 feet of the surface of the concrete. Tack welding shall not be performed on or to embedded items.
- F. Forms shall be in place, cleaned, coated, and adequately supported, in accordance with Section 03 1000, CONCRETE FORMWORK. Reinforcing steel shall be in place, cleaned, tied, and adequately supported, in accordance with Section 03 2000, CONCRETE REINFORCEMENT.

3.2 INSTALLATION

- A. Conveying:
 - 1. Convey concrete from mixer to final position as rapidly as practical without segregation or loss of material.
 - 2. Use only metal or metal lined chutes with maximum length of 20 feet, maximum slope 1 vertical to 2 horizontal and minimum slope 1 vertical to 3 horizontal.
 - 3. Provide a hopper at the end of long belt conveyors and chutes not meeting the above requirements.
 - 4. Conveying by pumping methods shall conform to ACI 304. Maximum loss of slump, 2 inches. Do not use pipe made of aluminum or aluminum alloy to convey concrete. Should pumping be required for this project, all costs for pumping shall be borne by the Contractor. No additional compensation will be considered for any pumping costs.
- B. Depositing:
 - 1. Deposit concrete in a continuous operation until the section is completed. Regulate rate of placement so concrete remains plastic and flows into position.
 - 2. Maximum height of concrete free fall is 4 feet.
 - 3. All concrete shall be placed within 2 hours of batching. All concrete on site more than 2 hours from batching time shall be rejected and sent back to the plant.
- C. Consolidation:
 - 1. Use mechanical vibrating, rodding or spading for consolidation. Conform to 309-72, "Recommended Practice For Consolidation of Concrete."
 - 2. Do not use vibrators to transport concrete in forms.
 - 3. Minimum vibrator speed 8000 rpm.

4. Vertically invert vibrators at points 18 inches apart to a depth sufficient to penetrate 6 inches into the preceding layer. Vibrate each location for a length of time to obtain adequate consolidation (generally 5 to 15 seconds).

D. Embedments:

1. Accurately position and securely fasten all anchor bolts, castings, steel shapes, conduit, sleeves, and other materials to be embedded in the concrete.
2. Embedments shall be clean when installed. Remove concrete spatter from all surfaces not in contact with concrete.

E. Wash-out:

1. The Contractor shall remove residue from concrete mixing wash-out from all landscape, walkways, curbs, driveways, and similar surfaces to the satisfaction of the Owner.

3.3 CURING

A. Normal Conditions

1. All concrete shall be prevented from drying for at least the first 7 days after placing. All slabs shall be cured by spraying on the specified curing compound as per the manufacturer's printed instructions. Concrete walls shall be cured as carefully as the slabs. However, instead of covering the sides with the curing compound, it would be satisfactory if the forms were "loosened after the concrete had hardened" and the wall sprinkled with water frequently for at least five (5) days allowing the water to flow down the sides between the forms and the concrete. After the five-day wetting the forms may be removed. Curing compounds which discolor the concrete are not permitted.

B. Cold Weather Conditions

1. Whenever the temperature of the surrounding air is below 40 degrees F, all concrete shall be maintained at a temperature of not less than 50 degrees F for at least 72 hours and shall be protected from freezing for at least another 72 hours, or for as much time as is necessary to insure proper curing of the concrete. The housing, covering or other protection used in connection with the curing shall remain in place and intact for at least 24 hours after the artificial heating is discontinued. No dependence shall be placed on salt or other chemicals for the prevention of freezing. The approved practice for Winter Concreting are those outlined in ACI 306.

C. Alternates

1. Methods of curing other than those specified above shall be approved by the Engineer before being used.

3.4 FINISHING CONCRETE

- A. Defective Concrete:
 - 1. Any concrete which is not formed as shown on the plans or for any reason is out of alignment or level, or shows a defective surface shall be corrected or replaced as directed by the Engineer.
 - 2. Repair all surface defects and tie holes immediately after form removal.
 - 3. Remove honeycombed or otherwise defective concrete to sound concrete with square cut edges to avoid feathering.
- B. Patching:
 - 1. Immediately after removing the forms, all concrete surfaces shall be inspected and any poor joints, voids, stone pockets or other defective areas and all tie holes shall at once be patched before the concrete is thoroughly dry. The patching shall be done in such a manner that it shall form a homogeneous part, in appearance, and action of the main concrete. Fins shall be removed and patched as required where concrete is exposed.
- C. Exposed Concrete:
 - 1. All exposed concrete finish shall be as produced through the use of new smooth plywood or metal forms.
- D. Rubbing:
 - 1. Smooth rubbed finish shall be provided for exposed surfaces including walls and spandrels.
 - 2. Smooth rubbed finish shall be produced on green concrete. All necessary patching shall be done immediately after forms have been removed and rubbing shall be completed not later than the following day. Surfaces shall be wetted and rubbed with carborundum brick or other abrasive until a uniform color and texture is produced. No cement grout or slush shall be used other than the cement paste drawn from the green concrete itself by the rubbing process.
- E. Finishing Floors and Slabs: Comply with recommendations in ACI 302.1R for screeding, restraighening, and finishing operations for concrete surfaces.
- F. Float Finish: Apply float finish, defined in ACI 301, to surfaces indicated, to surfaces to receive trowel finish.
- G. Trowel Finish: Apply a trowel finish to surfaces indicated and to surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin film-finish coating system.
- H. After apply float finish, apply first trowel finish and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighen until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.

- I. Finish and measure surface so gap at any point between concrete surface and an unlevelled free-standing 10-foot long straightedge, resting on two high spots and placed anywhere on the surface, does not exceed the following: 1/8 inch.
- J. Trowel and Fine-Broom Finish: Apply a partial trowel finish, stopping after second troweling, to surfaces indicated and to surfaces where ceramic or quarry tile is to be installed by either thickset or thin-set method. Immediately after second troweling, and when concrete is still plastic, slightly scarify surface with a fine broom.

3.5 FIELD QUALITY CONTROL

- A. Concrete Tests: Conduct the following minimum tests in accordance with the requirements of ACI 301, Section 16.3.
 - 1. Strength Test:
 - a. Mold and cure five (5) cylinders from each sample. Test one at 7 days for information and three (3) at 28 days for acceptance. Retain one (1) cylinder for potential 56-day compressive testing and/ or petrographic examination.
 - 2. Slump Test: Conduct test for each strength test sample and whenever consistency of concrete appears to vary.
 - 3. Air Content: Conduct test from one of first three batches mixed each day and for each strength test sample.
- B. Acceptance of Concrete:
 - 1. The strength level of concrete will be considered satisfactory so long as the average of all sets of three consecutive strength test results equals or exceeds the specified 28-day strength and no individual strength test result falls below the specified strength by more than 200 psi.
 - 2. Upon failure of test cylinder results, the Owner may require the Contractor, at his/her expense, to obtain and test at least three 2-inch diameter core samples from the area in question. Conform to ASTM C42. Concrete will be considered adequate if the average of the three cores is at least 85% of, and if no single core is less than 75% of the specified 28-day strength.
 - 3. Upon failure of core test results, the Owner may require the Contractor, at his/her expense, to perform load tests as specified in ACI 318, Chapter 20. Should load tests fail to prove the concrete has reached the required strength; the Contractor shall remove and replace all defective concrete at no additional cost to the Owner. No contract extension will be considered for the time required to remove and replace defective concrete.
 - 4. Fill all core holes as specified for repairing defective concrete.

END OF SECTION

METAL STAIRS AND RAILINGS

SECTION 05 51 00

PART 1 – GENERAL

1.1 IN GENERAL

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

1.2 SCOPE OF WORK

- A. In general, the Contractor shall supply all labor, 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, as amended. The work under this Section generally includes the following:
 - 1. Industrial-type stairs with steel grating treads.
 - 2. Steel tube railings, handrails and guardrails, interior and exterior.

1.3 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design stairs and railings, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Structural Performance of Stairs: Provide metal stairs capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 - 1. Uniform Load and Concentrated Loads: As required by Code.
 - 2. Stair Framing: Capable of withstanding stresses resulting from railing loads in addition to loads specified above.
 - 3. Limit deflection of treads, platforms, and framing members to L/360 or 1/4 inch, whichever is less.
- C. Structural Performance of Railings: Provide railings capable of withstanding the effects of gravity loads and Code required loads and stresses within limits and under conditions indicated.
- D. Seismic Performance: Provide metal stairs capable of withstanding the effects of earthquake motions determined according to Code.

1.4 RELATED WORK

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
 - 1. Section 03 10 00 – Concrete Formwork
 - 2. Section 03 20 00 – Concrete Reinforcement
 - 3. Section 03 30 00 – Cast-In-Place Concrete
 - 4. Section 32 31 13 – Fence and Gates

1.5 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design stairs and railings, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Structural Performance of Stairs: Provide metal stairs capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 - 1. Uniform Load and Concentrated Loads: As required by Code.
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 - 3. Limit deflection of treads, platforms, and framing members to L/360 or 1/4 inch, whichever is less.
- C. Structural Performance of Railings: Provide railings capable of withstanding the effects of gravity loads and Code required loads and stresses within limits and under conditions indicated.
- D. Seismic Performance: Provide metal stairs capable of withstanding the effects of earthquake motions determined according to Code.

1.6 REFERENCES

- A. Reference Standards: Comply with applicable requirements of the following standards and others references in this Section.
 - 1. ANSI/NAAMM MBG 531 – Metal Bar Grating Manual.
 - 2. ASTM A 36 - Structural Steel.
 - 3. ASTM A 53 – Pipe, Steel, Black and Hot-Dipped, Zinc-coated, Welded and Seamless Steel Pipe.
 - 4. ASTM A 108 - Standard Specification for Steel Bar, Carbon and Alloy, Cold Finished.
 - 5. ASTM A 123 - Zinc Coatings on Products Fabricated From Rolled, Pressed and Forged Steel Shapes, Plates, Bars, and Strip.
 - 6. ASTM A 153 - Zinc-Coating on Iron and Steel Hardware.

7. ASTM A 167 - Stainless and Heat Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
8. ASTM A 276 – Stainless and Heat- Resisting Steel Bars and Shapes.
9. ASTM A 283 - Carbon Steel Plates, Shapes, and Bars.
10. ASTM A 307 - Carbon Steel Externally Threaded Standard Fasteners.
11. ASTM A 325 - Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
12. ASTM A312/A312M - Seamless and Welded Austenitic Stainless Steel Pipes
13. ASTM A 361 - Zinc Coated (Galvanized) Iron or Steel Roofing sheets.
14. ASTM A 385 – Providing High Quality Zinc Coatings.
15. ASTM A 386 - Zinc Coating on Assembled Steel Products.
16. ASTM A 446 - Zinc Coated (Galvanized) Steel Sheets of Structural Quality, Coils and Cut Lengths.
17. ASTM A 480 – General requirements Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet and Strip.
18. ASTM A 500 - Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Round and Shapes.
19. ASTM A 501 - Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
20. ASTM A 525 - Specification for Sheet Steel, Zinc Coated (Galvanized).
21. ASTM A 666 - Stainless and Heat Resisting Chromium-Nickel Steel Sheet Strip, Plate and Flat Bar for Structural and Architectural Applications.
22. ASTM A 780 – Repair of Hot-Dip Galvanizing.
23. ASTM A1011/A1011M - Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.
24. ASTM B117 Standard Practice for Operating Salt Spray (Fog) Apparatus.
25. ASTM B 209 - Specification for Aluminum Alloy, Sheet and Plate.
26. ASTM B 221 - Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes.
27. ASTM A 575 Standard Specification for Steel Bars, Carbon, Merchant Quality, M-Grades.
28. ASTM A576 Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality.
29. ASTM F 593 - Stainless Steel Bolts, Hex Cap Screws.
30. ASTM F 594 - Stainless Steel Nuts.
31. ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
32. AGAI - Inspection Manual for Hot-Dipped Galvanized Products.

33. AISC - Code of Standard Practice for Steel Buildings and Bridges.
34. AISC - Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings.
35. AISI referenced standards.
36. AWS - Standard Code for Arc and Gas Welding in Building Construction.
37. FS QQ-A-250d - Aluminum and Aluminum Alloy, Plate and Sheet.
38. IPA (Industrial Perforators Association) - Voluntary Standard Tolerances.
39. MIL-P-21035B - Paint High Zinc Dust Content, Galvanizing Repair (Metric) (superseding DOD-P-21035A)
40. NAAMM publication AMP 500 – Metal Finishes Manual
41. NAAMM publication AMP 510 – Metal Stairs Manual.
42. NAAMM publication AMP 521 – Pipe Railing Manual
43. NAAMM publication AMP 555 – Code of Standard Practice for The Architectural Metal Industry.
44. NAAMM publication AMP 555 – Code of Standard Practice for The Architectural Metal Industry.
45. ASTM A 380 – Standard Practice for Cleaning, Descaling and Passivation of Stainless Steel Parts, Equipment and Systems.
46. ASTM A 967 – Chemical Passivation Treatments for Stainless Steel Parts.

1.7 SUBMITTALS

- A. Product Data: For metal stairs and the following:
 1. Metal bar gratings and treads.
 2. Structural steel and metal railings
 3. Paint products.
 4. Grout.
- B. Sustainable Design Submittals:
 1. Product Data: Indicating percentages by weight of postconsumer and preconsumer recycled content for products having recycled content. Include statement indicating costs for each product having recycled content.
 2. Product Data: Manufacturers' product data for paints, including printed statement of VOC content.
- C. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
 1. Provide templates for anchors and bolts specified for installation under other Sections.
- D. Delegated-Design Submittal: For stairs and railings indicated to comply with performance requirements and design criteria, including structural analysis data

signed and sealed by the qualified professional engineer responsible for their preparation.

- E. Welding certificates.
- F. Qualification Data: For professional engineer.

1.8 QUALITY ASSURANCE

- A. Engineering Responsibility: Preparation of Shop Drawings, design calculations, and other structural data by a qualified professional engineer.
- B. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of metal stairs and railings that are similar to those indicated for this Project in material, design, and extent.
- C. Installer Qualifications: Fabricator of products.
- D. NAAMM Stair Standard: Comply with "Recommended Voluntary Minimum Standards for Fixed Metal Stairs" in NAAMM AMP 510, "Metal Stairs Manual," for class of stair designated, unless more stringent requirements are indicated.
 - 1. Preassembled Stairs: Commercial class.
 - 2. Industrial Type Stairs: Industrial class.
 - 3. Ornamental Stairs: Architectural class.
- E. Welding: Qualify procedures and personnel according to the following:
 - 1. AWS D1.1, "Structural Welding Code--Steel."
 - 2. AWS D1.3, "Structural Welding Code--Sheet Steel."
 - 3. AWS D1.6, "Structural Welding Code--Stainless Steel."
 - 4. Certify that each welder has five years of welding experience, has satisfactorily passed AWS qualification tests for welding processes involved and has undergone recertification. Welder must be able to list for Engineer's inspection at least four (4) complete field installations by him in completed fabrication reasonably near the site. Such completed fabrication shall have been done with materials and methods similar to those required for work under this Section.

1.9 COORDINATION

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.
- B. Coordinate installation of anchorages for metal stairs. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete

inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

- C. Coordinate locations of hanger rods and struts with other work so that they will not encroach on required stair width and will be within the fire-resistance-rated stair enclosure.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Store work in a well-ventilated area, away from uncured concrete and masonry, and protected from weather, moisture, soiling, abrasion, extreme temperatures, and humidity.
- B. Ordering or Delivering Any Materials of This Subcontract: Prohibited until all submittals listed within this section have been received and approved by the Architect.
- C. Clean work prior to erection.

1.11 JOB CONDITIONS

- A. The Contractor shall supply, install and maintain all shoring, supports, barriers, protection, temporary heat, 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.
- B. Schedule and execute all work without exposing the interior building areas to inclement weather. Protect the existing building and its contents against all risks, and repair or replace all damage to the Owner's satisfaction.
- C. Coordinate the work in this section with the work by other trades to ensure the orderly progress of the work.
- D. 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.
- E. 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.
- 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.

- G. The Contractor shall utilize skilled and experienced specialty workers to install all aspects of the work.

1.12 WARRANTY

- A. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official.
- B. Special Warranty:
- C. See Division 01 Section "Summary of Work" for contractor's warranty.

PART 2 – PRODUCTS

2.1 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces, unless otherwise indicated. For components exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.
- B. Recycled Content of Steel Products: Provide products with average recycled content of steel products so postconsumer recycled content plus one-half of preconsumer recycled content is not less than 25 percent.

2.2 FERROUS METALS

- A. Steel Angles, Channels, Plates and Bars: ASTM A36
- B. Steel Pipe, Seamless: ASTM A53, standard weight, black finish, Grade B
- C. Steel Tubular Shapes: ASTM A500, Grade B, Fy=42 KSI
- D. Structural Steel Tubing, Square and Rectangular Shapes: ASTM A 500, grade B, Fy=46 KSI
- E. Steel Bars for Grating Treads: ASTM A 36/A 36M or steel strip, ASTM A 1011/A 1011M or ASTM A 1018/A 1018M.
- F. Stainless Steel, Pipe: ASTM A312, Type 304
- G. Stainless Steel, Tubing: ASTM A554, MT 304
- H. Stainless Steel, Plate and Sheet: ASTM A 666, ASTM A 276, Type 304
- I. Stainless Steel Castings: ASTM A743, Grade CF 8 or CF 20
- J. Wire Rod for Grating Crossbars: ASTM A 510.

2.3 HOT DIP-GALVANIZING

- A. Steel Chemically Suitable for Metal Coatings: Provide; comply with requirements herein
- B. Carbon: Below 0.25 percent
- C. Silicon: Below 0.24 percent
- D. Phosphorous: Below 0.05 percent
- E. Manganese: Below 1.35 percent
- F. Steel At Variance With These Requirements: Notify galvanizer to determine processing suitability.
- G. Hot dip galvanizing must conform to ASTM A123.

2.4 FASTENERS

- A. High Strength Bolts: ASTM A325
- B. Anchor rods (for anchoring the stair column baseplate to existing concrete) shall conform to AISI 1038 with a minimum tensile strength of 94.2 ksi such as ½" Hilti HIT-Z stainless steel threaded rods. Washers shall conform to ASTM A240 and ANSI B18.22.1 Type A. Nuts shall conform to ASTM F594.
- C. Adhesive for securing anchor rods into the existing concrete shall be a two component hybrid adhesive such as Hilti HIT-HY 200 using the Hilti "Safe-Set" Technology or Engineer approved equivalent.

2.5 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Shop Primers: Provide primers that comply with Section 099000 – Painting and Coating
- C. Zinc-Rich Primer: Complying with SSPC-Paint 20 or SSPC-Paint 29 and compatible with topcoat.
 - 1. Use primer with a VOC content of 420 g/L (3.5 lb/gal.) or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- D. Galvanizing Repair Paint: High-zinc-dust-content paint for reglazing welds in steel, complying with SSPC-Paint 20.
 - 1. Provide interior, field-applied paint with a VOC content of 250 g/L or less, when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.6 FABRICATION, GENERAL

- A. Provide complete stair assemblies, including metal framing, hangers, struts, railings, clips, brackets, bearing plates, and other components necessary to support and anchor stairs and platforms on supporting structure.
 - 1. Join components by welding, unless otherwise indicated.
 - 2. Use connections that maintain structural value of joined pieces.
 - 3. Fabricate treads and platforms of exterior stairs so finished walking surfaces slope to drain.
- B. Preassembled Stairs: Assemble stairs in shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
- C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- D. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- E. Form exposed work true to line and level with accurate angles and surfaces and straight edges.
- F. Weld connections to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. Weld exposed corners and seams continuously, unless otherwise indicated.
 - 5. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- G. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) screws or bolts unless otherwise indicated. Locate joints where least conspicuous.
- H. Comply with "Guideline 1: Joint Finishes", by National Ornamental & Miscellaneous Metals Association (NOMMA), as follows:
 - 1. Typical Railing: Type 2 or better, unless otherwise indicated.
 - 2. Service Stair Railing: Type 3 or better, unless otherwise indicated.
 - 3. Ornamental Railing: Type 1.

- I. Fabricate joints that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

2.7 STEEL-FRAMED STAIRS

- A. Stair Framing:
 1. Fabricate stringers of steel plates or channels. Provide closures for exposed ends of stringers.
 2. Construct platforms of steel plate or channel headers and miscellaneous framing members as needed to comply with performance requirements.
 3. Weld stringers to headers; weld framing members to stringers and headers.
- B. Metal Bar-Grating Stairs: Form treads and platforms to configurations shown from metal bar grating; fabricate to comply with NAAMM MBG 531, "Metal Bar Grating Manual."
 1. Fabricate treads and platforms from welded steel grating with openings in gratings no more than 1/2 inch in least dimension.
 2. Surface: Serrated.
 3. Finish: Galvanized.
 4. Fabricate grating treads with rolled-steel floor plate nosing and with steel angle or steel plate carrier at each end for stringer connections. Secure treads to stringers with bolts.
 5. Fabricate grating platforms with nosing matching that on grating treads. Provide toeplates at open-sided edges of grating platforms. Weld grating to platform framing.

2.8 STEEL TUBE RAILINGS

- A. General: Fabricate railings to comply with requirements indicated for design, dimensions, details, finish, and member sizes, including wall thickness of tube, post spacings, and anchorage, but not less than that needed to withstand indicated loads.
- B. Welded Connections: Fabricate railings with welded connections. Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
- C. Form changes in direction of railings as detailed on the Drawings.
- D. Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.
- E. Close exposed ends of railing members with prefabricated end fittings.

- F. Provide wall returns at ends of wall-mounted handrails, unless otherwise indicated. Close ends of returns unless clearance between end of rail and wall is 1/4 inch or less.
- G. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, end closures, flanges, miscellaneous fittings, and anchors for interconnecting components and for attaching to other work. Furnish inserts and other anchorage devices for connecting to concrete or masonry work.
 - 1. Connect posts to stair framing by direct welding, unless otherwise indicated.
 - 2. For galvanized railings, provide galvanized fittings, brackets, fasteners, sleeves, and other ferrous-metal components.
 - 3. For nongalvanized railings, provide nongalvanized ferrous-metal fittings, brackets, fasteners, and sleeves, except galvanize anchors embedded in exterior masonry and concrete construction.
- H. Fillers: Provide fillers made from steel plate, or other suitably crush-resistant material, where needed to transfer wall bracket loads through wall finishes to structural supports. Size fillers to suit wall finish thicknesses and to produce adequate bearing area to prevent bracket rotation and overstressing of substrate.

2.9 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish metal stairs after assembly.

2.10 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with applicable standard listed below:
 - 1. ASTM A 123/A 123M, for galvanizing steel and iron products.
 - 2. ASTM A 153/A 153M, for galvanizing steel and iron hardware.
 - 3. Fill vent and drain holes that will be exposed in finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.
 - 4. Handrails: Galvanizing shall exhibit a rugosity (smoothness) not greater than 4 rug (16-20 microns of variation) when measured by a profilometer over a 1 inch straight line on the surface of the railings.
- B. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed products:
 - 1. Exterior Stairs (SSPC Zone 1B): SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."

2. Interior Stairs (SSPC Zone 1A): SSPC-SP 3, "Power Tool Cleaning."
- C. Apply shop primer to uncoated surfaces of metal stair components, except those with galvanized finishes and those to be embedded in concrete or masonry unless otherwise indicated. Comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.

2.11 STAINLESS-STEEL FINISHES

- A. Remove tool and die marks and stretch lines or blend into finish.
- B. Grind and polish surfaces to produce uniform, directionally textured, polished finish indicated, free of cross scratches. Run grain with long dimension of each piece.
- C. Bright, Directional Satin Finish: No. 4.
- D. When polishing is completed, passivate and rinse surfaces. Remove embedded foreign matter and leave surfaces chemically clean.

PART 3 – EXECUTION

3.1 INSTALLATION, GENERAL

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing metal stairs to in-place construction. Include threaded fasteners for concrete and masonry inserts, through-bolts, lag bolts, and other connectors.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal stairs. Set units accurately in location, alignment, and elevation, measured from established lines and levels and free of rack.
- C. Install metal stairs by welding stair framing to steel structure or to weld plates cast into concrete, unless otherwise indicated.
- D. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
- E. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- F. Field Welding: Comply with the following requirements:
 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.

4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

3.2 INSTALLING STEEL TUBE RAILINGS

- A. Adjust railing systems before anchoring to ensure matching alignment at abutting joints. Space posts at spacing indicated or, if not indicated, as required by design loads. Plumb posts in each direction. Secure posts and rail ends to building construction as follows:
 1. Anchor posts to steel by welding directly to steel supporting members.
 2. Anchor handrail ends to concrete and masonry with steel round flanges welded to rail ends and anchored with postinstalled anchors and bolts.
- B. Attach handrails to wall with wall brackets. Provide bracket with 1-1/2-inch clearance from inside face of handrail and finished wall surface. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads. Secure wall brackets to building construction as follows:
 1. Use type of bracket with flange tapped for concealed anchorage to threaded hanger bolt.
 2. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts.
 3. For hollow masonry anchorage, use toggle bolts.
 4. For wood stud partitions, use hanger or lag bolts set into wood backing between studs. Coordinate with carpentry work to locate backing members.
 5. For steel-framed gypsum board assemblies, fasten brackets directly to steel framing or concealed steel reinforcements using self-tapping screws of size and type required to support structural loads.

3.3 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
 1. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.
- B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION

Roof Area B Access Stair Design
at the Center Building
67 Independence Drive
Augusta, ME
Gale JN 839100

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FENCE AND GATES

SECTION 32 31 13

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS (PCR) which are hereby made a part of this Section of the Specifications.

1.2 WORK INCLUDED

- A. Provide all equipment and materials and installation, of Chain Link fence, line posts, end posts, and rails as designated on the Contract Drawings.

1.3 RELATED WORK

- A. Examine Contract Documents for requirements that affect work of this Section. Other Specification Sections that directly relate to work of this Section include, but are not limited to:
 - 1. Section 03 10 00 – Concrete Formwork
 - 2. Section 03 20 00 – Concrete Reinforcement
 - 3. Section 03 30 00 – Cast-In-Place Concrete
 - 4. Section 05 51 00 – Metal Stairs and Railings

1.4 REFERENCES

- A. Comply with applicable requirements of the following standards. Where these standards conflict with other requirements, the most restrictive requirements shall govern.
 - 1. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
 - a. ASTM A 53 Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
 - b. ASTM A 123 Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
 - c. ASTM A 153 Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
 - d. ASTM A 176 (1994) Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip

- e. ASTM A 385 Standard Practice for Providing High-Quality Zinc Coatings (Hot-Dip)
- f. ASTM A 392 (1991b) Zinc-Coated Chain-Link Fence Fabric
- g. ASTM A 478 (1995a) Chromium-Nickel Stainless and Heat-Resisting Steel Weaving and Knitting Wire
- h. ASTM A 491 (1994) Aluminum-Coated Steel Chain-Link Fence Fabric
- i. ASTM A 666 (1994) Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar
- j. ASTM C 94 (1994) Ready-Mixed Concrete
- k. ASTM F 626 (1994a) Fence Fittings
- l. ASTM F 688 Poly (Vinyl Chloride) (PVC) and other Organic Polymer-Coated Steel Chain link fence fabric, Class 2B
- m. ASTM F 883 (1990) Padlocks
- n. ASTM F 900 (1994) Industrial and Commercial Swing Gates
- o. ASTM F 1043 (1995) Strength and Protective Coatings on Metal Industrial Chain-Link Fence Framework
- p. ASTM F 1083 (1993) Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded for Fence Structures
- 2. AMERICAN WELDING SOCIETY (AWS)
 - a. AWS WZC (1972) Welding Zinc-Coated Steels
- 3. CHAIN LINK FENCE MANUFACTURERS INSTITUTE (CLFMI)
 - a. CLFMI Product Manual (CLF-PM0610) revised January 2012
- B. AISC Specification for the Design, Fabrication and Erection of Structural Steel for Buildings, (AISC Specifications)
 - 1. AISC 325 Specification for Structural Steel Buildings
 - 2. AISC 326 Detailing for Steel Construction
 - 3. AISC 303 Code of Standard Practice for Steel Buildings and Bridges
 - 4. RCSC A.1 Specification for Structural joints Using ASTM A325 or A490 Bolts.

1.5 SUBMITTALS

- A. Submit shop drawings and manufacturer's specifications and installation instructions for all materials to be used.
- B. Certificates: Statement signed by an official authorized to certify on behalf of the manufacturer attesting that the chain link fence and component materials meet the specified requirements.

1.6 JOB CONDITIONS

- A. The Contractor shall supply, install and maintain all shoring, supports, barriers, protection, temporary heat, 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.
- B. Schedule and execute all work without exposing the interior building areas to inclement weather. Protect the existing building and its contents against all risks, and repair or replace all damage to the Owner's satisfaction.
- C. Coordinate the work in this section with the work by other trades to ensure the orderly progress of the work.
- D. 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.
- E. 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.
- 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.
- G. The Contractor shall utilize skilled and experienced specialty workers to install all aspects of the work.
- H. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

1.7 WARRANTY

- A. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official.

PART 2 - PRODUCTS

2.1 CHAIN LINK FENCE MATERIALS

A. Vinyl Coated Fence Fabric

1. Fabric shall be black vinyl coated thermally fused and bonded to a primer which is thermally cured onto galvanized steel core wire conforming to ASTM F 668, Class 2b. Color of vinyl coating shall be black as specified in the plan set. Minimum coating thickness shall be 0.006 in. Color sample shall be submitted to the Owner for approval.
2. Chain link Fabric shall be woven into a two (2) inch mesh of 8-core, 6 gauge galvanized wire with a minimum breaking strength of 1290 lbs. In accordance with ASTM F 668, Class 2b.
3. Zinc for galvanized coating shall conform to ASTM B 6, galvanized by hot dipped method AISI Type I, before vinyl coating; coating shall be smooth. Minimum weight of zinc coating shall be 1.2 oz. per sq. ft.
4. Polyvinyl chloride coating shall meet the following requirements:
 - a. Specific gravity shall be 1.30 maximum, tested in accordance with ASTM D 792.
 - b. Hardness shall have a minimum Durometer reading of A 95 in accordance with ASTM D 2240. Ultimate elongation shall be 275% in accordance with ASTM D 412.
5. Tensile strength shall have a test minimum of 3,300 psi in accordance with ASTM D 412.
6. Vinyl shall be a dense and impervious covering free of voids, having a smooth, lustrous surface without pinholes, bubbles, voids, or rough or blistered surface.

B. Fence Posts, Hardware, and Fittings - General

1. Comply with ASTM F 1043 for framing, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F 1043 or ASTM F 1083.
 - a. Light Industrial Strength: Material Group IC-L, round steel pipe, electric-resistance-welded pipe.
 - b. Horizontal Framework Members: Top and bottom rails complying with ASTM F 1043.
 - c. Brace Rails: Comply with ASTM F 1043.
 - d. Metallic Coating for Steel Framing:
 - 1) Type A, consisting of not less than minimum 2.0-oz./sq. ft. average zinc coating per ASTM A 123/A 123M or 4.0-oz./sq. ft. zinc coating per ASTM A 653/A 653M.
2. Fittings shall be of best quality malleable iron castings, wrought iron forgings, or pressed steel and provided with pin connections. Equipment shall be designed to carry 100% overload.
3. Malleable iron castings shall be hot-dipped galvanized in accordance with ASTM A 153.
4. Wrought iron forgings or pressed steel fitting and appurtenances shall be hot-dipped galvanized in accordance with ASTM A 123.

5. Fence Hardware Coatings: shall match fence fabric coating.
6. Piping for fence posts shall be steel conforming to ASTM A 53 except that pipe shall be unthreaded and untested for water pressure.
7. Galvanized items shall be galvanized in accordance with ASTM A 123, A 153, or A 385, as applicable.
8. Bolts, which are installed six (6) feet or less above grade shall not protrude more than 1/4 inch beyond the nut after tightening. Rough edges shall be filed smooth to the satisfaction of the engineer. Peen ends of all bolts after tightening.

C. Posts

1. Under Six Foot (6') High Fence:
 - a. Line posts shall be 1.9 in. outside diameter (O.D.), Schedule 40 pipe, weighing 2.28 lb./ft.
 - b. End and corner posts shall be 2.375 in. O.D., Schedule 40 pipe, weighing 3.65 lb./ft.
2. Six Feet to Nine Feet (6' to 9') High Fence:
 - a. Line posts shall be 2.375 in. O.D., Schedule 40 pipe, weighing 3.65 lb./ft.
 - b. End and corner posts shall be 2.875 in. O.D., Schedule 40 pipe, weighing 5.79 lb./ft.
3. Nine Feet to Twelve Feet (9' to 12') High Fence:
 - a. Line posts shall be 2.875 in. outside diameter (O.D.), Schedule 40 pipe, weighing 5.79 lb./ft.
 - b. End and corner posts shall be 4.00 in. O.D., Schedule 40 pipe, weighing 9.11 lb./ft.
4. Twelve Feet to Sixteen Feet (12' to 16') High Fence:
 - a. Line posts shall be 4.0 in. outside diameter (O.D.), Schedule 40 pipe, weighing 9.11 lb./ft.
 - b. End and corner posts shall be 6.6 in. O.D., Schedule 40 pipe, weighing 18.9 lb./ft.
5. The gatepost for any gate leaf 6 ft. wide and less shall be 3.0 in. O.D., Schedule 40 pipe, weighing 5.79 lb./ft.
6. Posts shall be PVC coated, thermally fused and bonded to a primer that is thermally cured onto galvanized steel posts. The color of the vinyl coating shall be black. The minimum coating thickness shall be 0.006 in.

D. Rails and Post Braces

1. Top rail, mid rail (**equal to or greater than 6-ft. fence**) and bottom rails shall be 1.66 in. O.D., Schedule 40 pipe, weighing 2.27 lb./ft.
2. Rails and post braces shall be PVC coated, thermally fused and bonded to a primer which is thermally cured onto galvanized steel rails and post braces. The color of the vinyl coating shall be black, as specified in the plan set. The minimum coating thickness shall be 0.006 in.

E. Caps

1. Posts shall have caps, which shall be designed to exclude water from the posts. Caps shall have holes suitable for the through passage of the top rail, where necessary.

2. Caps for posts shall be PVC coated, thermally fused and bonded to a primer which is thermally cured onto the galvanized steel caps. The color of the vinyl coating shall be black, as specified in the plan set. The minimum coating thickness shall be 0.006 in. All caps shall be securely fastened to the posts.

F. Tension and Tie Wire

1. PVC Coated Fence: Tie wire shall be 9-gauge O.D., vinyl-clad, galvanized steel wire.

G. Galvanized Paint

1. Cold galvanized paint shall be one of the following:

<u>Product</u>	<u>Manufacturer</u>
Galvicon	Galvicon Corporation
Zinc Shield	Stanley Chemical Division of The Stanley Works

2. Touch-up for Galvanized Surfaces: Touch-up damaged or abraded galvanized surfaces with products equal to one of the following:
 - a. Cold Galvanizing Compound; ZRC.
 - b. Speedhide Galvanized Steel Paint; PPG.
 - c. Series 90-97 Zinc-Rich Primer; Tnemec.

H. Concrete

1. Concrete shall meet ASTM C 94, using 3/4 inch maximum size aggregate, and having minimum compressive strength of 4000 psi at 28 days. Grout shall consist of one part Portland cement to three parts clean, well-graded sand and the minimum amount of water to produce a workable mix.

2.2 GROUT AND ANCHORING CEMENT

- A. Nonshrink, Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout, recommended in writing by manufacturer, for exterior applications.
- B. Erosion-Resistant Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with potable water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended in writing by manufacturer, for exterior applications.

2.3 BASEPLATE

- A. All steel shall be new steel conforming to the AISC specifications for design, fabrication and erection of structural steel for buildings and the following ASTM grades:
 1. Structural Steel Plates: ASTM A36 (36 ksi minimum yield).

2.4 ANCHORS

- A. Anchor rods (for anchoring the fence baseplate to existing concrete) shall conform to AISI 1038 with a minimum tensile strength of 94.2 ksi such as ½" Hilti HIT-Z stainless steel threaded rods. Washers shall conform to ASTM A240 and ANSI B18.22.1 Type A. Nuts shall conform to ASTM F594.
- B. Adhesive for securing anchor rods into the existing concrete shall be a two component hybrid adhesive such as Hilti HIT-HY 200 using the Hilti "Safe-Set" Technology or Engineer approved equivalent.

PART 3 - EXECUTION

3.1 GENERAL

- A. Fence shall be installed to the lines and grades indicated. The area on either side of the fence line shall be cleared to the extent indicated. Line posts shall be spaced equidistant, at intervals not exceeding ten feet (10). Terminal (corner, gate, and pull) posts shall be set at abrupt changes in vertical and horizontal alignment. Fabric shall be continuous between the terminal posts. However, runs between terminal posts shall not exceed 500 feet. Any damage to galvanized surfaces, including welding, shall be repaired with paint containing zinc dust, in accordance with ASTM A 780.
- B. Examine areas and conditions, with Installer present, for compliance with requirements for a verified survey of property lines and legal boundaries, site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.
 - 1. Do not begin installation before final grading is completed unless otherwise permitted by Designer.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 CHAIN-LINK FENCE INSTALLATION

- A. Install chain-link fencing to comply with ASTM F 567 and more stringent requirements indicated.
 - 1. Install fencing on established boundary lines inside property line.

3.3 POSTS

- A. Posts shall be anchored into the proposed concrete footings, as shown on the plans and details.

3.4 RAILS

- A. Top Rail, Mid and Bottom Rails
 - 1. Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Top, mid and bottom rails shall be supported at each post to form a continuous brace between terminal posts. Where required, sections of top rail shall be joined using sleeves or couplings that shall allow expansion or contraction of the rail. Bottom tension wire is not acceptable.

3.5 BRACES AND TRUSS RODS

- A. Braces and truss rods shall be installed as indicated and in conformance with the standard practice for the fence furnished. Braces and truss rods shall extend from terminal posts to line posts. Diagonal braces shall form an angle of approximately 40 to 50 degrees with the horizontal. No bracing is required on fences six feet high or less, if a top rail is installed. Install braces at end and gate posts and at both sides of corner and pull posts.

3.6 CHAIN LINK FABRIC

- A. Chain link fabric shall be installed on the driveway side of the fence unless otherwise noted. Fabric shall be attached to terminal posts with stretcher bars and tension bands. Bands shall be spaced at approximately fifteen inch (15") intervals. The fabric shall be installed and pulled taut to provide a smooth and uniform appearance free from sag, without permanently distorting the fabric diamond or reducing the fabric height. Fabric shall be fastened to line posts at approximately fourteen inch (14") intervals and fastened to all rails at approximately twelve inch (12") intervals. Fabric shall be cut by untwisting and removing pickets. Splicing shall be accomplished by weaving a single picket into the ends of the rolls to be joined. The top and bottom of installed fabric shall be as indicated on the Drawings. After the fabric installation is complete, the fabric shall be exercised by applying a 50-pound push-pull force at the center of the fabric between posts. The use of a 30-pound pull at the center of the panel shall cause fabric deflection of not more than two and one half inches (2-1/2") when pulling fabric from the post side of the fence. Every second fence panel shall meet this requirement. All failed panels shall be re-secured and retested at the Contractor's expense.

3.7 TOUCH-UP

- A. Following installation, scratches and marred spots in vinyl-coated surfaces shall be field coated with a vinyl coating supplied by the fence manufacturer.
- B. Following installation, scratches and marred spots in galvanized surfaces shall be power wire brushed and painted, with a cold-applied galvanized paint, at a rate of 2 oz. zinc per sq. ft. of surface.

3.8 GROUNDING

- A. Electrical equipment attached to the fence shall be grounded, as specified in manufacturer's instructions. Fences shall be grounded on each side of all gates, at each corner, at the closest approach to each building located within 50 feet of the fence, and where the fence alignment changes by more than 15 degrees. Grounding locations shall not exceed 650 feet. Each gate panel shall be bonded with a flexible bond strap to its gatepost. Fences crossed by power lines of 600 volts or more shall be grounded, at or near the point of crossing, and at distances not exceeding 150 feet on each side of crossing. The ground conductor shall consist of No. 8 AWG solid copper wire. Grounding electrodes shall consist of No. 8 AWG solid copper wire. Grounding electrodes shall be $\frac{3}{4}$ inch, by 10-foot long, copper-clad steel rod. Electrodes shall be driven into the earth so that the top of the electrode is at least six inches below the grade. Where driving is impracticable, electrodes shall be buried a minimum of twelve inches (12") deep and radially from the fence. The top of the electrode shall be not less than two feet or more than eight feet from the fence. The ground conductor shall be clamped to the fence and electrodes with bronze grounding clamps to create electrical continuity between fence posts, fence fabric and ground rods. After installation, the total resistance of the fence to the ground shall not be greater than 25 ohms.

END OF SECTION

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